

AutoCAD LT 2012

# Command Reference

The Autodesk logo is displayed in white text on a black rectangular background. The word "Autodesk" is written in a bold, sans-serif font and is oriented vertically, reading from bottom to top.

February 2011

© 2011 Autodesk, Inc. All Rights Reserved. Except as otherwise permitted by Autodesk, Inc., this publication, or parts thereof, may not be reproduced in any form, by any method, for any purpose.

Certain materials included in this publication are reprinted with the permission of the copyright holder.

#### **Trademarks**

The following are registered trademarks or trademarks of Autodesk, Inc., and/or its subsidiaries and/or affiliates in the USA and other countries: 3DEC (design/logo), 3December, 3December.com, 3ds Max, Algor, Alias, Alias (swirl design/logo), AliasStudio, AliasWavefront (design/logo), ATC, AUGI, AutoCAD, AutoCAD Learning Assistance, AutoCAD LT, AutoCAD Simulator, AutoCAD SQL Extension, AutoCAD SQL Interface, Autodesk, Autodesk Intent, Autodesk Inventor, Autodesk MapGuide, Autodesk Streamline, AutoLISP, AutoSnap, AutoSketch, AutoTrack, Backburner, Backdraft, Beast, Built with ObjectARX (logo), Burn, Buzzsaw, CAiCE, Civil 3D, Cleaner, Cleaner Central, ClearScale, Colour Warper, Combustion, Communication Specification, Constructware, Content Explorer, Dancing Baby (image), DesignCenter, Design Doctor, Designer's Toolkit, DesignKids, DesignProf, DesignServer, DesignStudio, Design Web Format, Discreet, DWF, DWG, DWG (logo), DWG Extreme, DWG TrueConvert, DWG TrueView, DXF, Ecotect, Exposure, Extending the Design Team, Face Robot, FBX, Fempro, Fire, Flame, Flare, Flint, FMDesktop, Freewheel, GDx Driver, Green Building Studio, Heads-up Design, Heidi, HumanIK, IDEA Server, i-drop, Illuminate Labs AB (design/logo), ImageModeler, iMOUT, Incinerator, Inferno, Inventor, Inventor LT, Kynapse, Kynogon, LandXplorer, LiquidLight, LiquidLight (design/logo), Lustre, MatchMover, Maya, Mechanical Desktop, Moldflow, Moldflow Plastics Advisers, MPI, Moldflow Plastics Insight, Moldflow Plastics Xpert, Moondust, MotionBuilder, Movimento, MPA, MPA (design/logo), MPX, MPX (design/logo), Mudbox, Multi-Master Editing, Navisworks, ObjectARX, ObjectDBX, Opticore, Pipeplus, PolarSnap, PortfolioWall, Powered with Autodesk Technology, Productstream, ProMaterials, RasterDWG, RealDWG, Real-time Roto, Recognize, Render Queue, Retimer, Reveal, Revit, RiverCAD, Robot, Showcase, Show Me, ShowMotion, SketchBook, Smoke, Softimage, SoftimageXSI (design/logo), Sparks, SteeringWheels, Stitcher, Stone, StormNET, StudioTools, ToolClip, Topobase, Toxik, TrustedDWG, U-Vis, ViewCube, Visual, Visual LISP, Volo, Vtour, WaterNetworks, Wire, Wiretap, WiretapCentral, XSI.

All other brand names, product names or trademarks belong to their respective holders.

#### **Disclaimer**

THIS PUBLICATION AND THE INFORMATION CONTAINED HEREIN IS MADE AVAILABLE BY AUTODESK, INC. "AS IS." AUTODESK, INC. DISCLAIMS ALL WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING THESE MATERIALS.

Published by:  
Autodesk, Inc.  
111 McInnis Parkway  
San Rafael, CA 94903, USA

# Contents

	<b>Commands</b> . . . . .	<b>1</b>
<b>Chapter 1</b>	<b>3D Commands</b> . . . . .	<b>3</b>
	3DCONFIG . . . . .	3
	Performance Tuning Dialog Box . . . . .	3
	Performance Tuner Log . . . . .	5
	-3DCONFIG . . . . .	6
	3DPOLY . . . . .	6
<b>Chapter 2</b>	<b>A Commands</b> . . . . .	<b>9</b>
	ABOUT . . . . .	9
	ADCCLOSE . . . . .	10
	ADCENTER . . . . .	10
	DesignCenter Window . . . . .	11
	Search Dialog Box . . . . .	15
	ADCNAVIGATE . . . . .	18
	ADDSELECTED . . . . .	19
	ADJUST . . . . .	20
	ALIGN . . . . .	22
	ANNORESET . . . . .	24
	ANNOUPDATE . . . . .	25
	APERTURE . . . . .	25
	ARC . . . . .	26

ARCHIVE . . . . .	30
Archive a Sheet Set Dialog Box . . . . .	31
Modify Archive Setup Dialog Box . . . . .	35
Archive - Set Password Dialog Box . . . . .	38
-ARCHIVE . . . . .	39
AREA . . . . .	40
ARRAY . . . . .	43
-ARRAY . . . . .	44
ARRAYCLOSE . . . . .	47
ARRAYEDIT . . . . .	48
Array Editor Ribbon Contextual Tab . . . . .	51
ARRAYPATH . . . . .	53
ARRAYPOLAR . . . . .	57
ARRAYRECT . . . . .	60
ATTACH . . . . .	62
-ATTACH . . . . .	63
ATTACHURL . . . . .	66
ATTDEF . . . . .	67
Attribute Definition Dialog Box . . . . .	67
-ATTDEF . . . . .	71
ATTDISP . . . . .	74
ATTEDIT . . . . .	75
Edit Attributes Dialog Box . . . . .	76
-ATTEDIT . . . . .	77
ATTEXT . . . . .	81
Attribute Extraction Dialog Box . . . . .	81
-ATTEXT . . . . .	83
ATTIPEDIT . . . . .	84
ATTSYNC . . . . .	85
AUDIT . . . . .	86
AUTOCOMPLETE . . . . .	87
AUTOPUBLISH . . . . .	88
Auto Publish Options Dialog Box . . . . .	89

**Chapter 3 B Commands . . . . . 91**

BACTION . . . . .	91
BACTIONBAR . . . . .	95
BACTIONSET . . . . .	96
BACTIONTOOL . . . . .	98
BASE . . . . .	104
BASSOCIATE . . . . .	104
BATTMAN . . . . .	105
Block Attribute Manager . . . . .	106
Edit Attribute Dialog Box . . . . .	108
Block Attribute Settings Dialog Box . . . . .	113
BATTORDER . . . . .	114



Attribute Order Dialog Box . . . . .	114
BAUTHORPALETTE . . . . .	115
BAUTHORPALETTECLOSE . . . . .	116
BCLOSE . . . . .	116
BCONSTRUCTION . . . . .	117
BCYCLEORDER . . . . .	118
Insertion Cycling Order Dialog Box . . . . .	118
BEDIT . . . . .	120
Edit Block Definition Dialog Box . . . . .	121
Block Editor Ribbon Contextual Tab . . . . .	122
Block Editor . . . . .	127
-BEDIT . . . . .	134
BESETTINGS . . . . .	134
Block Editor Settings Dialog Box . . . . .	135
BGRIPSET . . . . .	138
BHATCH . . . . .	138
BLEND . . . . .	139
BLIPMODE . . . . .	140
BLOCKICON . . . . .	141
BLOOKUPTABLE . . . . .	142
Property Lookup Table Dialog Box . . . . .	142
Add Parameter Properties Dialog Box . . . . .	144
BLOCK . . . . .	145
Block Definition Dialog Box . . . . .	145
-BLOCK . . . . .	148
BMPOUT . . . . .	150
BOUNDARY . . . . .	151
Boundary Creation Dialog Box . . . . .	152
-BOUNDARY . . . . .	153
BPARAMETER . . . . .	154
BREAK . . . . .	161
BROWSER . . . . .	163
BSAVE . . . . .	164
BSAVEAS . . . . .	165
Save Block As Dialog Box . . . . .	165
BTABLE . . . . .	166
Block Properties Table Dialog Box . . . . .	167
Add Parameter Properties Dialog Box . . . . .	169
BTESTBLOCK . . . . .	170
BVHIDE . . . . .	171
BVSHOW . . . . .	172
BVSTATE . . . . .	173
Visibility States Dialog Box . . . . .	173
New Visibility State Dialog Box . . . . .	174
-BVSTATE . . . . .	175

<b>Chapter 4</b>	<b>C Commands</b>	<b>177</b>
	CAL	177
	Understand Syntax of Expressions	178
	Format Feet and Inches	179
	Format Angles	180
	Use Points and Vectors	181
	Use System Variables in Calculations	182
	Convert Units of Measurement	183
	Use Standard Numeric Functions	183
	Calculate a Vector from Two Points	185
	Calculate the Length of a Vector	186
	Obtain a Point by Cursor	186
	Obtain the Last-Specified Point	187
	Use Snap Modes in Arithmetic Expressions	187
	Convert Points Between UCS and WCS	189
	Calculate a Point on a Line	190
	Rotate a Point About an Axis	190
	Obtain an Intersection Point	191
	Calculate a Distance	192
	Obtain a Radius	193
	Obtain an Angle	193
	Calculate a Normal Vector	195
	Use Shortcut Functions	196
	CHAMFER	197
	CHANGE	200
	CHPROP	203
	CHSPACE	205
	CIRCLE	206
	CLASSICIMAGE	208
	CLASSICLAYER	209
	CLASSICXREF	209
	CLEANSCREENON	210
	CLEANSCREENOFF	210
	CLIP	211
	CLOSE	214
	CLOSEALL	214
	COLOR	215
	Select Color Dialog Box	216
	-COLOR	222
	COMMANDLINE	223
	COMMANDLINEHIDE	224
	CONSTRAINTBAR	224
	CONSTRAINTSETTINGS	226
	Constraint Settings Dialog Box	226
	+CONSTRAINTSETTINGS	228
	CONTENTEXPLORER	229

CONTENTEXPLORERCLOSE . . . . .	229
CONVERT . . . . .	230
CONVERTCTB . . . . .	231
CONVERTPSTYLES . . . . .	232
COPY . . . . .	234
COPYBASE . . . . .	236
COPYCLIP . . . . .	237
COPYHIST . . . . .	238
COPYLINK . . . . .	238
COPYTOLAYER . . . . .	239
Copy To Layer Dialog Box . . . . .	240
-COPYTOLAYER . . . . .	240
CUI . . . . .	241
Customize User Interface Editor . . . . .	242
Button Editor Dialog Box . . . . .	252
Image Manager Dialog Box . . . . .	253
Find and Replace Dialog Box - CUI . . . . .	255
CUIEXPORT . . . . .	256
CUIIMPORT . . . . .	257
CUILOAD . . . . .	258
Load/Unload Customizations Dialog Box . . . . .	258
CUIUNLOAD . . . . .	260
CUSTOMIZE . . . . .	260
Customize Dialog Box . . . . .	261
CUTCLIP . . . . .	263

**Chapter 5 D Commands . . . . . 265**

DATALINK . . . . .	265
Data Link Manager . . . . .	266
New Excel Data Link Dialog Box . . . . .	267
DATALINKUPDATE . . . . .	270
DCDISPLAY . . . . .	271
DDEDIT . . . . .	272
Edit Text Dialog Box . . . . .	273
Edit Attribute Definition Dialog Box . . . . .	273
DDPTYPE . . . . .	274
Point Style Dialog Box . . . . .	275
DDVPOINT . . . . .	276
Viewpoint Presets Dialog Box . . . . .	276
DELAY . . . . .	278
DELCONSTRAINT . . . . .	278
DETACHURL . . . . .	279
DGNADJUST . . . . .	279
DGNATTACH . . . . .	281
Attach DGN Underlay Dialog Box . . . . .	282
DGN Underlay Ribbon Contextual tab . . . . .	284

-DGNATTACH . . . . .	285
DGNBIND (-DGNBIND) . . . . .	287
DGNCLIP . . . . .	287
DGNEXPORT . . . . .	289
Export DGN Settings Dialog Box . . . . .	290
DGNEXPORT Conversion Table . . . . .	294
-DGNEXPORT . . . . .	297
DGNIMPORT . . . . .	298
Import DGN Settings Dialog Box . . . . .	299
DGNIMPORT Conversion Table . . . . .	303
DGNIMPORT Unit Mapping Table . . . . .	305
-DGNIMPORT . . . . .	308
DGNLAYERS . . . . .	309
DGNMAPPING . . . . .	310
DGN Mapping Setups Dialog Box . . . . .	311
New Mapping Setup Dialog Box . . . . .	312
Modify DGN Mapping Setup Dialog Box . . . . .	314
Select Color Dialog Box . . . . .	319
DIM and DIM1 . . . . .	320
DIMALIGNED . . . . .	322
DIMANGULAR . . . . .	325
DIMARC . . . . .	328
DIMBASELINE . . . . .	330
DIMBREAK . . . . .	332
DIMCENTER . . . . .	334
DIMCONTINUE . . . . .	335
DIMDIAMETER . . . . .	337
DIMDISASSOCIATE . . . . .	338
DIMEDIT . . . . .	339
DIMINSPECT . . . . .	341
Inspection Dimension Dialog Box . . . . .	342
-DIMINSPECT . . . . .	344
DIMJOGGED . . . . .	344
DIMJOGLINE . . . . .	346
DIMLINEAR . . . . .	347
DIMORDINATE . . . . .	351
DIMOVERRIDE . . . . .	353
DIMRADIUS . . . . .	354
DIMREASSOCIATE . . . . .	356
DIMREGEN . . . . .	358
DIMROTATED . . . . .	358
DIMSPACE . . . . .	360
DIMSTYLE . . . . .	361
Dimension Style Manager . . . . .	362
Create New Dimension Style Dialog Box . . . . .	365
New, Modify, and Override Dimension Style Dialog Boxes . . . . .	366

Compare Dimension Styles Dialog Box . . . . .	396
-DIMSTYLE . . . . .	397
DIMTEDIT . . . . .	400
DIST . . . . .	402
DIVIDE . . . . .	404
DLINE . . . . .	405
DONUT . . . . .	407
DOWNLOADMANAGER . . . . .	408
DRAGMODE . . . . .	409
DRAWINGRECOVERY . . . . .	410
Drawing Recovery Manager . . . . .	410
DRAWINGRECOVERYHIDE . . . . .	412
DRAWORDER . . . . .	412
DSETTINGS . . . . .	414
Drafting Settings Dialog Box . . . . .	414
Pointer Input Settings Dialog Box . . . . .	430
Dimension Input Settings Dialog Box . . . . .	431
Tooltip Appearance Dialog Box . . . . .	432
DWFADJUST . . . . .	433
DWFATTACH . . . . .	434
Attach DWF Underlay Dialog Box . . . . .	435
Substitute DWF Name Dialog Box . . . . .	437
DWF Underlay Ribbon Contextual Tab . . . . .	438
-DWFATTACH . . . . .	439
DWFCLIP . . . . .	440
DWFFORMAT . . . . .	442
DWFLAYERS . . . . .	442
DWGCONVERT . . . . .	443
DWG Convert Dialog Box . . . . .	444
Conversion Setups Dialog Box . . . . .	446
New Conversion Setup Dialog Box . . . . .	447
Modify Conversion Setup Dialog Box . . . . .	447
DWGPROPS . . . . .	451
Drawing Properties Dialog Box . . . . .	452
Add Custom Property Dialog Box . . . . .	458
<b>Chapter 6 E Commands . . . . .</b>	<b>459</b>
EATTEDIT . . . . .	459
Enhanced Attribute Editor . . . . .	460
ELEV . . . . .	464
ELLIPSE . . . . .	466
ERASE . . . . .	469
ETRANSMIT . . . . .	470
Create Transmittal Dialog Box . . . . .	471
Transmittal Setups Dialog Box . . . . .	473
Modify Transmittal Setup Dialog Box . . . . .	474

	Transmittal - Set Password Dialog Box . . . . .	479
	-ETRANSMIT . . . . .	479
	EXPLODE . . . . .	480
	EXPORT . . . . .	482
	-EXPORT . . . . .	483
	EXPORTDWF . . . . .	484
	Save as DWF Dialog Box . . . . .	485
	Export to DWF/PDF Options Palette . . . . .	486
	Page Setup Override Dialog Box . . . . .	488
	Precision Presets Manager . . . . .	489
	Export to DWF/PDF Ribbon Panel . . . . .	491
	EXPORTDWFX . . . . .	492
	Save as DWFX Dialog Box . . . . .	493
	EXPORTLAYOUT . . . . .	494
	Export Layout to Model Space Drawing Dialog Box . . . . .	495
	EXPORTPDF . . . . .	496
	Save as PDF Dialog Box . . . . .	497
	EXPORTSETTINGS . . . . .	498
	EXPORTTOAUTOCAD . . . . .	498
	EXTEND . . . . .	500
	EXTERNALREFERENCES . . . . .	504
	External References Palette . . . . .	504
	EXTERNALREFERENCESCLOSE . . . . .	512
<b>Chapter 7</b>	<b>F Commands . . . . .</b>	<b>513</b>
	FIELD . . . . .	513
	Field Dialog Box . . . . .	514
	FILL . . . . .	517
	FILLET . . . . .	518
	FILTER . . . . .	521
	Object Selection Filters Dialog Box . . . . .	522
	FIND . . . . .	524
	Find and Replace Dialog Box - FIND . . . . .	525
<b>Chapter 8</b>	<b>G Commands . . . . .</b>	<b>529</b>
	GEOGRAPHICLOCATION . . . . .	529
	Define Geographic Location Dialog Box . . . . .	530
	Location Already Exists Dialog Box . . . . .	530
	Coordinate System Already Defined Dialog Box . . . . .	531
	Geographic Location Dialog Box . . . . .	532
	Location Picker Dialog Box . . . . .	535
	GETENV . . . . .	536
	GETLINK . . . . .	536
	Get Link Dialog Box . . . . .	537
	GOTOURL . . . . .	538

	GRADIENT . . . . .	539
	GRAPHSCR . . . . .	539
	GRID . . . . .	540
	GROUP . . . . .	541
	-GROUP . . . . .	542
	GROUPEDIT . . . . .	543
<b>Chapter 9</b>	<b>H Commands . . . . .</b>	<b>545</b>
	HATCH . . . . .	545
	Hatch and Gradient Dialog Box . . . . .	546
	Hatch Creation Ribbon Contextual Tab . . . . .	558
	Hatch Pattern Palette Dialog Box . . . . .	563
	-HATCH . . . . .	565
	HATCHEDIT . . . . .	572
	Hatch Edit Dialog Box . . . . .	573
	Hatch Editor Ribbon Contextual Tab . . . . .	573
	-HATCHEDIT . . . . .	578
	HATCHGENERATEBOUNDARY . . . . .	581
	HATCHSETBOUNDARY . . . . .	582
	HATCHSETORIGIN . . . . .	582
	HATCHTOBACK . . . . .	583
	HELP . . . . .	584
	HIDE . . . . .	584
	HIDEOBJECTS . . . . .	586
	HIDEPALETTES . . . . .	586
	HLSETTINGS . . . . .	587
	Hidden Line Settings Dialog Box . . . . .	587
	HYPERLINK . . . . .	590
	Insert Hyperlink Dialog Box . . . . .	591
	Edit Hyperlink Dialog Box . . . . .	594
	Select Place in Document Dialog Box . . . . .	595
	-HYPERLINK . . . . .	595
	HYPERLINKOPTIONS . . . . .	597
<b>Chapter 10</b>	<b>I Commands . . . . .</b>	<b>599</b>
	ID . . . . .	599
	IGESEXPOT . . . . .	600
	IGESEXPOT Conversion Table . . . . .	600
	IGESIMPORT . . . . .	603
	IGESIMPORT Conversion Table . . . . .	603
	IMAGE . . . . .	606
	-IMAGE . . . . .	607
	IMAGEADJUST . . . . .	609
	Image Adjust Dialog Box . . . . .	610
	-IMAGEADJUST . . . . .	611

IMAGEATTACH . . . . .	612
Attach Image Dialog Box . . . . .	613
Image Ribbon Contextual tab . . . . .	615
IMAGECLIP . . . . .	616
IMAGEQUALITY . . . . .	618
IMPORT . . . . .	619
INSERT . . . . .	620
Insert Dialog Box . . . . .	621
-INSERT . . . . .	624
INSERTOBJ . . . . .	626
Insert Object Dialog Box . . . . .	627
INTERSECT . . . . .	628
ISOLATEOBJECTS . . . . .	629
ISOPLANE . . . . .	630
<b>Chapter 11 J Commands . . . . .</b>	<b>633</b>
JOIN . . . . .	633
JPGOUT . . . . .	635
JUSTIFYTEXT . . . . .	636
<b>Chapter 12 L Commands . . . . .</b>	<b>639</b>
LAYCUR . . . . .	639
LAYDEL . . . . .	640
Delete Layers Dialog Box . . . . .	641
-LAYDEL . . . . .	641
LAYER . . . . .	642
Layer Properties Manager . . . . .	643
Layer Filter Properties Dialog Box . . . . .	652
Select Linetype Dialog Box . . . . .	656
Lineweight Dialog Box . . . . .	656
Layer Transparency Dialog Box . . . . .	658
Layer Settings Dialog Box . . . . .	658
Customize Layer Columns Dialog Box . . . . .	661
-LAYER . . . . .	663
LAYERCLOSE . . . . .	666
LAYERP . . . . .	666
LAYERPMODE . . . . .	667
LAYERSTATE . . . . .	667
Layer States Manager . . . . .	668
New Layer State to Save Dialog Box . . . . .	671
Edit Layer State Dialog Box . . . . .	672
Select Layers to Add to Layer State Dialog Box . . . . .	673
Select Layer States Dialog Box . . . . .	674
LAYFRZ . . . . .	675
LAYISO . . . . .	676



LAYLCK . . . . .	678
LAYMCH . . . . .	678
Change to Layer Dialog Box . . . . .	679
-LAYMCH . . . . .	680
LAYMCUR . . . . .	680
LAYMRG . . . . .	681
Merge Layers Dialog Box . . . . .	682
Merge to Layer Dialog Box . . . . .	683
-LAYMRG . . . . .	683
LAYOFF . . . . .	684
LAYON . . . . .	685
LAYOUT . . . . .	686
LAYOUTWIZARD . . . . .	688
Layout Wizard . . . . .	688
LAYTHW . . . . .	689
LAYULK . . . . .	690
LAYUNISO . . . . .	690
LAYVPI . . . . .	691
LAYWALK . . . . .	693
LayerWalk Dialog Box . . . . .	693
LEADER . . . . .	696
LENGTHEN . . . . .	698
LIMITS . . . . .	701
LINE . . . . .	702
LINETYPE . . . . .	704
Linetype Manager . . . . .	705
Load or Reload Linetypes Dialog Box . . . . .	707
-LINETYPE . . . . .	708
LIST . . . . .	710
LOGFILEOFF . . . . .	711
LOGFILEON . . . . .	711
LTSCALE . . . . .	712
LWEIGHT . . . . .	713
Lineweight Settings Dialog Box . . . . .	713
-LWEIGHT . . . . .	715
<b>Chapter 13 M Commands . . . . .</b>	<b>717</b>
MANAGEUPLOADS . . . . .	717
Manage Uploads Dialog Box . . . . .	718
MARKUP . . . . .	719
Markup Set Manager . . . . .	719
MARKUPCLOSE . . . . .	725
MASSPROP . . . . .	725
MATCHCELL . . . . .	729
MATCHPROP . . . . .	730
Property Settings Dialog Box . . . . .	731

MEASURE . . . . .	734
MEASUREGEOM . . . . .	736
MESSAGES . . . . .	740
MIRROR . . . . .	741
MLEADER . . . . .	742
MLEADERALIGN . . . . .	745
MLEADERCOLLECT . . . . .	746
MLEADEREDIT . . . . .	747
MLEADERSTYLE . . . . .	749
Multileader Style Manager . . . . .	749
Modify Multileader Style Dialog Box . . . . .	751
Create New Multileader Style Dialog Box . . . . .	757
MODEL . . . . .	758
MOVE . . . . .	758
MREDO . . . . .	759
MSLIDE . . . . .	760
MSPACE . . . . .	761
MTEDIT . . . . .	761
MTEXT . . . . .	762
In-Place Text Editor . . . . .	763
Text Formatting Toolbar . . . . .	768
Text Editor Ribbon Contextual Tab . . . . .	773
Paragraph Dialog Box . . . . .	778
Columns Menu . . . . .	779
Column Settings Dialog Box . . . . .	780
Background Mask Dialog Box . . . . .	781
Find and Replace Dialog Box - MTEXT . . . . .	782
Stack Properties Dialog Box . . . . .	784
AutoStack Properties Dialog Box . . . . .	786
-MTEXT . . . . .	787
Symbols and Special Characters . . . . .	791
MULTIPLE . . . . .	794
MVIEW . . . . .	794
<b>Chapter 14 N Commands . . . . .</b>	<b>799</b>
NAVBAR . . . . .	799
3Dconnexion Settings Dialog Box . . . . .	800
NAVSWHEEL . . . . .	801
NCOPY . . . . .	801
NEW . . . . .	803
Create New Drawing Dialog Box . . . . .	804
Quick Setup Wizard . . . . .	807
Advanced Setup Wizard . . . . .	809
NEW Command Prompt . . . . .	811
NEWSHEETSET . . . . .	812

<b>Chapter 15</b>	<b>O Commands</b>	<b>813</b>
	OBJECTSCALE	813
	Annotative Object Scale Dialog Box	814
	Add Scales to Object Dialog Box	815
	-OBJECTSCALE	816
	OFFSET	817
	OLELINKS	819
	Links Dialog Box	819
	Convert Dialog Box	821
	Change Icon Dialog Box	822
	OLESCALE	823
	OLE Text Size Dialog Box	823
	ONLINEDRAWINGS	824
	OOPS	825
	OPEN	826
	Standard File Selection Dialog Boxes	826
	Buzzsaw Location Shortcuts Dialog Box	831
	Log In to Buzzsaw Dialog Box	831
	Create or Edit a Buzzsaw Location Shortcut Dialog Box	832
	Select a Buzzsaw Location Dialog Box	833
	Find Dialog Box	834
	Add/Modify FTP Locations Dialog Box	836
	OPEN Command Prompt	838
	OPENDWFMARKUP	839
	OPENONLINE	839
	OPENSHEETSET	840
	OPTIONS	841
	Options Dialog Box	841
	Alternate Font Dialog Box	874
	Drawing Window Colors Dialog Box	875
	Command Line Window Font Dialog Box	877
	Thumbnail Preview Settings Dialog Box	878
	Plot Style Table Settings Dialog Box	879
	Right-Click Customization Dialog Box	881
	Field Update Settings Dialog Box	883
	Visual Effect Settings Dialog Box	884
	Ribbon Contextual Tab State Options Dialog Box	885
	Advanced Preview Options Dialog Box	887
	Transparency Dialog Box	888
	Hidden Message Settings Dialog Box	889
	InfoCenter Settings Dialog Box	890
	Default Scale List Dialog Box	891
	ORTHO	892
	OSNAP	893
	OVERKILL	895
	Delete Duplicate Objects Dialog Box	896

-OVERKILL . . . . .	898
<b>Chapter 16 P Commands . . . . .</b>	<b>901</b>
PAGESETUP . . . . .	901
Page Setup Manager . . . . .	902
New Page Setup Dialog Box . . . . .	904
Page Setup Dialog Box . . . . .	905
Changes to a Printer Configuration File Dialog Box (Page Setup) . . . . .	912
Import Page Setups Dialog Box . . . . .	913
PAN . . . . .	914
Panning in Real Time . . . . .	915
-PAN . . . . .	916
Pan Shortcut Menu . . . . .	917
PARAMETERS . . . . .	917
Parameters Manager - Drawing Editor . . . . .	918
Parameters Manager - Block Editor . . . . .	921
-PARAMETERS . . . . .	924
PARAMETERSCLOSE . . . . .	925
PASTEASHYPERLINK . . . . .	925
PASTEBLOCK . . . . .	926
PASTECLIP . . . . .	926
PASTEORIG . . . . .	927
PASTESPEC . . . . .	928
Paste Special Dialog Box . . . . .	929
PCINWIZARD . . . . .	930
PDFADJUST . . . . .	931
PDFATTACH . . . . .	932
-PDFATTACH . . . . .	933
Attach PDF Underlay Dialog Box . . . . .	934
PDF Underlay Ribbon Contextual tab . . . . .	936
PDFCLIP . . . . .	937
PDFLAYERS . . . . .	939
PEDIT . . . . .	939
Multiple Selection (PEDIT) . . . . .	941
2D Polyline Selection (PEDIT) . . . . .	941
3D Polyline Selection (PEDIT) . . . . .	948
PKFSTGROUP . . . . .	950
PLAN . . . . .	952
PLINE . . . . .	954
PLOT . . . . .	961
Plot Dialog Box . . . . .	961
Add Page Setup Dialog Box . . . . .	971
Changes to a Printer Configuration File Dialog Box . . . . .	972
Plot Job Progress Dialog Box . . . . .	972
Update PC3 File with New Printer Dialog Box . . . . .	973

-PLOT . . . . .	975
PLOTSTAMP . . . . .	978
Plot Stamp Dialog Box . . . . .	979
User Defined Fields Dialog Box . . . . .	981
Advanced Options Dialog Box . . . . .	982
-PLOTSTAMP . . . . .	984
PLOTSTYLE . . . . .	987
Current Plot Style Dialog Box . . . . .	988
Select Plot Style Dialog Box . . . . .	989
-PLOTSTYLE . . . . .	990
PLOTTERMANAGER . . . . .	991
Add-a-Plotter Wizard . . . . .	991
Plotter Configuration Editor . . . . .	992
Configure LPT Port Dialog Box . . . . .	1005
Settings for COM Port Dialog Box . . . . .	1006
Advanced Settings for COM Port Dialog Box . . . . .	1007
PNGOUT . . . . .	1008
POINT . . . . .	1009
POLYGON . . . . .	1011
PREVIEW . . . . .	1013
PROPERTIES . . . . .	1014
Properties Palette . . . . .	1015
General Properties of Objects . . . . .	1017
Cell Border Properties Dialog Box . . . . .	1018
Add Distance or Angle Value Dialog Box . . . . .	1020
PROPERTIESCLOSE . . . . .	1020
PSETUPIN . . . . .	1021
-PSETUPIN . . . . .	1021
PSPACE . . . . .	1022
PUBLISH . . . . .	1023
Publish Dialog Box . . . . .	1024
Publish Options Dialog Box . . . . .	1028
Publish Block Template Dialog Box (Publish) . . . . .	1030
Block Template Options Dialog Box (Publish) . . . . .	1031
DWF Password Dialog Box . . . . .	1032
Confirm DWF Password Dialog Box . . . . .	1032
Publish Job Progress Dialog Box . . . . .	1033
-PUBLISH . . . . .	1033
PUBLISHTOWEB . . . . .	1034
Publish to Web Wizard . . . . .	1035
PURGE . . . . .	1036
Purge Dialog Box . . . . .	1036
-PURGE . . . . .	1039
<b>Chapter 17 Q Commands . . . . .</b>	<b>1041</b>
QCCLOSE . . . . .	1041

QDIM . . . . .	1041
QKUNGROUP . . . . .	1043
QLEADER . . . . .	1043
Leader Settings Dialog Box . . . . .	1045
QNEW . . . . .	1049
QSAVE . . . . .	1050
QSELECT . . . . .	1051
Quick Select Dialog Box . . . . .	1051
QTEXT . . . . .	1054
QUICKCALC . . . . .	1054
QuickCalc Calculator . . . . .	1055
Variable Definition Dialog Box . . . . .	1057
Category Definition Dialog Box . . . . .	1059
QUICKCUI . . . . .	1060
QUICKPROPERTIES . . . . .	1060
QUIT . . . . .	1061
QVDRAWING . . . . .	1062
QVDRAWINGCLOSE . . . . .	1062
QVLAYOUT . . . . .	1063
QVLAYOUTCLOSE . . . . .	1063

**Chapter 18 R Commands . . . . . 1065**

RAY . . . . .	1065
RECOVER . . . . .	1066
RECOVERALL . . . . .	1067
RECTANG . . . . .	1068
REDO . . . . .	1070
REDRAW . . . . .	1070
REFCLOSE . . . . .	1071
REFEDIT . . . . .	1072
Edit Reference Ribbon Contextual Tab . . . . .	1073
Reference Edit Dialog Box . . . . .	1074
-REFEDIT . . . . .	1076
REFSET . . . . .	1077
REGEN . . . . .	1079
REGENALL . . . . .	1079
REGION . . . . .	1080
REINIT . . . . .	1081
Re-initialization Dialog Box . . . . .	1081
RENAME . . . . .	1082
Rename Dialog Box . . . . .	1083
-RENAME . . . . .	1084
RESETBLOCK . . . . .	1084
RESUME . . . . .	1085
REVCLLOUD . . . . .	1085
REVDATE . . . . .	1087

REVERSE . . . . .	1087
RIBBON . . . . .	1088
RIBBONCLOSE . . . . .	1088
ROTATE . . . . .	1089
RSCRIPT . . . . .	1090
<b>Chapter 19 S Commands . . . . .</b>	<b>1091</b>
SAVE . . . . .	1091
SAVEAS . . . . .	1091
Template Options Dialog Box . . . . .	1092
Saveas Options Dialog Box . . . . .	1094
SAVEAS Command Prompts . . . . .	1096
SCALE . . . . .	1096
SCALELISTEDIT . . . . .	1098
Edit Drawing Scales Dialog Box . . . . .	1098
Add Scale Dialog Box . . . . .	1100
Edit Scale Dialog Box . . . . .	1101
-SCALELISTEDIT . . . . .	1102
SCALETEXT . . . . .	1102
SCRIPT . . . . .	1104
SECURITYOPTIONS . . . . .	1105
Security Options Dialog Box . . . . .	1105
SEEK . . . . .	1106
SELECT . . . . .	1107
SELECTSIMILAR . . . . .	1110
Select Similar Settings Dialog Box . . . . .	1111
SETBYLAYER . . . . .	1112
SetByLayer Settings Dialog Box . . . . .	1113
SETENV . . . . .	1114
SETVAR . . . . .	1114
SHADE . . . . .	1115
SHADEMODE . . . . .	1116
SHARE . . . . .	1116
Share Drawing Dialog Box . . . . .	1117
SHAREWITHSEEK . . . . .	1118
Share with Autodesk Seek Dialog Box . . . . .	1119
SHEETSET . . . . .	1120
Sheet Set Manager . . . . .	1121
Subset Properties Dialog Box . . . . .	1128
Publish Sheets Dialog Box . . . . .	1130
Select Layout as Sheet Template Dialog Box . . . . .	1131
New Sheet Dialog Box . . . . .	1132
Rename & Renumber Sheet Dialog Box . . . . .	1133
Rename & Renumber View Dialog Box . . . . .	1135
Import Layouts as Sheets Dialog Box . . . . .	1135
Insert Sheet List Table Dialog Box . . . . .	1137

Edit Sheet List Table Settings Dialog Box . . . . .	1141
Sheet Set Properties Dialog Box . . . . .	1143
Sheet Set Custom Properties Dialog Box . . . . .	1144
Add Custom Property Dialog Box . . . . .	1145
Resource Drawing Locations Dialog Box . . . . .	1146
Sheet Properties Dialog Box . . . . .	1147
New Sheet Selection Dialog Box . . . . .	1148
Sheet Selections Dialog Box . . . . .	1149
View Category Dialog Box . . . . .	1150
List of Blocks Dialog Box . . . . .	1150
Select Block Dialog Box . . . . .	1151
SHEETSETHIDE . . . . .	1152
SHOWPALETTES . . . . .	1153
SIGVALIDATE . . . . .	1153
Validate Digital Signatures Dialog Box . . . . .	1154
Digital Signature Contents Dialog Box . . . . .	1155
SKETCH . . . . .	1157
SNAP . . . . .	1158
SOLID . . . . .	1160
SPACETRANS . . . . .	1161
SPELL . . . . .	1162
Check Spelling Dialog Box . . . . .	1163
Check Spelling Settings Dialog Box . . . . .	1165
Dictionaries Dialog Box . . . . .	1166
Manage Custom Dictionaries Dialog Box . . . . .	1168
SPLINE . . . . .	1169
SPLINEDIT . . . . .	1173
STRETCH . . . . .	1178
STYLE . . . . .	1180
Text Style Dialog Box . . . . .	1181
-STYLE . . . . .	1184
STYLESMANAGER . . . . .	1186
Add-a-Plot-Style-Table Wizard . . . . .	1186
Plot Style Table Editor . . . . .	1187
Edit Lineweights Dialog Box . . . . .	1194
SUBTRACT . . . . .	1195
SYSWINDOWS . . . . .	1197

**Chapter 20 T Commands . . . . . 1199**

TABLE . . . . .	1199
Insert Table Dialog Box . . . . .	1200
Table Ribbon Contextual Tab . . . . .	1204
Manage Cell Content Dialog Box . . . . .	1206
-TABLE . . . . .	1208
TABLEEDIT . . . . .	1210
TABLEEXPORT . . . . .	1211



TABLESTYLE . . . . .	1211
Table Style Dialog Box . . . . .	1212
Create New Table Style Dialog Box . . . . .	1213
New and Modify Table Style Dialog Boxes . . . . .	1214
Create New Cell Style Dialog Box . . . . .	1219
Manage Cell Styles Dialog Box . . . . .	1220
Table Cell Format Dialog Box . . . . .	1221
Additional Format Dialog Box . . . . .	1223
TABLET . . . . .	1224
TASKBAR . . . . .	1228
TEXT . . . . .	1229
Text Shortcut Menu . . . . .	1234
Special Unicode Characters . . . . .	1234
Control Codes and Special Characters . . . . .	1235
TEXTEDIT . . . . .	1236
TEXTSCR . . . . .	1237
TEXTTOFRONT . . . . .	1238
TIFOUT . . . . .	1238
TIME . . . . .	1239
TIMELINE . . . . .	1241
Timeline Dialog Box . . . . .	1241
TINSERT . . . . .	1243
Insert a Block in a Table Cell Dialog Box . . . . .	1243
TOLERANCE . . . . .	1244
Geometric Tolerance Dialog Box . . . . .	1245
Symbol Dialog Box . . . . .	1248
Material Condition Dialog Box . . . . .	1250
TOOLBAR . . . . .	1250
-TOOLBAR . . . . .	1251
TOOLPALETES . . . . .	1252
View Options Dialog Box . . . . .	1254
Tool Properties Dialog Box . . . . .	1255
TOOLPALETESCLOSE . . . . .	1256
TPNAVIGATE . . . . .	1257
TRANSPARENCY . . . . .	1257
TRAYSETTINGS . . . . .	1258
Tray Settings Dialog Box . . . . .	1259
TRIM . . . . .	1259
<b>Chapter 21 U Commands . . . . .</b>	<b>1265</b>
U . . . . .	1265
UCS . . . . .	1266
UCSICON . . . . .	1271
UCS Icon Dialog Box . . . . .	1273
UCSMAN . . . . .	1275
UCS Dialog Box . . . . .	1276

	Orthographic UCS Depth Dialog Box . . . . .	1280
	UCS Details Dialog Box . . . . .	1280
	ULAYERS . . . . .	1281
	Underlay Layers Dialog Box . . . . .	1282
	UNDO . . . . .	1283
	UNGROUP . . . . .	1286
	UNION . . . . .	1286
	UNISOLATEOBJECTS . . . . .	1288
	UNITS . . . . .	1288
	Drawing Units Dialog Box . . . . .	1289
	Direction Control Dialog Box . . . . .	1291
	-UNITS . . . . .	1293
	UPDATEFIELD . . . . .	1294
	UPDATETHUMBSNOW . . . . .	1295
	UPLOAD . . . . .	1295
	Upload Drawing Dialog Box . . . . .	1296
	UPLOADFILES . . . . .	1297
	Choose Files to Upload Dialog Box . . . . .	1298
<b>Chapter 22</b>	<b>V Commands . . . . .</b>	<b>1299</b>
	VIEW . . . . .	1299
	View Manager . . . . .	1300
	New View Dialog Box . . . . .	1304
	-VIEW . . . . .	1305
	VIEWGO . . . . .	1307
	VIEWPLOTDETAILS . . . . .	1307
	Plot and Publish Details Dialog Box . . . . .	1308
	Plot and Publish Status Bar Icon Shortcut Menu . . . . .	1310
	VIEWRES . . . . .	1311
	VPCLIP . . . . .	1312
	VPLAYER . . . . .	1313
	VPMAX . . . . .	1315
	VPMIN . . . . .	1316
	VPOINT . . . . .	1317
	VPORTS . . . . .	1318
	Viewports Dialog Box . . . . .	1319
	-VPORTS . . . . .	1322
	VSLIDE . . . . .	1326
	VTOPTIONS . . . . .	1327
	View Transitions Dialog Box . . . . .	1327
<b>Chapter 23</b>	<b>W Commands . . . . .</b>	<b>1329</b>
	WBLOCK . . . . .	1329
	Write Block Dialog Box . . . . .	1330
	-WBLOCK . . . . .	1332

	WHOHAS . . . . .	1333
	WIPEOUT . . . . .	1334
	WMFIN . . . . .	1335
	WMFOPTS . . . . .	1338
	WMF In Options Dialog Box . . . . .	1338
	WMFOUT . . . . .	1339
	WORKSPACE . . . . .	1339
	WSSAVE . . . . .	1340
	Save Workspace Dialog Box . . . . .	1340
	WSSETTINGS . . . . .	1341
	Workspace Settings Dialog Box . . . . .	1341
<b>Chapter 24</b>	<b>X Commands . . . . .</b>	<b>1343</b>
	XATTACH . . . . .	1343
	Attach External Reference Dialog Box . . . . .	1344
	External Reference Ribbon Contextual Tab . . . . .	1347
	XBIND . . . . .	1348
	Xbind Dialog Box . . . . .	1348
	-XBIND . . . . .	1349
	XCLIP . . . . .	1350
	XLINE . . . . .	1352
	XOPEN . . . . .	1355
	Open Reference Files Dialog Box . . . . .	1355
	XPLODE . . . . .	1357
	XREF . . . . .	1358
	Bind Xrefs/DGN Underlays Dialog Box . . . . .	1359
	-XREF . . . . .	1360
<b>Chapter 25</b>	<b>Z Commands . . . . .</b>	<b>1363</b>
	ZOOM . . . . .	1363
	Zoom Shortcut Menu . . . . .	1367
<b>Chapter 26</b>	<b>Command Modifiers . . . . .</b>	<b>1369</b>
	Coordinate Filters (Command Modifier) . . . . .	1369
	Direct Distance Entry (Command Modifier) . . . . .	1370
	FROM (Command Modifier) . . . . .	1370
	MTP (Command Modifier) . . . . .	1371
	TRACKING (Command Modifier) . . . . .	1371
	Object Snaps (Command Modifier) . . . . .	1372
	Selection Modes (Command Modifier) . . . . .	1373
	<b>System Variables . . . . .</b>	<b>1375</b>

<b>Chapter 27</b>	<b>3D System Variables</b>	<b>1377</b>
	3DSELECTIONMODE	1377
<b>Chapter 28</b>	<b>A System Variables</b>	<b>1379</b>
	ADCSTATE	1379
	AFLAGS	1380
	ANGBASE	1380
	ANGDIR	1381
	ANNOALLVISIBLE	1381
	ANNOAUTOSCALE	1382
	ANNOTATIVEDWG	1383
	APBOX	1383
	APERTURE	1384
	APPLYGLOBALOPACITIES	1384
	APSTATE	1385
	ARRAYEDITSTATE	1385
	AREA	1386
	ARRAYTYPE	1386
	ATTDIA	1387
	ATTIPE	1387
	ATTMODE	1388
	ATTMULTI	1389
	ATTREQ	1389
	AUDITCTL	1390
	AUNITS	1390
	AUPREC	1391
	AUTOCOMPLETEDELAY	1391
	AUTOCOMPLETEMODE	1392
	AUTODWFPUBLISH	1392
	AUTOMATICPUB	1393
	AUTOSNAP	1394
<b>Chapter 29</b>	<b>B System Variables</b>	<b>1395</b>
	BACKGROUNDPLOT	1395
	BACTIONBARMODE	1396
	BACTIONCOLOR	1396
	BCONSTATUSMODE	1397
	BDEPENDENCYHIGHLIGHT	1397
	BGRIPOBJCOLOR	1398
	BGRIPOBJSIZE	1398
	BLIPMODE	1399
	BLOCKEDITLOCK	1399
	BLOCKEDITOR	1400
	BLOCKTESTWINDOW	1400

	BPARAMETERCOLOR . . . . .	1401
	BPARAMETERFONT . . . . .	1401
	BPARAMETERSIZE . . . . .	1402
	BPTEXTHORIZONTAL . . . . .	1402
	BTMARKDISPLAY . . . . .	1403
	BVMODE . . . . .	1403
<b>Chapter 30</b>	<b>C System Variables . . . . .</b>	<b>1405</b>
	CALCINPUT . . . . .	1405
	CANNOSCALE . . . . .	1405
	CANNOSCALEVALUE . . . . .	1406
	CBARTRANSPARENCY . . . . .	1406
	CDATE . . . . .	1407
	CECOLOR . . . . .	1407
	CELTSCALE . . . . .	1408
	CELTYPE . . . . .	1408
	CELWEIGHT . . . . .	1409
	CENTERMT . . . . .	1409
	CETRANSPARENCY . . . . .	1410
	CHAMFERA . . . . .	1411
	CHAMFERB . . . . .	1411
	CHAMFERC . . . . .	1411
	CHAMFERD . . . . .	1412
	CHAMMODE . . . . .	1412
	CIRCLERAD . . . . .	1412
	CLASSICKEYS . . . . .	1413
	CLAYER . . . . .	1413
	CLEANSCREENSTATE . . . . .	1414
	CLISTATE . . . . .	1414
	CLIPBOARD . . . . .	1415
	CMDACTIVE . . . . .	1415
	CMDDIA . . . . .	1416
	CMDINPUTHISTORYMAX . . . . .	1417
	CMDNAMES . . . . .	1417
	CMLEADERSTYLE . . . . .	1418
	CONSTRAINTBARMODE . . . . .	1418
	CONSTRAINTNAMEFORMAT . . . . .	1419
	CONSTRAINTRELAX . . . . .	1420
	CONSTRAINTSOLVEMODE . . . . .	1420
	CONTENTEXPLORERSTATE . . . . .	1421
	COORDS . . . . .	1421
	COPYMODE . . . . .	1422
	CPLOTSTYLE . . . . .	1422
	CROSSINGAREACOLOR . . . . .	1423
	CTAB . . . . .	1424
	CTABLESTYLE . . . . .	1424

	CURSORSIZE . . . . .	1424
	CVPORT . . . . .	1425
<b>Chapter 31</b>	<b>D System Variables . . . . .</b>	<b>1427</b>
	DATALINKNOTIFY . . . . .	1427
	DATE . . . . .	1428
	DBLCLKEDIT . . . . .	1428
	DBMOD . . . . .	1429
	DCTCUST . . . . .	1430
	DCTMAIN . . . . .	1430
	DEFLPLSTYLE . . . . .	1432
	DEFPLSTYLE . . . . .	1432
	DELOBJ . . . . .	1433
	DGNFRAME . . . . .	1433
	DGNIMPORTMAX . . . . .	1434
	DGNIMPORTMODE . . . . .	1435
	DGNMAPPINGPATH . . . . .	1435
	DGNOSNAP . . . . .	1436
	DIASAT . . . . .	1436
	DIGITIZER . . . . .	1437
	DIMADec . . . . .	1437
	DIMALT . . . . .	1438
	DIMALTD . . . . .	1438
	DIMALTF . . . . .	1439
	DIMALTRND . . . . .	1439
	DIMALTTD . . . . .	1440
	DIMALTTZ . . . . .	1440
	DIMALTU . . . . .	1441
	DIMALTZ . . . . .	1442
	DIMANNO . . . . .	1442
	DIMAPOST . . . . .	1443
	DIMARCSYM . . . . .	1443
	DIMASSOC . . . . .	1444
	DIMASZ . . . . .	1445
	DIMATFIT . . . . .	1445
	DIMAUNIT . . . . .	1446
	DIMAZIN . . . . .	1447
	DIMBLK . . . . .	1447
	DIMBLK1 . . . . .	1449
	DIMBLK2 . . . . .	1450
	DIMCEN . . . . .	1450
	DIMCLR . . . . .	1451
	DIMCLRE . . . . .	1451
	DIMCLRT . . . . .	1452
	DIMCONSTRAINTICON . . . . .	1452
	DIMDEC . . . . .	1453

DIMDLE	1453
DIMDLI	1454
DIMDSEP	1454
DIMEXE	1455
DIMEXO	1455
DIMFRAC	1455
DIMFXL	1456
DIMFXLON	1456
DIMGAP	1457
DIMJOGANG	1457
DIMJUST	1458
DIMLDRBLK	1458
DIMLFAC	1459
DIMLIM	1460
DIMLTEX1	1460
DIMLTEX2	1461
DIMLTYPE	1461
DIMLUNIT	1461
DIMLWD	1462
DIMLWE	1463
DIMPOST	1463
DIMRND	1464
DIMSAH	1464
DIMSCALE	1465
DIMSD1	1465
DIMSD2	1466
DIMSE1	1466
DIMSE2	1467
DIMSOXD	1467
DIMSTYLE	1468
DIMTAD	1468
DIMTDEC	1469
DIMTFAC	1470
DIMTFILL	1470
DIMTFILLCLR	1471
DIMTIH	1471
DIMTIX	1472
DIMTM	1472
DIMTMOVE	1473
DIMTOFL	1473
DIMTOH	1474
DIMTOL	1474
DIMTOLJ	1475
DIMTP	1475
DIMTSZ	1476
DIMTVP	1476

DIMTXSTY . . . . .	1477
DIMTXT . . . . .	1477
DIMTXTDIRECTION . . . . .	1478
DIMTZIN . . . . .	1478
DIMUPT . . . . .	1479
DIMZIN . . . . .	1479
DISPSILH . . . . .	1480
DISTANCE . . . . .	1481
DONUTID . . . . .	1481
DONUTOD . . . . .	1482
DRAGMODE . . . . .	1482
DRAGP1 . . . . .	1483
DRAGP2 . . . . .	1483
DRAWORDERCTL . . . . .	1484
DRSTATE . . . . .	1485
DTEXTED . . . . .	1485
DWFFRAME . . . . .	1486
DWFOSNAP . . . . .	1486
DWGCHECK . . . . .	1487
DWGCODEPAGE . . . . .	1488
DWGNAME . . . . .	1488
DWGPREFIX . . . . .	1489
DWGTITLED . . . . .	1489
DYNCONSTRAINTMODE . . . . .	1489
DYNDIGRIP . . . . .	1490
DYNDIVIS . . . . .	1491
DYNINFOTIPS . . . . .	1491
DYNMODE . . . . .	1492
DYNPICOORDS . . . . .	1493
DYNPIFORMAT . . . . .	1493
DYNPIVIS . . . . .	1494
DYNPROMPT . . . . .	1495
DYNTOOLTIPS . . . . .	1495

**Chapter 32 E System Variables . . . . . 1497**

EDGEMODE . . . . .	1497
ELEVATION . . . . .	1498
ERHIGHLIGHT . . . . .	1498
ERSTATE . . . . .	1499
EXEDIR . . . . .	1499
EXPERT . . . . .	1500
EXPLMODE . . . . .	1501
EXPORTEPLOTFORMAT . . . . .	1501
EXPORTMODELSPACE . . . . .	1502
EXPORTPAPERSPACE . . . . .	1502
EXPORTPAGESETUP . . . . .	1503



	EXTMAX . . . . .	1503
	EXTMIN . . . . .	1504
	EXTNAMES . . . . .	1504
<b>Chapter 33</b>	<b>F System Variables . . . . .</b>	<b>1507</b>
	FACETRES . . . . .	1507
	FIELDDISPLAY . . . . .	1507
	FIELDEVAL . . . . .	1508
	FILEDIA . . . . .	1509
	FILLETRAD . . . . .	1509
	FILLETRAD3D . . . . .	1510
	FILLMODE . . . . .	1510
	FONTALT . . . . .	1511
	FONTMAP . . . . .	1511
	FRAME . . . . .	1512
	FRAMESELECTION . . . . .	1513
	FULLPLOTPATH . . . . .	1513
<b>Chapter 34</b>	<b>G System Variables . . . . .</b>	<b>1515</b>
	GEOLATLONGFORMAT . . . . .	1515
	GEOMARKERVISIBILITY . . . . .	1516
	GFANG . . . . .	1516
	GFCLR1 . . . . .	1517
	GFCLR2 . . . . .	1517
	GFCLRLUM . . . . .	1518
	GFCLRSTATE . . . . .	1518
	GFNAME . . . . .	1519
	GFSHIFT . . . . .	1519
	GLOBALOPACITY . . . . .	1520
	GRIDDISPLAY . . . . .	1521
	GRIDMAJOR . . . . .	1521
	GRIDMODE . . . . .	1522
	GRIDSTYLE . . . . .	1522
	GRIDUNIT . . . . .	1523
	GRIPBLOCK . . . . .	1523
	GRIPCOLOR . . . . .	1524
	GRIPCONTOUR . . . . .	1524
	GRIPDYNCOLOR . . . . .	1525
	GRIPHOT . . . . .	1525
	GRIPHOVER . . . . .	1525
	GRIPMULTIFUNCTIONAL . . . . .	1526
	GRIPOBJLIMIT . . . . .	1527
	GRIPS . . . . .	1527
	GRIPSIZE . . . . .	1528
	GRIPTIPS . . . . .	1528

	GROUPDISPLAYMODE . . . . .	1529
<b>Chapter 35</b>	<b>H System Variables . . . . .</b>	<b>1531</b>
	HALOGAP . . . . .	1531
	HANDLES . . . . .	1531
	HELPPREFIX . . . . .	1532
	HIDEPRECISION . . . . .	1532
	HIDETEXT . . . . .	1533
	HIGHLIGHT . . . . .	1533
	HPANG . . . . .	1534
	HPANNOTATIVE . . . . .	1534
	HPASSOC . . . . .	1535
	HPBACKGROUNDCOLOR . . . . .	1535
	HPBOUND . . . . .	1536
	HPBOUNDRETAIN . . . . .	1536
	HPCOLOR . . . . .	1537
	HPDLGMODE . . . . .	1538
	HPDOUBLE . . . . .	1538
	HPDRAWORDER . . . . .	1539
	HPGAPTOL . . . . .	1540
	HPINHERIT . . . . .	1540
	HPISLANDDETECTION . . . . .	1541
	HPISLANDDETECTIONMODE . . . . .	1541
	HPLAYER . . . . .	1542
	HPMAXAREAS . . . . .	1542
	HPMAXLINES . . . . .	1543
	HPNAME . . . . .	1543
	HPOBJWARNING . . . . .	1544
	HPORIGIN . . . . .	1544
	HPORIGINMODE . . . . .	1544
	HPQUICKPREVIEW . . . . .	1545
	HPQUICKPREVTIMEOUT . . . . .	1546
	HPSCALE . . . . .	1546
	HPSEPARATE . . . . .	1547
	HPSPACE . . . . .	1547
	HPTRANSPARENCY . . . . .	1548
	HYPERLINKBASE . . . . .	1548
<b>Chapter 36</b>	<b>I System Variables . . . . .</b>	<b>1549</b>
	IMAGEFRAME . . . . .	1549
	IMAGEHLT . . . . .	1550
	INDEXCTL . . . . .	1550
	INETLOCATION . . . . .	1551
	INPUTHISTORYMODE . . . . .	1551
	INSBASE . . . . .	1552

	INSNAME . . . . .	1552
	INSUNITS . . . . .	1553
	INSUNITSDEFSOURCE . . . . .	1554
	INSUNITSDEFTARGET . . . . .	1556
	INTELLIGENTUPDATE . . . . .	1557
	INTERSECTIONCOLOR . . . . .	1557
	INTERSECTIONDISPLAY . . . . .	1558
	ISAVEBAK . . . . .	1559
	ISAVEPERCENT . . . . .	1559
	ISOLINES . . . . .	1560
<b>Chapter 37</b>	<b>L System Variables . . . . .</b>	<b>1561</b>
	LARGEOBJECTSUPPORT . . . . .	1561
	LASTANGLE . . . . .	1561
	LASTPOINT . . . . .	1562
	LATITUDE . . . . .	1562
	LAYEREVAL . . . . .	1563
	LAYEREVALCTL . . . . .	1564
	LAYERFILTERALERT . . . . .	1564
	LAYERMANAGERSTATE . . . . .	1565
	LAYERNOTIFY . . . . .	1566
	LAYLOCKFADECTL . . . . .	1567
	LAYOUTCREATEVIEWPORT . . . . .	1568
	LIMCHECK . . . . .	1568
	LIMMAX . . . . .	1569
	LIMMIN . . . . .	1569
	LOCALE . . . . .	1570
	LOCALROOTPREFIX . . . . .	1570
	LOCKUI . . . . .	1571
	LOGFILEMODE . . . . .	1571
	LOGFILENAME . . . . .	1572
	LOGFILEPATH . . . . .	1572
	LONGITUDE . . . . .	1573
	LTSCALE . . . . .	1573
	LUNITS . . . . .	1574
	LUPREC . . . . .	1574
	LWDEFAULT . . . . .	1575
	LWDISPLAY . . . . .	1575
	LWUNITS . . . . .	1576
<b>Chapter 38</b>	<b>M System Variables . . . . .</b>	<b>1577</b>
	MAXACTVP . . . . .	1577
	MAXSORT . . . . .	1577
	MAXTOUCHES . . . . .	1578
	MBUTTONPAN . . . . .	1578

MEASUREINIT . . . . .	1579
MEASUREMENT . . . . .	1579
MENUBAR . . . . .	1580
MENUECHO . . . . .	1580
MIRRHATCH . . . . .	1581
MIRRTEXT . . . . .	1581
MLEADERSCALE . . . . .	1582
MODEMACRO . . . . .	1583
MSLTSCALE . . . . .	1583
MSMSTATE . . . . .	1584
MSOLESCALE . . . . .	1584
MTEXTCOLUMN . . . . .	1585
MTEXTED . . . . .	1585
MTEXTFIXED . . . . .	1586
MTEXTTOOLBAR . . . . .	1586
MTJIGSTRING . . . . .	1587
MYDOCUMENTSPREFIX . . . . .	1587
<b>Chapter 39 N System Variables . . . . .</b>	<b>1589</b>
NAVBARDISPLAY . . . . .	1589
<b>Chapter 40 O System Variables . . . . .</b>	<b>1591</b>
OBJECTISOLATIONMODE . . . . .	1591
OBSCUREDOLOR . . . . .	1592
OBSCUREDLTTYPE . . . . .	1592
OFFSETDIST . . . . .	1594
OFFSETGAPTYPE . . . . .	1594
OLEFRAME . . . . .	1595
OLEHIDE . . . . .	1595
OLEQUALITY . . . . .	1596
OLESTARTUP . . . . .	1597
OPENPARTIAL . . . . .	1597
OPMSTATE . . . . .	1598
ORTHOMODE . . . . .	1598
OSMODE . . . . .	1599
OSNAPCOORD . . . . .	1600
OSNAPNODELEGACY . . . . .	1601
OSOPTIONS . . . . .	1601
<b>Chapter 41 P System Variables . . . . .</b>	<b>1603</b>
PALETTEOPAQUE . . . . .	1603
PAPERUPDATE . . . . .	1604
PDFFRAME . . . . .	1605
PDFOSNAP . . . . .	1605

PDMODE . . . . .	1606
PDSIZE . . . . .	1606
PEDITACCEPT . . . . .	1607
PELLIPSE . . . . .	1607
PERIMETER . . . . .	1608
PERSPECTIVE . . . . .	1608
PERSPECTIVECLIP . . . . .	1609
PICKADD . . . . .	1609
PICKAUTO . . . . .	1610
PICKBOX . . . . .	1611
PICKDRAG . . . . .	1611
PICKFIRST . . . . .	1612
PICKSTYLE . . . . .	1612
PLATFORM . . . . .	1613
PLINECONVERTMODE . . . . .	1613
PLINEGEN . . . . .	1614
PLINETYPE . . . . .	1614
PLINEWID . . . . .	1615
PLOTOFFSET . . . . .	1615
PLOTROTMODE . . . . .	1616
PLOTTRANSPARENCYOVERRIDE . . . . .	1617
POINTCLOUDDENSITY . . . . .	1617
POLARADDANG . . . . .	1618
POLARANG . . . . .	1619
POLARDIST . . . . .	1619
POLARMODE . . . . .	1619
POLYSIDES . . . . .	1620
PREVIEWEFFECT . . . . .	1621
PREVIEWFACEEFFECT . . . . .	1621
PREVIEWFILTER . . . . .	1622
PROJMODE . . . . .	1622
PROPOBJLIMIT . . . . .	1623
PROXYGRAPHICS . . . . .	1623
PROXYNOTICE . . . . .	1624
PROXYSHOW . . . . .	1624
PROXYWEBSEARCH . . . . .	1625
PSLTSCALE . . . . .	1626
PSTYLEMODE . . . . .	1626
PSTYLEPOLICY . . . . .	1627
PUBLISHALLSHEETS . . . . .	1628
PUBLISHCOLLATE . . . . .	1628
PUBLISHHATCH . . . . .	1629
PUCSBASE . . . . .	1630

<b>Chapter 42 Q System Variables . . . . .</b>	<b>1631</b>
QCSTATE . . . . .	1631

	QPLOCATION . . . . .	1631
	QPMODE . . . . .	1632
	QTEXTMODE . . . . .	1633
	QVDRAWINGPIN . . . . .	1633
	QVLAYOUTPIN . . . . .	1634
<b>Chapter 43</b>	<b>R System Variables . . . . .</b>	<b>1635</b>
	RASTERDPI . . . . .	1635
	RASTERPERCENT . . . . .	1635
	RASTERPREVIEW . . . . .	1636
	RASTERTHRESHOLD . . . . .	1636
	RECOVERAUTO . . . . .	1637
	RECOVERYMODE . . . . .	1637
	REFEDITNAME . . . . .	1638
	REGENMODE . . . . .	1638
	REMEMBERFOLDERS . . . . .	1639
	REPORTERROR . . . . .	1640
	RIBBONBGLOAD . . . . .	1640
	RIBBONCONTEXTSELECT . . . . .	1641
	RIBBONCONTEXTSELLIM . . . . .	1642
	RIBBONDOCKEDHEIGHT . . . . .	1642
	RIBBONICONRESIZE . . . . .	1643
	RIBBONSELECTMODE . . . . .	1643
	RIBBONSTATE . . . . .	1644
	ROAMABLEROOTPREFIX . . . . .	1644
	ROLLOVEROPACITY . . . . .	1645
	ROLLOVERTIPS . . . . .	1646
	RTDISPLAY . . . . .	1646
<b>Chapter 44</b>	<b>S System Variables . . . . .</b>	<b>1647</b>
	SAVEFIDELITY . . . . .	1647
	SAVEFILE . . . . .	1648
	SAVEFILEPATH . . . . .	1648
	SAVENAME . . . . .	1648
	SAVETIME . . . . .	1649
	SCREENSIZE . . . . .	1649
	SELECTIONANNODISPLAY . . . . .	1650
	SELECTIONAREA . . . . .	1650
	SELECTIONAREAOPACITY . . . . .	1651
	SELECTIONCYCLING . . . . .	1651
	SELECTIONPREVIEW . . . . .	1652
	SELECTSIMILARMODE . . . . .	1653
	SETBYLAYERMODE . . . . .	1654
	SHADEDGE . . . . .	1654
	SHADEDIF . . . . .	1655

SHORTCUTMENU . . . . .	1655
SHORTCUTMENUDURATION . . . . .	1656
SHOWLAYERUSAGE . . . . .	1657
SHOWPAGESETUPFORNEWLAYOUTS . . . . .	1657
SIGWARN . . . . .	1658
SKETCHINC . . . . .	1659
SKPOLY . . . . .	1659
SKTOLERANCE . . . . .	1660
SNAPANG . . . . .	1660
SNAPBASE . . . . .	1660
SNAPISOPAIR . . . . .	1661
SNAPMODE . . . . .	1661
SNAPSTYL . . . . .	1662
SNAPTYPE . . . . .	1662
SNAPUNIT . . . . .	1663
SORTENTS . . . . .	1663
SPLDEGREE . . . . .	1664
SPLFRAME . . . . .	1665
SPLINESEGS . . . . .	1665
SPLINETYPE . . . . .	1666
SPLKNOTS . . . . .	1666
SPLMETHOD . . . . .	1667
SPLPERIODIC . . . . .	1667
SSFOUND . . . . .	1668
SSLOCATE . . . . .	1668
SSMAUTOOPEN . . . . .	1669
SSMPOLLTIME . . . . .	1669
SSMSHEETSTATUS . . . . .	1670
SSMSTATE . . . . .	1671
STARTUP . . . . .	1671
STATUSBAR . . . . .	1672
SYSCODEPAGE . . . . .	1673

**Chapter 45 T System Variables . . . . . 1675**

TABLEINDICATOR . . . . .	1675
TABLETOOLBAR . . . . .	1675
TABMODE . . . . .	1676
TARGET . . . . .	1677
TBSHOWSHORTCUTS . . . . .	1677
TDCREATE . . . . .	1678
TDINDWG . . . . .	1678
TDUCREATE . . . . .	1679
TDUPDATE . . . . .	1679
TDUSRTIMER . . . . .	1679
TDUUPDATE . . . . .	1680
TEMPOVERRIDES . . . . .	1680

TEXTED . . . . .	1681
TEXTFILL . . . . .	1681
TEXTOUTPUTFILEFORMAT . . . . .	1682
TEXTQLTY . . . . .	1682
TEXTSIZE . . . . .	1683
TEXTSTYLE . . . . .	1683
THICKNESS . . . . .	1684
TILEMODE . . . . .	1684
TIMEZONE . . . . .	1684
TOOLTIPMERGE . . . . .	1689
TOOLTIPS . . . . .	1689
TOOLTIPSIZE . . . . .	1690
TOOLTIPTRANSPARENCY . . . . .	1690
TPSTATE . . . . .	1691
TRACEWID . . . . .	1691
TRACKPATH . . . . .	1692
TRANSPARENCYDISPLAY . . . . .	1692
TRAYICONS . . . . .	1693
TRAYNOTIFY . . . . .	1693
TRAYTIMEOUT . . . . .	1694
TREEDEPTH . . . . .	1694
TREEMAX . . . . .	1695
TRIMMODE . . . . .	1696
TSPACEFAC . . . . .	1696
TSPACETYPE . . . . .	1697
TSTACKALIGN . . . . .	1697
TSTACKSIZE . . . . .	1698

**Chapter 46 U System Variables . . . . . 1699**

UCS2DDISPLAYSETTING . . . . .	1699
UCSAXISANG . . . . .	1700
UCSBASE . . . . .	1700
UCSFOLLOW . . . . .	1701
UCSICON . . . . .	1701
UCSNAME . . . . .	1702
UCSORG . . . . .	1703
UCSORTHO . . . . .	1703
UCSSELECTMODE . . . . .	1704
UCSVIEW . . . . .	1704
UCSXDIR . . . . .	1705
UCSYDIR . . . . .	1705
UNDOCTL . . . . .	1706
UNDOMARKS . . . . .	1706
UNITMODE . . . . .	1707
UOSNAP . . . . .	1707
UPDATETHUMBNAIL . . . . .	1708



	USERI1-5 . . . . .	1709
	USERNAME . . . . .	1709
	USERR1-5 . . . . .	1710
<b>Chapter 47</b>	<b>V System Variables . . . . .</b>	<b>1711</b>
	VERSION . . . . .	1711
	VIEWCTR . . . . .	1711
	VIEWDIR . . . . .	1712
	VIEWMODE . . . . .	1712
	VIEWSIZE . . . . .	1713
	VIEWTWIST . . . . .	1713
	VISRETAIN . . . . .	1714
	VPLAYEROVERRIDES . . . . .	1714
	VPLAYEROVERRIDESMODE . . . . .	1715
	VPMAXIMIZEDSTATE . . . . .	1716
	VPROTATEASSOC . . . . .	1716
	VSMAX . . . . .	1717
	VSMIN . . . . .	1717
	VTDURATION . . . . .	1718
	VTENABLE . . . . .	1718
	VTFPS . . . . .	1719
<b>Chapter 48</b>	<b>W System Variables . . . . .</b>	<b>1721</b>
	WHIPARC . . . . .	1721
	WINDOWAREACOLOR . . . . .	1721
	WMFBKGND . . . . .	1722
	WMFFOREGND . . . . .	1723
	WORKSPACELABEL . . . . .	1723
	WORLDUCS . . . . .	1724
	WORLDVIEW . . . . .	1724
	WSAUTOSAVE . . . . .	1725
	WSCURRENT . . . . .	1725
<b>Chapter 49</b>	<b>X System Variables . . . . .</b>	<b>1727</b>
	XCLIPFRAME . . . . .	1727
	XDWGFADECTL . . . . .	1728
	XEDIT . . . . .	1728
	XFADECTL . . . . .	1729
	XLOADCTL . . . . .	1729
	XLOADPATH . . . . .	1730
	XREFCTL . . . . .	1731
	XREFNOTIFY . . . . .	1731
	XREFTYPE . . . . .	1732

**Chapter 50 Z System Variables . . . . . 1733**  
    ZOOMFACTOR . . . . . 1733  
    ZOOMWHEEL . . . . . 1733

**Chapter 51 Utilities . . . . . 1735**  
    Attach Digital Signatures . . . . . 1735  
        Attach Digital Signatures Dialog Box . . . . . 1735  
        Search Folders Dialog Box . . . . . 1737  
    SLIDELIB . . . . . 1738

**Index . . . . . 1741**

# Commands

You can start a command by using one of the following methods:

- Click the command name on a ribbon, menu, toolbar, status bar, tool palette, or shortcut menu.
- Enter the command name or command alias at the Command prompt and press Enter or Spacebar.

The *acadlt.pgp* file lists the command aliases.

To access the *acadlt.pgp*, on the Tools menu, click Customize ► Edit Program Parameters (*acadlt.pgp*).

In this *Command Reference*, near the beginning of each command description is a command access section that lists the specific ways you can start that command.



# 3D Commands

# 1

## 3DCONFIG

### Quick Reference

See also:

- Performance Tuning

Sets hardware acceleration on or off and provides a method to check for driver updates

### Summary

Displays the [Performance Tuning dialog box](#) on page 3.

If you enter `-3dconfig` at the Command prompt, [options are displayed](#).

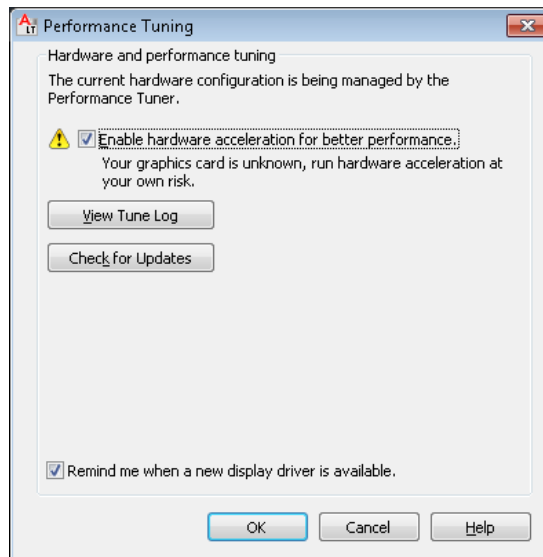
## Performance Tuning Dialog Box

### Quick Reference

See also:

- Performance Tuning

Sets hardware acceleration on or off and provides a method to check for driver updates



### Summary

This dialog box can also be accessed from the Performance Settings button on the System tab of the Options dialog box.

### List of Options

The following options are displayed.

#### **Hardware and Performance Tuning**

Specifies hardware settings and performance tuning. The performance tuner reads your system and decides whether to use software or hardware acceleration for features that support both. Features that work with your system are turned on, and features that cannot work with your system are turned off. A log file displays the results.

#### **Enable hardware acceleration for better performance**

When checked, hardware acceleration is enabled.

#### **View Tune Log**

Displays the [Performance Tuner log](#) on page 5.

#### **Check for Updates**

Checks for updated versions of the graphics card and driver database that is used for performance tuning.

### Remind Me When a New Driver Is Available

Specifies that a notification bubble is displayed when a new driver is available.

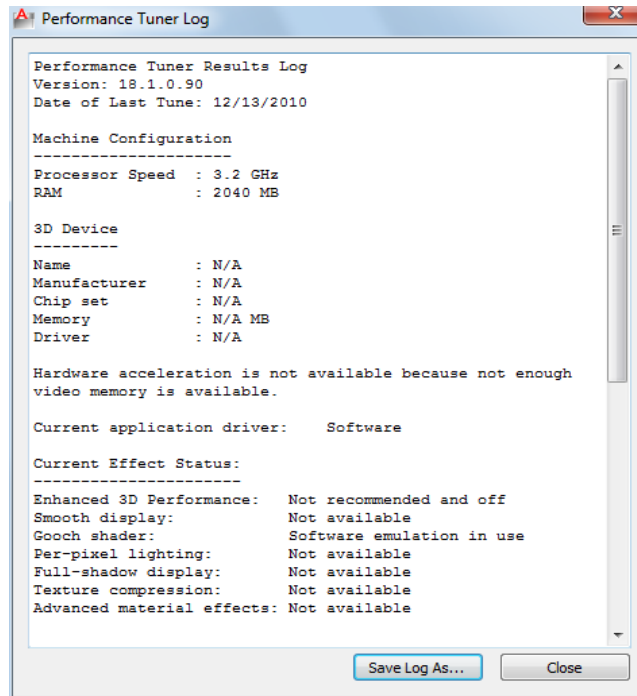
## Performance Tuner Log

### Quick Reference

See also:

- Control Performance

Lists the features that have been disabled, if any.



### Summary

Information includes the system configuration, 3D graphics device, driver, and if any features have been disabled. If your 3D device shows as certified, Autodesk tested AutoCAD LT with this specific hardware.

### List of Options

The following options are displayed.

### Save Log As

Displays a [standard file selection dialog box](#).

## -3DCONFIG

### Quick Reference

See also:

- Performance Tuning

Controls Hardware Acceleration from the command line.

### List of Prompts

The following prompts are displayed.

Enter option:[acceLeration](#) on page 6/eXit] <acceleration>:

#### **Acceleration**

Specifies whether to use software or hardware acceleration.

**Hardware** Specifies hardware acceleration. The hardware graphics card performs most of the drawing tasks to increase performance.

**Software** Specifies software acceleration. The software graphics system performs all of the drawing tasks in 3D.

## 3DPOLY

### Quick Reference

See also:

- Draw Polylines

Creates a 3D polyline.




## Access Methods



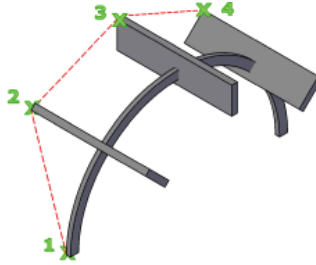
### Button

 **Ribbon:** Home tab ► Draw panel ► 3D Polyline.

 **Menu:** Draw ► 3D Polyline

## Summary

A 3D polyline is a connected sequence of straight line segments created as a single object. 3D polylines can be non-coplanar; however, they cannot include arc segments.



## List of Prompts

The following prompts are displayed.

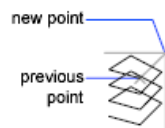
Specify start point of polyline: *Specify a point (1)*

Specify **endpoint of line** or [Undo]: *Specify a point or enter an option*

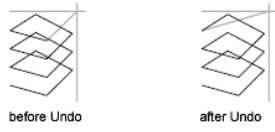
Specify endpoint of line or [Undo]: *Specify a point or enter an option*

Specify endpoint of line or [Close/Undo]: *Specify a point or enter an option*

**Endpoint of Line** Draws a straight line from the previous point to the specified new point. The prompt is repeated until you press Enter to end the command.



**Undo** Deletes the last line created. You can continue drawing from the previous point.



**Close** Draws a closing line from the endpoint back to the first point, and then ends the command. To be closed, a 3D polyline must contain at least two lines.



# A Commands

# 2

## ABOUT

### Quick Reference


See also:

- Start a Drawing

Displays information about AutoCAD LT.

### Access Methods

 **Menu:** Help ► About

 **Command entry:** 'about for transparent use

### Summary

Copyright information and product information is displayed. Product information includes the version number and service pack, serial number, license type and expiration date, and the text of the license agreement. You can save the product information as a text file.

## ADCCLOSE

### Quick Reference

#### See also:

- Overview of DesignCenter

Closes DesignCenter.

### Summary

Closes the DesignCenter™ window.

## ADCENTER

### Quick Reference

#### See also:

- Overview of DesignCenter


Manages and inserts content such as blocks, xrefs, and hatch patterns.

### Access Methods



#### Button

 **Ribbon:** Insert tab ► Content panel ► DesignCenter

 **Toolbar:** Standard

 **Menu:** Tools ► Palettes ► DesignCenter

### Summary

The [DesignCenter](#) is displayed.

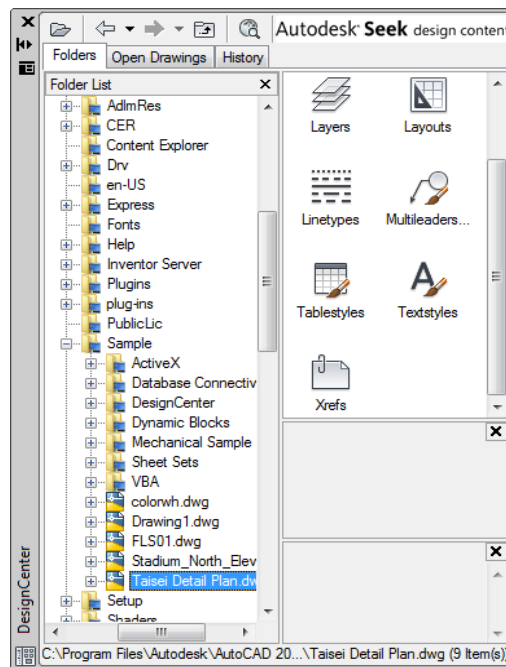
# DesignCenter Window

## Quick Reference

See also:

- Understand the DesignCenter Window

Browses, finds, and previews content, and inserts content, which includes blocks, hatches, and external references (xrefs).



## Summary

Use the buttons in the toolbar at the top of DesignCenter for display and access options.

When you click the Folders tab or the Open Drawings tab, the following two panes are displayed from which you can manage drawing content:

- [Content area \(right pane\)](#) on page 12

- [Tree view \(left pane\)](#) on page 14

---

**NOTE** The DesignCenter Online (DC Online tab) is disabled by default. You can enable it from the CAD Manager Control utility.

---

### List of Options

The following options are displayed.

**Content Area (DesignCenter)** Displays the content of the "container" currently selected in the tree view. A container is a network, computer, disk, folder, file, or web address (URL) containing information accessible by DesignCenter. Depending on the container selected in tree view, the content area typically displays the following:

- Folders containing drawings or other files
- Drawings
- Named objects contained in drawings (named objects include blocks, xrefs, layouts, layers, dimension styles, table styles, multileader styles, and text styles)
- Images or icons representing blocks or hatch patterns
- Web-based content
- Custom content developed by third-party applications

From the content area, you can insert blocks or hatch patterns or attach external references in a drawing by dragging, by double-clicking, or by right-clicking and choosing Insert Block, Attach Xref, or Copy. You can drag or right-click to add other content to drawings, such as layers, dimension styles, and layouts. You can drag blocks and hatches from DesignCenter to tool palettes.

---

**NOTE** You can access relevant content area and tree view options on a shortcut menu by right-clicking in the tree view or the content area.

---

**Load** Displays the Load dialog box (a [standard file selection dialog box](#)). Use Load to navigate to files on local and network drives or on the Web, and then to select content to load in the content area.

**Back** Returns to the most recent location in the history list.

**Forward** Returns to the next later location in the history list.

**Up** Displays the contents of the container one level above the current container.

**Stop (DC Online tab)** Stops the current transfer.

**Reload (DC Online tab)** Reloads the current page.

**Search** Displays the [Search dialog box](#), where you can specify search criteria to locate drawings, blocks, and nongraphical objects within drawings.

**Favorites** Displays the contents of the *Favorites* folder in the content area. The *Favorites* folder contains shortcuts to items you access often. You can add items to *Favorites* either by right-clicking the content area or right-clicking an item in the tree view, and then clicking Add to Favorites. To delete an item from *Favorites*, use the Organize Favorites option on the shortcut menu and then use the Refresh option on the shortcut menu.

---

**NOTE** The *DesignCenter* folder is automatically added to *Favorites*. This folder contains drawings with discipline-specific blocks that you can insert in drawings.

---

**Home** Returns DesignCenter to your home folder. On installation, the home folder is set to ...\*Sample*\DesignCenter. Change the home folder using the shortcut menu in the tree view.

**Tree View Toggle** Displays and hides the tree view. Hide the tree view if you need more space in your drawing area. When the tree view is hidden, you can use the content area to navigate to containers and to load content.

The Tree View Toggle button is not available while you're using the History list in the tree view.

**Preview** Displays and hides a preview of the selected item in a pane below the content area. If there is no preview image saved with the selected item, the Preview area is empty.

**Description** Displays and hides a text description of the selected item in a pane below the content area. If a preview image is also displayed, the description is displayed below it. If there is no description saved with the selected item, the Description area is empty.

### **Views**

Provides different display formats for the content that is loaded in the content area. You can select a view from the Views list or click the Views button repeatedly to cycle through the display formats. The default view varies for the type of content currently loaded in the content area.

**Large Icon** Displays the names of the loaded content in large icon format.

**Small Icon** Displays the names of the loaded content in small icon format.

**List View** Displays the names of the loaded content in a list.

**Detail View** Displays additional information about the loaded content. You can sort the items by name, size, type, and other properties, depending on the type of content that is loaded in the content area.

**Refresh (Shortcut Menu Only)** Refreshes the display in the content area to reflect any changes you have made. Right-click the content area background and click Refresh on the shortcut menu.

**Autodesk Seek Design Content** Opens a web browser and displays the Autodesk Seek ([SEEK](#) on page 1106) home page. Product design information available on Autodesk Seek depends on what content providers, both corporate partners and individual contributors, publish to Autodesk Seek ([SHAREWITHSEEK](#) on page 1118). Such content could include 3D models, 2D drawings, specifications, brochures, or descriptions of products or components.

### **Tree View (DesignCenter)**

Displays the hierarchy of files and folders on your computer and network drives, a list of open drawings, and a history of the last locations you accessed. Select an item in the tree view to display its contents in the content area.

---

**NOTE** In the *sample\designcenter* folder are drawings containing discipline-specific blocks that you can insert in drawings. These drawings are called symbol library drawings.

---

Use the buttons in the toolbar at the top of DesignCenter to access tree view options.

**Folders** Displays the hierarchy of files and folders on your computer and network drives, including My Computer and Network Neighborhood.

You can use ADCNAVIGATE to navigate to a specific file name, directory location, or network path in the DesignCenter tree view. See [ADCNAVIGATE](#) on page 18.

**Open Drawings** Displays all drawings open in the current work session, including drawings that are minimized.

**History** Displays a list of the files that you opened most recently in DesignCenter. With the history displayed, right-click a file to display information about the file or to delete the file from the History list.

**DC Online** Accesses the DesignCenter Online web page. When you establish a web connection, two panes are viewed on the Welcome page. The left side displays folders containing symbol libraries, manufacturer sites, and additional



content libraries. When a symbol is selected, it is displayed on the right side and can be downloaded into your drawing.

---

**NOTE** The DesignCenter Online (DC Online tab) is disabled by default. You can enable it from the CAD Manager Control utility.

---

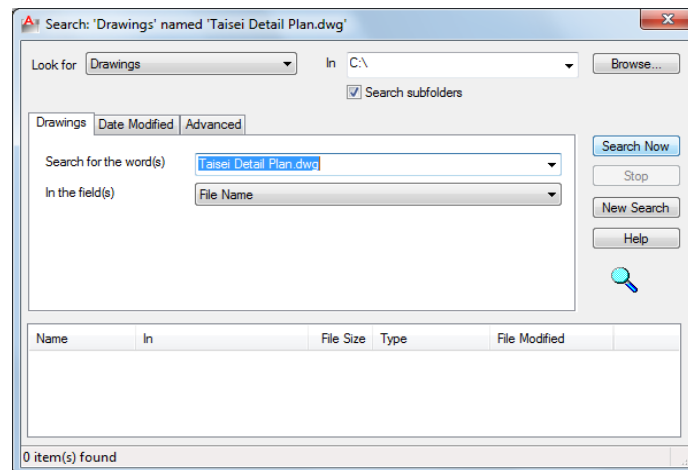
## Search Dialog Box

### Quick Reference

See also:

- Overview of DesignCenter

Searches for content such as drawings, hatch patterns, and blocks.



### List of Options

The following options are displayed.

#### Look For

Specifies the type of content to search for. The content type you specify determines which tabs are displayed in the Search dialog box and the search fields it provides. The Date Modified and Advanced tabs are displayed only when the Drawings option is selected in Look For.

#### In

Specifies a search path name. To enter multiple paths, separate them with semicolons. Use Browse to select a path from a tree view list.

**Browse**

Displays a tree view in the Browse for Folder dialog box, in which you can specify the drives and folders to search.

**Search Subfolders**

Includes subfolders in the search path.

**Search Now**

Starts the search based on criteria you specify.

**Stop**

Stops the search and displays the accumulated results in the Search Results panel.

**New Search**

Clears the Search For the Word(s) box and places the cursor in the box.

**Search Results Panel**

Displays the results of the search in resizable columns at the bottom of the window. Double-click an item to load it into DesignCenter.

**Search Tabs (Search Dialog Box)**

Display search fields relevant to the type of content specified in the Look For list. The name of the tab reflects the content type. You can use wild-card characters to extend or limit your search patterns.

**Search for the Word(s)**

Specifies the text string to look for in the field you specify. Use the asterisk and question mark wild-card characters to broaden your search.

- *\** (*Asterisk*): Matches any string and can be used anywhere in the search string.
- *?* (*Question mark*): Matches any single character; for example, ?BC matches ABC, 3BC, and so on.

This option is available on the Drawings tab.

**In the Field(s)**

Specifies the property fields to search. For drawings, all fields other than File Name are derived from the information entered in the Drawing Properties dialog box ([DWGPROPS](#) on page 451).

This option is available on the Drawings tab.

#### **Search for the Name**

Specifies the name of the drawing, block, layer, xref, or other content type that you want to find.

This option is available on all tabs except Drawings.

#### **Date Modified Tab (Search Dialog Box)**

Finds content that was created or modified during a certain time period.

**All Files** Finds all the files that match the criteria you specify on other tabs, regardless of creation date or date modified. This is the default setting.

**Find All Files Created or Modified** Finds files created or modified during a specific time period. The search locates files that match the criteria you specify on this and other tabs.

#### **Between**

Searches for files created or modified between the dates you specify.

#### **During the Previous Month(s)**

Searches for files created or modified within the number of months you specify.

#### **During the Previous Day(s)**

Searches for files created or modified within the number of days you specify.

#### **Advanced Tab (Search Dialog Box)**

Finds content within drawings; this tab is available only when you select Drawings in Look For.

#### **Containing**

Specifies the type of text in a drawing that you want to search for. For example, you can search for text contained within a block attribute, such as a manufacturer's catalog number.

#### **Containing Text**

Specifies the text you want to search for.

#### **Size Is**

Specifies a minimum or maximum file size. Select At Least or At Most, and enter a value in KB.

## ADCNAVIGATE

### Quick Reference

#### See also:

- Access Content with DesignCenter

Loads a specified DesignCenter drawing file, folder, or network path.

### Summary

The path or drawing file name you specify is loaded in the tree view of the DesignCenter Folders tab.

ADCNAVIGATE supports remote domains or workgroups if you have the target domain or workgroup mapped to a drive letter.

### List of Prompts

The following prompts are displayed.

Enter pathname *<current>*:

At the prompt, you can enter a path in any of the following formats:

- Folder path: *c:\project files\electrical*
- Folder path and a file name: *c:\project files\electrical\circuit2.dwg*
- UNC (universal naming convention) network path: *\\server1\campus\_project*

DesignCenter is displayed, with the Folder tab active, and the path or drawing file that you specified is loaded.

# ADDSELECTED

## Quick Reference

See also:

- Copy, Array, Offset, or Mirror Objects

Creates a new object based on the object type and general properties of a selected object.

## Access Methods



Button

 **Toolbar:** Draw

**Shortcut menu:** Select a single object, right-click, and click Add Selected.

## Summary

Differs from COPY by duplicating only the [general properties](#) on page 1017 of an object. For example, creating an object based on a selected circle adopts the general properties of the circle, such as its color and layer, but prompts you for the new circle's center point and radius.

With the ADDSELECTED command, you can create a new object with the same object type as a selected object. Certain objects have special properties that are supported in addition to its general properties, as shown in the following table.

Object type	Special properties supported by ADDSELECTED
Gradient	Gradient name, Color 1, Color 2, Gradient Angle, Centered
Text, MText, Attribute Definition	Text Style, Height
Dimensions (Linear, Aligned, Radial, Diamet-	Dim Style, Dim Scale

Object type	Special properties supported by ADDSELECTED
ric, Angular, Arc Length, and Ordinate)	
Tolerance	Dim Style
Leader	Dim Style, Dim Scale
Multileader	Multileader Style, Overall Scale
Table	Table Style
Hatch	Pattern, Scale, Rotation
Block Reference, External Reference	Name
Underlays (DWF, DGN, Image, and PDF)	Name

### List of Prompts

The following prompt is displayed.

Select object: *Use an object selection method*

The prompts vary by object type.

## ADJUST

### Quick Reference

See also:


- Adjust Underlay Contrast, Fade, Monochrome, and Colors for the Background

Adjusts the fade, contrast and monochrome settings of the selected underlay (DWF, DWFX, PDF, or DGN), or image.

## Access Methods



### Button

 **Ribbon:** Insert tab ► Reference panel ► Adjust

## Summary

With the ADJUST command, you can control several display settings for selected images and underlays (DWF, DWFX, PDF, and DGN underlays). To confirm the settings, use the Properties palette.

## List of Prompts

The following prompts are displayed.

The list of prompts depends on whether you select one or more images, or one or more underlays.

### Images

**Fade** Controls the fade effect in the image. Values range from 0 through 100. The greater the value, the lighter that the image appears. This setting works indirectly with the contrast effect; a higher contrast value blends the image into the background when fade is set to a higher value.

**Contrast** Controls the contrast, and indirectly the fading effect in the image. Values range from 0 through 100. The greater the value, the stronger the contrast.

**Brightness** Controls the brightness, and indirectly, the contrast in the image. Values range from 0 through 100. The greater the value, the brighter the image and the more pixels that become white when you increase contrast.

### Underlays

**Fade** Controls the fade effect in the underlay. Values range from 0 through 100. The greater the value, the lighter that the linework in the underlay appears. This setting works indirectly with the contrast effect; a higher contrast value blends the underlay into the background when fade is set to a higher value.

**Contrast** Controls the contrast, and indirectly the fading effect in the underlay. Values range from 0 through 100. The greater the value, the stronger the contrast.

**Monochrome** Controls the color saturation of all areas while maintaining the luminance. When turned on, the underlay appears in shades of gray starting at black if the background color luminance is 50 percent or more. If the background color luminance is less than 50 percent, then the colors are inverted, with the darkest areas displaying as white, and the lightest areas displaying as black.

## ALIGN

### Quick Reference

See also:

- Align Objects

Aligns objects with other objects in 2D and 3D.

### Summary

Either one, two, or three pairs of source points and definition points can be specified to move, rotate, or tilt the selected objects, aligning them with points on another object.

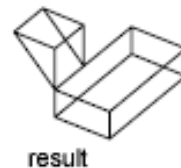
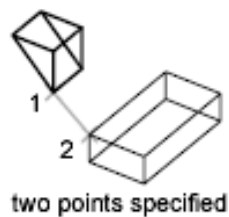


### List of Prompts

The following prompts are displayed.

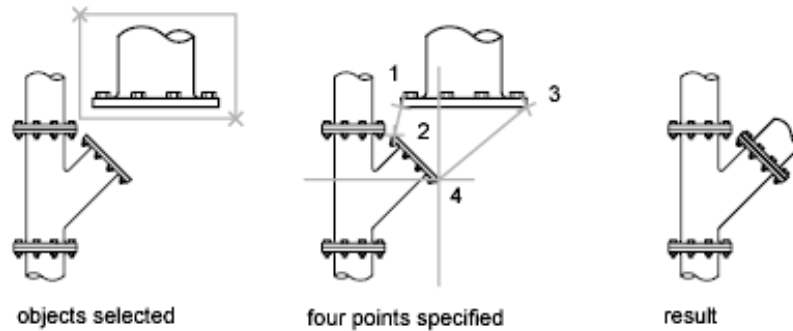
Select objects: *Select the objects to align and press Enter*

**ALIGN Using One Pair of Points** When you select only one source point and destination point pair, the selected objects move in 2D or 3D from the source point (1) to the destination point (2).





**ALIGN Using Two Pairs of Points** When you select two point pairs, you can move, rotate, and scale the selected objects in 2D or 3D to align with other objects.



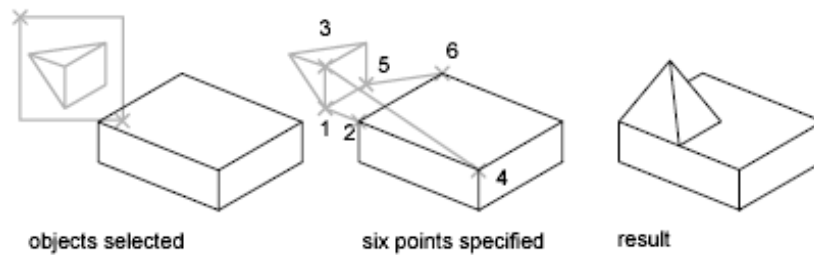
The first set of source and destination points defines the base point for the alignment (1, 2). The second set of points defines the angle of rotation (3, 4). After you enter the second set of points, you are prompted to scale the object. The distance between the first and second destination points (2, 4) is used as the reference length to which the object is scaled. Scaling is available only when you are aligning objects using two point pairs.

---

**NOTE** If you use two source and destination points to perform a 3D alignment on nonperpendicular working planes, you get unpredictable results.

---

**ALIGN Using Three Pairs of Points** When you select three point pairs, you can move and rotate the selected objects in 3D to align with other objects.



The selected objects move from the source point (1) to the destination point (2).

The selected object is rotated (1 and 3) so that it aligns with the destination object (2 and 4).

The selected object is then rotated again (3 and 5) so that it aligns with the destination object (4 and 6).

## ANNORESET

### Quick Reference

#### See also:


- Add and Modify Scale Representations


Resets the locations of all alternate scale representations of the selected annotative objects.

#### Access Methods



#### Button

 **Ribbon:** Annotate tab ► Annotation Scaling panel ► Sync Scale Positions

 **Menu:** Modify ► Annotative Object Scale ► Synchronize Multiple-Scale Positions

**Shortcut menu:** Select an annotative object. Right-click and choose Annotative Object Scale ► Synchronize Multiple-Scale Positions.

#### Summary

The location of each scale representation of an annotative object can be adjusted using grips. For each selected annotative object, all alternate scale representations are returned to the location of the object's current scale representation.

# ANNOUPDATE

## Quick Reference

### See also:

- Work with Annotative Styles

Updates existing annotative objects to match the current properties of their styles.

### Summary

When a non-annotative text object is updated to an annotative text style, the object becomes annotative and supports the current annotation scale. If the text style has a fixed Paper Height, the object is set to that height. If the text style's Paper Height is set to 0, the size of the text does not change. The Paper Height value is inferred by dividing the model height by the current annotation scale.

If an annotative object is updated to a non-annotative style, the object becomes non-annotative and any alternate scale representations are removed.

# APERTURE


## Quick Reference

### See also:

- Use Object Snaps

Controls the size of the object snap target box.

### Access Methods

 **Command entry:** `aperture` (or '`aperture`' for transparent use)

### Summary

Object snap applies only to objects inside or crossing the object snap target box. The [APBOX](#) on page 1383 system variable controls whether the object snap target box is displayed. The number of pixels you enter using APERTURE

controls the size of the object snap box. The higher the number, the larger the target box.

You can also change this setting in the Options dialog box, Drafting tab.



APERTURE controls the object snap target box, not the pickbox displayed at the Select Objects prompt. The object selection pickbox is controlled by the PICKBOX on page 1611 system variable.

## ARC

### Quick Reference

See also:


- Draw Arcs

Creates an arc.

### Access Methods



Button

 **Ribbon:** Home tab ► Draw panel ► Arc drop-down ► 3-Point

 **Menu:** Draw ► Arc

 **Toolbar:** Draw

### Summary

To create an arc, you can specify combinations of center, endpoint, start point, radius, angle, chord length, and direction values.

### List of Prompts

The following prompts are displayed.

Specify [start point](#) of arc or [\[Center\]](#): *Specify a point, enter c, or press ENTER to start tangent to last line, arc, or polyline*

**Start Point**

Specifies the starting point of the arc.

---

**NOTE** If you press ENTER without specifying a point, the endpoint of the last drawn line or arc is used and you are immediately prompted to specify the endpoint of the new arc. This creates an arc tangent to the last drawn line, arc, or polyline.

---

Specify second point of arc or [Center/End]:

**Second Point**

Draws an arc using three specified points on the arc's circumference. The first point is the start point (1). The third point is the endpoint (3). The second point (2) is a point on the circumference of the arc.

Specify end point of arc: *Specify a point (3)*



You can specify a three-point arc either clockwise or counterclockwise.

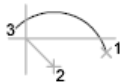
**Center**

Specifies the center of the circle of which the arc is a part.

Specify center point of arc:

Specify end point of arc or [Angle/chord Length]:

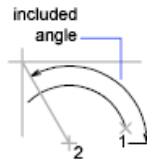
**End Point** Using the center point (2), draws an arc counterclockwise from the start point (1) to an endpoint that falls on an imaginary ray drawn from the center point through the third point (3).



The arc does not necessarily pass through this third point, as shown in the illustration.

**Angle** Draws an arc counterclockwise from the start point (1) using a center point (2) with a specified included angle. If the angle is negative, a clockwise arc is drawn.

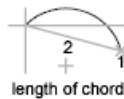
Specify included angle: *Specify an angle*



**Chord Length** Draws either a minor or a major arc based on the distance of a straight line between the start point and endpoint.

If the chord length is positive, the minor arc is drawn counterclockwise from the start point. If the chord length is negative, the major arc is drawn counterclockwise.

Specify length of chord: *Specify a length*



### End

Specifies the endpoint of the arc.

Specify end point of arc:

Specify center point of arc or [Angle/Direction/Radius]:

**Center Point** Draws an arc counterclockwise from the start point (1) to an endpoint that falls on an imaginary ray drawn from the center point (3) through the second point specified (2).



**Angle** Draws an arc counterclockwise from the start point (1) to an endpoint (2), with a specified included angle. If the angle is negative, a clockwise arc is drawn.

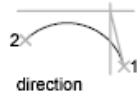
Specify included angle: *Enter an angle in degrees or specify an angle by moving the pointing device counterclockwise*



**Direction** Begins the arc tangent to a specified direction. It creates any arc, major or minor, clockwise or counterclockwise, beginning with the start point

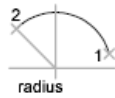
(1), and ending at an endpoint (2). The direction is determined from the start point.

Specify tangent direction for the start point of arc:



**Radius** Draws the minor arc counterclockwise from the start point (1) to the endpoint (2). If the radius is negative, the major arc is drawn.

Specify radius of arc:



### Center

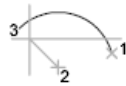
Specifies the center of the circle of which the arc is a part.

Specify center point of arc:

Specify start point of arc:

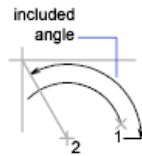
Specify end point of arc or [Angle/chord Length]:

**End Point** Draws an arc counterclockwise from the start point (2) to an endpoint that falls on an imaginary ray drawn from the center point (1) through a specified point (3).



**Angle** Draws an arc counterclockwise from the start point (2) using a center point (1) with a specified included angle. If the angle is negative, a clockwise arc is drawn.

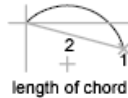
Specify included angle:



**Chord Length** Draws either a minor or a major arc based on the distance of a straight line between the start point and endpoint.

If the chord length is positive, the minor arc is drawn counterclockwise from the start point. If the chord length is negative, the major arc is drawn counterclockwise.

Specify length of chord:



### **Tangent to Last Line, Arc, or Polyline**

Draws an arc tangent to the last line, arc, or polyline drawn when you press ENTER at the first prompt.



Specify end point of arc: *Specify a point (1)*

## **ARCHIVE**

### **Quick Reference**

See also:

- Publish, Transmit, and Archive Sheet Sets

Packages the current sheet set files for archive.

### **Access Methods**



Button

 **Menu:** Application menu  ► Publish ► Archive



### Summary

The [Archive a Sheet Set dialog box](#) is displayed.

If you enter `-archive` at the Command prompt, [options are displayed](#).

## Archive a Sheet Set Dialog Box

### Quick Reference

See also:

- Publish, Transmit, and Archive Sheet Sets

Packages the current sheet set files for archive.

### Summary

The Sheets tab lists the sheets to be included in the archive package in sheet order and according to subset organization. The Files Tree tab lists the files to be included in the package in a hierarchical tree format. The Files Table tab displays the files to be included in the package in a table format.

All files to be included in the archive package are indicated by a check mark next to the file name. To remove a file from the archive package, select the check box. Right-click in the file display area to display a shortcut menu, from which you can clear all check marks or apply check marks to all files.

---

**NOTE** Make sure that the files to be archived are not currently open in any application.

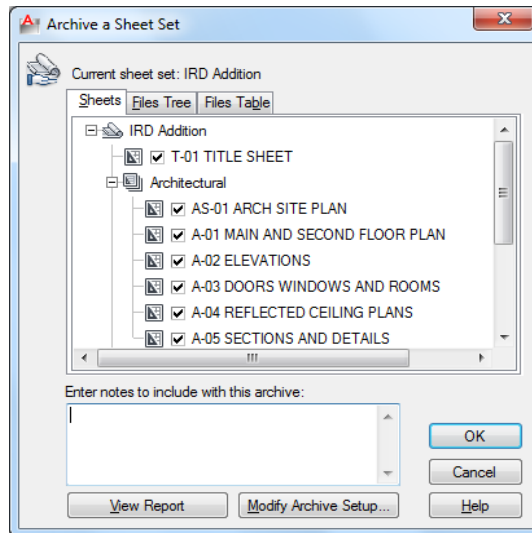
---

### List of Options

The following options are displayed.

#### Sheets Tab

Lists the sheets to be included in the archive package in sheet order and according to subset organization. A sheet set must be open in the Sheet Set Manager. Archive can be selected from the shortcut menu displayed when the top-level sheet set node is right-clicked, or **archive** can be entered at the Command prompt.

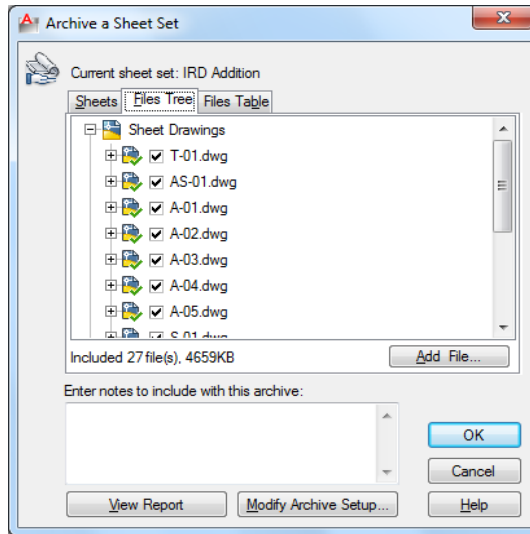


### **Files Tree Tab**

Lists the files to be included in the archive package in a hierarchical tree format. By default, all files associated with the current drawing (such as related xrefs, plot styles, and fonts) are listed. You can add files to the archive package or remove existing files. Related files that are referenced by URLs are not included in the archive package.

### **Included**

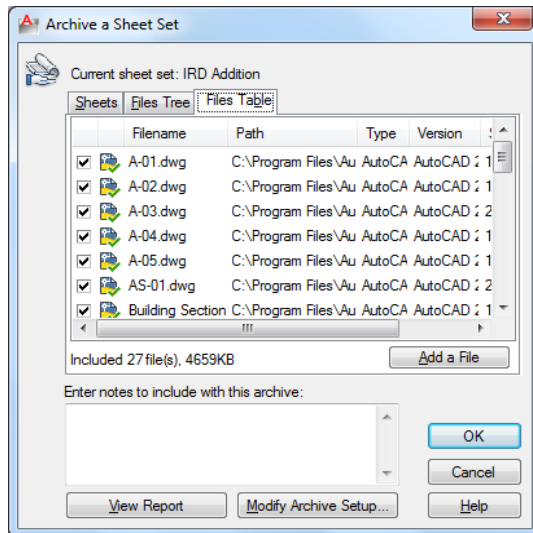
Reports the number of files included in the package and the size of the package.



### **Files Table Tab**

Displays the files to be included in the archive package in a table format. By default, all files associated with the current drawing (such as related xrefs, plot styles, and fonts) are listed. You can add files to the archive package or remove existing files. Related files that are referenced by URLs are not included in the archive package.

- [Included](#) on page 32



### **Add a File**

Opens a standard file selection dialog box, in which you can select an additional file to include in the archive package. This button is available on both the Files Tree tab and the Files Table tab.

### **Enter Notes to Be Included with This Archive**

Provides a space where you can enter notes related to the archive package. The notes are included in the archive report. You can specify a template of default notes to be included with all your archive packages by creating an ASCII text file called *archive.txt*. This file must be saved to a location specified by the Support File Search Path option on the [Files tab](#) in the Options dialog box.

### **View Report**

Displays report information that is included with the archive package. Includes any archive notes that you entered. If you have created a text file of default notes, the notes are also included in the report.

**Save As** Opens a File Save dialog box, in which you can specify a location in which to save a report file. Note that a report file is automatically included with all archive packages that you generate; by choosing Save As, you can save an additional copy of a report file for reference purposes.

### **Modify Archive Setup**

Displays the [Modify Archive Setup dialog box](#), in which you can specify options for the archive package.

# Modify Archive Setup Dialog Box

## Quick Reference

See also:

- Publish, Transmit, and Archive Sheet Sets

## List of Options

The following options are displayed.

### Archive Type and Location

Specifies the type and location of archive package created.

#### Archive Package Type

Specifies the type of archive package created.

Archive Package Type	Description
Folder	Creates an archive package of uncompressed files in a new or existing folder.
Self-Extracting Executable	Creates an archive package of files as a compressed, self-extracting executable file. Double-clicking the resulting EXE file decompresses the archive package and restores the files.
Zip	Creates an archive package of files as a compressed ZIP file. To restore the files, you need a decompression utility such as the shareware application PKZIP or WinZip.

### File Format

Specifies the file format to which all drawings included in the archive package will be converted. You can select a drawing file format from the drop-down list.

### Archive File Folder

Specifies the location in which the archive package is created. Lists the last nine locations in which archive packages were created. To specify a new location, click Browse and navigate to the location you want.

If this field is left blank, the archive file is created in the folder containing the sheet set data (DST) file.

### Archive File Name

Specifies the method for naming the archive package. Displays the default file name for the archive package. This option is not available if the archive package type is set to Folder.

Archive File Name Type	Description
Prompt for a File Name	Displays a standard file selection dialog box where you can enter the name of the archive package.
Overwrite if Necessary	Uses a logical default file name. If the file name already exists, the existing file is automatically overwritten.
Increment File Name if Necessary	Uses a logical default file name. If the file name already exists, a number is added to the end. This number is incremented each time a new archive package is saved.

### Path Options

Provides options for the archive.

#### Use Organized Folder Structure

Duplicates the folder structure for the files being transmitted. The root folder is the top-level folder within a hierarchical folder tree.

The following considerations apply:

- Relative paths remain unchanged. Relative paths outside the source root folder retain up to one level of the folder path above them, and are placed in the root folder.
- Absolute paths within the root folder tree are converted to relative paths. Absolute paths retain up to one level of the folder path above them, and are placed in the root folder.

- Absolute paths outside the root folder tree are converted to No Path and are moved to the root folder or to a folder within the root folder tree.
- A *Fonts* folder is created, if necessary.
- A *PlotCfgs* folder is created, if necessary.
- A *SheetSets* folder is created to hold all support files for sheet sets, if necessary. The sheet set data (DST) file, however, is placed in the root folder.

This option is not available if you're saving an archive package to an Internet location.

#### **Source Root Folder**

Defines the source root folder for relative paths of drawing-dependent files, such as xrefs. This option determines the source root folder for the Use Organized Folder Structure option.

The source root folder also contains the sheet set data (DST) file when a sheet set is archived.

#### **Place All Files in One Folder**

All files are installed to a single, specified target folder when the archive package is created.

#### **Keep Files and Folders As Is**

Preserves the folder structure of all files in the archive package. This option is not available if you're saving an archive package to an Internet location.

#### **Actions**

Specifies the actions applicable to the archive package.

#### **Set Default Plotter to 'None'**

Changes the printer/plotter setting in the archive package to None.

#### **Prompt for Password**

Opens the [Archive—Set Password dialog box](#), where you can specify a password for your archive package.

#### **Purge Drawings**

Does a complete purge of all the drawings in the archive.

---

**NOTE** As the purge is done in silent mode, you will not receive any notifications when the drawings have been removed.

---

### **Include Options**

Specifies the various options available with the archive package.

#### **Include Fonts**

Includes any associated font files (TXT and SHX) with the archive package.

#### **Include Files from Data Links**

Adds external files referenced by a data link to the transmittal package.

#### **Include Textures from Materials**

Includes textures with materials that are attached to objects or faces.

#### **Include Photometric Web Files**

Includes photometric web files that are associated with web lights in the drawing.

#### **Include Unloaded File References**

Includes all unloaded external file references. The unloaded file references are listed in the Files Tree and Files Table and report under their appropriate category.

#### **Include Sheet Set Data and Files**

Includes the sheet set data (DST) file, label block drawing files, callout block drawing files, and drawing template (DWT) files with the archive package.

## **Archive - Set Password Dialog Box**

### **Quick Reference**

**See also:**

- Publish, Transmit, and Archive Sheet Sets

### **List of Options**

The following options are displayed.



### **Password for Compressed Archive Package**

Provides a space for an optional password for the archive package. When others attempt to open the archive package, they must provide this password to access the files. Password protection cannot be applied to folder archive packages.

### **Password Confirmation**

Provides a space to confirm the password that you entered in the Password field. If the two passwords do not match, you are prompted to reenter them.

## **-ARCHIVE**

### **Quick Reference**

See also:

- Publish, Transmit, and Archive Sheet Sets

### **List of Prompts**

The following prompts are displayed.

Sheet Set name or [?] <current>: *Enter a predefined sheet set name, enter ? to display a list of sheet sets, or press ENTER*

#### **Sheet Set Name**

Specifies a sheet set to use for the archive package. This option is available only when a sheet set is open.

**Create Archive Package** Creates the archive package from the specified sheet set.

**Report Only** Opens a File Save dialog box, in which you can specify a location in which to save a report file. Note that a report file is automatically included with all archive packages that you generate; by choosing Save As, you can save an additional copy of a report file for reference purposes.

**Password** You are only prompted for a password if you selected Prompt for Password in the archive setup.

# AREA

## Quick Reference

### See also:

- Obtain Area and Mass Properties Information

Calculates the area and perimeter of objects or of defined areas.

### Summary

Several commands are available to provide area information including AREA, [MEASUREGEOM](#) on page 736, and [MASSPROP](#) on page 725. Alternatively, use [BOUNDARY](#) on page 151 to create a closed polyline or region. Then use [LIST](#) on page 710 or the [Properties palette](#) on page 1015 to find the area.

### List of Prompts

The following prompts are displayed.

[Specify first corner point](#) on page 40 or [[Object](#) on page 41/[Add Area](#) on page 41/[Subtract Area](#) on page 42] <Object>: *Select an option*

The area and perimeter of the specified object displays at the Command prompt and in the tooltip.

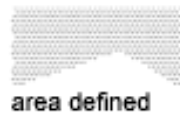
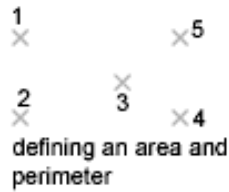
### Specify Corner Points

Calculates the area and perimeter defined by specified points. All points must lie in a plane parallel to the *XY* plane of the current user coordinate system (UCS).

A rubberband line from the first specified point to the cursor is displayed. Once the second point is specified, a line segment and a polygon with green fill are displayed.

Continue to specify points to define a polygon and then press ENTER to complete the definition of the perimeter. The area to be calculated is highlighted in green.

If you do not close the polygon, the area is calculated as if a line were drawn from the last point entered to the first. When the perimeter is calculated, that line length is added.



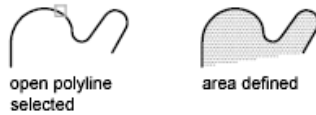
### Object

Calculates the area and perimeter of a selected object. You can calculate the area of circles, ellipses, splines, polylines, polygons, regions, and solids.

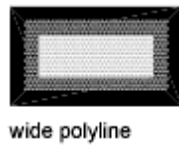
Select object:

If you select an open polyline, the area is calculated as if a line were drawn from the last point entered to the first. When the perimeter is calculated that line length is ignored.

The centerline of a wide polyline is used to make area and perimeter calculations.



The centerline of a wide polyline is used to make area and perimeter (or length) calculations.



### Add Area

Turns on Add mode and keeps a running balance of the total area as you continue to define areas. You can use the Add Area option to calculate individual areas and perimeters of defined areas and objects and the total area of all defined areas and objects.

You can also select to specify the points. A rubberband line from the first specified point to the cursor is displayed



Specify points to define a polygon (3). The area to be added is highlighted in green. Press ENTER. AREA calculates the area and perimeter and returns the total area of all the areas defined by selecting points or objects since Add mode was turned on.

If you do not close the polygon, the area is calculated as if a line were drawn from the last point entered to the first. When the perimeter is calculated, that line length is added.

### **Subtract Area**

Similar to the Add Area option, but subtracts areas and perimeters. You can use the Subtract Area option to subtract a specified area from a total area.

You can also specify the area to be subtracted with points. A rubberband line from the first specified point to the cursor is displayed.



The specified area to be subtracted is highlighted in red.

The total area and perimeter displays at the Command prompt and in the tooltip.

# ARRAY

## Quick Reference

See also:

- Array Objects

Creates copies of objects arranged in a 2D or 3D pattern.

## Access Methods



Button

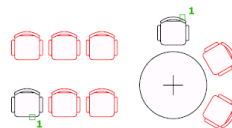
 **Ribbon:** Home tab ► Modify panel ► Array.

 **Toolbar:** Modify

 **Menu:** Modify ► Array.

## Summary

You can create copies of objects in a regularly spaced rectangular, polar, or path array.



The [DELOBJ](#) on page 1433 system variable controls whether the source objects of the array are deleted or retained after the array is created.

If you enter **-array** at the Command prompt, [options are displayed](#).

## List of Prompts

The following prompts are displayed.

Select objects: *Use an object selection method*

Enter array type [[Rectangular](#) on page 44/[Path](#) on page 44/[Polar](#) on page 44]

<Rectangular>: *Enter an option or press Enter*

**Rectangular** ([ARRAYRECT on page 60](#)) Distributes object copies into any combination of rows, columns, and levels.

**Path** ([ARRAYPATH on page 53](#)) Evenly distributes object copies along a path or a portion of a path.

**Polar** ([ARRAYPOLAR on page 57](#)) Evenly distributes object copies in a circular pattern around a center point or axis of rotation.

## -ARRAY

### Quick Reference

See also:

- Array Objects

Maintains legacy command line behavior for creating nonassociative, 2D rectangular or polar arrays.

### List of Prompts

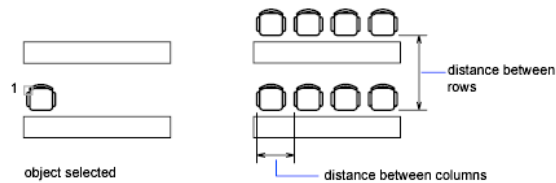
The following prompts are displayed.

Select objects: *Use an object selection method*

Enter the type of array [[Rectangular/Polar](#)] <current>: *Enter an option or press ENTER*

### Rectangular

Creates an array of rows and columns of copies of the selected objects.



Enter the number of rows (---) <1>: *Enter a nonzero integer or press ENTER*

Enter the number of columns (|||) <1>: *Enter a nonzero integer or press ENTER*

If you specify one row, you must specify more than one column and vice versa.

The selected object, or cornerstone element, is assumed to be in the lower-left corner, and generates the array up and to the right.

The specified distance between the rows and columns includes the corresponding lengths of the object to be arrayed.

Enter the distance between rows or specify unit cell (---):

To add rows downward, specify a negative value for the distance between rows. ARRAY skips the next prompt if you specify two points for the opposite corners of a rectangle.

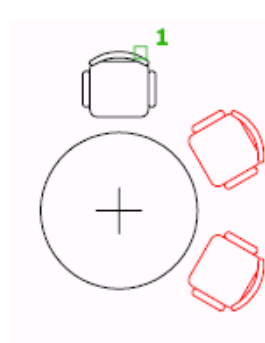
Specify the distance between columns (|||):

To add columns to the left, specify a negative value for the distance between columns. Rectangular arrays are constructed along a baseline defined by the current snap rotation. This angle is normally 0, so the rows and columns are orthogonal with respect to the X and Y drawing axes. The Rotate option of the SNAP on page 1158 command changes the angle and creates a rotated array. The SNAPANG on page 1660 system variable stores the snap rotation angle.

If you specify a large number of rows and columns for the array, it might take a while to create the copies. By default, the maximum number of array elements that you can generate in one command is 100,000. You can change the maximum number of array elements by setting the MaxArray system registry variable using the SETENV command.

### **Polar**

Creates an array by copying the selected objects around a specified center point.



Specify center point of array or [Base]: *Specify a point or enter **b** to specify a new base point*

**Center Point** Creates an array defined by a center point.

**Base** Specifies a new reference (base) point relative to the selected objects that will remain at a constant distance from the center point of the array as the objects are arrayed.

Enter the number of items in the array: *Enter a positive integer or press ENTER*

If you enter a value for the number of items, you must specify either the angle to fill or the angle between items. If you press ENTER (and do not provide the number of items), you must specify both.

Specify the angle to fill (+=ccw, -=cw) <360>: *Enter a positive integer for a counterclockwise rotation or a negative integer for a clockwise rotation*

You can enter **0** for the angle to fill only if you specify the number of items.

If you specify an angle to fill without providing the number of items, or if you specify the number of items and enter **0** as the angle to fill or press ENTER, the following prompt is displayed:

Angle between items: *Specify an angle*

If you specified the number of items and entered 0 as the angle to fill or pressed ENTER, ARRAY prompts for a positive or negative value to indicate the direction of the array:

Angle between items (+=ccw, -=cw): *Enter a positive integer for a counterclockwise rotation or a negative integer for a clockwise rotation*

ARRAY determines the distance from the array's center point to a reference point on the last object selected. The reference point used is the center point of a circle or arc, the insertion base point of a block, the start point of text, and one endpoint of a line.

Rotate arrayed objects? <Y>: *Enter y or n, or press ENTER*

In a polar array, the reference point of the last object in the selection set is used for all objects. If you defined the selection set by using window or crossing selection, the last object in the selection set is arbitrary. Removing an object from the selection set and adding it back forces that object to be the last object selected. You can also make the selection set into a block and replicate it.



# ARRAYCLOSE

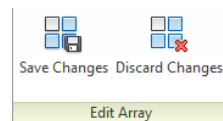
## Quick Reference

See also:

- Array Objects

Saves or discards changes made to an array's source objects and exits the array editing state.

## Access Methods



Panel

 **Ribbon:** <current tab> ► Edit Array contextual panel

## Summary

The Source option of [ARRAYEDIT](#) on page 48 activates an editing state in which you can edit the source objects of a selected array item. While the editing state is active, an Edit Array contextual tab is displayed on the ribbon. Save or discard changes to exit the editing state.

## List of Prompts

The following prompts are displayed.

Save changes to array [[Yes](#) on page 47/[No](#) on page 48] <Yes>: *Enter an option*

### Save Changes



Button

<current tab> ► Edit Array contextual panel ► Save Changes

Saves all changes made to the source object or to a replacement item of the array.

## Discard Changes



Button

<current tab> ► Edit Array contextual panel ► Discard Changes

Discards any changes made; the source object or replacement item in the array is returned to its original state.

# ARRAYEDIT

## Quick Reference

See also:

- Edit Associative Arrays

Edits associative array objects and their source objects.

## Access Methods



Button

 **Ribbon:** Home tab ► Modify panel ► Edit Array

 **Toolbar:** Modify II

## Summary

Modify associative arrays by editing the array properties, editing source objects, or replacing items with other objects.

When you edit source objects, an editing state is activated. Save or discard changes ([ARRAYCLOSE](#) on page 47) to exit the editing state.

When you select and edit a single array object, the [Array Editor ribbon contextual tab](#) on page 51 is displayed. The array properties available on the Array Editor ribbon contextual tab depend on the type of the selected array.

## List of Prompts

The following prompt is displayed.

Select array: *Use an object selection method*

The array type determines the remaining prompts.

For rectangular arrays:

Enter an option [[Source](#) on page 49/[REPlace](#) on page 49/[Base point](#) on page 50/[Rows](#) on page 50/[Columns](#) on page 50/[Levels](#) on page 50/[RESet](#) on page 51/[eXit](#) on page 51] <eXit>:

For path arrays:

Enter an option [Source/[REPlace](#)/[Method](#) on page 50/[Base point](#)/[Items](#) on page 50/[Rows](#)/[Levels](#)/[Align items](#) on page 51/[Z direction](#) on page 51/[RESet](#)/[eXit](#)] <eXit>:

For polar arrays:

Enter an option [Source/[REPlace](#)/[Base point](#)/[Items](#)/[Angle between](#) on page 51/[Fill angle](#) on page 51/[Rows](#)/[Levels](#)/[ROTate items](#) on page 51/[RESet](#)/[eXit](#)] <eXit>:

### Source

Activates an editing state in which you can edit the source objects (or replacement source objects) for a selected item.

All changes (including the creation of new objects) are instantly applied to all items that reference the same source objects.

While the editing state is active, an Edit Array contextual tab is displayed on the ribbon and automatic saving is disabled. Save or discard changes ([ARRAYCLOSE](#) on page 47) to exit the editing state.

When the source objects are modified, the changes are dynamically reflected on the array block.

### Replace

Replaces the source objects for selected items or for all items referencing the original source objects.

**Replacement Objects** Selects the new source objects.

**Base Point** Specifies a base point for the replacement objects.

**Item in Array** Selects the item whose source objects are to be replaced, and continues to prompt for additional items.

- **Source objects.** Replaces the original set of source objects in the array, which updates all items that have not been previously replaced.

### **Base Point**

Redefines the base point of the array.

Path arrays are repositioned relative to the new base point.

### **Rows**

Specifies the number and spacing of rows, and the incremental elevation between them.

**Expression** Derives a value using a mathematical formula or equation.

**Total** Specifies the total distance between the first and last rows.

### **Columns (Rectangular Arrays)**

Specifies the number and spacing of columns.

[Expression on page 50](#)

**Total** Specifies the total distance between the first and last columns.

### **Levels**

Specifies the number and spacing of levels.

[Expression on page 50](#)

**Total** Specifies the total distance between the first and last levels.

### **Method (Path Arrays)**

Controls how to distribute items when the path or number of items is edited.

- **Divide.** Redistributes items to divide evenly along the length of the path.
- **Measure.** Maintains current spacing when the path is edited, or when the number of items is edited through grips or the Properties palette. When the number of items is edited using ARRAYEDIT, you are prompted to redefine the distribution method.

### **Items (Path and Polar Arrays)**

Specifies the number of items in the array.

For path arrays whose Method property is set to Measure, you are prompted to redefine the distribution method. The same prompts are available from [ARRAYPATH](#) on page 53.

**Align Items (Path Arrays)**

Specifies whether to align each item to be tangent to the path direction. Alignment is relative to the orientation of the first item (ARRAYPATH, Orientation option).

**Z Direction (Path Arrays)**

Controls whether to maintain the original Z direction of the items or to naturally bank the items along a 3D path.

**Angle Between (Polar Arrays)**

Specifies the angle between items.

[Expression on page 50](#)

**Fill Angle (Polar Arrays)**

Specifies the angle between the first and last item in the array.

[Expression on page 50](#)

**Rotate Items (Polar Arrays)**

Controls whether items are rotated as they are arrayed.

**Reset**

Restores erased items and removes any item overrides.

**Exit**

Exits the command.

## Array Editor Ribbon Contextual Tab

**Quick Reference**

See also:

- Edit Associative Arrays

Edits associative array objects and their source objects.

**Access Methods**

Button

 **Ribbon:** Home tab ► Modify panel ► Edit Array

 **Toolbar:** Modify II

### List of Options

The following options are displayed.

#### **Columns Panel (Rectangular Arrays)**

**Column Count** Specifies the number of columns.

**Column Spacing** Specifies the spacing of columns.

**Total Column Distance** Specifies the total distance between the first and last columns.

#### **Items Panel (Path and Polar Arrays)**

**Item Count** Specifies the number of items.

**Item Spacing** Specifies the spacing of items.

**Total Item Distance** Specifies the total distance between the first and last items.

#### **Rows Panel**

**Row Count** Specifies the number of rows.

**Row Spacing** Specifies the spacing of rows.

**Total Row Distance** Specifies the total distance between the first and last rows.

**Incremental Elevation** Specifies the incremental elevation between rows.

#### **Levels Panel**

**Level Count** Specifies the number of levels.

**Level Spacing** Specifies the spacing of levels.

**Total Level Distance** Specifies the total distance between the first and last levels.

#### **Properties Panel**

**Base Point** Redefines the base point of the array.

Path arrays are repositioned relative to the new base point.

**Measure (Path Arrays)** Maintains current item spacing when the path is edited, or when the number of items is edited through grips, or the Properties palette.

**Divide (Path Arrays)** Redistributes items to divide evenly along the length of the path.

**Align Items (Path Arrays)** Controls the whether to maintain the starting orientation or continue reorienting items along the path, relative to the starting orientation.

**Z Direction (Path Arrays)** Controls whether to maintain the original Z direction of the items or to naturally bank the items along a 3D path.

**Rotate Items (Polar Arrays)** Controls whether items are rotated as they are arrayed.

### **Options Panel**

**Edit Source** Activates an editing state in which you can edit the source objects (or replacement source objects) for a selected item.

**Replace Item** Replaces the source objects for selected items or for all items referencing the original source objects.

**Reset Array** Restores erased items and removes any item overrides.

## **ARRAYPATH**

### **Quick Reference**

**See also:**


- Create Path Arrays

Evenly distributes object copies along a path or a portion of a path.

### **Access Methods**



**Button**

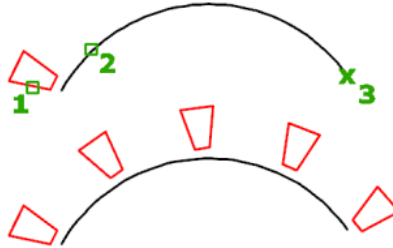
 **Ribbon:** Home tab ► Modify panel ► Array dropdown ► Path Array

 **Menu:** Modify ► Array ► Path Array

 **Toolbar:** Modify

## Summary

This command is equivalent to the Path option in [ARRAY](#) on page 43.



The path can be a line, polyline, 3D polyline, spline, helix, arc, circle, or ellipse.

## List of Prompts

The following prompts are displayed.

Select objects: *Use an object selection method*

Select [path curve](#) on page 54: *Use an object selection method*

Enter [number of items](#) on page 54 along path or [[Orientation](#) on page 54/[Expression](#) on page 55] <Orientation>: *Specify the number of items or enter an option*

Specify [base point](#) on page 55 or [[Key point](#) on page 55] <end of path curve>: *Specify a base point or enter an option*

Specify direction to align with path or [2Points/Normal] <current>: *Press Enter or select and option*

Specify the [distance between items](#) on page 55 along path or [[Divide](#) on page 56/[Total](#) on page 56/[Expression](#) on page 55] <Divide evenly along path>: *Specify a distance or enter an option*

Press Enter to accept or [[ASsociative](#) on page 56/[Base point/Items](#) on page 56/[Rows](#) on page 56/[Levels](#) on page 56/[Align items](#) on page 56/[Z direction](#) on page 57/[eXit](#) on page 57]<eXit>: *Press Enter or select an option*

### **Path Curve**

Specifies the object to use for the path of the array. Select a line, polyline, 3D polyline, spline, helix, arc, circle, or ellipse.

### **Number of Items**

Specifies the number of items in the array.

**Orientation** Controls whether the selected objects are reoriented (rotated) relative to the starting direction of the path before being moved to the start point of the path.

- **2 Points.** Specifies two points to define the direction to be aligned with the starting direction of the path.

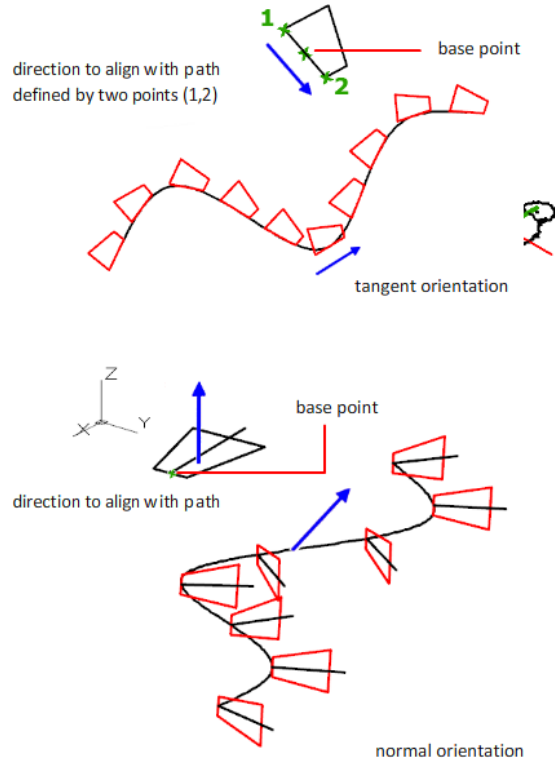


- **Normal.** Objects are aligned to be normal to the starting direction of the path.

---

**NOTE** The [Align Items](#) on page 56 option controls the whether to maintain the starting orientation or continue reorienting items along the path, relative to the starting orientation.

---



**Expression** Derives a value using a mathematical formula or equation.

**Base Point**

Specifies a base point for the array.

**Key Point** For associative arrays, specifies a valid constraint point (or *key point*) on the source objects to use as the base point. If you edit the source objects of the resulting array, the base point of the array remains coincident with the key point of the source objects.

**Distance Between Items**

Specifies the distance between items.

**Divide** Divides items evenly along the entire length of the path.

**Total** Specifies the total distance between the first and last items.

[Expression on page 55](#)

### **Associative**

Specifies whether to create items in the array as an associative array object, or as independent objects.

- **Yes.** Contains array items in a single *array object*, similar to a block. This allows you to quickly propagate changes by editing the properties and source objects of the array.
- **No.** Creates array items as independent objects. Changes to one item do not affect the other items.

### **Items**

Edits the number of items in the array.

If the Method property is set to Measure, you are prompted to redefine the distribution method ([Distance Between Items](#) on page 55, [Divide](#) on page 56, and [Total](#) on page 56 options).

### **Rows**

Specifies the number and spacing of rows in the array, and the incremental elevation between them.

[Expression on page 55](#)

**Total** Specifies the total distance between the first and last rows.

### **Levels**

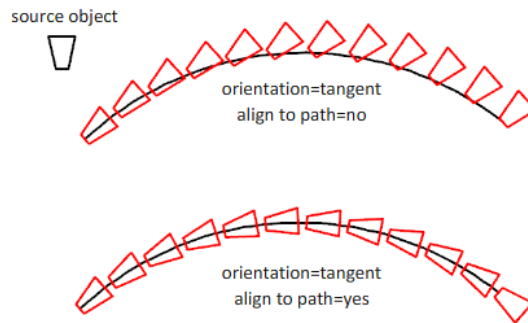
Specifies the number and spacing of levels in the array.

[Expression on page 55](#)

**Total** Specifies the total distance between the first and last levels.

### **Align Items**

Specifies whether to align each item to be tangent to the path direction. Alignment is relative to the first item's orientation ([Orientation](#) on page 54 option).



### Z Direction

Controls whether to maintain the items' original Z direction or to naturally bank the items along a 3D path.

### Exit

Exits the command.

## ARRAYPOLAR

### Quick Reference

See also:


- Create Polar Arrays

Evenly distributes object copies in a circular pattern around a center point or axis of rotation.

### Access Methods



Button

 **Ribbon:** Home tab ► Modify panel ► Array dropdown ► Polar Array

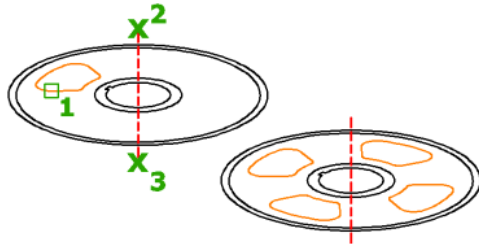
 **Menu:** Modify ► Array ► Polar Array

 **Toolbar:** Modify

### Summary

This command is equivalent to the Polar option in [ARRAY](#) on page 43.

Creates an array by copying the selected objects around a specified center point or axis of rotation.



### List of Prompts

The following prompts are displayed.

Select objects: *Use an object selection method*

Specify **center point** on page 58 of array or [**Base point** on page 58/**Axis of rotation** on page 58]: *Specify a center point, or enter an option*

Enter number of **items** on page 58 or [**Angle between** on page 59/**Expression** on page 58] <last count>: *Specify the number of items or enter an option*

Specify the **angle to fill** on page 59 (+ = ccw, - = cw) or [Expression]: *Enter a fill angle or enter an option*

Press Enter to accept or [**ASsociative** on page 59/**Base point/Items/Angle between/Fill angle/ROWs** on page 59/**Levels** on page 59/**ROTate items** on page 59/**eXit** on page 59]<eXit>: *Press Enter or select an option*

### Center Point

Specifies the point around which to distribute the array items. The axis of rotation is the Z axis of the current UCS.

### Base Point

Specifies a base point for the array.

**Key Point** For associative arrays, specifies a valid constraint (or *key point*) on the source objects to use as the base point. If you edit the source objects of the resulting array, the base point of the array remains coincident with the key point of the source objects.

### Axis of Rotation

Specifies a custom axis of rotation defined by two specified points.

### Items

Specifies the number of items in the array.

**Expression** Derives a value using a mathematical formula or equation.

**NOTE** When defining the fill angle in an expression, the (+ or -) mathematical symbol in the resultant value does not affect the direction of the array.

---

**Angle Between**

Specifies the angle between items.

[Expression on page 58](#)

**Fill Angle**

Specifies the angle between the first and last item in the array.

[Expression on page 58](#)

**Associative**

Specifies whether to create items in the array as an associative array object, or as independent objects.

- **Yes.** Contains array items in a single *array object*, similar to a block. This allows you to quickly propagate changes by editing the properties and source objects of the array.
- **No.** Creates array items as independent objects. Changes to one item do not affect the other items.

**Rows**

Edits the number and spacing of rows in the array, and the incremental elevation between them.

[Expression on page 58](#)

**Total** Sets the total distance between the first and last rows.

**Levels**

Specifies the number and spacing of levels in the array.

[Expression on page 58](#)

**Total** Specifies the total distance between the first and last levels.

**Rotate Items**

Controls whether items are rotated as they are arrayed.

**Exit**

Exits the command.

# ARRAYRECT

## Quick Reference

See also:

- Create Rectangular Arrays

Distributes object copies into any combination of rows, columns, and levels.

## Access Methods



Button

 **Ribbon:** Home tab ► Modify panel ► Array dropdown ► Rectangular Array

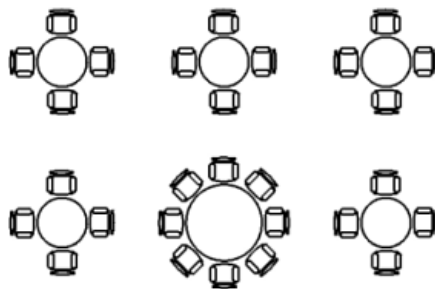
 **Menu:** Modify ► Array ► Rectangular Array

 **Toolbar:** Modify

## Summary

This command is equivalent to the Rectangular option in [ARRAY](#) on page 43.

Creates an array of rows and columns of copies of the selected object.



## List of Prompts

The following prompts are displayed.

Select objects: *Use an object selection method*

Specify opposite corner for number of [items](#) on page 61 or [[Base point](#) on page 61/[Angle](#) on page 61/[Count](#) on page 61] <Count>: *Enter an option or press Enter*  
Press Enter to accept or [[ASsociative](#) on page 61/[Base point](#)/[Rows](#) on page 62/[Columns](#) on page 62/[Levels](#) on page 62/[eXit](#) on page 62] <eXit>: *Press Enter or select an option*

### **Items**

Specifies the number of items in the array. Use the preview grid to specify a point that reflects the desired configuration.

**Count** Specifies the row and column values individually.

- [Expression](#) on page 62

### **Space Items**

Specifies the row and column spacing. Use the preview grid to specify a point that reflects the desired configuration.

**Spacing** Specifies the row and column spacing individually.

- [Expression](#) on page 62

### **Base Point**

Specifies a base point for the array.

**Key Point** For associative arrays, specifies a valid constraint (or *key point*) on the source objects to use as the base point. If you edit the source objects of the resulting array, the base point of the array remains coincident with the key point of the source objects.

### **Angle**

Specifies the angle of rotation for the row axis. The row and column axes remain orthogonal to each other. For associative arrays, you can later edit the individual row and column angles.

You can change the measurement conventions for angles using [UNITS](#) on page 1288. The [ANGBASE](#) on page 1380 and [ANGDIR](#) on page 1381 system variables affect the angle of arrays.

### **Associative**

Specifies whether to create items in the array as an associative array object, or as independent objects.

- **Yes.** Contains array items in a single *array object*, similar to a block. This allows you to quickly propagate changes by editing the properties and source objects of the array.
- **No.** Creates array items as independent objects. Changes to one item do not affect the other items.

**Rows**

Edits the number and spacing of rows in the array, and the incremental elevation between them.

**Expression** Derives a value using a mathematical formula or equation.

**Total** Sets the total distance between the first and last rows.

**Columns**

Edits the number and spacing of columns.

[Expression on page 62](#)

**Total** Specifies the total distance between the first and last columns.

**Levels**

Specifies the number and spacing of levels.

[Expression on page 62](#)

**Total** Specifies the total distance between the first and last levels.

**Exit**

Exits the command.

## ATTACH

### Quick Reference

See also:

- Attach Files as Underlays
- Attach and Detach Referenced Drawings
- Attach Raster Image Files

Inserts an external reference, raster image, or underlay (DWF, DWFx, PDF, or DGN files) in the current drawing.

### Access Methods



Button



 **Ribbon:** Insert tab ► Reference panel ► Attach

### Summary

The Select Reference File dialog box (a [standard file selection dialog box](#)) is displayed. To select multiple DWG files for attach, set the Files of Type to Drawing. You can select one file only for all other file formats.

## -ATTACH

### Quick Reference

See also:

- Attach Files as Underlays

Inserts an external reference, raster image, or underlay (DWF, DWFX, PDF, or DGN files) in the current drawing.

### Summary

Attach an external reference, image, or underlay (DWF, DWFX, PDF, or DGN) file from the command line.

### List of Prompts

The list of prompts differs depending on whether you are attaching an underlay, an image, or an external reference.

#### **DWF and DWFX Underlay Prompts**

**Path to File** Enters the location of the DWF or DWFX file including the file name.

**Sheet name** Enters a sheet name.

? Enters multiple sheets.

\* Lists sheets available in the DWF or DWFX file.

**Insertion point** Specify the location of the lower, left-hand corner of the underlay by clicking on screen or entering the X,Y coordinates.

**Base Image Size** Displays the underlay's height and width in units

**Scale Factor** Resizes the underlay. For example, if the base image size is 36 x 24 and you enter a scale factor of 2, the underlay will display at 72 x 48.

**Rotation** Sets an angle of rotation for the underlay.

### **PDF Underlay Prompts**

**Path to File** Enters the location of the PDF file including the file name.

**Page Number** Enters a page number.

? Enters multiple pages.

\* Lists pages available in the PDF file.

**Insertion Point** Specifies the location of the lower, left-hand corner of the underlay by clicking on screen or entering the X,Y coordinates.

**Base Image Size** Displays the underlay's height and width in units

**Scale Factor** Resizes the underlay. For example, if the base image size is 36 x 24 and you enter a scale factor of 2, the underlay will display at 72 x 48.

**Rotation** Sets an angle of rotation for the underlay.

### **DGN Underlay Prompts**

**Path to File** Enters the location of the DGN file including the file name.

**Name of Model** Enters a model name.

? Enters multiple models.

\* Lists pages available in the DGN file.

**Insertion Point** Specifies the location of the lower, left-hand corner of the underlay by clicking on screen or entering the X,Y coordinates.

**Base Image Size** Displays the underlay's height and width in units

**Scale Factor** Resizes the underlay. For example, if the base image size is 36 x 24 and you enter a scale factor of 2, the underlay will display at 72 x 48.

**Rotation** Sets an angle of rotation for the underlay.

### **Image Prompts**

**Path to File** Enters the location of the image file including the file name.

**Insertion Point** Specifies the location of the lower, left-hand corner of the image by clicking on screen or entering the X,Y coordinates.

**Base Image Size** Displays the image's height and width in units

**Scale Factor** Resizes the image. For example, if the base image size is 36 x 24 and you enter a scale factor of 2, the underlay will display at 72 x 48.

**Rotation** Sets an angle of rotation for the underlay.

### **External Reference Prompts**

**Path to File** Enters the location of the external reference file including the file name.

**Reference Type** Selects whether to attach this file as an underlay or an overlay. Press Enter to attach the file as an underlay (attachment).

---

**NOTE** Unlike attached external references, overlaid external references are **not** included when the drawing is attached or overlaid as an external reference to another drawing.

---

**Insertion Point** Specifies the location of the lower, left-hand corner of the external reference by clicking on screen or entering the X,Y coordinates.

**Scale** Sets the scale factor for the X,Y, and Z axes. The scale for the Z axis is the absolute value of the specified scale factor.

- Specify scale factor for XYZ axes: Enter a nonzero value
- Specify insertion point:
- Specify rotations angle <0>:

**X, Y, Z** Sets the X, Y, and Z scale factor.

- Specifies scale factor for XYZ axes: Enter a nonzero value
- Specifies insertion point:
- Specifies rotations angle <0>:

**Rotate** Sets the rotation angle for both the individual blocks and the entire array.

**PScale** Sets the scale factor for the X, Y, and Z axes to control the display of the block as it is dragged into position.

**PX, PY, PZ** Sets the scale factor for the X, Y, and Z axes to control the display of the block as it is dragged into position.

**PRotate** Sets the rotation angle of the block as it is dragged into position.

**Base Image Size** Displays the external reference's height and width in units

**Scale Factor** Resizes the external reference. For example, if the base image size is 36 x 24 and you enter a scale factor of 2, the external reference will display at 72 x 48.

**Unit** Changes the type of units to scale the external reference.

## ATTACHURL

### Quick Reference

See also:

- Overview of Using Hyperlinks in a Drawing

Attaches hyperlinks to objects or areas in a drawing.

### List of Prompts

The following prompts are displayed.

Enter hyperlink insert option [[Area/Object](#)] <Object>: *Enter a or press ENTER*

#### **Area**

Creates the URLLAYER layer, draws a polyline on that layer, and attaches a URL to the polyline.

The polyline that represents the area is displayed in the color assigned to URLLAYER. The default color is red. When you move the cursor over the area in the drawing, the cursor changes to a hyperlink cursor to indicate that a URL is attached to the area.

#### **Object**

Attaches a URL to the selected object.

When you move the cursor over the object in the drawing, the cursor changes to a hyperlink cursor to indicate that a URL is attached to the object.

# ATTDEF

## Quick Reference

### See also:


- Define Block Attributes

Creates an attribute definition for storing data in a block.

## Access Methods



### Button

 **Ribbon:** Insert tab ► Attributes panel ► Define Attributes.

 **Menu:** Draw ► Block ► Define Attributes

## Summary

The [Attribute Definition dialog box](#) is displayed.

If you enter **-attdef** at the Command prompt, [options are displayed](#).

An attribute is an object that is created and included with a block definition. Attributes can store data such as part numbers, product names, and so on.

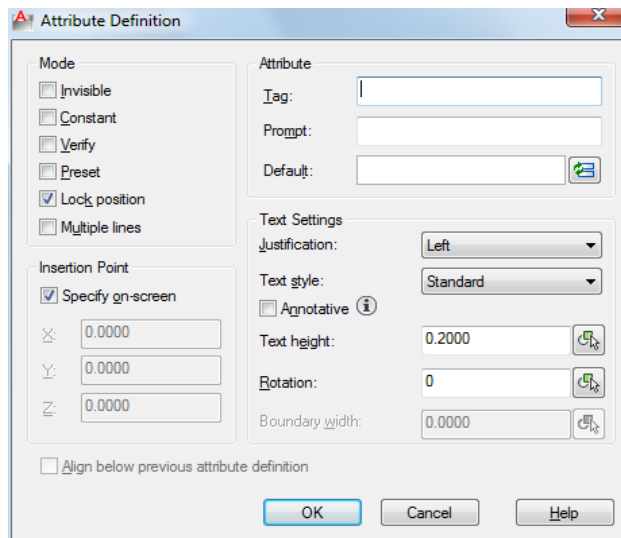
# Attribute Definition Dialog Box

## Quick Reference

### See also:

- Define Block Attributes

Defines the mode; attribute tag, prompt, and value; insertion point; and text settings for an attribute.



### List of Options

The following options are displayed.

#### Mode

Sets options for attribute values associated with a block when you insert the block in a drawing.

The default values are stored in the [AFLAGS](#) on page 1380 system variable. Changing the AFLAGS setting affects the default mode for new attribute definitions and does not affect existing attribute definitions.

#### Invisible

Specifies that attribute values are not displayed or printed when you insert the block. [ATTDISP](#) on page 74 overrides Invisible mode.

#### Constant

Gives attributes a fixed value for block insertions.

#### Verify

Prompts you to verify that the attribute value is correct when you insert the block.

#### Preset

Sets the attribute to its default value when you insert a block containing a preset attribute.

**Lock Position**

Locks the location of the attribute within the block reference. When unlocked, the attribute can be moved relative to the rest of the block using grip editing, and multiline attributes can be resized.

**Multiple Lines**

Specifies that the attribute value can contain multiple lines of text. When this option is selected, you can specify a boundary width for the attribute.

---

**NOTE** In a dynamic block, an attribute's position must be locked for it to be included in an action's selection set.

---

**Attribute**

Sets attribute data.

**Tag**

Identifies each occurrence of an attribute in the drawing. Enter the attribute tag using any combination of characters except spaces. Lowercase letters are automatically changed to uppercase.

**Prompt**

Specifies the prompt that is displayed when you insert a block containing this attribute definition. If you do not enter a prompt, the attribute tag is used as a prompt. If you select Constant in the Mode area, the Prompt option is not available.

**Default**

Specifies the default attribute value.

**Multiline Editor Button**

When Multiple Line mode is selected, displays an in-place text editor with a text formatting toolbar and ruler. Depending on the setting of the [ATTIPE](#) on page 1387 system variable, the Text Formatting toolbar displayed is either the abbreviated version, or the full version.

For more information, see the [In-Place Text Editor](#).

---

**NOTE** Several options in the full In-Place Text Editor are grayed out to preserve compatibility with single-line attributes.

---

**Insertion Point**

Specifies the location for the attribute. Enter coordinate values or select Specify On-screen and use the pointing device to specify the placement of the attribute in relation to the objects that it will be associated with.

**Specify On-Screen**

Displays a Start Point prompt when the dialog box closes. Use the pointing device to specify the placement of the attribute in relation to the objects that it will be associated with.

**X**

Specifies the *X* coordinate of the attribute's insertion point.

**Y**

Specifies the *Y* coordinate of the attribute's insertion point.

**Z**

Specifies the *Z* coordinate of the attribute's insertion point.

**Text Settings**

Sets the justification, style, height, and rotation of the attribute text.

**Justification**

Specifies the justification of the attribute text. See [TEXT](#) on page 1229 for a description of the justification options.

**Text Style**

Specifies a predefined text style for the attribute text. Currently loaded text styles are displayed. To load or create a text style, see [STYLE](#) on page 1180.

**Annotative**

Specifies that the attribute is . If the block is annotative, the attribute will match the orientation of the block. Click the information icon to learn more about annotative objects.

**Text Height**

Specifies the height of the attribute text. Enter a value, or choose Height to specify a height with your pointing device. The height is measured from the origin to the location you specify. If you select a text style that has fixed height (anything other than 0.0), or if you select Align in the Justification list, the Height option is not available.

**Rotation**

Specifies the rotation angle of the attribute text. Enter a value, or choose Rotation to specify a rotation angle with your pointing device. The rotation angle is measured from the origin to the location you specify. If you select Align or Fit in the Justification list, the Rotation option is not available.



### Boundary Width

Specifies the maximum length of the lines of text in a multiple-line attribute before wrapping to the next line. A value of 0.000 means that there is no restriction on the length of a line of text.

Not available for single-line attributes.

### Align Below Previous Attribute Definition

Places the attribute tag directly below the previously defined attribute. If you have not previously created an attribute definition, this option is not available.

## -ATTDEF

### Quick Reference

See also:

- Define Block Attributes

### List of Prompts

The following prompts are displayed.

Current **attribute modes**: Invisible=*current* Constant=*current* Verify=*current* Preset=*current* Lock position=*current* Annotative =*current* Multiple line =*current*  
Enter an option to change [Invisible/Constant/Verify/Preset/Lock position/Annotative/Multiple lines] <done>:

Enter **attribute tag name**: *Enter any characters except spaces or exclamation points*

Enter **attribute value**: *Enter the appropriate text or press ENTER (this prompt is displayed only if you turned on Constant mode)*

Enter **attribute prompt**: *Enter the text for the prompt line or press ENTER (this prompt is not displayed if you turned on Constant mode)*

Enter **default attribute value**: *Enter the appropriate text or press ENTER (this prompt is not displayed if you turned on Constant mode)*

Specify **location of multiline attribute**: *Specify a point (this prompt is displayed only if you turned on Multiple line mode)*

Specify **opposite corner**: *Specify a point or enter an option (this prompt is displayed only if you turned on Multiple line mode)*

### Attribute Modes

The current value line indicates the current settings for each attribute mode (either Y for on or N for off). Entering **i**, **c**, **v**, **p**, **l**, **a**, or **m** toggles the modes on or off. Press ENTER when you have finished adjusting the mode settings.

The [AFLAGS](#) on page 1380 system variable stores the current mode settings and can be used to set the default modes.

**Invisible** Specifies that attribute values are displayed when you insert the block. [ATTDISP](#) on page 74 overrides Invisible mode.

**Constant** Gives attributes a fixed value for block insertions.

**Verify** Prompts for verification that the attribute value is correct when you insert the block.

**Preset** Sets the attribute to its default value when you insert a block containing a preset attribute.

**Lock Position** Locks the location of the attribute within the block reference. When unlocked, the attribute can be moved relative to the rest of the block using [grip editing](#), and [multiline attributes](#) can be resized.

---

**NOTE** In a dynamic block, an attribute's position must be locked for it to be included in an action's selection set.

---

**Annotative** Specifies that the attribute is .

**Multiple Lines** Specifies that the attribute value can contain multiple lines of text. When this option is selected, you can specify a boundary width for the attribute.

#### **Attribute Tag Name**

Specifies the attribute tag, which identifies each occurrence of an attribute in the drawing. The tag can contain any characters except spaces or exclamation marks (!). Lowercase letters are automatically changed to uppercase.

#### **Attribute Prompt**

Specifies the prompt that is displayed when you insert a block containing this attribute definition. If you press ENTER, the attribute tag is used as the prompt. If you turn on Constant mode, this prompt is not displayed.

---

**NOTE** For single-line attributes, you can enter up to 256 characters. If you need leading blanks in the prompt or the default value, start the string with a backslash (\). To make the first character a backslash, start the string with two backslashes.

---

#### **Default Attribute Value**

Specifies the default attribute value. The default attribute value appears when a block is inserted into your drawing. A default value is not required. If you turn on Constant mode, the Attribute Value prompt is displayed instead.

When Multiple Line mode is off, -ATTDEF then displays the same prompts as the TEXT command, using the attribute tag instead of requesting a text string.

Current text style: "Standard" Text height: 0.2000

Specify start point of text or [Justify / Style]: *Enter an option or press ENTER*

Specify paper text height <current>: *Specify a height, or press ENTER*

The Specify Paper Text Height prompt is displayed only if the current text style is .

For a description of each option, see [TEXT](#) on page 1229.

---

**NOTE** For single-line attributes, you can enter up to 256 characters. If you need leading blanks in the prompt or the default value, start the string with a backslash (\). To make the first character a backslash, start the string with two backslashes.

---

When Multiple Line mode is on, -ATTDEF then displays several of the prompts used by the MTEXT command. For a description of each option, see [MTEXT](#) on page 762.

#### **Attribute Value (Constant Mode)**

Specifies the value for a constant attribute. This prompt is displayed only if you turn on Constant mode.

ATTDEF then displays the same prompts as the TEXT command, using the attribute tag instead of requesting a text string. For a description of each option, see [TEXT](#) on page 1229.

When Multiple Line mode is on, -ATTDEF then displays several of the prompts used by the MTEXT command. For a description of each option, see [MTEXT](#) on page 762.

#### **Location of Multiline Attribute (Multiple Line Mode)**

Specifies the first corner of the bounding box for the multiple-line text. This location is used as the starting point for the attribute.

#### **Opposite Corner (Multiple Line Mode)**

As you drag the pointing device to specify the opposite corner, a rectangle is displayed to show the location and width of the multiple-line text. The arrow within the rectangle indicates the direction of the text flow.

# ATTDISP

## Quick Reference

See also:


- Define Block Attributes


Controls the visibility overrides for all block attributes in a drawing.


## Access Methods



Button

 **Ribbon:** Home tab ► Block panel dropdown ► Retain Attribute Display

 **Menu:** View ► Display ► Attribute Display

 **Command entry:** 'attdisp' for transparent use

## Summary



The drawing is regenerated after you change the visibility settings. The current visibility of attributes is stored in the [ATTMODE](#) on page 1388 system variable.

### List of Prompts

The following prompts are displayed.

Enter attribute visibility setting [[Normal/ON/OFF](#)] <current>:

**Normal** Restores the visibility settings of each attribute. Visible attributes are displayed. Invisible attributes are not displayed.

**On** Makes all attributes visible, overriding the original visibility settings.

**Off** Makes all attributes invisible, overriding the original visibility settings.

## ATTEDIT

### Quick Reference

See also:

- [Attach Data to Blocks \(Block Attributes\)](#)

Changes attribute information in a block.

### Access Methods



Button

 **Ribbon:** Insert tab ► Block panel ► Edit Attribute.

 **Menu:** Modify ► Object ► Attribute ► Single

### Summary

The [Edit Attributes dialog box](#) is displayed to edit attribute values for a specific block.

If you enter **-attedit** at the Command prompt, [options are displayed](#) to edit attribute values and properties independent of a block.

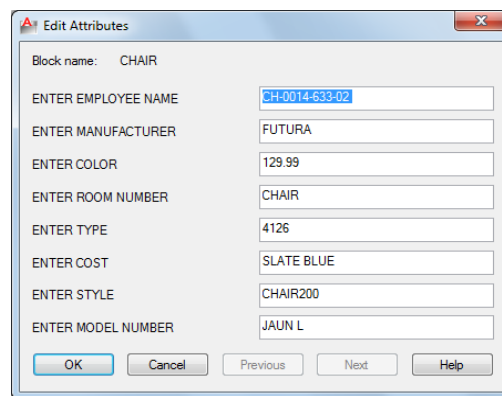
## Edit Attributes Dialog Box

### Quick Reference

See also:

- Attach Data to Blocks (Block Attributes)

Changes attribute information in a block.



### Summary

To change attribute properties such as position, height, and style, use -ATTEDIT.

### List of Options

The following options are displayed.

#### Block Name

Indicates the name of the selected block. The value of each attribute contained in the block is displayed in this dialog box.

#### List of Attributes

Displays the first eight attributes contained in the block. Edit the attribute values. If the block contains additional attributes, click Previous or Next to navigate through the list. You cannot edit attribute values on locked layers.

Multiple-line attributes display the [In-Place Text Editor](#) on page 763 with the Text Formatting toolbar and the ruler. Depending on the setting of the [ATTIPE](#)

on page 1387 system variable, the Text Formatting toolbar displayed is either the abbreviated version, or the full version.

#### Previous

Displays the previous eight attribute values. Previous is available only if the selected block contains more than eight attributes and you used Next to display the additional attributes.

#### Next

Displays the next eight attribute values. If the block contains no additional attributes, Next is unavailable.

## -ATTEDIT

### Quick Reference

#### See also:

- Modify Blocks

#### List of Prompts

If you enter **-attedit** at the Command prompt, the following prompts are displayed.

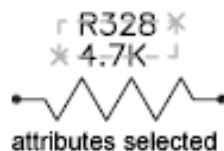
Edit attributes one at a time? [Yes/No] <Y>: *Enter y or press Enter to edit attributes one at a time, or enter n to edit attributes globally*

The following prompts filter the attributes to be changed based on attribute tag, current value, or object selection.

#### Yes

Edits attributes one at a time. Attributes to be edited one at a time must be visible and parallel to the current UCS.

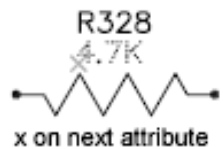
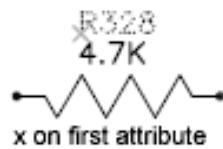
Attribute values are case sensitive.



The first attribute in the selection set is marked with an *X*. You can change any properties of the attribute you select.

Enter an option [Value/Position/Height/Angle/Style/Layer/Color/Next] <N>:  
*Enter the property to change, or press Enter for the next attribute*

If the original attribute was defined with aligned or fit text, the prompt does not include Angle. The Height option is omitted for aligned text. For each of the options except Next, ATTEDIT prompts for a new value. The *X* remains on the current attribute until you move to the next attribute.



### **Value**

Changes or replaces an attribute value.

Enter type of value modification [Change/Replace]: *Enter c or r or press Enter*

**Change** Modifies a few characters of the attribute value.

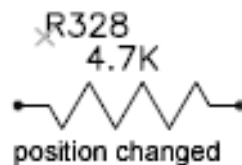
Either string can be null. The ? and \* characters are interpreted literally, not as wild-card characters.

**Replace** Substitutes a new attribute value for the entire attribute value.

If you press Enter, the attribute value is empty (null).

### **Position**

Changes the text insertion point.

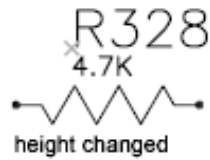


If the attribute is aligned, ATTEDIT prompts for both ends of a new text baseline.



### **Height**

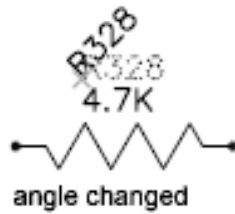
Changes the text height.



When you specify a point, the height becomes the distance between the specified point and the start point of the text.

### **Angle**

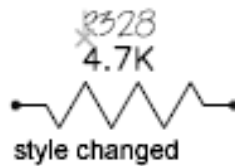
Changes the rotation angle.



If you specify a point, the text is rotated along an imaginary line between the specified point and the start point of the text.

### **Style**

Changes the style setting.



### **Layer**

Changes the layer.

### **Color**

Changes the color.

You can enter a color from the AutoCAD Color Index (a color name or number), a true color, or a color from a color book.

You can enter a color name, a color number between 1 and 255, or **bylayer** or **byblock**.

**True Color** Specifies a true color to be used for the selected object.

**Color Book** Specifies a color from a loaded color book to be used for the selected object.

If you enter a color book name, you are prompted to enter the color name in the color book, such as PANTONE® 573.

**Next**

Moves to the next attribute in the selection set. If there are no more attributes, ATTEDIT ends.

**No**

Edits more than one attribute at a time. Global editing applies to both visible and invisible attributes.

Editing attributes globally limits you to replacing a single text string with another text string. If you edit attributes one at a time, you can edit any or all of the attributes.

**Yes** Edits only visible attributes.

Attribute values are case sensitive. To select empty (null) attributes, which normally are not visible and cannot be selected, enter a backslash (\).

Select the attribute you want to change.

Either string can be empty (null). The ? and \* characters are interpreted literally, not as wild-card characters.

**No** Edits attributes whether they are visible or not. Changes to attributes are not reflected immediately. The drawing is regenerated at the end of the command.

Attribute values are case sensitive. To select empty (null) attributes, which normally are not visible, enter a backslash (\).

The attributes that match the specified block name, attribute tag, and attribute value are selected.

Either string can be empty (null). The ? and \* characters are interpreted literally, not as wild-card characters.

# ATTEXT

## Quick Reference

See also:

- Attach Data to Blocks (Block Attributes)

Extracts attribute data, informational text associated with a block, into a file.

## Access Methods

 **Menu:** Tools ► Attribute Extraction

## Summary

The [Attribute Extraction dialog box](#) is displayed.

If you enter **-attext** at the Command prompt, [options are displayed](#).

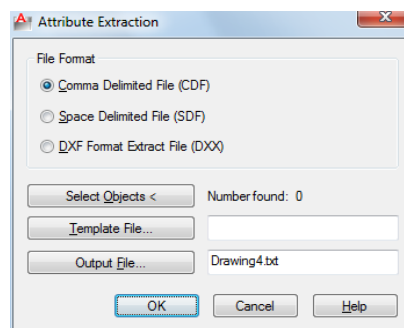
## Attribute Extraction Dialog Box

### Quick Reference

See also:

- Attach Data to Blocks (Block Attributes)

Extracts attribute data, informational text associated with a block, into a file.



## Summary

Specifies the file format for the attribute information, the objects from which you want to extract information, and the template and output file names for the information.

## List of Options

The following options are displayed.

### File Format

Sets the format for the file into which you are extracting the attribute data.

#### Comma Delimited File (CDF)

Generates a file containing one record for each block reference in the drawing that has at least one matching attribute tag in the template file. Commas separate the fields of each record. Single quotation marks enclose the character fields.

#### Space Delimited File (SDF)

Generates a file containing one record for each block reference in the drawing that has at least one matching attribute tag in the template file. The fields of each record have a fixed width; therefore, field separators or character string delimiters are not appropriate.

#### DXF Format Extract File (DXX)

Produces a subset of the AutoCAD Drawing Interchange File format containing only block reference, attribute, and end-of-sequence objects. DXF™ format extraction requires no template. The file name extension *.dxx* distinguishes the output file from normal DXF files.

## Select Objects

Closes the dialog box so you can use the pointing device to select blocks with attributes. When the Attribute Extraction dialog box reopens, Number Found shows the number of objects you selected.

## Number Found

Indicates the number of objects you selected using Select Objects.

## Template File

Specifies a template extraction file for CDF and SDF formats. Enter the file name in the box, or choose Template File to search for existing template files using a [standard file selection dialog box](#). The default file extension is *.txt*. If you select DXF under File Format, the Template File option is not available.

## Output File

Specifies the file name and location for the extracted attribute data. Enter the path and file name for the extracted attribute data, or choose Output File to search for existing template files using a [standard file selection dialog box](#). The *.txt* file name extension is appended for CDF or SDF files and the *.dxx* file name extension for DXF files.

## -ATTEXT

### Quick Reference

See also:

- Attach Data to Blocks (Block Attributes)

### List of Prompts

Enter extraction type or enable object selection [[Cdf/Sdf/Dxf/Objects](#)] <C>:  
*Enter an option or press Enter*

**CDF: Comma-Delimited File** Generates a file containing one record for each block reference in the drawing. Commas separate the fields of each record. Single quotation marks enclose the character fields.

In the Select Template File dialog box, enter the name of an existing attribute extraction template file.

In the Create Extract File dialog box, enter the name for the output file. The extract file's file name extension is *.txt* for CDF or SDF format.

**SDF: Space-Delimited File** Generates a file containing one record for each block reference in the drawing. The fields of each record have a fixed width; therefore, field separators or character string delimiters are not used.

In the Select Template File dialog box, enter the name of an existing attribute extraction template file.

In the Create Extract File dialog box, enter the name for the output file. The extract file's file name extension is *.txt* for CDF or SDF format.

**DXF: Drawing Interchange File** Produces a subset of the AutoCAD Drawing Interchange File format containing only block reference, attribute, and end-of-sequence objects. DXF-format extraction requires no template. The file name extension *.dxx* distinguishes the output file from normal DXF files.

In the Create Extract File dialog box, enter the name for the output file. The extract file's file name extension is *.dxx* for DXF format.

**Objects** Selects objects whose attributes you want to extract.

## ATTIPEDIT

### Quick Reference

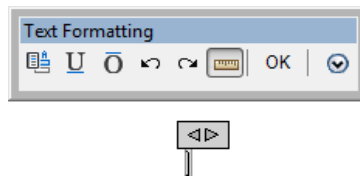
**See also:**

- [Modify a Block Attribute Definition](#)

Changes the textual content of an attribute within a block.

### Summary

If you select a single-line attribute, displays the [In-Place Text Editor](#) on page 763 without the Text Formatting toolbar and the ruler. Right-click to display options.



If you select a multiple-line attribute, displays the [In-Place Text Editor](#) on page 763 with the Text Formatting toolbar and the ruler. Depending on the setting of the [ATTIPE](#) on page 1387 system variable, the Text Formatting toolbar displayed is either the abbreviated version shown, or the full version.

Use the abbreviated version for compatibility with previous AutoCAD LT releases and editing operations. Use the full version for additional text formatting options.

---

**NOTE** Not all MTEXT formatting options are available for multiline attributes even with the full In-Place Editor.

---

### List of Prompts

The following prompts are displayed.

Select attribute to edit: *Select an attribute within a block*

# ATTSYNC

## Quick Reference

### See also:


- Modify a Block Attribute Definition


Updates block references with new and changed attributes from a specified block definition.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Block panel ► Synchronize Attributes

 **Toolbar:** Modify II

### Summary

You are prompted for the names of blocks you want to update with the current attributes defined for the blocks.

Use this command to update all instances of a block containing attributes that was redefined using the BLOCK or BEDIT commands. ATTSYNC does not change any values assigned to attributes in existing blocks.

---

**NOTE** Use the ATTREDEF command to redefine and update blocks in one command.

---

Entering ? displays a list of all block definitions in the drawing. Enter the name of the block you want to update.

Pressing ENTER allows you to use your pointing device to select the block whose attributes you want to update.

If a block you specify does not contain attributes or does not exist, an error message is displayed, and you are prompted to specify another block.

---

**WARNING** ATTSYNC removes any format or property changes made with the ATTEDIT or EATTEDIT commands. It also deletes any extended data associated with the block, and might affect dynamic blocks and blocks created by third-party applications.

---

## AUDIT

### Quick Reference

See also:



- Repair a Damaged Drawing File

Evaluates the integrity of a drawing and corrects some errors.

### Access Methods



Button

 **Menu:** Application menu  Drawing Utilities ► Audit

### Summary

For easy access, AUDIT places all objects for which it reports errors in the Previous selection set. However, editing commands affect only the objects that belong to the current paper space or model space.

If you set the [AUDITCTL](#) on page 1390 system variable to 1, AUDIT creates a text file describing problems and the action taken and places this report in the same folder as the current drawing, with the file extension *.adt*.

If a drawing contains errors that AUDIT cannot fix, use [RECOVER](#) on page 1066 to retrieve the drawing and correct its errors.



# AUTOCOMPLETE


## Quick Reference

### See also:

- The Command Line Window

Controls what types of automated keyboard features are available at the Command prompt.

### Access Methods

 **Command entry:** Right-click within the Command Window ►  
AutoComplete ► *option*

### Summary

Entering a command or system variable at the Command prompt is assisted with several features that list or complete the commands and system variables as they are being typed. The AUTOCOMPLETE command controls which of the features are turned on.

### List of Prompts

The following prompts are displayed.

**Append** Controls whether commands and system variables are automatically completed as you type.

**List** Controls whether a list of valid commands and system variables is displayed as you type.

**Icon** Controls whether the corresponding icon for a command is displayed in the list. The same icon is used for all system variables.

**System variables** Controls whether system variables are also included with the Append and List features.

**Delay** Sets a time delay in seconds before the Append and List features take effect.

**On** Enables the operation of the AUTOCOMPLETE features that are currently turned on.

**Off** Suppresses the operation of AUTOCOMPLETE features without changing their settings.

## AUTOPUBLISH




### Quick Reference

See also:

- Set Publish Options

Publishes drawings to DWF, DWFx, or PDF files automatically to a specified location.

### Access Methods

-  **Menu:** Application menu  ► Options ► Plot and Publish tab
- Shortcut menu:** Right-click in the command window, or (with no commands active and no objects selected) right-click in the drawing area, and choose Options. Select the Plot and Publish tab.
-  **Command entry:** options

### Summary

Publishes a drawing to a DWF, DWFx, or PDF file. The file format (DWF, DWFx, or PDF) is specified in the [Auto Publish dialog box](#) on page 89.

To view information about the published drawings, click the Plotting Details Report Available icon in the tray on the right side of the status bar. Clicking this icon opens the [Plot and Publish Details dialog box](#), which provides information about your completed plot and publish jobs. This information is also saved to the Plot and Publish log file. The shortcut menu for this icon also provides an option to view the most recently published DWF, DWFx, or PDF file.

### List of Prompts

The following prompts are displayed.

**AutoPublish DWF** Automatically publishes the drawing to a DWF, DWFx, or PDF file. The file format (DWF, DWFx, or PDF) is specified in the [Auto Publish dialog box](#) on page 89.

**Location** Specifies a directory where the published drawings are stored. Opens Select a Folder for Generated Files dialog box (a [standard file selection dialog box](#) on page 826).

## Auto Publish Options Dialog Box

### Quick Reference

**See also:**

- Set Publish Options

Publishes drawings to DWF, DWFx, or PDF files automatically to a specified location.

### Summary

Specifies options for publishing drawings to DWF, DWFx, or PDF files when you save or close a drawing file, or issue the [AUTOPUBLISH](#) on page 88 command.

### List of Options

The following options are displayed.

#### **Auto-Publish Options**

Specifies where DWF or PDF files are saved when you publish drawing sheets.

**Publish on** Specifies when the publishing takes place.

- Save (Publishes when the drawing is saved)
- Close (Publishes when the drawing is closed)
- Prompt on Save (Publishes when the drawing is prompted to save)
- Prompt on Close (Publishes when the drawing is prompted to close)

**Location** Specifies a directory where exported files are saved when you publish drawings by selecting the following options in the list:

- Drawing folder
- DWF and PDF (sub-folder relative to Drawing folder)
- Previously selected location

Click the [...] button to specify a new location to save the published drawings.

**Include** Specifies whether to publish the model, the layouts or both the model and layouts are saved when you publish drawings.

### **General DWF/PDF options**

Specifies options for creating a single-sheet or multi-sheet DWF, DWFx, and PDF files.

**File Format** Specifies whether the DWG should be published as a DWF, DWFx, or PDF file.

**Type** Specifies that a single-sheet or a multi-sheet is generated for all the sheets listed in the [Publish dialog box](#).

**Layer Information** Specifies whether layer information is included in the published DWF, DWFx, or PDF file.

---

**NOTE** Layer information for 3D DWF entries does not get published.

---

**Merge Control** Specifies whether overlapping lines **overwrite** (the top line hides the bottom line) or **merge** (the colors of the lines blend together).

### **DWF Data Options**

Lists and allows you to specify the data that you can optionally include in the published file.

**Password Protection** Specifies options for protecting DWF, DWFx, or PDF files with passwords.

**Block Information** Specifies whether block property and attribute information is included in the published DWF, DWFx, or PDF files.

---

**NOTE** You must set block information to Include in order for block template file information to be available.

---

**Block Template File** Allows you to create a new block template (DXE) file, edit an existing block template file, or use the settings of a previously created block template file.

Create opens the [Publish Block Template dialog box](#) on page 1030, in which you can create a new block template.

Edit opens the Select Block Template dialog box (a [standard file selection dialog box](#) on page 826), in which you can select an existing block template to modify.

# B Commands

# 3

## BACTION

### Quick Reference

See also:

- Overview of Actions

Adds an action to a dynamic block definition.

### Summary

This command is available only in the [Block Editor](#) on page 127. Actions define how the geometry of a dynamic block reference moves or changes when the custom properties of a block reference are manipulated in a drawing. You associate actions with parameters.

### List of Prompts

The following prompts are displayed.

Select parameter: *Select a parameter in the block definition with which to associate the action*

You can associate parameters with the following types of actions.

### Array

Adds an array action to the current dynamic block definition. An array action can be associated with a linear, polar, or XY parameter. Specifies that the selection set of objects arrays when the action is triggered in a dynamic block reference.

**Select Objects** Defines the objects that will be included in the action when modified.

**Enter Distance Between Columns** When a linear or polar parameter is selected, specifies the distance between the selected objects when the array action is modified. To specify the distance, use the mouse pointer.

■ **Specify opposite corner.**

**Enter Distance Between Rows or Specify Unit Cell** When an XY parameter is selected, specifies the distance between the selected objects when the array action is modified. To specify the distance, use the mouse pointer. To specify unit cell, enter two values separated by a comma for each of the two points.

**Specify Action Location** When [BACTIONBARMODE](#) on page 1396 is set to 0, determines where the action is placed within the Block Editor.

### **Lookup**

The lookup action displays the [Property Lookup Table dialog box](#) on page 142 where you can create a lookup table for the block reference.

### **Flip**

A set of objects is flipped around the reflection line of the flip parameter when the action is triggered in the block reference.

A flip action can only be associated with a flip parameter.

**Specify Selection Set** Determines the objects that will be mirrored about the flip parameter reflection line.

### **Move**

Specifies that the selection set of objects moves when the action is triggered in a dynamic block reference. A move action can be associated with a point, linear, polar, or XY parameter.

**Select Objects** [Select Objects](#) on page 92

**Specify Action Location** [Specify Action Location](#) on page 92

**Specify Parameter Point** When a linear or polar parameter is selected, determines whether the start or end point of the parameter is used to determine the base point of the action.

When an XY parameter is selected, determines which corner of the parameter will be associated with the action. The objects selected for the action will be moved relative to this point.

**Multiplier** When [BACTIONBARMODE](#) on page 1396 is set to 0 and the action is triggered, changes the associated parameter value by the specified distance.

**Offset** When [BACTIONBARMODE](#) on page 1396 is set to 0 and the action is triggered, increases or decreases the angle of the selected parameter by the specified value.

**XY** When an XY parameter is selected, specifies whether the distance applied to the action is the parameter's X distance, Y distance, or XY distance from the parameter's base point.

### **Rotate**

Specifies that the selection set of objects rotates when the action is triggered in a dynamic block reference. A rotate action can only be associated with a rotation parameter.

**Specify Selection Set** Determines the objects that will be rotated about the parameter base point.

### **Scale**

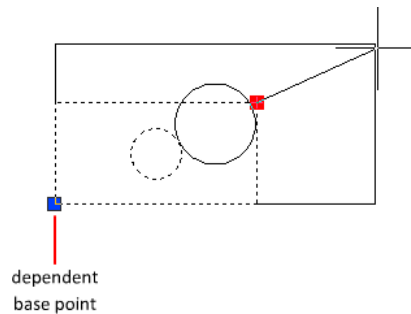
Specifies that the selection set of objects scales relative to the defined base point when the action is triggered in a dynamic block reference. A scale action can only be associated with a linear, polar, or XY parameter.

**Select Objects** [Select Objects](#) on page 92

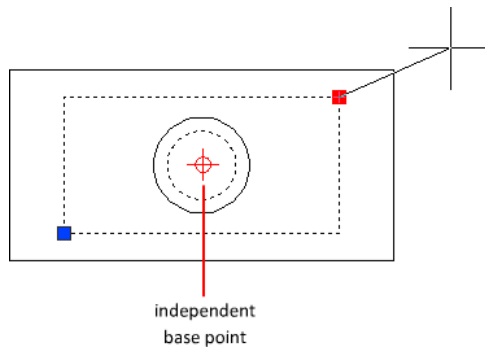
**Specify Action Location** [Specify Action Location](#) on page 92

**Base Type** Specifies whether the base point for the action is dependent or independent of the associated parameter's base point.

**Dependent** Scales or moves selected objects relative to the base point of the associated parameter.



**Independent** Scales or moves selected objects relative to a base point defined separately from that of the associated parameter.



**XY** When an XY parameter is selected, sets the *Scale Type* custom property.

- **X.** Scales the selected object only along the X-axis of the XY parameter.
- **Y.** Scales the selected object only along the Y-axis of the XY parameter.
- **XY.** Scales the selected object along both the X- and Y-axes of the XY parameter.

### **Stretch**

Specifies that the selection set of objects will stretch or move when the action is triggered in a dynamic block reference. A stretch action can be associated with a point, linear, polar, or XY parameter.

**Specify Parameter Point** When a linear or polar parameter is selected, determines whether the start or end point of the parameter is used to determine the base point of the action.

When an XY parameter is selected, determines which corner of the parameter will be associated with the action. The objects selected for the action will be stretched relative to this point.

**Specify Stretch Frame** Creates a box that represents the boundary area for the action when modified.

- **Specify opposite corner.**
- Specify objects.

**CPolygon** Creates a polygon that represents the boundary area for the action when modified.

- **First polygon point.**
- **Specify endpoint.**



**Specify Action Location** [Specify Action Location](#) on page 92

- [Multiplier](#) on page 92
- [Offset](#) on page 93
- [XY](#) on page 93

**Select Objects** [Select Objects](#) on page 92

### **Polar Stretch**

Specifies that the selection set of objects stretches or moves when the action is triggered in a dynamic block reference. A polar stretch action can only be associated with a polar parameter.

**Specify Parameter Point** Determines whether the start or end point of the parameter is used to determine the base point of the action.

**Specify Stretch Frame** [Specify Stretch Frame](#) on page 94

- [CPolygon](#) on page 94

**Specify Objects to Rotate Only** Determines the objects in the selection that will rotate and not stretch.

**Specify Action Location** [Specify Action Location](#) on page 92

- [Multiplier](#) on page 92
- [Offset](#) on page 93

## **BACTIONBAR**

### **Quick Reference**


**See also:**


- [Overview of Actions and Parameters](#)

Displays or hides action bars for a selection set of parameter objects.

### **Access Methods**



 **Ribbon:** Block Editor contextual tab ► Action Parameters panel ► Show All Actions

 **Ribbon:** Block Editor contextual tab ► Action Parameters panel ► Hide All Actions

 **Command entry:** `bedit` ► `bactionbar`

### Summary

You can only use the BACTIONBAR command in the [Block Editor](#) on page 127 and when in Action Bar mode ([BACTIONBARMODE](#) on page 1396 system variable is set to 1). The BACTIONBAR command controls the display of action bars for parameter objects in the Block Editor. An action bar is a toolbar-like element that displays the actions associated with a parameter object.

On the ribbon, you can also show or hide all action bars for all parameter objects.

### List of Prompts

The following prompts are displayed.

Enter an option [[Show](#) on page 96/[Hide](#) on page 96/[Reset](#)] <Show all>: *Specify a parameter to show or hide the action bars*

#### **Show**

Displays the action bars for the selected parameter objects in the Block Editor.

#### **Hide**

Hides the action bars for the selected parameter objects in the Block Editor.

#### **Reset**

Displays all action bars for the parameter objects in the Block Editor and resets to the default position relative to the parameters they are associated with.

## BACTIONSET

### Quick Reference

#### See also:

- [Modify Dynamic Block Definitions](#)

Specifies the selection set of objects associated with an action in a dynamic block definition.

## Access Methods

 **Command entry:** `bedit` ► `bactionset`

**Shortcut menu:** Select an action in the block definition. Right-click in the Block Editor drawing area. Click Action Selection Set, and then click an option.

## Summary

Re-specifies the selection set of objects associated with an action by creating a new selection set or by adding to or removing objects from the existing selection set. You can only use the BACTIONSET command in the [Block Editor](#) on page 127.

---

**NOTE** The BACTIONSET command is disabled when the [BACTIONBARMODE](#) on page 1396 system variable is set to 1.

---

## List of Prompts

The following prompts are displayed.

Select action: *Select an action in the current dynamic block definition*

### **Specify Selection Set**

Creates a new selection set for the selected action, or modifies an existing selection set.

**Select objects** Defines the objects that will be included in the action when modified.

**Remove** Removes objects from the original selection set associated with the selected action.

**Specify Stretch Frame** Creates a box that represents the boundary area for the action when modified.

- **Specify opposite corner.**

- Specify objects.

**CPolygon** Creates a polygon that represents the boundary area for the action when modified.

- **First polygon point.**

- **Specify endpoint.**

**Specify Objects to Rotate Only** Determines the objects in the selection that will rotate and not stretch.

# BACTIONTOOL

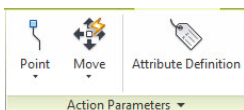
## Quick Reference

### See also:


- Overview of Actions


Adds an action to a dynamic block definition.

## Access Methods



### Panel

 **Ribbon:** Block Editor contextual tab ► Action Parameters panel

 **Command entry:** `bedit` ► `bactiontool`

## Summary

Actions define how the geometry of a dynamic block reference moves or changes when the custom properties of a block reference are manipulated in a drawing. You associate actions with parameters. The BACTIONTOOL command is used in the [Block Editor](#) on page 127 either on the ribbon or by action tools on the Actions tab of the Block Authoring palettes.

## List of Prompts

The following prompts are displayed.

Select action type [[Array](#)/[Lookup](#)/[Flip](#)/[Move](#)/[Rotate](#)/[Scale](#)/[Stretch](#)/[Polar stretch](#)]:

### Array



### Button

Block Editor contextual tab ► Action Parameters panel ► Actions drop-down

► Array

Specifies that the selection set of objects arrays when the action is triggered in a dynamic block reference. An array action can be associated with a linear, polar, or XY parameter.

**Select Parameter** Select a parameter to associate with the action.

**Select Objects** Defines the objects that will be included in the action when modified.

**Enter Distance Between Columns** When a linear or polar parameter is selected, specifies the distance between the selected objects when the array action is modified. To specify the distance, use the mouse pointer.

■ **Specify opposite corner.**

**Enter Distance Between Rows or Specify Unit Cell** When an XY parameter is selected, specifies the distance between the selected objects when the array action is modified. To specify the distance, use the mouse pointer. To specify unit cell, enter two values separated by a comma for each of the two points.

**Specify Action Location** When [BACTIONBARMODE](#) on page 1396 is set to 0, determines where the action is placed within the Block Editor.

## Lookup



**Button**

Block Editor contextual tab ► Action Parameters panel ► Actions drop-down ► Lookup

The lookup action displays the Property Lookup Table dialog box where you can create a lookup table for the block reference.

## Flip



**Button**

Block Editor contextual tab ► Action Parameters panel ► Actions drop-down ► Flip

A set of objects is flipped around the reflection line of the flip parameter when the action is triggered in the block reference. A flip action can only be associated with a flip parameter.

**Specify Selection Set** Determines the objects that will be mirrored about the flip parameter reflection line.

## Move



### Button

Block Editor contextual tab ► Action Parameters panel ► Actions drop-down  
► Move

Specifies that the selection set of objects moves when the action is triggered in a dynamic block reference. A move action can be associated with a point, linear, polar, or XY parameter.

**Select Parameter** [Select Parameter](#) on page 99

**Select Objects** [Select Objects](#) on page 99

**Specify Action Location** [Specify Action Location](#) on page 99

**Specify Parameter Point** When a linear or polar parameter is selected, determines whether the start or end point of the parameter is used to determine the base point of the action.

When an XY parameter is selected, determines which corner of the parameter will be associated with the action. The objects selected for the action will be moved relative to this point.

**Multiplier** When [BACTIONBARMODE](#) on page 1396 is set to 0 and the action is triggered, changes the associated parameter value by the specified distance.

**Offset** When [BACTIONBARMODE](#) on page 1396 is set to 0 and the action is triggered, increases or decreases the angle of the selected parameter by the specified value.

**XY** When an XY parameter is selected, specifies whether the distance applied to the action is the parameter's *X* distance, *Y* distance, or *XY* distance from the parameter's base point.

## Rotate



### Button

Block Editor contextual tab ► Action Parameters panel ► Actions drop-down  
► Rotate

Specifies that the selection set of objects rotates when the action is triggered in a dynamic block reference. A rotate action can only be associated with a rotation parameter.

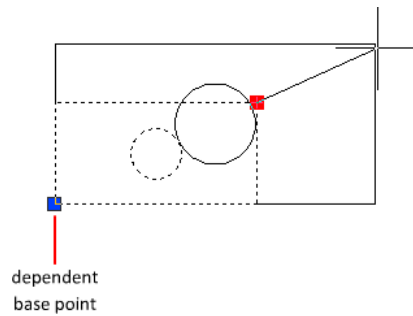
**Select Parameter** [Select Parameter](#) on page 99

**Select Objects** [Select Objects](#) on page 99

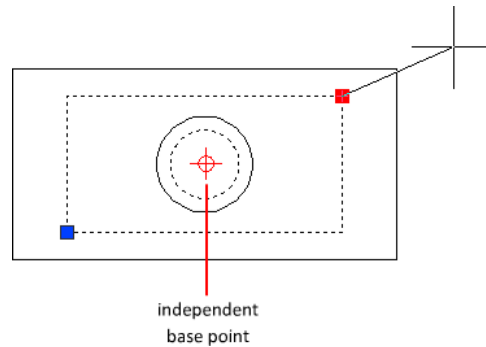
**Specify Action Location** [Specify Action Location](#) on page 99

**Base Type** Specifies whether the base point for the action is dependent or independent of the associated parameter's base point.

**Dependent** Scales or moves selected objects relative to the base point of the associated parameter.



**Independent** Scales or moves selected objects relative to a base point defined separately from that of the associated parameter.



## Scale



**Button**

Block Editor contextual tab ► Action Parameters panel ► Actions drop-down  
► Scale

Specifies that the selection set of objects scales relative to the defined base point when the action is triggered in a dynamic block reference. A scale action can only be associated with a linear, polar, or XY parameter.

**Select Parameter** [Select Parameter](#) on page 99

**Select Objects** [Select Objects](#) on page 99

**Specify Action Location** [Specify Action Location](#) on page 99

**Base Type** [Base Type](#) on page 101

- [Dependent](#) on page 101
- [Independent](#) on page 101

XY When an XY parameter is selected, sets the *Scale Type* custom property.

- **X.** Scales the selected object only along the X-axis of the XY parameter.
- **Y.** Scales the selected object only along the Y-axis of the XY parameter.
- **XY.** Scales the selected object along both the X- and Y-axes of the XY parameter.

## Stretch



### Button

Block Editor contextual tab ► Action Parameters panel ► Actions drop-down  
► Stretch

Specifies that the selection set of objects will stretch or move when the action is triggered in a dynamic block reference. A stretch action can be associated with a point, linear, polar, or XY parameter.

**Select Parameter** [Select Parameter](#) on page 99

**Specify Parameter Point** When a linear or polar parameter is selected, determines whether the start or end point of the parameter is used to determine the base point of the action.

When an XY parameter is selected, determines which corner of the parameter will be associated with the action. The objects selected for the action will be stretched relative to this point.



**Specify Stretch Frame** Creates a box that represents the boundary area for the action when modified.

- **Specify opposite corner.**
- Specify objects.

**CPolygon** Creates a polygon that represents the boundary area for the action when modified.

- **First polygon point.**
- **Specify endpoint.**

**Specify Action Location** [Specify Action Location](#) on page 99

- [Multiplier](#) on page 100
- [Offset](#) on page 100
- [XY](#) on page 100

**Select Objects** [Select Objects](#) on page 99

## **Polar Stretch**



### **Button**

Block Editor contextual tab ► Action Parameters panel ► Actions drop-down ► Polar Stretch

Specifies that the selection set of objects stretches or moves when the action is triggered in a dynamic block reference. A polar stretch action can only be associated with a polar parameter.

**Select Parameter** [Select Parameter](#) on page 99

**Specify Parameter Point** Determines whether the start or end point of the parameter is used to determine the base point of the action.

**Specify Stretch Frame** [Specify Stretch Frame](#) on page 103

- [CPolygon](#) on page 103

**Specify Objects to Rotate Only** Determines the objects in the selection that will rotate and not stretch.

Specify Action Location [Specify Action Location](#) on page 99

■ [Multiplier](#) on page 100

■ [Offset](#) on page 100

## BASE

### Quick Reference

See also:

■ [Insert Blocks](#)


Sets the insertion base point for the current drawing.


### Access Methods



Button

 **Ribbon:** Insert tab ► Block panel ► Set Base Point

 **Menu:** Draw ► Block ► Base

 **Command entry:** `base` (or '`'base` for transparent use)

### Summary

The base point is expressed as coordinates in the current UCS. When you insert or externally reference the current drawing into other drawings, this base point is used as the insertion base point.

## BASSOCIATE

### Quick Reference

See also:

■ [Modify Dynamic Block Definitions](#)

Associates an action with a parameter in a dynamic block definition.

### Summary

Associates an *orphaned* action with a parameter. You can only use the BASSOCIATE command in the [Block Editor](#) on page 127. An action becomes orphaned when the parameter with which it is associated is removed from the block definition.

---

**NOTE** The BASSOCIATE command is disabled when the [BACTIONBARMODE](#) on page 1396 system variable is set to 1.

---

### List of Prompts

The following prompts are displayed.

Select action object: *Select an action in the current block definition that is not associated with a parameter*

Select parameter to associate with action: *Select a parameter to associate with the action (if you selected a lookup action, you can select one or more lookup parameters)*

If you selected an action and parameter combination that requires that the action be associated with a key point on the parameter, prompts are displayed to select the parameter point to associate with the action.

## BATTMAN

### Quick Reference

See also:

- [Modify a Block Attribute Definition](#)

Manages the attributes for a selected block definition.

### Access Methods



Button

- ✎ **Ribbon:** Insert tab ► Block Definition panel ► Manage Attributes
- ✎ **Menu:** Modify ► Object ► Attribute ► Block Attribute Manager
- ✎ **Toolbar:** Modify II

### Summary

The [Block Attribute Manager](#) is displayed.

If the current drawing does not contain any blocks with attributes, a message is displayed.

This command controls all attribute properties and settings of a selected block definition. Any changes to the attributes in a block definition are reflected in the block references.

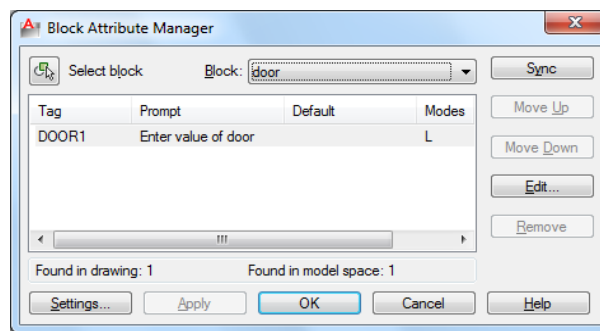
## Block Attribute Manager

### Quick Reference

See also:

- [Modify a Block Attribute Definition](#)

Manages the attribute definitions for blocks in the current drawing.



### Summary

You can edit the attribute definitions in blocks, remove attributes from blocks, and change the order in which you are prompted for attribute values when inserting a block.

Attributes of the selected block are displayed in the attribute list. By default, Tag, Prompt, Default, Mode, and Annotative attribute properties are displayed in the attribute list. For each selected block, a description below the attribute list identifies the number of its instances in the current drawing and in the current layout.

You can specify which attribute properties you want displayed in the list by choosing Settings.

Double-click an attribute to display the [Edit Attribute dialog box](#), where you can modify attribute properties.

### **List of Options**

The following options are displayed.

#### **Select Block**

You can use your pointing device to select a block from the drawing area. When you choose Select Block, the dialog box closes until you select a block from the drawing or you cancel by pressing ESC.

If you modify attributes of a block and then select a new block before you save the attribute changes you made, you are prompted to save the changes before selecting another block.

#### **Block**

Lists all block definitions in the current drawing that have attributes. Select the block whose attributes you want to modify.

#### **List of Attributes**

Displays the properties of each attribute in the selected block.

#### **Blocks Found in Drawing**

Reports the total number of instances of the selected block in the current drawing.

#### **Blocks Found in Current Space**

Reports the number of instances of the selected block in the current model space or layout.

#### **Sync**

Updates all instances of the selected block with the attribute properties currently defined. This does not affect any values assigned to attributes in each block.

### **Move Up**

Moves the selected attribute tag earlier in the prompt sequence. The Move Up button is not available when a constant attribute is selected.

### **Move Down**

Moves the selected attribute tag later in the prompt sequence. The Move Down button is not available when a constant attribute is selected.

### **Edit**

Opens the [Edit Attribute dialog box](#), where you can modify attribute properties.

### **Remove**

Removes the selected attribute from the block definition. If Apply Changes to Existing References is selected in the Settings dialog box before you choose Remove, the attribute is removed from all instances of the block in the current drawing. The Remove button is not available for blocks with only one attribute.

### **Settings**

Opens the [Block Attribute Settings dialog box](#), where you can customize how attribute information is listed in the Block Attribute Manager.

### **Apply**

Applies the changes made and leaves the dialog box open.

## **Edit Attribute Dialog Box**

### **Quick Reference**

#### **See also:**

- [Modify a Block Attribute Definition](#)

Allows you to edit attributes for a block definition.

#### **Summary**

The Edit Attribute dialog box contains the following tabs:

- [Attribute](#) on page 109
- [Text Options](#) on page 110

- [Properties](#) on page 112

### List of Options

The following options are displayed.

#### Block Name

Displays the name of the block whose attributes are to be edited.

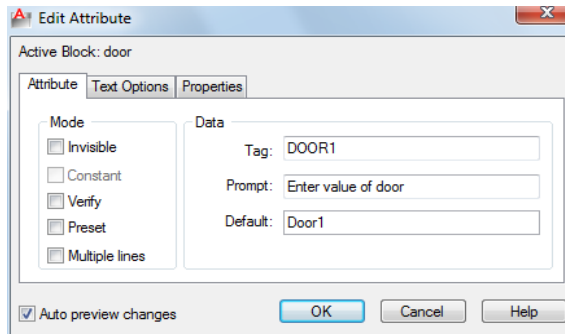
#### Auto Preview Changes

Controls whether or not the drawing area is immediately updated to display any visible attribute changes you make. If Auto Preview Changes is selected, changes are immediately visible. If Auto Preview Changes is cleared, changes are not immediately visible.

Clearing Auto Preview Changes results in a small improvement in performance. Auto Preview Changes is not available if Apply Changes to Existing References is not selected.

### Attribute Tab (Edit Attribute Dialog Box)

Defines how a value is assigned to an attribute and whether or not the assigned value is visible in the drawing area, and sets the string that prompts users to enter a value. The Attribute tab also displays the tag name that identifies the attribute.



#### Mode

Mode options determine whether and how attribute text appears.

#### Invisible

Displays or hides the attribute in the drawing area. If selected, hides the attribute value in the drawing area. If cleared, displays the attribute value.

#### Constant

Identifies whether the attribute is set to its default value. You cannot change this property. If a check mark is shown in the check box, the attribute is set to its default value and cannot be changed. If the check box is empty, you can assign a value to the attribute.

#### **Verify**

Turns value verification on and off. If selected, prompts you to verify the values you assign to the attribute when inserting a new instance of the block. If this option is cleared, verification is not performed.

#### **Preset**

Turns default value assignment on and off. If selected, sets the attribute to its default value when the block is inserted. If cleared, ignores the attribute's default value and prompts you to enter a value when inserting the block.

**Lock Location** Locks the location of the attribute within the block reference. When unlocked, the attribute can be moved relative to the rest of the block using grip editing, and multiline attributes can be resized.

#### **Multiple Lines**

Indicates whether the attribute was defined as a Multiple Lines attribute and can contain multiple lines of text.

#### **Data**

Data options set the attribute text that is displayed.

#### **Tag**

Sets the identifier assigned to the attribute.

#### **Prompt**

Sets the text for the prompt that is displayed when you insert the block.

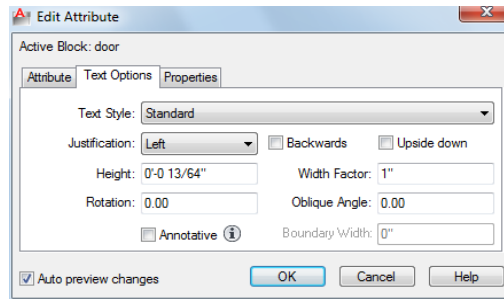
#### **Default**

Sets the default value assigned to the attribute when you insert the block.

#### **Text Options Tab (Edit Attribute Dialog Box)**

Sets the properties that define the way an attribute's text is displayed in the drawing. Change the color of attribute text on the Properties tab.





### **Text Style**

Specifies the text style for attribute text. Default values for this text style are assigned to the text properties displayed in this dialog box.

### **Justification**

Specifies how attribute text is justified.

### **Height**

Specifies the height of the attribute text.

### **Rotation**

Specifies the rotation angle of the attribute text.

### **Annotative**

Specifies that the attribute is .

### **Backwards**

Specifies whether or not the text is displayed backwards.

### **Upside Down**

Specifies whether or not the text is displayed upside down.

### **Width Factor**

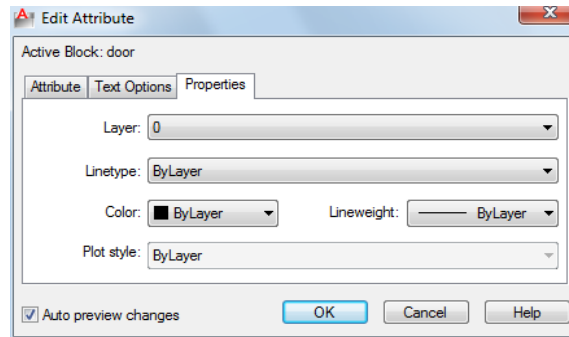
Sets the character spacing for attribute text. Entering a value less than **1.0** condenses the text. Entering a value greater than **1.0** expands it.

### **Oblique Angle**

Specifies the angle that attribute text is slanted away from its vertical axis.

### **Properties Tab (Edit Attribute Dialog Box)**

Defines the layer that the attribute is on and the color, lineweight, and linetype for the attribute's line. If the drawing uses plot styles, you can assign a plot style to the attribute using the Properties tab.



#### **Layer**

Specifies the layer that the attribute is on.

#### **Linetype**

Specifies the linetype of attribute text.

#### **Color**

Specifies the attribute's text color.

#### **Lineweight**

Specifies the lineweight of attribute text.

Changes you make to this option are not displayed if the [LWDISPLAY](#) on page 1575 system variable is off.

#### **Plot Style**

Specifies the plot style of the attribute.

If the current drawing uses color-dependent plot styles, the Plot Style list is not available.

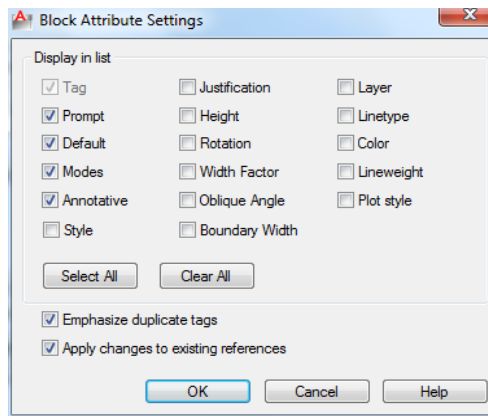
# Block Attribute Settings Dialog Box

## Quick Reference

See also:

- Modify a Block Attribute Definition

Controls the appearance of the attribute list in the Block Attribute Manager.



## List of Options

The following options are displayed.

### Display in List

Specifies the properties to be displayed in the attribute list. Only the selected properties are displayed in the list. The Tag property is always selected.

### Select All

Selects all properties.

### Clear All

Clears all properties.

### Emphasize Duplicate Tags

Turns duplicate tag emphasis on and off. If this option is selected, duplicate attribute tags are displayed in red type in the attribute list. If this option is cleared, duplicate tags are not emphasized in the attribute list.

### **Apply Changes to Existing References**

Specifies whether or not to update all existing instances of the block whose attributes you are modifying. If selected, updates all instances of the block with the new attribute definitions. If cleared, updates only new instances of the block with the new attribute definitions.

You can choose Sync in the Block Attribute Manager to apply changes immediately to existing block instances. This temporarily overrides the Apply Changes to Existing References option.

## **BATTORDER**

### **Quick Reference**

#### **See also:**

- [Attach Data to Blocks \(Block Attributes\)](#)

Specifies the order of attributes for a block.

#### **Summary**

Displays the [Attribute Order dialog box](#), which controls the order in which attributes are listed and prompted for when you insert or edit a block reference. You can only use the BATTORDER command in the [Block Editor](#) on page 127.

## **Attribute Order Dialog Box**

### **Quick Reference**

#### **See also:**

- [Attach Data to Blocks \(Block Attributes\)](#)

Specifies the order in which attributes are listed and prompted for when you insert or edit a block reference.

#### **List of Options**

The following options are displayed.

### Attribute Definitions

Lists the attribute definitions in the current block.

### Move Up

Moves the selected attribute definition up in the list.

### Move Down

Moves the selected attribute definition down in the list.

## BAUTHORPALETTE

### Quick Reference

See also:


- [Create Custom Block Authoring Tools](#)

Opens the Block Authoring Palettes window in the Block Editor.

### Access Methods



Button

 **Ribbon:** Block Editor contextual tab ► Manage panel ► Authoring Palettes

### Summary

Displays the Block Authoring Palettes window in the [Block Editor](#). You can open the Block Authoring Palettes window only from the Block Editor.

The Block Authoring Palettes window contains the following tabs:

- Parameters tab
- Actions tab
- Parameter Sets tab

## BAUTHORPALETTECLOSE

### Quick Reference

#### See also:

- Create Custom Block Authoring Tools

Closes the Block Authoring Palettes window in the Block Editor.

### Summary

You can close the Block Authoring Palettes window only from the [Block Editor](#).

## BCLOSE

### Quick Reference

#### See also:

- Overview of the Block Editor
- Define Blocks
- Modify Blocks

Closes the Block Editor.

### Access Methods



#### Button

 **Ribbon:** Block Editor contextual tab ► Close panel ► Close Block Editor

**Shortcut menu:** In the Block Editor, right-click in the drawing area. Click Close Block Editor

### Summary

Closes the [Block Editor](#). If you have modified the block definition since it was last saved, you are prompted to save or discard the changes.

## BCONSTRUCTION

### Quick Reference

See also:


- [Create Construction Geometry Within a Block](#)

Converts geometry into construction geometry.

### Access Methods



Button

 **Ribbon:** Block Editor contextual tab ► Manage panel ► Construction

### Summary

The BCONSTRUCTION command is used in the [Block Editor](#) on page 127 to convert geometry into construction geometry. This command also controls the display of construction geometry and changes construction geometry back to regular geometry.

Construction geometry is not displayed in the block reference; in the Block Editor it is displayed with a gray dashed linetype. You cannot modify the color, linetype, or layer of the construction geometry.

### List of Prompts

The following prompts are displayed.

Select objects or [[Show all](#) on page 118/[Hide all](#) on page 118]: *Select objects to convert or revert geometry*

Enter an option [[Convert/Revert](#)] <Convert>: *Specify an option*

**Convert**

Converts the valid selected objects into construction geometry and displays the number of objects converted. Authoring objects are not converted.

**Revert**

Changes the selected objects back to regular geometry. The geometry is set to the current layer.

**Show All**

Displays all construction geometry.

**Hide All**

Hides all construction geometry.

## BCYCLEORDER

**Quick Reference****See also:**

- [Insert Blocks](#)

Changes the cycling order of grips for a dynamic block reference.

**Summary**

Displays the [Insertion Cycling Order dialog box](#). The BCYCLEORDER command is available only in the [Block Editor](#) on page 127.

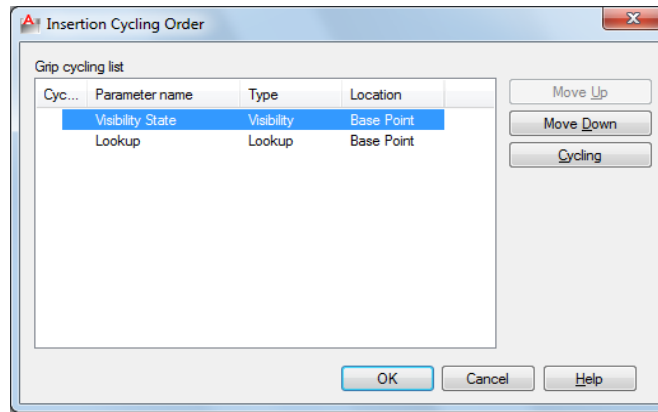
## Insertion Cycling Order Dialog Box

**Quick Reference****See also:**

- [Insert Blocks](#)

Specifies the grip-cycling order for the insertion point of a dynamic block reference.





### Summary

When you insert a dynamic block reference in a drawing, you can use the Ctrl key to cycle through the grips that have cycling turned on in the block definition. The grip you select as you cycle is used as the insertion point for the block reference.

### List of Options

The following options are displayed.

#### Grip Cycling List

Lists the grips in the dynamic block definition. A check mark in the cycling column indicates that cycling is turned on for that grip.

#### Move Up

Moves the selected grip up in the cycling order for the dynamic block reference.

#### Move Down

Moves the selected grip down in the cycling order for the dynamic block reference.

#### Cycling

Turns cycling on or off for the selected grip. A check mark in the cycling column indicates that cycling is turned on for that grip.

# BEDIT

## Quick Reference

### See also:

- Define Blocks
- Modify Blocks
- Modify Dynamic Block Definitions


Opens the block definition in the Block Editor.

## Access Methods



### Button

 **Ribbon:** Home tab ► Block panel ► Block Editor

 **Menu:** Tools ► Block Editor

 **Toolbar:** Standard

**Shortcut menu:** Select a block reference. Right-click in the drawing area. Click Block Editor.

## Summary

The [Edit Block Definition dialog box](#) on page 121 is displayed. Select a block definition to edit or enter a name for a new block definition to create, then click OK to open the [Block Editor](#).

If the ribbon is active, the [Block Editor ribbon contextual tab](#) on page 122 is displayed. Otherwise, the Block Editor toolbar is displayed.

When the BLOCKEDITLOCK system variable is set to 1, the Block Editor cannot be opened.

The Block Editor is a separate environment for creating and changing block definitions for the current drawing. You can also use it to add dynamic behavior to blocks.

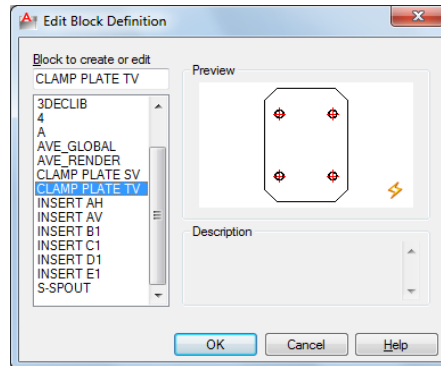
# Edit Block Definition Dialog Box

## Quick Reference

See also:

- Define Blocks
- Modify Blocks
- Modify Dynamic Block Definitions

Select from a list of block definitions that are saved in the drawing to edit in the Block Editor. You can also enter a name for a new block definition to create in the Block Editor.



## Summary

When you click OK, the Edit Block Definition dialog box closes, and the Block Editor is displayed.

- If you selected a block definition from the list, that block definition is displayed and is available for editing in the Block Editor.
- If you entered a name for a new block definition, the Block Editor is displayed, and you can start adding objects to the block definition.

## List of Options

The following options are displayed.

**Block to create or edit**

Specifies the name of the block to edit or create in the Block Editor. If you select <Current Drawing>, the current drawing is opened in the Block Editor. After you add dynamic elements to the drawing, you can then save it and insert it as a dynamic block reference in a drawing.

#### **Name List**

Displays a list of block definitions that are saved in the current drawing. When you select a block definition from the list, the name is displayed in the Name box.

When you click OK, this block definition is opened in the Block Editor. When you select <Current Drawing>, the current drawing is opened in the Block Editor.

#### **Preview**

Displays a preview of the selected block definition. A lightning bolt icon indicates that the block is a dynamic block.

#### **Description**

Displays the description of the selected block definition.

## **Block Editor Ribbon Contextual Tab**

### **Quick Reference**

#### **See also:**

- [Modify Dynamic Block Definitions](#)

#### **List of Options**

The following options are displayed.

#### **Open/Save Panel**

**Edit Block** Opens the block definition in the Block Editor.

**Save Block** Saves the current block definition.

**Test Block** Displays a window within the Block Editor to test a dynamic block.

**Save Block As** Saves a copy of the current block definition under a new name.

## **Geometric Panel**

**Auto Constrain** Applies geometric constraints to a selection set of objects based on orientation of the objects relative to one another.

**Coincident (GEOMCONSTRAINT)** Constrains two points together or a point to a curve (or an extension of a curve).

**Collinear (GEOMCONSTRAINT)** Causes two or more line segments to lie along the same line.

**Concentric (GEOMCONSTRAINT)** Constrains two arcs, circles, or ellipses to the same center point.

**Fix (GEOMCONSTRAINT)** Locks points and curves in position.

**Parallel (GEOMCONSTRAINT)** Causes selected lines to lie parallel to each other.

**Perpendicular (GEOMCONSTRAINT)** Causes selected lines to lie 90 degrees to one another.

**Horizontal (GEOMCONSTRAINT)** Causes lines or pairs of points to lie parallel to the X axis of the current coordinate system.

**Vertical (GEOMCONSTRAINT)** Causes lines or pairs of points to lie parallel to the Y axis of the current coordinate system.

**Tangent (GEOMCONSTRAINT)** Constrains two curves to maintain a point of tangency to each other or their extensions.

**Smooth (GEOMCONSTRAINT)** Constrains a spline to be contiguous and maintain G2 continuity with another spline, line, arc, or polyline.

**Symmetric (GEOMCONSTRAINT)** Causes selected objects to become symmetrically constrained about a selected line.

**Equal (GEOMCONSTRAINT)** Resizes selected arcs and circles to the same radius, or selected lines to the same length.

**Show Constraints** Displays constraint bars for the selected objects with geometric constraints applied to them.

**Show All** Displays all geometric constraints in the drawing.

**Hide All** Hides all geometric constraints in the current drawing.

**Constraint Settings** Controls the display of geometric constraints on constraint bars.

### **Dimensional Panel**

**Linear (BCPARAMETER)** Creates a horizontal or vertical constraint parameter based on the locations of the extension line origins and the location of the dimension line similar to the DIMLINEAR command.

**Horizontal (BCPARAMETER)** Creates a horizontal constraint parameter by picking two constraint points. Valid objects include lines and polyline segments.

**Vertical (BCPARAMETER)** Creates a vertical constraint parameter by picking two constraint points. Valid objects include lines and polyline segments.

**Aligned (BCPARAMETER)** Creates an aligned constraint parameter using one of the following ways.

- Selects a point and a line object. The aligned constraint controls the distance between a point and the closest point on a line.
- Selects two line objects. The lines are made parallel and the aligned constraint controls the distance between the two lines.

**Radius (BCPARAMETER)** Creates a radial constraint parameter for a circle, arc, or polyline arc segment.

**Diameter (BCPARAMETER)** Creates a diameter constraint parameter for a circle, arc, or polyline arc segment.

**Angular (BCPARAMETER)** Creates an angular constraint parameter by picking two lines or polyline segments or an arc. It is similar to an angular dimension.

**Convert (BCPARAMETER)** Converts the dimensional constraints to constraint parameters.

**Block Table** Displays a dialog box to define variations of a block.

**Constraint Settings** Sets preferences in behavior when displaying dimensional constraints.

### **Manage Panel**

**Delete Constraints** Removes all geometric and dimensional constraints from a selection set of objects.

**Construction Geometry** Converts geometry into construction geometry.

**Block Constraint Status** Turns the constraint display status on and off and controls the shading of objects based on their constraint level.

**Parameters Manager** Opens the Parameters Manager palette that includes all dimensional constraint parameters, reference parameters, and user variables in the current drawing.

**Authoring Palettes** Opens the Block Authoring Palettes window in the Block Editor.

**Block Editor Settings** Displays the Block Editor Settings dialog box.

### **Action Parameters Panel**

**Point** (**BPARAMETER on page 154**) Defines custom  $X$  and  $Y$  properties for the block reference.

**Linear** (**BPARAMETER on page 154**) Defines the distance between two key points in the block definition.

**Polar** (**BPARAMETER on page 154**) Defines a distance and angle for two key points in the block definition.

**XY** (**BPARAMETER on page 154**) Defines an  $X$  and  $Y$  distance from the base point of a block definition.

**Rotation** (**BPARAMETER on page 154**) Defines an angle for the block reference.

**Flip** (**BPARAMETER on page 154**) Mirrors objects or the entire block reference about a reflection line.

**Alignment** (**BPARAMETER on page 154**) Rotates the block reference about a point to align with other objects in the drawing.

**Visibility** (**BPARAMETER on page 154**) Defines objects that will either display or not display within the block definition.

**Lookup** (**BPARAMETER on page 154**) Defines user parameters that are determined by a lookup table.

**Basepoint** (**BPARAMETER on page 154**) Defines a changeable base point for the dynamic block reference in relation to the geometry in the block.

**Move** (**BACTIONTOOL on page 98**) Specifies that the selection set of objects moves when the action is triggered in a dynamic block reference. A move action can be associated with a point, linear, polar, or XY parameter.

**Stretch** (**BACTIONTOOL on page 98**) Specifies that the selection set of objects will stretch or move when the action is triggered in a dynamic block reference. A stretch action can be associated with a point, linear, polar, or XY parameter.

**Polar Stretch (BACTIONTOOL on page 98)** Specifies that the selection set of objects stretches or moves when the action is triggered in a dynamic block reference. A polar stretch action can only be associated with a polar parameter.

**Scale (BACTIONTOOL on page 98)** Specifies that the selection set of objects scales relative to the defined base point when the action is triggered in a dynamic block reference. A scale action can only be associated with a linear, polar, or XY parameter.

**Rotate (BACTIONTOOL on page 98)** Specifies that the selection set of objects scales relative to the defined base point when the action is triggered in a dynamic block reference. A scale action can only be associated with a linear, polar, or XY parameter.

**Flip (BACTIONTOOL on page 98)** A set of objects is flipped around the reflection line of the flip parameter when the action is triggered in the block reference. A flip action can only be associated with a flip parameter.

**Array (BACTIONTOOL on page 98)** Specifies that the selection set of objects arrays when the action is triggered in a dynamic block reference. An array action can be associated with a linear, polar, or XY parameter.

**Lookup (BACTIONTOOL on page 98)** A set of objects is flipped around the reflection line of the flip parameter when the action is triggered in the block reference. A flip action can only be associated with a flip parameter.

**Attribute Definition** Creates an attribute definition for storing data in a block.

**Show All Actions (BACTIONBAR on page 95)** Displays all action bars for the parameter objects in the Block Editor.

**Hide All Actions (BACTIONBAR on page 95)** Hides all action bars for the parameter objects in the Block Editor.

### **Visibility Panel**

**Visibility States** Creates, sets, or deletes a visibility state in a dynamic block.

**Visibility Mode (BVMODE)** Controls how objects that are made invisible for the current visibility state are displayed in the Block Editor.

**Make Visible (BVSHOW)** Makes objects visible in the current visibility state or all visibility states in a dynamic block definition.

**Make Invisible (BVHIDE)** Makes objects invisible in the current visibility state or all visibility states in a dynamic block definition.

**Block Visibility States** Specifies the current visibility state displayed in the Block Editor.



## **Close Panel**

**Close Block Editor** Closes the Block Editor.

# **Block Editor**

## **Quick Reference**

**See also:**

- Define Blocks
- Modify Blocks
- Modify Dynamic Block Definitions

The Block Editor contains a special authoring area in which you can draw and edit geometry as you would in the drawing area.

## **Summary**

You use the Block Editor to define the objects and behavior for a block definition.

In the Block Editor, you add parameters and actions, which define custom properties and dynamic behavior.

The following commands are used for editing blocks and are available only in the Block Editor:

- BACTION
- [BACTIONBAR](#) on page 95
- BACTIONSET
- BACTIONTOOL
- BASSOCIATE
- BATTORDER
- BAUTHORPALETTE
- BAUTHORPALETTECLOSE
- BCLOSE

- BCYCLEORDER
- [BCONSTRUCTION](#) on page 117
- BGRIPSET
- BLOOKUPTABLE
- BPARAMETER
- BSAVE
- BSAVEAS
- [BTABLE](#) on page 166
- [BTESTBLOCK](#) on page 170
- BVHIDE
- BVSHOW
- BVSTATE

When the BLOCKEDITLOCK system variable is set to 1, the Block Editor cannot be opened.

The Block Editor also provides a [Block Editor toolbar](#) and Block Authoring palettes that contain tools for creating dynamic blocks. The Block Authoring Palettes window contains the following tabs:

- [Parameters tab](#) on page 129
- [Actions tab](#) on page 131
- [Parameter Sets tab](#) on page 132

### **Block Editor Toolbar**

Provides tools for working in the Block Editor, creating dynamic blocks, and working with visibility states.

The Block Editor toolbar is displayed when the ribbon is not active. It is also displayed only when you enter the Block Editor with the ribbon closed.



**Edit or Create Block Definition** Displays the [Edit Block Definition dialog box](#).

**Save Block Definition** Saves the current block definition.

**Save Block As** Saves a copy of the current block definition under a new name.

**Name** Displays the name of the current block definition.

**Test Block** (**BTESTBLOCK** on page 170) Displays a window within the Block Editor to test a dynamic block.

**Display / Hide Constraints Bar** (**CONSTRAINTBAR** on page 224) Displays or hides the geometric constraints on an object.

**Parameter** (**BPARAMETER**) Adds a parameter with grips to a dynamic block definition.

**Action** (**BACTION**) Adds an action to a dynamic block definition.

**Define Attribute** (**Attribute Definition Dialog Box**) Creates an attribute definition for storing data in a block.

**Authoring Palettes** (**BAUTHORPALETTE** on page 115) Opens the Block Authoring Palettes window in the Block Editor.

**Parameters Manager** (**PARAMETERS** on page 917) Opens the Parameters Manager palette that includes all dimensional constraint parameters, reference parameters, and user variables in the current drawing.

**Close Block Editor** (**BCLOSE** on page 116) Closes the Block Editor.

**Visibility Mode** (**BVMODE**) Controls how objects that are made invisible for the current visibility state are displayed in the Block Editor.

**Make Visible** (**BVSHOW**) Makes objects visible in the current visibility state or all visibility states in a dynamic block definition.

**Make Invisible** (**BVHIDE**) Makes objects invisible in the current visibility state or all visibility states in a dynamic block definition.

**Manage Visibility States** (**Visibility States Dialog Box** on page 173) Creates, sets, or deletes a visibility state in a dynamic block.

**Visibility State** Specifies the current visibility state displayed in the Block Editor.

### **Parameters Tab (Block Authoring Palettes Window)**

Provides tools for adding parameters to a dynamic block definition in the Block Editor. Parameters specify positions, distances, and angles for geometry in the block reference. When you add a parameter to a dynamic block definition, it defines one or more custom properties for the block.

**Point Parameter (BPARAMETER)** Adds a point parameter to the dynamic block definition and defines custom *X* and *Y* properties for the block reference. A point parameter defines an *X* and *Y* location in the drawing. In the Block Editor, a point parameter looks similar to an ordinate dimension.

**Linear Parameter (BPARAMETER)** Adds a linear parameter to the dynamic block definition and defines a custom distance property for the block reference. A linear parameter shows the distance between two anchor points. A linear parameter constrains grip movement along a preset angle. In the Block Editor, a linear parameter looks similar to an aligned dimension.

**Polar Parameter (BPARAMETER)** Adds a polar parameter to the dynamic block definition and defines custom distance and angle properties for the block reference. A polar parameter shows the distance between two anchor points and displays an angle value. You can use both grips and the Properties palette to change both the distance value and the angle. In the Block Editor, a polar parameter looks similar to an aligned dimension.

**XY Parameter (BPARAMETER)** Adds an XY parameter to the dynamic block definition and defines custom horizontal and vertical distance properties for the block reference. An XY parameter shows the *X* and *Y* distances from the base point of the parameter. In the Block Editor, an XY parameter displays as a pair of dimensions (horizontal and vertical). These dimensions share a common base point.

**Rotation Parameter (BPARAMETER)** Adds a rotation parameter to the dynamic block definition and defines a custom angle property for the block reference. A rotation parameter defines an angle. In the Block Editor, a rotation parameter displays as a circle.

**Alignment Parameter (BPARAMETER)** Adds an alignment parameter to the dynamic block definition. An alignment parameter defines an *X* and *Y* location and an angle. An alignment parameter always applies to the entire block and needs no action associated with it. An alignment parameter allows the block reference to automatically rotate around a point to align with other objects in the drawing. An alignment parameter affects the angle property of the block reference. In the Block Editor, an alignment parameter looks like an alignment line.

**Flip Parameter (BPARAMETER)** Adds a flip parameter to the dynamic block definition and defines a custom flip property for the block reference. A flip parameter flips objects. In the Block Editor, a flip parameter displays as a reflection line. Objects can be flipped about this reflection line. A flip parameter displays a value that shows if the block reference has been flipped or not.

**Visibility Parameter (BPARAMETER)** Adds a visibility parameter to the dynamic block definition and defines a custom visibility property for the block reference. With visibility parameter, you can create visibility states and control the visibility of objects in the block. A visibility parameter always applies to the entire block and needs no action associated with it. In a drawing, you click the grip to display a list of visibility states available for the block reference. In the Block Editor, a visibility parameter displays as text with an associated grip.

**Lookup Parameter (BPARAMETER)** Adds a lookup parameter to the dynamic block definition and defines custom lookup properties for the block reference. A lookup parameter defines a custom property that you can specify or set to evaluate to a value from a list or table you define. It can be associated with a single lookup grip. In the block reference, you click the grip to display a list of available values. In the Block Editor, a lookup parameter displays as text.

**Base Point Parameter (BPARAMETER)** Adds a base point parameter to the dynamic block definition. A base point parameter defines a base point for the dynamic block reference relative to the geometry in the block. A base point parameter cannot be associated with any actions, but can belong to an action's selection set. In the Block Editor, a base point parameter displays as a circle with crosshairs

### **Actions Tab (Block Authoring Palettes Window)**

Provides tools for adding actions to a dynamic block definition in the Block Editor. Actions define how the geometry of a dynamic block reference move or change when the custom properties of a block reference are manipulated in a drawing. You associate actions with parameters.

**Move Action (BACTIONTOOL)** Adds a move action to the dynamic block definition when you associate the action with a point, linear, polar, or XY parameter. A move action is similar to the MOVE command. In a dynamic block reference, a move action causes objects to move a specified distance and angle.

**Scale Action (BACTIONTOOL)** Adds a scale action to the dynamic block definition when you associate the action with a linear, polar, or XY parameter. A scale action is similar to the SCALE command. In a dynamic block reference, a scale action causes its selection set to scale when the associated parameter is edited by moving grips or by using the Properties palette.

**Stretch Action (BACTIONTOOL)** Adds a stretch action to the dynamic block definition when you associate the action with a point, linear, polar, or XY parameter. A stretch action causes objects to move and stretch a specified distance in a specified location.

**Polar Stretch Action (BACTIONTOOL)** Adds a polar stretch action to the dynamic block definition when you associate the action with a polar parameter. A polar stretch action rotates, moves, and stretches objects a specified angle and distance when the key point on the associated polar parameter is changed through a grip or the Properties palette

**Rotate Action (BACTIONTOOL)** Adds a rotate action to the dynamic block definition when you associate the action with a rotation parameter. A rotate action is similar to the ROTATE command. In a dynamic block reference, a rotate action causes its associated objects to rotate when the associated parameter is edited through a grip or the Properties palette.

**Flip Action (BACTIONTOOL)** Adds a flip action to the dynamic block definition when you associate the action with a flip parameter. With a flip action you can flip a dynamic block reference about a specified axis called a reflection line.

**Array Action (BACTIONTOOL)** Adds an array action to the dynamic block definition when you associate the action with a linear, polar, or XY parameter. An array action causes its associated objects to copy and array in a rectangular pattern when the associated parameter is edited through a grip or the Properties palette.

**Lookup Action (BACTIONTOOL)** Adds a lookup action to the dynamic block definition. When you add a lookup action to a dynamic block definition and associate it with a lookup parameter, it creates a lookup table. You can use a lookup table to assign custom properties and values to a dynamic block.

### **Parameter Sets Tab (Block Authoring Palettes Window)**

Provides tools for adding a parameter and at least one action at the same time to a dynamic block definition in the Block Editor. When you add a parameter set to a dynamic block, the actions are automatically associated with the parameter. After you add a parameter set to a dynamic block, you double-click the yellow alert icon (or use the BACTIONSET command) and follow the Command prompts to associate the action with a selection set of geometry.

**Point Move** Automatically adds a move action associated with the point parameter.

**Linear Move** Automatically adds a move action associated with the endpoint of the linear parameter.

**Linear Stretch** Automatically adds a stretch action associated with the linear parameter.

**Linear Array** Automatically adds an array action associated with the linear parameter.

**Linear Move Pair** Automatically adds a two move action, one associated with the base point and one associated with the endpoint of the linear parameter.

**Linear Stretch Pair** Automatically adds two stretch actions, one associated with the base point and one associated with the endpoint of the linear parameter.

**Polar Move** Automatically adds a move action associated with the polar parameter.

**Polar Stretch** Automatically adds a stretch action associated with the polar parameter.

**Polar Array** Automatically adds an array action associated with the polar parameter.

**Polar Move Pair** Automatically adds two move actions, one associated with the base point and one associated with the endpoint of the polar parameter.

**Polar Stretch Pair** Automatically adds two stretch actions, one associated with the base point and one associated with the endpoint of the polar parameter.

**XY Move** Automatically adds a move action associated with the endpoint of the XY parameter.

**XY Move Pair** Automatically adds two move actions, one associated with the base point and one associated with the endpoint of the XY parameter.

**XY Move Box Set** Automatically adds four move actions, one associated with each key point on the XY parameter.

**XY Stretch Box Set** Automatically adds four stretch actions, one associated with each key point on the XY parameter.

**XY Array Box Set** Automatically adds an array action associated with the XY parameter.

**Rotation Set** Automatically adds a rotation action associated with the rotation parameter.

**Flip Set** Automatically adds a flip action associated with the flip parameter.

**Visibility Set** Adds a visibility parameter to the dynamic block definition and allows visibility states to be defined. No action is necessary with the visibility parameter.

**Lookup Set** Automatically adds a lookup action associated with the lookup parameter.

## **-BEDIT**

### **Quick Reference**

**See also:**

- Define Blocks
- Modify Blocks
- Modify Dynamic Block Definitions

### **Summary**

If you select a block in a drawing and enter **-bedit** at the Command prompt, the selected block is opened in the [Block Editor](#) on page 127. If nothing is selected, the following prompt is displayed:

### **List of Prompts**

The following prompts are displayed

Enter [block name](#) on page 134 or [[?](#) on page 134]: *Enter a name or ?*

#### **Block Name**

Specifies the name of a block saved in the current drawing to open in the Block Editor or specifies the name of a new block to create.

#### **?—List Previously Defined Blocks**

Lists the block names in the text window.

Enter block(s) to list <\*>: *Enter a name list or press Enter*

## **BESETTINGS**

### **Quick Reference**


**See also:**


- Create and Edit Dynamic Blocks




Displays the Block Editor Settings dialog box.

### Access Methods

 **Ribbon:** Block Editor contextual tab ► Manage panel ► Dialog Box

Launcher 

 **Command entry:** besettings

### Summary

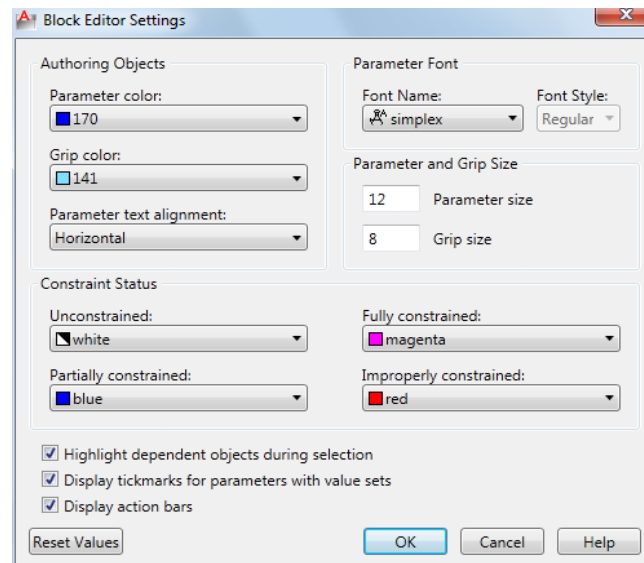
The [Block Editor Settings dialog box](#) on page 135 is displayed.

## Block Editor Settings Dialog Box

### Quick Reference

See also:

- Create and Edit Dynamic Blocks



## **Summary**

Controls the environment settings of the Block Editor.

## **List of Options**

The following options are displayed.

### **Authoring Objects**

Controls the color of parameter and grip objects and specifies the orientation of the parameter text.

#### **Parameter Color**

Sets the color of parameters in the Block Editor.

([BPARAMETERCOLOR](#) on page 1401 system variable)

#### **Grip Color**

Sets the color of grips in the Block Editor.

([BGRIPOBJCOLOR](#) on page 1398 system variable)

#### **Parameter Text Alignment**

Forces the text displayed for action parameters and constraint parameters in the Block Editor to be horizontal.

([BPTEXTHORIZONTAL](#) on page 1402 system variable)

#### **Parameter Font**

Sets the font for the authoring objects.

##### **Font Name**

Sets the font used for parameters and actions in the Block Editor.

([BPARAMETERFONT](#) on page 1401 system variable)

##### **Font Style**

Specifies font character formatting for the authoring objects, such as italic, bold, or regular.

#### **Parameter and Grip Size**

Controls the size of the parameter and grip objects.

##### **Parameter Size**

Sets the size of parameter text and features in the Block Editor relative to the screen display.

([BPARAMETERSIZE](#) on page 1402 system variable)

##### **Grip Size**

Sets the display size of custom grips in the Block Editor relative to the screen display.

([BGRIPOBJSIZE](#) on page 1398 system variable)

### **Constraint Status**

Specifies the color overrides for objects in the Block Editor to show constraint status.

#### **Unconstrained**

Sets the color of the unconstrained objects.

#### **Partially Constrained**

Sets the color of the partially constrained objects.

#### **Fully Constrained**

Sets the color of the fully constrained objects.

#### **Improperly Constrained**

Sets the color of the over-constrained objects.

### **Highlight Dependent Objects During Selection**

Automatically highlights all objects that are dependent on the currently selected authoring objects. Use this option when you need to confirm or change dependent objects.

### **Display Tickmarks for Parameters With Value Sets**

Controls whether or not value set markers are displayed for dynamic block references.

([BTMARKDISPLAY](#) on page 1403 system variable)

### **Display Action Bars**

Indicates whether the action bars or the legacy action objects are displayed in the Block Editor.

([BACTIONBARMODE](#) on page 1396 system variable)

### **Reset Values**

Resets the Block Editor settings to default values.

# BGRIPSET

## Quick Reference

See also:

- Specify Grips for Dynamic Blocks

Creates, deletes, or resets grips associated with a parameter.

## Access Methods

**Shortcut menu:** Select a parameter in the block definition. Right-click in the Block Editor drawing area. Click Grip Display, and then click an option.

## Summary

Specifies the number of grips displayed for a parameter. Also resets the position of grips for a parameter to their default location. You can only use the BGRIPSET command in the [Block Editor](#) on page 127.

## List of Prompts

The following prompts are displayed.

Select parameter: *Select a parameter in the current dynamic block definition*

Enter number of grip objects for parameter or reset position

[0/1/2/4/Reposition]: *Enter the number of grips to display for the parameter (the number of grips available will vary depending on the type of parameter you selected) or enter **reposition** to reposition the existing grips in the block definition to their default locations*

# BHATCH

## Quick Reference

See also:

- Overview of Hatch Patterns and Fills

Fills an enclosed area or selected objects with a hatch pattern or gradient fill.

## Summary

The BHATCH command has been renamed to HATCH. If you enter **bhatch**, the [Hatch and Gradient dialog box](#) on page 546 is displayed. If you enter **-bhatch** or **-hatch**, [Command prompts](#) are displayed.

# BLEND

## Quick Reference

See also:


- Draw Splines


Creates a spline in the gap between two selected lines or curves.

## Access Methods



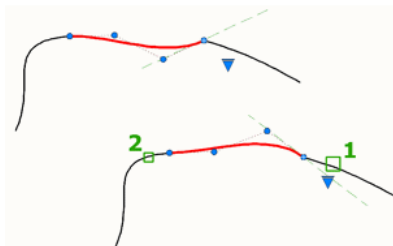
Button

 **Ribbon:** Home tab ► Modify panel ► Blend

 **Menu:** Modify ► Blend Curves

## Summary

Select each object near an endpoint. The shape of the resulting spline depends on the specified continuity. The lengths of the selected objects remain unchanged.



Valid objects include lines, arcs, elliptical arcs, helices, open polylines, and open splines.

### List of Prompts

The following prompts are displayed.

Select first object or [CONtinuity]: *Select a line or open curve near the end where the spline should start*

Select second object: *Select another line or open curve near the end where the spline should end*

### Continuity

Specify one of two types of blends.

**Tangent** Creates a degree 3 spline with tangency (G1) continuity to the selected objects at their endpoints.

**Smooth** Creates a degree 5 spline with curvature (G2) continuity to the selected objects at their endpoints.

If you use the Smooth option, do not switch the display from control vertices to fit points. This action changes the spline to degree 3, which will change shape of the spline.

## BLIPMODE

### Quick Reference

See also:

- Customize Object Selection

Controls the display of marker blips.

Obsolete

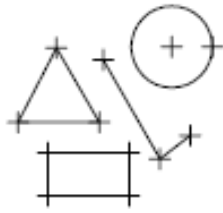
Marker blips have been removed from the product.

### Access Methods

 **Command entry:** 'blipmode' for transparent use

### Summary

When Blip mode is on, a temporary mark in the shape of a plus sign (+) appears where you specify a point. BLIPMODE is off by default.



objects drawn with  
BLIPMODE on



objects drawn with  
BLIPMODE off

To remove marker blips, use REDRAW, REGEN, ZOOM, PAN, or other commands that redraw or regenerate the drawing.

## BLOCKICON

### Quick Reference

See also:

- Overview of Blocks

Generates preview images for blocks displayed in DesignCenter.

### Access Methods

 **Menu:** File ► Drawing Utilities ► Update Block Icons 

### Summary

Use this command to generate icons for blocks created with an earlier release. You can enter a series of comma-delimited block names or wild-card characters. For example, enter **b1,?2**, to specify that block B1 and all two-character blocks ending with 2 should be updated.

After you enter the block names, a message is displayed describing the process as it proceeds. Press ESC at any time to stop.

# BLOOKUPTABLE

## Quick Reference

### See also:

- Lookup Actions

Displays or creates a lookup table for a dynamic block definition.

## Summary

When a lookup action is applied to a [lookup parameter](#) on page 160, the [Property Lookup Table dialog box](#) is automatically displayed.

If a table is already defined for the lookup action, then that table is displayed in the dialog box.

---

**NOTE** The BLOOKUPTABLE command is disabled when the [BACTIONBARMODE](#) on page 1396 system variable is set to 1.

---

# Property Lookup Table Dialog Box

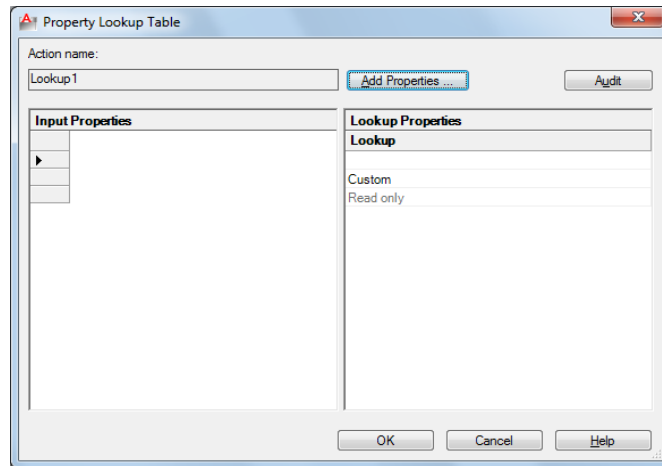
## Quick Reference

### See also:

- Lookup Actions

Creates and modifies a lookup table for custom properties within the dynamic block definition.





## Summary

The lookup table assigns custom property values to the dynamic block reference. If Reverse Lookup is selected for a lookup property, the block reference displays a lookup grip with a list of properties that change the display of the dynamic block reference.

The lookup table also allows the values of lookup parameters to be controlled by the values of other parameters (input properties).

## List of Options

The following options are displayed.

### Action Name

Displays the associated lookup action name, which you can edit in the Properties palette.

### Add Properties

Displays the [Add Parameter Properties dialog box](#) on page 144.

### Audit

Checks the data to ensure that each row is unique.

### Input Properties

Displays the parameters you select in the [Add Parameter Properties dialog box](#) on page 144 as columns. When a parameter value matches the input property column, the corresponding lookup property is assigned to the block reference.

### **Lookup Properties**

Displays the custom value assigned to the input properties. Click the bottom of a lookup column to make the lookup property read-only or to allow reverse lookup. Allow Reverse Lookup enables a drop-down list associated with the lookup grip that changes the block reference to match the input property values in the table.

## **Add Parameter Properties Dialog Box**

### **Quick Reference**

**See also:**

- Lookup Actions

Adds parameter properties to a lookup table.

### **List of Options**

The following options are displayed.

#### **Parameter Properties**

Displays a list of parameters not yet added to the lookup table. Select a parameter and click OK to add it to the lookup table.

#### **Property Type**

Specifies the type of property to add to the lookup table.

#### **Add Input Properties**

Displays the available custom properties in parameters you've already added to the block definition.

#### **Add Lookup Properties**

Displays the available lookup property parameters that can be added to the lookup table.

# BLOCK

## Quick Reference

See also:

- Define Blocks

Creates a block definition from selected objects.

## Access Methods



Button

 **Ribbon:** Insert tab ► Block Definition panel ► Create Block

 **Menu:** Draw ► Block ► Make

 **Toolbar:** Draw

## Summary

The [Block Definition dialog box](#) is displayed.

If you enter **-block** at the Command prompt, [options are displayed](#).

You create a block definition by selecting objects, specifying an insertion point, and giving it a name.

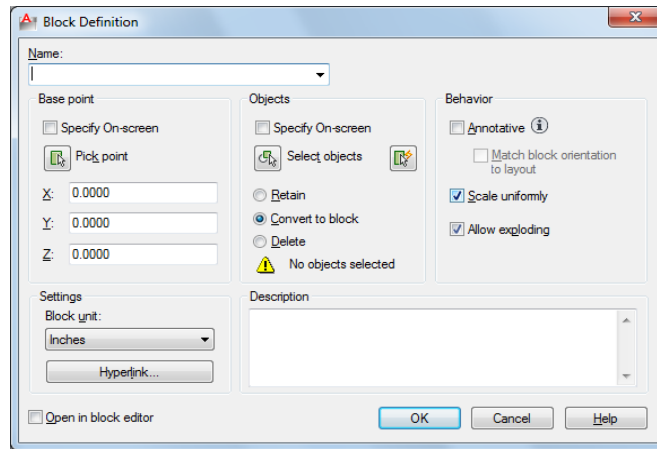
# Block Definition Dialog Box

## Quick Reference

See also:

- Define Blocks

Defines and names a block.



### List of Options

The following options are displayed.

#### **Name**

Names the block. The name can have up to 255 characters and can include letters, numbers, blank spaces, and any special character not used by the operating system or the program for other purposes.

The block name and definition are saved in the current drawing.

#### **Preview**

If an existing block is selected under Name, displays a preview of the block.

#### **Base Point**

Specifies an insertion base point for the block. The default value is 0,0,0.

#### **Specify On-Screen**

Prompts you to specify the base point when the dialog box is closed.

#### **Pick Insertion Base Point**

Temporarily closes the dialog box so that you can specify an insertion base point in the current drawing.

#### **X**

Specifies the *X* coordinate value.

#### **Y**

Specifies the *Y* coordinate value.

## Z

Specifies the Z coordinate value.

## Objects

Specifies the objects to include in the new block and whether to retain or delete the selected objects or convert them to a block instance after you create the block.

### Specify On-Screen

Prompts you to specify the objects when the dialog box is closed.

### Select Objects

Closes the Block Definition dialog box temporarily while you select the objects for the block. When you finish selecting objects, press Enter to return to the dialog box.

### Quick Select

Displays the [Quick Select dialog box](#), which defines a selection set.

### Retain

Retains the selected objects as distinct objects in the drawing after you create the block.

### Convert to Block

Converts the selected objects to a block instance in the drawing after you create the block.

### Delete

Deletes the selected objects from the drawing after you create the block.

### Objects Selected

Displays the number of selected objects.

## Behavior

Specifies the behavior of the block.

### Annotative

Specifies that the block is .

### Match Block Orientation to Layout

Specifies that the orientation of the block references in paper space viewports matches the orientation of the layout. This option is unavailable if the Annotative option is cleared.

#### **Scale Uniformly**

Specifies whether or not the block reference is prevented from being non-uniformly scaled.

#### **Allow Exploding**

Specifies whether or not the block reference can be exploded.

#### **Settings**

Specifies settings for the block.

#### **Block Unit**

Specifies the insertion units for the block reference.

#### **Hyperlink**

Opens the [Insert Hyperlink dialog box](#), which you can use to associate a hyperlink with the block definition.

#### **Description**

Specifies the text description of the block.

#### **Open in Block Editor**

Opens the current block definition in the [Block Editor](#) on page 127 when you click OK.

## **-BLOCK**

### **Quick Reference**

#### **See also:**

- Define Blocks

If you enter **-block** at the Command prompt, the following prompts are displayed.

## List of Prompts

The following prompts are displayed.

Enter **block name** or [?]: *Enter a name or ?*

### **Block Name**

Names the block. The name can have up to 255 characters and can include letters, numbers, blank spaces, and any special character not used by the operating system and the program for other purposes if the system variable EXTNames is set to 1.

If you enter the name of an existing block, you are prompted as follows:

**Redefine Block Reference** By redefining a block, you automatically update all references to that block. Attributes attached to existing block references remain unchanged in the drawing. However, new insertions of the block do not prompt for attributes unless the attribute definitions are included in the new block definition.

**Specify Insertion Base Point** The point specified as the base point is used for subsequent insertions of the block. Typically, a base point is the center of the block or its lower-left corner. The base point is also the point about which you can rotate the block during insertion. A block with 0 rotation is oriented according to the UCS in effect when it was created. Entering a 3D point inserts the block at a specific elevation. Omitting the Z coordinate uses the current elevation.



### ■ **Annotative:**

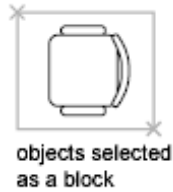
Enter **a** to create an annotative.

If you enter *yes*, the block becomes annotative.

**Match Orientation to Layout in Paper Space Viewports** If you enter *yes*, the block's orientation in paper space viewports will match the orientation of the layout.

**Select Objects** If you specify the insertion base point, you are prompted to select the objects.

The program defines a block using the objects selected, the insertion base point, and the name provided, and then erases the selected objects from the drawing. You can restore the deleted objects by entering the OOPS command immediately after BLOCK.



The insertion base point becomes the origin of the block's coordinate system, which is parallel to the UCS in effect at the time that you define the block. When you insert the block into a drawing, its coordinate system is aligned parallel to the current UCS. Thus, you can insert a block at any orientation in space by setting the UCS first.

### ?—List Previously Defined Blocks

Lists the block names in the text window.

**Enter Blocks to List** In the list, external references (xrefs) are indicated with the notation *Xref: resolved*.

In addition, externally dependent blocks (blocks in an xref) are indicated with the notation *xdep: XREFNAME*, where *xrefname* is the name of an externally referenced drawing. The following terms are used in the list:

- *User Blocks*: Number of user-defined blocks in the list.
- *External References*: Number of xrefs in the list.
- *Dependent Blocks*: Number of externally dependent blocks in the list.
- *Unnamed Blocks*: Number of unnamed (anonymous) blocks in the drawing.

## BMPOUT

### Quick Reference

**See also:**

- Export Raster Files

Saves selected objects to a file in device-independent bitmap format.



### Summary

The Create Raster File dialog box (a [standard file selection dialog box](#)) is displayed. Enter the file name in the dialog box.

A bitmap file that contains the objects you select is created. The file reflects what is displayed on the screen. Light glyphs that are displayed in the drawing appear in the new file, even if the Plot Glyph property of the lights is set to No.

---

**NOTE** When the FILEDIA system variable is set to 0 (Off), Command prompts are displayed.

---

## BOUNDARY

### Quick Reference

See also:

- Create and Combine Areas (Regions)


Creates a region or a polyline from an enclosed area.

### Access Methods



Button

 **Ribbon:** Home tab ► Draw panel ► Boundary

 **Menu:** Draw ► Boundary

### Summary

The [Boundary Creation dialog box](#) is displayed.

If you enter **-boundary** at the Command prompt, [options are displayed](#).

Each point that you specify identifies the surrounding objects and creates a separate region or polyline.



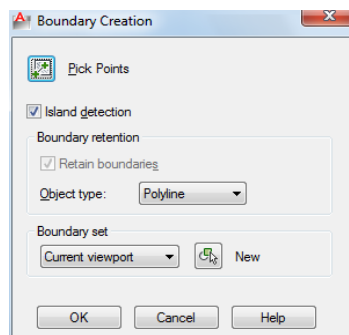
## Boundary Creation Dialog Box

### Quick Reference

See also:

- Create and Combine Areas (Regions)

Defines the object type, boundary set, and island detection method for creating a region or polyline using a specified point within an area enclosed by objects.



### List of Options

The following options are displayed.

#### **Pick Points**

Determines a boundary from existing objects that form an enclosed area around the specified point.

#### **Island Detection**

Controls whether **boundary** detects internal closed boundaries, called islands.

**Object Type**

Controls the type of the new boundary object. **boundary** creates the boundary as a region or a polyline object.

**Boundary Set**

Defines the set of objects **boundary** analyzes when defining a boundary from a specified point.

**Current Viewport** Defines the boundary set from everything in the current viewport extents. Selecting this option discards any current boundary set.

**New** Prompts you to select the objects that define the boundary set. **boundary** includes only the objects that can be used to create a region or closed polyline when it constructs the new boundary set.

For more information about the options in this dialog box, see HATCH.

## -BOUNDARY

**Quick Reference**

See also:

- Create and Combine Areas (Regions)

If you enter **-boundary** at the Command prompt, the following prompts are displayed.

Specify [internal point](#) or [\[Advanced options\]](#): *Specify a point or enter a*

**Internal Point**

Creates a region or polyline from existing objects that form an enclosed area. Specify a point inside the area.

**Advanced Options**

Sets the method BOUNDARY uses to create the boundary.

Enter an option [Boundary set/Island detection/Object type]: *Enter an option or press Enter to return to the previous prompt*

**Boundary Set** Defines the set of objects **boundary** analyzes when it creates a boundary from a specified point. For information about defining a boundary set at the Command prompt, see the HATCH Command prompt option.

**Island Detection** Specifies whether **boundary** uses objects within the outermost boundary as boundary objects. For information about specifying island detection at the Command prompt, see the HATCH Command prompt option.

**Object Type** Specifies the type of object that **boundary** creates.

- Region
- Polyline

## BPARAMETER

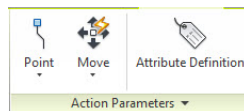
### Quick Reference

See also:


- Add Parameters to Dynamic Blocks

Adds a parameter with grips to a dynamic block definition.

### Access Methods



### Panel

 **Ribbon:** Block Editor contextual tab ➤ Action Parameters panel

### Summary

You can use the **bparameter** command only in the [Block Editor](#) on page 127. A parameter defines custom properties for the block reference. After you add a parameter, you must associate an action with the parameter to make the block dynamic.

### List of Prompts

The following prompts are displayed.

Enter parameter type [[Alignment/Base](#) on page 155/[pOint/Linear/Polar/XY/Rotation/Flip](#)/"[Visibility](#)"/[looKup](#)] <last>: *Enter a parameter type*

## Alignment



### Button

Block Editor contextual tab ► Action Parameters panel ► Action Parameters drop-down ► Alignment

Rotates the block reference about a point to align with other objects in the drawing.

**Specify Base Point of Alignment** Specifies the grip about which the block reference will rotate to align with another object in the drawing.

**Name** Sets the *Name* custom property for this parameter.

**Specify Alignment Direction** Determines the angle of alignment for the block reference.

**Type** Determines whether the block reference will align tangent or perpendicular to objects in the drawing.

### Base



### Button

Block Editor contextual tab ► Action Parameters panel ► Action Parameters drop-down ► Basepoint

Defines a changeable base point for the dynamic block reference in relation to the geometry in the block.

**Specify Parameter Location** Determines the default location of the basepoint for the block definition. This will be the location of the basepoint grip in the block reference.

### Point



### Button

Block Editor contextual tab ► Action Parameters panel ► Action Parameters drop-down ► Point

Defines custom *X* and *Y* properties for the block reference.

**Specify Parameter Location** Determines the *X* and *Y* location of the point parameter in the block definition. This will be the location of the point grip in the block reference.

**Name** [Name](#) on page 155

**Label** Defines a custom descriptive label for the location of the parameter.

**Chain** Determines whether the parameter is included in the selection set of an action that is associated with a different parameter.

- **Yes.** A change to an action associated with this parameter will also trigger other actions associated with this parameter, just as if you had edited the parameter through a grip or custom property.
- **No.** Associated actions are not triggered.

**Description** Defines an extended description of the [Label](#) on page 156 custom property. When the block reference is inserted, this description is displayed at the bottom of the Properties palette.

**Palette** Specifies whether the Label custom property is displayed in the Properties palette when the block reference is selected in a drawing.

## Linear



### Button

Block Editor contextual tab ► Action Parameters panel ► Action Parameters drop-down ► Linear

Defines the distance between two key points in the block definition.

**Specify Start Point/Endpoint** Specifies the key points for the parameter in the block definition.

**Name** [Name](#) on page 155

**Label** [Label](#) on page 156

**Chain** [Chain](#) on page 156

**Description** [Description](#) on page 156

**Base** Specifies the Base Location property for the parameter.

- **Startpoint.** The start point of the parameter remains fixed when the endpoint of the parameter is edited in the block reference.
- **Midpoint.** The midpoint of the parameter remains fixed, and the start point and endpoint of the parameter move simultaneously equal distances from the midpoint.

**Palette** [Palette](#) on page 156

**Value Set** Limits the available values for the parameter to the values specified in the set.

- **List.** Specifies a list of available values for the parameter in a block reference.
- **Increment.** Specifies a value increment and minimum and maximum values for the parameter in the block reference.

**Specify Label Location** Specifies the location of the [parameter label](#) on page 156 in the block definition.

**Enter Number of Grips** Determines the number of grips that will display in the block reference.

- **0.** No grips will be displayed in the block reference. Rather, the selected geometry can be edited in the Properties palette or a [lookup table](#) on page 142.
- **1.** A grip will be displayed at just the endpoint of the parameter.
- **2.** A grip will be displayed at both the start point and endpoint of the parameter.

## Polar



### Button

Block Editor contextual tab ► Action Parameters panel ► Action Parameters drop-down ► Polar

Defines a distance and angle for two key points in the block definition.

**Specify Base Point** Determines the point in the block definition relative to which the grip will be placed.

**Name** [Name](#) on page 155

**Label** [Label](#) on page 156

**Chain** [Chain](#) on page 156

**Description** [Description](#) on page 156

**Palette** [Palette](#) on page 156

**Value Set** [Value Set](#) on page 157

**Specify Endpoint** Determines the distance and angle from the base point. The distance and angle are custom properties in the Properties palette.

**Specify Label Location** [Specify Label Location](#) on page 157

**Enter Number of Grips** [Enter Number of Grips](#) on page 157

## **XY**



### **Button**

Block Editor contextual tab ► Action Parameters panel ► Action Parameters drop-down ► XY

Defines an  $X$  and  $Y$  distance from the base point of a block definition.

**Specify Base Point** Determines the maximum  $X$  distance for the parameter.

**Name** [Name](#) on page 155

**Label** [Label](#) on page 156

**Chain** [Chain](#) on page 156

**Description** [Description](#) on page 156

**Palette** [Palette](#) on page 156

**Value Set** [Value Set](#) on page 157

**Specify Endpoint** Determines the maximum  $Y$  distance for the parameter.

**Specify Number of Grips** Determines the number of grips that will display in the block reference.

- **0.** on page 157
- **1.** A grip will be displayed at the endpoint of the  $Y$  distance.
- **2.** A grip will be displayed at both endpoints.



- 4. Grips will be displayed at all four corners of the parameter.

## Rotation



### Button

Block Editor contextual tab ► Action Parameters panel ► Action Parameters drop-down ► Rotation

Defines an angle for the block reference.

**Specify Base Point** Determines the point about which the selected block geometry will be rotated.

**Name** [Name](#) on page 155

**Label** [Label](#) on page 156

**Chain** [Chain](#) on page 156

**Description** [Description](#) on page 156

**Palette** [Palette](#) on page 156

**Value Set** [Value Set](#) on page 157

**Specify Radius of Parameter** Determines the distance between the base point of the parameter and the grip.

**Specify Default Rotation Angle** Determines the location of the grip in the block reference.

**Base Angle** Specifies a base angle other than 0 for the parameter grip.

## Flip



### Button

Block Editor contextual tab ► Action Parameters panel ► Action Parameters drop-down ► Flip

Mirrors objects or the entire block reference about a reflection line.

**Specify Base Point** Determines the first point for the line of reflection. The parameter grip will be displayed at this point.

Name [Name](#) on page 155

Label [Label](#) on page 156

Description [Description](#) on page 156

Palette [Palette](#) on page 156

**Specify Endpoint of Reflection Line** Determines the endpoint of the reflection line.

**Specify Label Location** [Specify Label Location](#) on page 157

### Visibility



#### Button

Block Editor contextual tab ► Action Parameters panel ► Action Parameters drop-down ► Visibility

Defines objects that will either display or not display within the block definition.

**Specify Parameter Location** Determines a location for the parameter grip. The parameter can be placed anywhere within the block definition.

Name [Name](#) on page 155

Label [Label](#) on page 156

Description [Description](#) on page 156

Palette [Palette](#) on page 156

### Lookup



#### Button

Block Editor contextual tab ► Action Parameters panel ► Action Parameters drop-down ► Lookup

Defines user parameters that are determined by a lookup table.

**Specify Parameter Location** [Specify Parameter Location](#) on page 160

Name [Name](#) on page 155

Label [Label](#) on page 156

Description [Description](#) on page 156

Palette [Palette](#) on page 156

## BREAK

### Quick Reference

See also:


- Break and Join Objects

Breaks the selected object between two points.

### Access Methods



Button

 **Ribbon:** Home tab ► Modify panel ► Break

 **Ribbon:** Home tab ► Modify panel ► Break at Point

 **Menu:** Modify ► Break

 **Toolbar:** Modify

### Summary

You can create a gap between two specified points on an object, breaking it into two objects. If the points are off of an object, they are automatically projected on to the object. **break** is often used to create space for a block or text.



### List of Prompts

The following prompts are displayed.

Select object: *Use an object selection method, or specify the first break point (1) on an object*

The prompts that are displayed next depend on how you select the object. If you select the object by using your pointing device, the program both selects the object and treats the selection point as the first break point. At the next prompt, you can continue by specifying the second point or overriding the first point.

Specify second break point or [First point]: *Specify the second break point (2) or enter f*

**Second Break Point** Specifies the second point to use to break the object.

**First Point** Overrides the original first point with the new point that you specify.

Specify first break point:

Specify second break point:



The portion of the object is erased between the two points that you specify. If the second point is not on the object, the nearest point on the object is selected; therefore, to break off one end of a line, arc, or polyline, specify the second point beyond the end to be removed.

To split an object in two without erasing a portion, enter the same point for both the first and second points. You can do this by entering @ to specify the second point.

Lines, arcs, circles, polylines, ellipses, splines, donuts, and several other object types can be split into two objects or have one end removed.

The program converts a circle to an arc by removing a piece of the circle starting counterclockwise from the first to the second point.



You can also break selected objects at a single point with the Break at Point tool.

Valid objects include lines, open polylines, and arcs. Closed objects such as circles cannot be broken at a single point.



## BROWSER

### Quick Reference

See also:

- Get Started with Internet Access

Launches the default web browser defined in your system's registry.

### Access Methods



Button

 **Toolbar:** Web

### Summary

Pressing Enter displays your web browser, which automatically connects to the location you specify. Because **browser** does not append “http://” to web locations, you can specify an FTP or file location to your default web browser.

## BSAVE

### Quick Reference

See also:


- Create Blocks Within a Drawing

Saves the current block definition.

### Access Methods



Button

 **Ribbon:** Block Editor contextual tab ► Open/Save panel ► Save Block

### Summary

Saves changes to the current block definition.

You can only use the BSAVE command in the [Block Editor](#) on page 127.

# BSAVEAS

## Quick Reference

### See also:


- Create Blocks Within a Drawing

Saves a copy of the current block definition under a new name.

## Access Methods



### Button

 **Ribbon:** Block Editor contextual tab ► Open/Save panel ► Save Block As

## Summary

Displays the [Save Block As dialog box](#) on page 165.

You can only use the BSAVEAS command in the [Block Editor](#) on page 127.

# Save Block As Dialog Box

## Quick Reference

### See also:

- Create Blocks Within a Drawing

Saves a copy of the current block definition under a new name.

## List of Options

The following options are displayed.

**Block Name**

Specifies a new name under which to save a copy of the current block definition.

#### **Block List**

Displays a list of block definitions that are saved in the current drawing.

#### **Preview**

Displays a preview of the selected block definition.

#### **Description**

Displays the description saved with the block definition.

#### **Save Block Definition to Drawing File**

Saves the block definition as a drawing file. Selecting a pre-existing drawing file overwrites the saved file. By default, the block name specified is taken as the drawing file name.

## **BTABLE**

### **Quick Reference**

#### **See also:**


- [Define User Parameters in Dynamic Blocks](#)

Displays a dialog box to define variations of a block.

#### **Access Methods**



#### **Button**

 **Ribbon:** Block Editor contextual tab ► Dimensional panel ► Block Table

#### **Summary**

You can only use the **btable** command in the [Block Editor](#) on page 127. The [Block Properties Table dialog box](#) on page 167 is displayed after you specify a location point. The location point determines where the grip and table icon



are located in the block definition. The grip location determines where the grip appears in the block reference and displays a context menu based on the contents of the block properties table. The type of properties that can be included in the block properties table include legacy parameters, parameter constraints, user parameters, and attributes. The legacy action parameters that are added to the lookup tables cannot be added to the Block Properties Table.

Each row in the table defines a different variation of the block reference, and can be accessed by the lookup grip.

If a block table is already created in the block editor, entering the **btable** command directly displays the Block Properties Table dialog box (see [BLOOKUPTABLE](#) on page 142 command).

### **List of Prompts**

The following prompts are displayed.

Specify parameter location or [Palette]: *Specify a location point*

### **Palette**

Specifies whether the block table item is displayed in the Properties palette for the block reference.

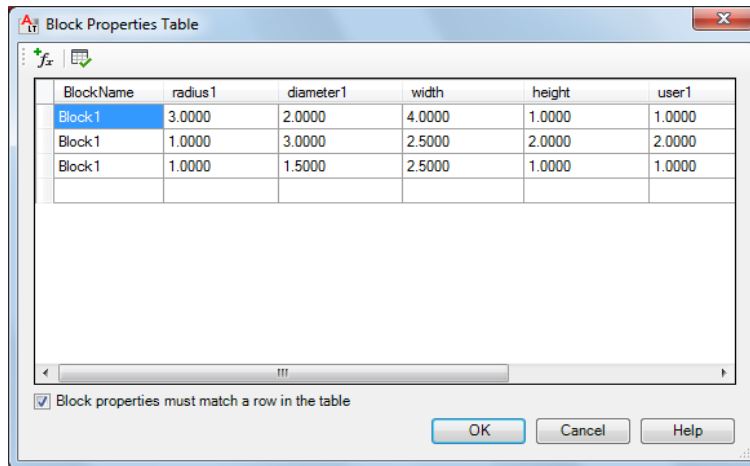
## **Block Properties Table Dialog Box**

### **Quick Reference**

#### **See also:**

- Define User Parameters in Dynamic Blocks

Defines the variations for a set of user-defined properties in the block definition through a grid control.



## Summary

You can press Shift+Enter to add a new line for a multiline attribute value in the grid in the Block Properties Table dialog box.

## List of Options

The following options are displayed.

### Add Properties

Displays the [Add Parameter Properties dialog box](#) on page 169 where you can add parameters already defined in the Block Properties Table.

### Audit

Checks the Block Properties Table for errors.

**Grid Control** Displays the name of parameters added to the table. You can also modify the properties of the table.

### Block Properties Must Match A Row In The Table

Specifies whether the properties added to the grid control can be modified individually for a block reference.

### Default Value When Properties Do Not Match Table

Displays the default values when other properties are changed without matching a row.

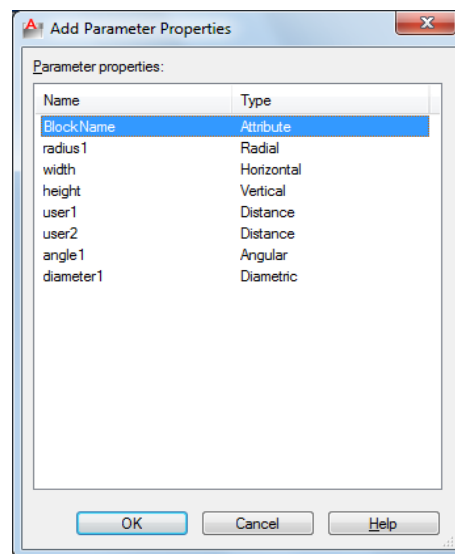
## Add Parameter Properties Dialog Box

### Quick Reference

See also:

- Define User Parameters in Dynamic Blocks

Adds parameter properties to the block properties table.



### List of Options

The following options are displayed.

#### **Parameter Properties**

Displays a list of dimensional constraint parameters, user parameters, legacy parameters, and attribute definitions.

#### **Name**

Displays the names of parameters available to add to the block properties table.

#### **Type**

Identifies the type of the parameter.

# BTESTBLOCK

## Quick Reference

### See also:


- Test Blocks Within the Block Editor

Displays a window within the Block Editor to test a dynamic block.

### Access Methods



#### Button

 **Ribbon:** Block Editor contextual tab ► Open/Save panel ► Test Block

### Summary

You can only use the **btestblock** command in the [Block Editor](#) on page 127. With the Test Block window you can test a dynamic block without closing the Block Editor. You can select the block reference and test the grips or display the Properties palette and test the behavior when changing the properties. You can also insert additional copies of the block to test the inserting behavior. You can make changes and test the block without saving the changes to the block definition.

In the Test Block window, all AutoCAD commands operate the same way except the [BEDIT](#) on page 120, [SAVE](#) on page 1091, [SAVEAS](#) on page 1091, and [QSAVE](#) on page 1050 commands. The **bedit** command is not available in Test Block window. The **save**, **saveas**, and **qsave** commands remove the Test Block status from the window and the Test Block window becomes an open drawing. A Close Test Block Window contextual panel is added to the ribbon when you are in the Test Block mode.

In the Block Editor, the [BCLOSE](#) on page 116, [BTESTBLOCK](#) on page 170, and [CLOSE](#) on page 214 commands automatically close the Test Block window and discard the temporary file. The **btestblock** command closes the current Test Block window and opens a new window with the current definition.

---

**NOTE** Please ensure that there are entities present in the block being tested before running the **btestblock** command.

---

## BVHIDE

### Quick Reference

See also:

- Control the Visibility of Objects in a Block

Makes objects invisible in the current visibility state or all visibility states in a dynamic block definition.

### Access Methods



Button

**Ribbon:** Block Editor contextual tab ► Visibility panel ► Make Invisible  
**Shortcut menu:** Select objects to hide for visibility states. Right-click in the Block Editor drawing area. Click Object Visibility ► Hide for Current State or click Object Visibility ► Hide for All States

### Summary

Makes objects invisible for the current visibility state. You can only use the **bvhide** command in the [Block Editor](#) on page 127.

### List of Prompts

The following prompts are displayed.

Select objects to hide: *Select objects to hide for the current visibility state or all visibility states*

Hide for current state or all visibility states [Current/All] <Current>: *Enter **current** to hide the selected objects for the current visibility state or enter **all** to hide the selected objects for all visibility states in the block definition*

# BVSHOW

## Quick Reference

### See also:


- Control the Visibility of Objects in a Block

Makes objects visible in the current visibility state or all visibility states in a dynamic block definition.

### Access Methods



#### Button

 **Ribbon:** Block Editor contextual tab ► Visibility panel ► Make Visible  
**Shortcut menu:** Select objects to make visible for visibility states. Right-click in the Block Editor drawing area. Click Object Visibility ► Show for Current State or click Object Visibility ► Show for All States

### Summary

Allows you to make objects visible for visibility states. You can only use the **bvshow** command in the [Block Editor](#) on page 127.

### List of Prompts

The following prompts are displayed

Select objects to make visible: *Select objects to make visible for the current visibility state or all visibility states*

Make visible for current state or all visibility states [Current/All] <Current>:  
*Enter **current** to make the selected objects visible for the current visibility state or enter **all** to make the selected objects visible for all visibility states in the block definition*

# BVSTATE

## Quick Reference

See also:


- Control the Visibility of Objects in a Block

Creates, sets, or deletes a visibility state in a dynamic block.

## Access Methods



Button

 **Ribbon:** Block Editor contextual tab ► Visibility panel ► Visibility States

## Summary

Displays the [Visibility States dialog box](#) on page 173. You can only use the BVSTATE command in the [Block Editor](#) on page 127 after a visibility parameter has been added to the block definition.

# Visibility States Dialog Box

## Quick Reference

See also:

- Control the Visibility of Objects in a Block

Creates or modifies visibility states.

## List of Options

The following options are displayed.

**Visibility States**

Lists the available visibility states for the current dynamic block definition. The order of this list is reflected in the dynamic block reference when the grip is clicked to display the list of visibility states. The state at the top of the list is the default state for the block reference.

#### **Set Current**

Sets the selected visibility state as the current state to display in the Block Editor. Does not change the default visibility state that is displayed when the block is inserted in a drawing, nor does it change the displayed visibility state for block references already inserted and edited in the drawing.

#### **New**

Displays the [New Visibility State dialog box](#). on page 174

#### **Rename**

Renames the selected visibility state.

#### **Delete**

Deletes the selected visibility state.

#### **Move Up**

Moves the selected visibility state up in the list.

#### **Move Down**

Moves the selected visibility state down in the list.

## **New Visibility State Dialog Box**

### **Quick Reference**

#### **See also:**

- [Control the Visibility of Objects in a Block](#)

Creates a new visibility state.

#### **List of Options**

The following options are displayed.

#### **Visibility State Name**



Specifies the name for the new visibility state.

#### **Visibility Options for New States**

Displays options for the new visibility state.

#### **Hide All Existing Objects in New State**

Specifies that all objects in the block definition will be hidden in the new visibility state.

#### **Show All Existing Objects in New State**

Specifies that all objects in the block definition will be shown in the new visibility state.

#### **Leave Visibility of Existing Objects Unchanged in New State**

Specifies that the visibility of objects in the new visibility state will be the same as in the current visibility state on which the new state is based.

## **-BVSTATE**

### **Quick Reference**

**See also:**

- [Control the Visibility of Objects in a Block](#)

### **Access Methods**

 **Command entry:** `bedit > -bvstate`

### **List of Prompts**

The following prompts are displayed.

Current visibility state: *<Name of current visibility state>*

Enter an option [[New](#) on page 175/[Set](#) on page 176/[Delete](#) on page 176] *<New>*:

Enter an option or press Enter

#### **New**

Creates a new visibility state.

#### **Hide All**

Specifies that all objects in the block definition will be hidden in the new visibility state.

**Show All**

Specifies that all objects in the block definition will be shown in the new visibility state.

**Current Visibility**

Specifies that the visibility of objects in the new visibility state will be the same as in the current visibility state on which the new state is based.

**Set**

Specifies the visibility state to set as current.

**Delete**

Deletes a visibility state.

# C Commands

# 4

## CAL


### Quick Reference

See also:

- Use the Command Prompt Calculator

Evaluates mathematical and geometric expressions.

### Access Methods

 **Command entry:** 'cal for transparent use

### Summary

CAL is an online geometry calculator that evaluates point (vector), real, or integer expressions. The expressions can access existing geometry using the object snap functions such as CEN, END, and INS.

You can use these arithmetic and vector expressions in any command that expects points, vectors, or numbers.

## Understand Syntax of Expressions

### Quick Reference

See also:

- Use the Command Prompt Calculator

CAL evaluates expressions according to standard mathematical rules of precedence:

- Expressions in parentheses first, starting with the innermost set
- Operators in standard order: exponents first, multiplication and division second, and addition and subtraction last
- Operators of equal precedence from left to right

### Numeric Expressions

Numeric expressions are real integer numbers and functions combined with the operators in the following table.

#### Numeric operators

Operator	Operation
()	Groups expressions
^	Indicates exponentiation
*, /	Multiplies, divides
+, -	Adds, subtracts

The following are examples of numeric expressions:

**3**

**3 + 0.6**

**(5.8^2) + PI**

## Vector Expressions

A vector expression is a collection of points, vectors, numbers, and functions combined with the operators in the following table.

---

### Vector operators

---

Operator	Operation
( )	Groups expressions
&	Determines the vector product of vectors (as a vector) $[a,b,c] \& [x,y,z] = [ (b*z) - (c*y) , (c*x) - (a*z) , (a*y) - (b*x) ]$
*	Determines the scalar product of vectors (as a real number) $[a,b,c] * [x,y,z] = ax + by + cz$
*, /	Multiplies, divides a vector by a real number $a*[x,y,z] = [a*x,a*y,a*z]$
+, -	Adds, subtracts vectors (points) $[a,b,c] + [x,y,z] = [a+x,b+y,c+z]$

---

The following are examples of vector expressions:

$A + [1,2,3]$  provides the point located [1,2,3] units relative to point A.

The expression

$$[2<45<45] + [2<45<0] - [1.02, 3.5, 2]$$

adds two points and subtracts a third point. The first two points are expressed in spherical coordinates.

## Format Feet and Inches

### Quick Reference

See also:

- Use the Command Prompt Calculator

Enter feet and inches using the following format:

**feet'-inches"** or **feet' inches"** or **feet'inches"**

You can separate feet, inches, and fractional inches with a dash, a space, or nothing. You can use any of the following syntax cases to enter valid feet-inch formatted values:

- 5' or 60"
- 5'-9" or 5' 9" or 5'9"
- 5'-1/2" or 5' 1/2" or 5'1/2"
- 5'-9-1/2" or 5' 9-1/2" or 5'9-1/2"
- 5'-9 1/2" or 5' 9 1/2" or 5'9 1/2"

To designate inches for linear calculations, entering double quotes (") is optional. For example, instead of entering 5'9-1/2", you could enter 5'9-1/2.

---

**WARNING** With imperial units, CAL interprets a minus or a dash (-) as a unit separator rather than a subtraction operation. To specify subtraction, include at least one space before or after the minus sign. For example, to subtract 9" from 5', enter 5' -9" rather than 5'-9".

---

## Format Angles

### Quick Reference

See also:

- Use the Command Prompt Calculator

The default units for angles are decimal degrees. Enter angles using the following format:

*<degrees>d<minutes>'<seconds>"*

You must enter **0d** when entering an angle that is less than 1 degree (minutes and seconds only). You can omit the minutes or seconds if they are zero.

Enter a number followed by **r** to enter angles in radians. Enter a number followed by **g** to enter angles in grads.

The following examples show ways of entering angles:

**5d10'20"**

**0d10'20"**

124.6r

14g

Angles entered in any format are converted to decimal degrees.

Pi radians is equal to 180 degrees, and 100 grads is equal to 90 degrees.

## Use Points and Vectors

### Quick Reference

See also:

- Use the Command Prompt Calculator

Both points and vectors are pairs or triples of real numbers. A point defines a location in space, but a vector defines a direction (or translation) in space.

Some CAL functions, such as **p1d** and **plt**, return a point. Other functions, such as **nor** and **vec**, return a vector.

### Formatting Points and Vectors

A point or vector is a set of three real expressions enclosed in brackets ([ ]):  
*[r1,r2,r3]*

The notation *p1*, *p2*, and so forth designates points. The notation *v1*, *v2*, and so forth designates vectors. In drawings, points are displayed as dots, and vectors are displayed as lines with arrows.

CAL supports points expressed in all formats.

---

#### Point formats

---

Coordinate system	Point format
Polar	[dist<angle]
Cylindrical	[dist<angle,z]
Spherical	[dist<angle1<angle2]
Relative	Uses the @ prefix [@x,y,z]

---

---

### Point formats

---

Coordinate system	Point format
WCS (instead of UCS)	Uses the * prefix [ <i>*x,y,z</i> ]

---

You can omit the following components of a point or vector: coordinate values of zero and a comma immediately preceding the right bracket (]).

The following are valid points:

[1,2] is the same as [1,2,0]

[,3] is the same as [0,0,3]

[ ] is the same as [0,0,0]

In the following example, the point is entered in the relative spherical coordinate system with respect to the (WCS). The distance is  $1+2=3$ ; the angles are  $10+20=30$  degrees and 45 degrees, 20 minutes.

[ \*1+2<10+20<45d20"]

The following is a valid point that contains arithmetic expressions as its components:

[2\*(1.0+3.3),0.4-1.1,2\*1.4]

The following example uses the Endpoint object snap and the vector [2,0,3] to calculate a point that is offset from a selected endpoint:

end + [2,,3]

The calculated point is offset 2 units in the X direction and 3 units in the Z direction relative to the selected endpoint.

## Use System Variables in Calculations

### Quick Reference

#### See also:

- Use the Command Prompt Calculator

You can use the *getvar* function to read the value of a system variable.

The syntax is



`getvar(variable_name)`

The following example uses `getvar` to obtain the point that is the center of the view in the current viewport.

**getvar(viewctr)**

With this method, you can also access the user system variables, USER1-5 and USERR1-5. For example, to retrieve the value stored in USERR2, enter the following:

**getvar(userr2)**

## Convert Units of Measurement

### Quick Reference

See also:

- Use the Command Prompt Calculator

The `cvunit` function converts either a number or a point from one unit of measurement to another. See the `acadlt.unt` file for a list of units that you can convert. The syntax is

`cvunit(value, from_unit, to_unit)`

The following example converts the value 1 from inches to centimeters:

**cvunit(1,inch,cm)**

## Use Standard Numeric Functions

### Quick Reference

See also:

- Use the Command Prompt Calculator

CAL supports the standard numeric functions in the following table.

Numeric functions	
Function	Description
$\sin(\text{angle})$	Sine of the angle
$\cos(\text{angle})$	Cosine of the angle
$\text{tang}(\text{angle})$	Tangent of the angle
$\text{asin}(\text{real})$	Arcsine of the number; the number must be between -1 and 1
$\text{acos}(\text{real})$	Arccosine of the number; the number must be between -1 and 1
$\text{atan}(\text{real})$	Arctangent of the number
$\ln(\text{real})$	Natural log of the number
$\log(\text{real})$	Base-10 log of the number
$\exp(\text{real})$	Natural exponent of the number
$\exp10(\text{real})$	Base-10 exponent of the number
$\text{sqr}(\text{real})$	Square of the number
$\text{sqrt}(\text{real})$	Square root of the number; the number must be nonnegative
$\text{abs}(\text{real})$	Absolute value of the number
$\text{round}(\text{real})$	Number rounded to the nearest integer
$\text{trunc}(\text{real})$	Integer portion of the number
$\text{r2d}(\text{angle})$	Angles in radians converted to degrees; for example, <b>r2d(pi)</b> converts the pi radians to 180 degrees
$\text{d2r}(\text{angle})$	Angles in degrees converted to radians; for example, <b>d2r(180)</b> converts 180 degrees to radians and returns the value of pi
pi	The constant pi

## Calculate a Vector from Two Points

### Quick Reference

See also:

- Use the Command Prompt Calculator

The functions **vec** and **vec1** calculate a vector from two points.

**vec(p1,p2)** Provides the vector from point *p1* to point *p2*.

**vec1(p1,p2)** Provides the unit vector from point *p1* to point *p2*.

The following example uses CAL to move selected objects 3 units in the direction from the center of one selected circle to the center of another selected circle:

Command: **move**

Select objects

Specify base point or displacement: '**cal**

>> Expression: **3\*vec1(cen,cen)**

Select entity for CEN snap: *Specify a circle or an arc*

Specify second point of displacement or <use first point as displacement>:

*Specify a point or press Enter*

The following examples illustrate the meaning of vector and point calculations.

---

#### Examples of vector and point calculations

---

Expression	Meaning
$\text{vec}(a,b)$	Determines vector translation from point <i>a</i> to point <i>b</i> .
$\text{vec1}(a,b)$	Determines unit vector direction from point <i>a</i> to point <i>b</i> .
$L*\text{vec1}(a,b)$	Determines vector of length <i>L</i> in the direction from point <i>a</i> to point <i>b</i> .
$a+v$	Determines point <i>b</i> , which is a translation of the point <i>a</i> through vector <i>v</i> .
$a+[5<20]$	Determines point <i>b</i> located 5 units away from point <i>a</i> at an angle of 20 degrees. Note that $[5<20]$ is a vector in polar coordinates.

---

## Calculate the Length of a Vector

### Quick Reference

See also:

- Use the Command Prompt Calculator

The **abs** function calculates the length of a vector.

**abs(v)** Calculates the length of vector *v*, a nonnegative real number.

In spherical coordinates (*dist<ang<ang*), the *dist* is the length of the vector.

The following example calculates the length of the vector [1,2,3]:

```
abs([1,2,3])
```

## Obtain a Point by Cursor

### Quick Reference

See also:

- Use the Command Prompt Calculator

To enter a point using the pointing device, use the **cur** function. The program prompts you to specify a point and uses the coordinate values of the point in the expression. The point coordinate values are expressed in terms of the current UCS. The **cur** function sets the value of theLASTPOINT system variable.

The following example adds the vector [3.6,2.4,0]—the result of 1.2\*[3,2]—to the point you select. This expression produces a point that is offset from the selected point.

```
cur+1.2*[3,2]
```

## Obtain the Last-Specified Point

### Quick Reference

See also:

- Use the Command Prompt Calculator

Use the character in the expression to obtain the coordinate of the last point, as shown in the following example:

```
Command: line
Specify first point: 'cal
>> Expression: cen+[0,1]
>> Select entity for CEN snap: Select a circle or an arc
Specify next point or [Close/Undo]: 'cal
>> Expression: +3*vec1(cen,cen)
```

The first point of the line is 1 unit in the *Y* direction from the center of the first selected circle. The second point of the line is 3 units away from the first point. The direction of the line is from the center of the first selected circle to the center of the second selected circle.

## Use Snap Modes in Arithmetic Expressions

### Quick Reference

See also:

- Use the Command Prompt Calculator

You can use Snap modes as parts of arithmetic expressions. The program prompts you to select an object and returns the coordinate of the appropriate snap point. Using arithmetic expressions with Snap modes greatly simplifies entering coordinates relative to other objects.

When you use these Snap modes, enter only the three-character name. For example, when you use the Center Snap mode, enter **cen**. CAL Snap modes set the value of the LASTPOINT system variable.

<b>CAL Snap modes</b>	
<b>Abbreviation</b>	<b>Snap mode</b>
END	ENDPOINT
INS	INSERT
INT	INTERSECTION
MID	MIDPOINT
CEN	CENTER
NEA	NEAREST
NOD	NODE
QUA	QUADRANT
PER	PERPENDICULAR
TAN	TANGENT

The following example uses the Center and Endpoint Snap modes in a CAL expression:

**(cen+end)/2**

CAL prompts for a circle or arc and an object. It then determines the midpoint between the center of the circle or arc and the end of the selected object.

Using the Midpoint Snap mode, in the following example CAL prompts for an object and returns a point 1 unit in the Y direction from the midpoint of the selected object:

**mid+[,1]**

The following example uses the Endpoint Snap mode to calculate the centroid of a triangle defined by three endpoints:

**(end+end+end)/3**

## Convert Points Between UCS and WCS

### Quick Reference

See also:

- Use the Command Prompt Calculator

Normally, the program assumes all coordinates to be relative to the current UCS. The following functions convert points between UCS and WCS.

**w2u(p1)** Converts point *p1* expressed in the WCS to the current UCS.

**u2w(p1)** Converts point *p1* expressed in the current UCS to the WCS.

You can use **w2u** to find the WCS origin in terms of the current UCS:

**w2u([0,0,0])**

### Filtering the X, Y, and Z Components of a Point or Vector

The following functions filter the X, Y, and Z components of a point or vector.

#### Point-filter functions

Function	Description
<i>xyof(p1)</i>	X and Y components of a point; Z component is set to 0.0
<i>xzof(p1)</i>	X and Z components of a point; Y component is set to 0.0
<i>yzof(p1)</i>	Y and Z components of a point; X component is set to 0.0
<i>xof(p1)</i>	X component of a point; Y and Z components are set to 0.0
<i>yof(p1)</i>	Y component of a point; X and Z components are set to 0.0
<i>zof(p1)</i>	Z component of a point; X and Y components are set to 0.0
<i>rxof(p1)</i>	X component of a point
<i>ryof(p1)</i>	Y component of a point
<i>rzof(p1)</i>	Z component of a point

The following example provides the Z component of a point expressed in spherical coordinates:

```
zof([2<45<45])
```

The following example provides a point whose X and Y coordinate values are taken from point *a* and the Z coordinate value from point *b*:

```
xyof(a)+zof(b)
```

## Calculate a Point on a Line

### Quick Reference

See also:

- Use the Command Prompt Calculator

The **plt** and **pld** functions return a point on a given line. You can specify the location of the point on the line either by its distance from the first point or parametrically by a *t* parameter.

**pld(p1,p2,dist)** Calculates a point on the line passing through points *p1* and *p2*. The parameter *dist* defines the distance of the point from the point *p1*.

**plt(p1,p2,t)** Calculates a point on the line passing through points *p1* and *p2*. The parameter *t* defines the parametric location of the point on the line.

The following are examples of the parameter *t*:

If *t*=0 the point is *p1*

If *t*=0.5 the point is the midpoint between *p1* and *p2*

If *t*=1 the point is *p2*

## Rotate a Point About an Axis

### Quick Reference

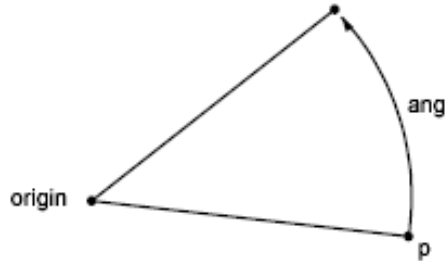
See also:

- Use the Command Prompt Calculator

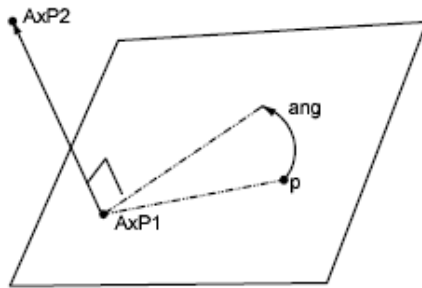


The **rot** function rotates a point about an axis and returns the resulting point.

**rot(p,origin,ang)** Rotates point  $p$  through angle  $ang$  about the  $Z$  axis passing through the point  $origin$ , as shown in the following example:



**rot(p,AxP1,AxP2,ang)** Rotates point  $p$  through an angle  $ang$  about the axis passing through points  $AxP1$  and  $AxP2$ , as shown in the following example. The axis is oriented from the first point to the second point.



## Obtain an Intersection Point

### Quick Reference

See also:

- Use the Command Prompt Calculator

The **ill** and **ilp** functions determine intersection points.

**ill(p1,p2,p3,p4)** Determines the intersection point between two lines  $(p1,p2)$  and  $(p3,p4)$ . All points are considered three-dimensional.

**ilp(p1,p2,p3,p4,p5)** Determines the intersection point between a line (p1,p2) and a plane passing through three points (p3,p4,p5).

## Calculate a Distance

### Quick Reference

See also:

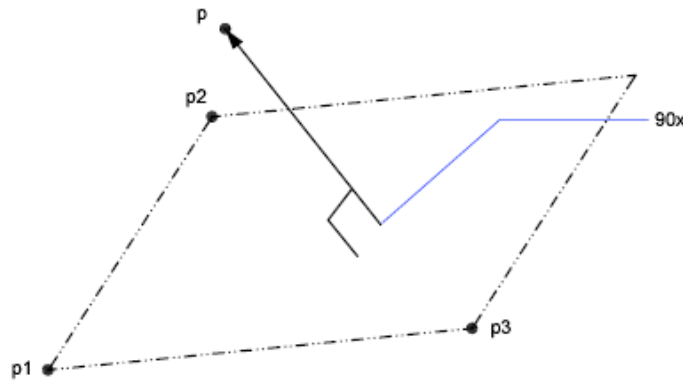
- Use the Command Prompt Calculator

**dist(p1,p2)** Determines the distance between two points, p1 and p2. This is the same as the vector expression **abs(p1-p2)**.

**dpl(p,p1,p2)** Determines the shortest distance between point p and the line passing through points p1 and p2.

**dpp(p,p1,p2,p3)** Determines the distance from a point p to a plane defined by three points (p1,p2,p3).

**dist(p1,p2)** Determines the distance between two points, p1 and p2. This is the same as the vector expression **abs(p1-p2)**.



The following example returns half the distance between the centers of two selected objects:

**dist(cen,cen)/2**

The following example finds the distance between the point 3,2,4 and a plane you define by selecting three endpoints:

```
dpp([3,2,4],end, end, end)
```

## Obtain a Radius

### Quick Reference

See also:

- Use the Command Prompt Calculator

The **rad** function determines the radius of a selected object.

**rad** Determines the radius of a selected object. The object can be a circle, an arc, or a 2D polyline arc segment.

The following example uses **rad** with the CIRCLE command. The radius of the new circle is two-thirds of the radius of the selected polyline arc segment:

Command: **circle**

Specify center point for circle or [3P/2P/Ttr (tangent tangent radius)]: **cen**  
of *Select the circle*

Specify radius of circle or [Diameter] <last>: **'cal**

>> Expression: **2/3\*rad**

>> Select circle, arc or polyline segment for RAD function: *Select the circle*

## Obtain an Angle

### Quick Reference

See also:

- Use the Command Prompt Calculator

The **ang** function determines the angle between two lines. Angles are measured counterclockwise with respect to either the *X* axis, in the two-dimensional case, or to a user-specified axis, in the three-dimensional case.

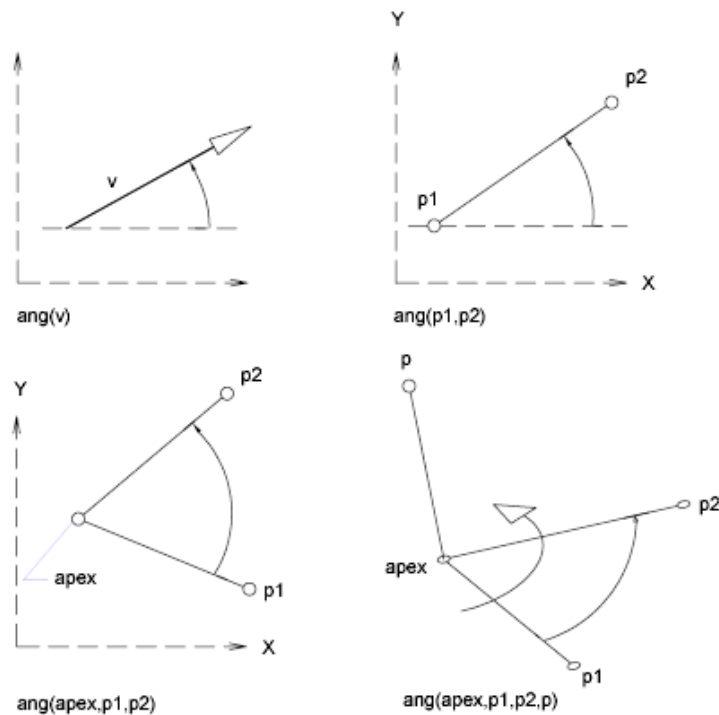
**ang(v)** Determines the angle between the *X* axis and vector *v*. The vector *v* is considered 2D, projected on the *XY* plane of the current UCS.

**ang(p1,p2)** Determines the angle between the X axis and the line (p1,p2), oriented from p1 to p2. The points are considered 2D, projected on the XY plane of the current UCS.

**ang(apex,p1,p2)** Determines the angle between lines (apex,p1) and (apex,p2). The points are considered 2D, projected on the XY plane of the current UCS.

**ang(apex,p1,p2,p)** Determines the angle between lines (apex,p1) and (apex,p2). The lines are considered 3D. The last parameter, point p, is used to define the orientation of the angle. The angle is measured counterclockwise with respect to the axis going from apex to p.

The following examples show how angles are measured.



You can determine the angle between the two sides of a triangle using the **ang** function, as shown in the following example:

Command: **cal**

>> Expression: **ang(end,end,end)**

Select the apex of the angle, and then select the two opposite vertices.

## Calculate a Normal Vector

### Quick Reference

See also:

- Use the Command Prompt Calculator

The **nor** function calculates the unit normal vector (a vector perpendicular to a line or plane), not a point. The vector defines the direction of the normal, not a location in space. You can add this normal vector to a point to obtain another point.

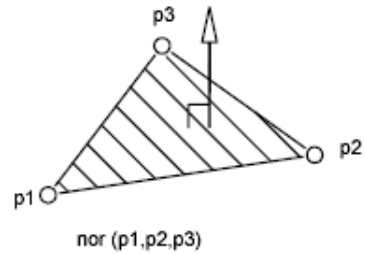
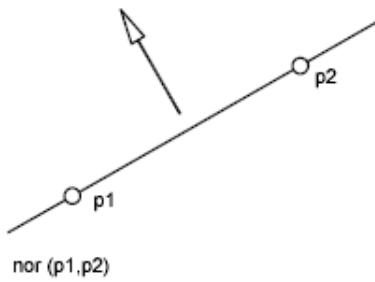
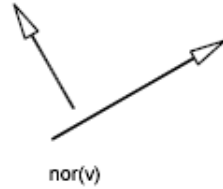
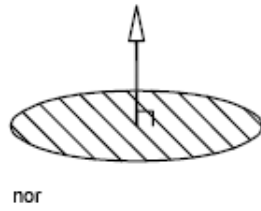
**nor** Determines the three-dimensional unit normal vector of a selected circle, arc, or polyline arc segment. This normal vector is the Z coordinate of the object coordinate system (OCS) of the selected object.

**nor(v)** Determines the two-dimensional unit normal vector to vector  $v$ . Both vectors are considered 2D, projected on the  $XY$  plane of the current UCS. The orientation of the resulting normal vector points to the left of the original vector  $v$ .

**nor(p1,p2)** Determines the 2D unit normal vector to line  $p1,p2$ . The line is oriented from  $p1$  to  $p2$ . The orientation of the resulting normal vector points to the left from the original line ( $p1,p2$ ).

**nor(p1,p2,p3)** Determines the 3D unit normal vector to a plane defined by the three points  $p1$ ,  $p2$ , and  $p3$ . The orientation of the normal vector is such that the given points go counterclockwise with respect to the normal.

The following illustrations show how normal vectors are calculated:



The following example sets the view direction perpendicular to a selected object. The program displays the object in plan view and does not distort the object by the parallel projection.

Command: **vpoint**

Current view direction: *VIEWDIR=current*

Specify a view point or [Rotate] <display compass and tripod>: '**cal**

>> Expression: **nor**

>> Select circle, arc or polyline for NOR function:

## Use Shortcut Functions

### Quick Reference

See also:

- Use the Command Prompt Calculator

The functions in the table are shortcuts for commonly used expressions that combine a function with the Endpoint Snap mode.

Shortcut functions		
Function	Shortcut for	Description
dee	dist(end,end)	Distance between two endpoints
ille	ill(end,end,end,end)	Intersection of two lines defined by four endpoints
mee	(end+end)/2	Midpoint between two endpoints
nee	nor(end,end)	Unit vector in the <i>XY</i> plane and normal to two endpoints
pldee (d)	pld(d,end,end)	Point at a distance along a line determined by two endpoints (see pld)
pltee (t)	plt(t,end,end)	Point at a parametric location on a line determined by two endpoints (see plt)
vee	vec(end,end)	Vector from two endpoints
vee1	vec1(end,end)	Unit vector from two endpoints

## CHAMFER

### Quick Reference

See also:


- Create Chamfers

Bevels the edges of objects.

## Access Methods



### Button

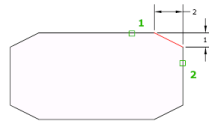
 **Ribbon:** Home tab ► Modify panel ► Chamfer and Fillet drop-down ► Chamfer

 **Menu:** Modify ► Chamfer

 **Toolbar:** Modify

## Summary

The distances and angles that you specify are applied in the order that you select the objects.



You can chamfer lines, polylines, rays, and xlines.

## List of Prompts

The following prompts are displayed.

(TRIM mode) Current chamfer Dist1 = *current*, Dist2 = *current*

Select [first line](#) on page 198 or [[Undo](#) on page 199/[Polyline](#) on page 199/[Distance](#) on page 199/[Angle](#) on page 199/[Trim](#) on page 200/[mEthod](#) on page 200/[Multiple](#) on page 200]: *Use an object selection method or enter an option*

### First Line

Specifies the first of two edges required to define a 2D chamfer.

If you select lines or polylines, their lengths adjust to accommodate the chamfer line. You can hold down Shift while selecting the objects to override the current chamfer distances with a value of 0.

If the selected objects are line segments of a 2D polyline, they must be adjacent or separated by no more than one segment. If they're separated by another polyline segment, CHAMFER deletes the segment that separates them and replaces it with the chamfer.

### Enter Surface Selection Option

Edge



Loop

**Undo**

Reverses the previous action in the command.

**Polyline**

Chamfers an entire 2D polyline.

The intersecting polyline segments are chamfered at each vertex of the polyline. Chamfers become new segments of the polyline.

If the polyline includes segments that are too short to accommodate the chamfer distance, those segments are not chamfered.



**Distance**

Sets the distance of the chamfer from the endpoint of the selected edge.

If you set both distances to zero, CHAMFER extends or trims the two lines so they end at the same point.



**Angle**

Sets the chamfer distances using a chamfer distance for the first line and an angle for the second line.



**Trim**

Controls whether CHAMFER trims the selected edges to the chamfer line endpoints.

---

**NOTE** Trim sets the TRIMMODE system variable to 1; No Trim sets TRIMMODE to 0.

---

If the TRIMMODE system variable is set to 1, CHAMFER trims the intersecting lines to the endpoints of the chamfer line. If the selected lines do not intersect, CHAMFER extends or trims them so that they do. If TRIMMODE is set to 0, the chamfer is created without trimming the selected lines.

**Method**

Controls whether CHAMFER uses two distances or a distance and an angle to create the chamfer.

**Multiple**

Chamfers the edges of more than one set of objects.

**Expression**

Controls the chamfer distance with a mathematical expression. See Control Geometry with the Parameters Manager for a list of operators and functions allowed.

## CHANGE

**Quick Reference****See also:**

- Display and Change the Properties of Objects

Changes the properties of existing objects.

**List of Prompts**

The following prompts are displayed

**Select objects:**

Specify [change point](#) or [\[Properties\]](#): *Specify a new point, or press Enter to enter new values*

**Specify Objects**

If you select lines and other changeable objects in the same selection set, you get varying results depending on the object selection sequence. The easiest

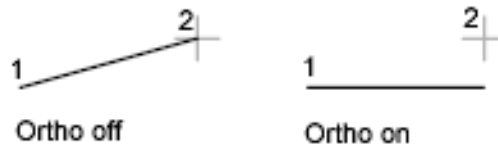
way to use CHANGE is to select only lines in a selection set or select only objects other than lines in a selection set.

Except for zero-thickness lines, the objects selected must be parallel to the current user coordinate system (UCS).

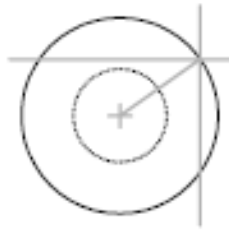
### **Change Point or Values**

Changes the selected objects. The result depends on the type of objects you select.

**Lines** Moves the endpoints of the selected lines that are closest to the change point to the new point, unless Ortho mode is on. If Ortho mode is on, the selected lines are modified so that they become parallel to either the X or the Y axis; their endpoints are not moved to the specified coordinate.



**Circles** Changes the circle radius. If you selected more than one circle, the prompt is repeated for the next circle.



**Text** Changes text location and other properties.

**Specify New Text Insertion Point** Relocates the text.

**Attribute Definitions** Changes the text and text properties of an attribute that is not part of a block.

**Blocks** Changes the location or rotation of a block.

Specifying a new location relocates the block. Pressing Enter leaves the block in its original location.



## Properties

Modifies properties of existing objects.

---

**NOTE** The Plotstyle option is displayed only when you are using named plot styles.

---

You can change several properties at a time. The Enter Property to Change prompt is redisplayed after each option is completed.

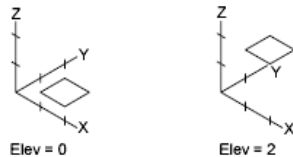
**Color** Changes the color of the selected objects.

For example, to change a color to red, enter **red** or **1**. If you enter **bylayer**, the object assumes the color of the layer on which it is located. If you enter **byblock**, the object inherits the color of the block of which it is a component.

- **True Color.** Specifies a true color to be used for the selected object. The integer values range from 0 to 255 separated by commas.
- **Color Book.** Specifies a color from a loaded color book to be used for the selected object.

**Elev** Changes the Z-axis elevation of 2D objects.

You can change the elevation of an object only if all its points have the same Z value.



**Layer** Changes the layer of the selected objects.

**Ltype** Changes the linetype of the selected objects.

If the new linetype is not loaded, the program tries to load it from the standard linetype library file, *acadlt.lin*. If this procedure fails, use LINETYPE to load the linetype.



**Ltscale** Changes the linetype scale factor of the selected objects.

**Lweight** Changes the lineweight of the selected objects. Lineweight values are predefined values. If you enter a value that is not a predefined value, the closest predefined lineweight is assigned to the selected objects.

**Thickness** Changes the Z-direction thickness of 2D objects.

Changing the thickness of a 3D polyline, dimension, or layout viewport object has no effect.



**Transparency** Changes the transparency level of selected objects.

Set the transparency to ByLayer or ByBlock, or enter a value from 0 to 90.

**Material** Changes the material of the selected objects if a material is attached.

**Annotative** Changes the property of the selected objects.

## CHPROP

### Quick Reference

**See also:**

- Display and Change the Properties of Objects

Changes the properties of an object.

### List of Prompts

The following prompts are displayed.

Select objects:

Enter property to change [[Color](#) on page 203/[Layer](#) on page 204/[LType](#) on page 204/[LtScale](#) on page 204/[LWeight](#) on page 204/[Thickness](#) on page 204/[TRansparency](#) on page 204/[Material](#) on page 204/[Annotative](#) on page 204]:

---

**NOTE** The Plotstyle option is displayed only when you are using named plot styles.

---

If you select several objects with different values for the property you want to change, *varies* is displayed as the current value.

### Color

Changes the color of the selected objects.

For example, to change a color to red, enter **red** or **1**. If you enter **bylayer**, the object assumes the color of the layer on which it is located. If you enter **byblock**, the object inherits the color of the block of which it is a component.

**True Color** Specifies a true color to be used for the selected object.

**Color Book** Specifies a color from a loaded color book to be used for the selected object.

**Layer**

Changes the layer of the selected objects.

**Ltype**

Changes the linetype of the selected objects.

If the new linetype is not loaded, the program tries to load it from the standard linetype library file, *acadlt.lin*. If this procedure fails, use LINETYPE to load the linetype.



**Ltscale**

Changes the linetype scale factor of the selected objects.

**Lweight**

Changes the lineweight of the selected objects. Lineweight values are predefined values. If you enter a value that is not a predefined value, the closest predefined lineweight is assigned to the selected objects.

**Thickness**

Changes the Z-direction thickness of 2D objects.

Changing the thickness of a 3D polyline, dimension, or layout viewport object has no effect.



**Transparency**

Changes the transparency level of selected objects.

Set the transparency to ByLayer or ByBlock, or enter a value from 0 to 90.

**Material**

Changes the material of the selected objects if a material is attached.

**Annotative**

Changes the property of the selected objects.

# CHSPACE

## Quick Reference

See also:

- Move Objects


Moves objects between model space and paper space.

## Access Methods



Button

 **Ribbon:** Home tab ► Modify panel ► Change Space

 **Menu:** Modify ► Change Space

## Summary

The moved object is scaled appropriately in the new space.

When transferring objects to paper space, the SOURCE viewport that you click determines the paper space location of the transferred objects. When transferring objects to model space, the TARGET viewport that you click determines the model space location of the transferred objects.

## List of Prompts

The following prompts are displayed.

Select objects:

Set the SOURCE viewport active and press Enter to continue:

Returns prompts similar to the following:

*N* object(s) changed from MODEL space to PAPER space.

Objects were scaled by a factor of *n* to maintain visual appearance.

# CIRCLE

## Quick Reference

See also:


- Draw Circles

Creates a circle.

## Access Methods



Button

 **Ribbon:** Home tab ► Draw panel ► Circle drop-down ► Center, Radius

 **Menu:** Draw ► Circle ► Center, Radius

 **Toolbar:** Draw

## List of Prompts

The following prompts are displayed.

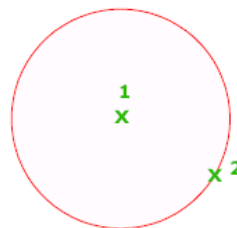
Specify [center point](#) on page 206 for circle or [[3P](#) on page 207/[2P](#) on page 207/[Tr](#) ([tan tan radius](#)) on page 208]: *Specify a point or enter an option*

### Center Point

Draws a circle based on a center point and a diameter or a radius.

**Radius** Defines the radius of the circle. Enter a value, or specify a point.

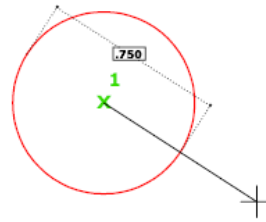
For example:





**Diameter** Defines the diameter of the circle. Enter a value, or specify a second point.

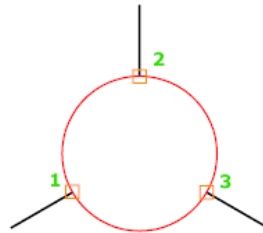
For example:



**3P (Three Points)**

Draws a circle based on three points on the circumference.

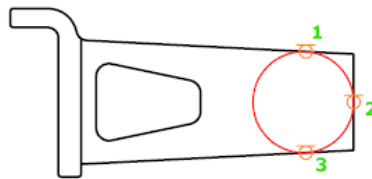
For example:



**Tan, Tan, Tan**

Creates a circle tangent to three objects.

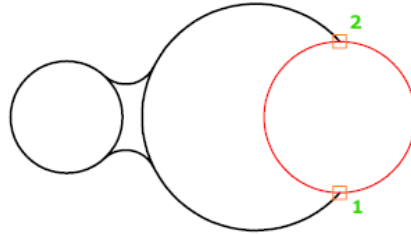
For example:



**2P (Two Points)**

Draws a circle based on two endpoints of the diameter.

For example:

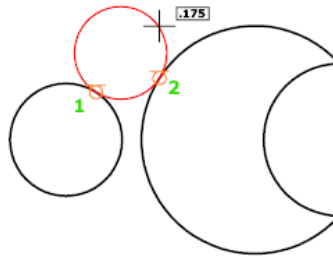


### **TTR (Tangent, Tangent, Radius)**

Draws a circle with a specified radius tangent to two objects.

Sometimes more than one circle matches the specified criteria. The program draws the circle of the specified radius whose tangent points are closest to the selected points.

For example:



## **CLASSICIMAGE**

### **Quick Reference**

See also:

- Manage Raster Images

Manages referenced image files in the current drawing.

### **Summary**

The legacy Image Manager is displayed. The [IMAGE](#) command now displays the External References palette.

---

**NOTE** This command will be removed in future releases.

---

## CLASSICLAYER

### Quick Reference

**See also:**

- Use Layers to Manage Complexity

Opens the legacy Layer Properties Manager.

### Summary

The legacy Layer Properties Manager is displayed. The [LAYER](#) command displays the current Layer Properties Manager.

---

**NOTE** This command will be removed in future releases.

---

## CLASSICXREF

### Quick Reference

**See also:**

- Attach and Detach Referenced Drawings

Manages referenced drawing files in the current drawing.

### Summary

The legacy Xref Manager is displayed. The [EXTERNALREFERENCES](#) on page 504 command displays the current External References palette.

---

**NOTE** This command will be removed in future releases.

---

# CLEANSCREENON

## Quick Reference

See also:


- Control the Display of Toolbars

Clears the screen of toolbars and dockable windows, excluding the command window.

## Access Methods

 **Menu:** View ► Clean Screen

 **Command entry:** Ctrl+0

 **Toolbar:** Status bar ► Clean Screen

## Summary

The screen displays only the menu bar, the Model and layout tabs at the bottom of the drawing, the status bars, and the command line. Use CLEANSCREENOFF to restore the display of interface items that were hidden by CLEANSCREENON.

# CLEANSCREENOFF

## Quick Reference

See also:


- Control the Display of Toolbars

Restores the state of the display before CLEANSCREENON was used.

## Access Methods

 **Menu:** View ► Clean Screen

 **Command entry:** Ctrl+0

 **Toolbar:** Status bar ► Clean Screen

## Summary

Restores the state of the display before [CLEANSCREENON](#) was used. Use [CLEANSCREENON](#) to clear the screen of most AutoCAD user interface elements.

# CLIP

## Quick Reference

See also:


- [Clip Underlays](#)

Crops a selected external reference, image, viewport, or underlay (DWF, DWFx, PDF, or DGN) to a specified boundary.

## Access Methods



Button

 **Ribbon:** Insert tab ► Reference panel ► Clip

## Summary

The clipping boundary determines a portion of an image, underlay, viewport, or external reference to hide. The visibility of the clipping boundary is controlled by the [FRAME](#) on page 1512 system variable.

## List of Prompts

The list of prompts varies depending on whether you are clipping an underlay, image, external reference, or viewport.

### Underlay and Image Prompts

The following prompts are displayed.

**On** Turns on clipping and displays the underlay clipped to the previously defined boundary.

**Off** Turns off clipping and displays the entire PDF underlay and frame.

If you clip the underlay again while clipping is off, clipping automatically turns on. You are prompted to delete the old boundary even when clipping is off and the clipping boundary is not visible.

**Delete** Removes a predefined clipping boundary and redisplay the full original underlay.

**New Boundary** Defines a rectangular or polygonal clipping boundary, or generates a polygonal clipping boundary from a polyline.

---

**NOTE** You can only create a new clipping boundary for an underlay when the old boundary is deleted.

---

**Select Polyline** Defines the boundary with the selected polyline. The polyline can be open but must consist of straight line segments and cannot intersect itself.

**Polygonal** Defines a polygonal clipping boundary with three or more points that you specify for the vertices of a polygon.

**Rectangular** Defines a rectangular boundary with the points that you specify for opposite corners.

**Invert Clip** Inverts the mode of the clipping boundary: objects are clipped either outside the boundary or inside the boundary.

### **External Reference Prompts**

The following prompts are displayed.

Select objects: *Use an object selection method and press Enter* when you finish selecting objects

Enter clipping option [[ON](#) on page 1351/[OFF](#) on page 1351/[Clipdepth](#) on page 1351/[Delete](#) on page 1351/[generate Polyline](#) on page 1352/[New boundary](#) on page 1352] <New>: *Select an option or press Enter*

**On** Displays the clipped portion of the external reference or block in the current drawing.

**Off** Displays all of the geometry of the external reference or block in the current drawing, ignoring the clipping boundary.

**Clipdepth** Sets the front and back clipping planes on an xref or block. Objects outside the volume defined by the boundary and the specified depth are not displayed. Regardless of the current UCS, the clip depth is applied parallel to the clipping boundary.

- **Front Clip Point.** Creates a clipping plane passing through and perpendicular to the clipping boundary.

- **Distance.** Creates a clipping plane the specified distance from and parallel to the clipping boundary.
- **Remove.** Removes both the front and back clipping planes.

**Delete** Removes a clipping boundary for the selected xref or block. To temporarily turn off a clipping boundary, use the Off option. Delete erases the clipping boundary and the clipdepth. The **ERASE** on page 469 command cannot be used to delete clipping boundaries.

**Generate Polyline** Automatically draws a polyline coincident with the clipping boundary. The polyline assumes the current layer, linetype, lineweight, and color settings. Use this option when you want to modify the current clipping boundary using **PEDIT** on page 939 and then redefine the clipping boundary with the new polyline. To see the entire xref while redefining the boundary, use the Off option.

**New Boundary** Defines a rectangular or polygonal clipping boundary, or generates a polygonal clipping boundary from a polyline.

**NOTE** You can only create a new clipping boundary for a selected XREF underlay when the old boundary is deleted.

- 
- **Select Polyline.** Defines the boundary with the selected polyline. The polyline can be open but must consist of straight line segments and cannot intersect itself.
  - **Polygonal.** Defines a polygonal clipping boundary with three or more points that you specify for the vertices of a polygon.
  - **Rectangular.** Defines a rectangular boundary with the points that you specify for opposite corners.
  - **Invert Clip.** Inverts the mode of the clipping boundary: objects are clipped either outside the boundary or inside the boundary.

### **Viewport Prompts**

**NOTE** You cannot clip a viewport in model space. You must be in paper space.

**Clipping Object** Select the viewport to clip.

**Polygonal** Draws a clipping boundary. You can draw line segments or arc segments by specifying points.

The descriptions of the Next Point, Arc, Close, Length, and Undo options match the descriptions of the corresponding options in the PLINE command.

**Delete** Deletes the clipping boundary of a selected viewport. This option is available only if the selected viewport has already been clipped. If you clip a viewport that has been previously clipped, the original clipping boundary is deleted, and the new clipping boundary is applied.

## CLOSE

### Quick Reference

#### See also:

- Open a Drawing

Closes the current drawing.

#### Access Methods

 **Menu:** Application menu  > Close > Current Drawing  
 **Menu:** File > Close

#### Summary

The current drawing is closed. If you modified the drawing since it was last saved, you are prompted to save or discard the changes.

You can close a file that has been opened in read-only mode if you have made no changes or if you are willing to discard changes. To save changes to a read-only file, you must use the SAVEAS command.

## CLOSEALL

### Quick Reference

#### See also:

- Open a Drawing

Closes all currently open drawings.



### Access Methods

-  **Menu:** Application menu  > Close > All Drawings
-  **Menu:** Window > Close All

### Summary

All open drawings are closed. A message box is displayed for each unsaved drawing, in which you can save any changes to the drawing before closing it.

## COLOR

### Quick Reference

See also:




- Set the Current Color

Sets the color for new objects.

### Access Methods



Button

-  **Ribbon:** Home tab > Properties panel > Object Color
-  **Menu:** Format > Color
-  **Command entry:** 'color for transparent use

### Summary

The [Select Color dialog box](#) is displayed.

If you enter **-color** at the Command prompt, [options are displayed](#).

## Select Color Dialog Box

### Quick Reference

#### See also:

- Set the Current Color

Defines the color of objects.

### Summary

You can select from the 255 AutoCAD Color Index (ACI) colors, true colors, and Color Book colors.

### List of Tabs

The following tabs are displayed.

- [Index Color](#)
- [True Color](#)
- [Color Books](#)

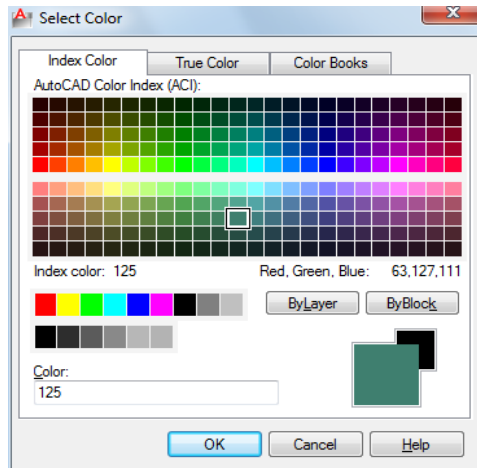
## Index Color Tab (Select Color Dialog Box)

### Quick Reference

#### See also:

- Set the Current Color

Specifies color settings using the 255 AutoCAD Color Index (ACI) colors.



### List of Options

The following options are displayed.

**AutoCAD Color Index (ACI) Palettes** Specifies a color from the AutoCAD Color Index. If you hover over a color, the number of the color and its red, green, blue value are displayed below the palette. Click a color to select it, or enter the color number or name in the Color box.

The large palette displays colors 10 through 249.

The second palette displays colors 1 through 9; these colors have names as well as numbers.

The third palette displays colors 250 through 255; these colors are shades of gray.

**Index Color** Indicates the ACI color number when you hover over a color.

**Red, Green, Blue** Indicates the RGB color value when you hover over a color.

### Bylayer

Specifies that new objects assume the color assigned to the layer on which you create them. When BYLAYER is selected, the color of the current layer is displayed in the Old and New color swatches.

### Byblock

Specifies that new objects use the default color (white or black, depending on your background color) until you group the objects into a block and insert

the block. When you insert the block into a drawing, the objects in the block inherit the current Color setting.

### Color

Specifies a color name, BYLAYER or BYBLOCK color, or an AutoCAD Color Index (ACI) number of 1 through 255. The New color swatch shows the most recently selected color.

### Old Color Swatch

Displays the previously selected color.

### New Color Swatch

Displays the currently selected color.

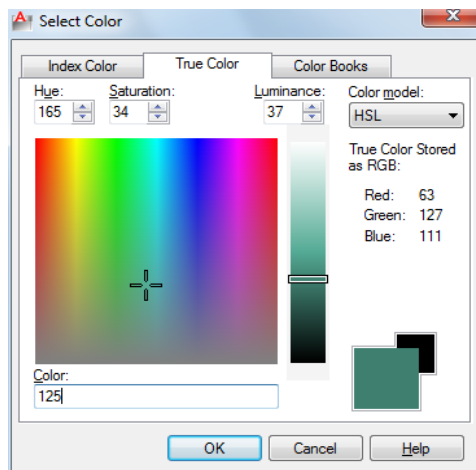
## True Color Tab (Select Color Dialog Box)

### Quick Reference

#### See also:

- Set the Current Color

Specifies color settings using true colors.



## Summary

Specifies color settings using true colors (24-bit color) with either the Hue, Saturation, and Luminance (HSL) color model or the Red, Green, and Blue (RGB) color model. Over sixteen million colors are available when using true color functionality. The options available on the True Color tab are dependent on whether the HSL or RGB color model is specified.

## List of Options

The following options are displayed.

### HSL Color Model

Specifies the HSL color model for selecting colors.

Hue, saturation, and luminance are properties of colors. By manipulating the values of these properties, you can specify a wide range of colors.

#### Hue (H)

Specifies the hue of a color. Hues represent a specific wavelength of light within the visible spectrum. To specify a hue, use the color spectrum or specify a value in the Hue box. Adjusting this value affects the RGB value. Valid hue values are from 0 to 360 degrees.

#### Saturation (S)

Specifies the purity of a color. High saturation causes a color to look more pure while low saturation causes a color to look washed-out. To specify color saturation, use the color spectrum or specify a value in the Saturation box. Adjusting this value affects the RGB value. Valid saturation values are from 0 to 100%.

#### Luminance (L)

Specifies the brightness of a color. To specify color luminance, use the color slider or specify a value in the Luminance box. Valid luminance values are from 0 to 100%. A value of 0% represents the color black, 100% represents white, and 50% represents the optimal brightness for the color. Adjusting this value also affects the RGB value.

**Color Spectrum** Specifies the hue and purity of a color. To specify a hue, move the crosshairs from side to side over the color spectrum. To specify color saturation, move the crosshairs from top to bottom over the color spectrum.

**Color Slider** Specifies the brightness of a color. To specify color luminance, adjust the bar on the color slider or specify a value in the Luminance box.

**RGB Color Model**

Specifies the RGB color model for selecting colors. The options available on the True Color tab are dependent on whether the HSL or RGB color model is specified.

Colors can be broken down into components of red, green, and blue. The values specified for each component represent the intensity of the red, green, and blue components. The combination of these values can be manipulated to create a wide range of colors.

**Red (R)**

Specifies the red component of a color. Adjust the slider on the color bar or specify a value from 1 to 255 in the Red box. If this value is adjusted, it will be reflected in the HSL color mode values.

**Green (G)**

Specifies the green component of a color. Adjust the slider on the color bar or specify a value from 1 to 255 in the Green box. If this value is adjusted, it will be reflected in the HSL color mode values.

**Blue (B)**

Specifies the blue component of a color. Adjust the slider on the color bar or specify a value from 1 to 255 in the Blue box. If this value is adjusted, it will be reflected in the HSL color mode values.

**Color**

Specifies the RGB color value. This option is updated when changes are made to HSL or RGB options. You can also edit the RGB value directly using the following format: **000,000,000**.

**True Color Stored as RGB**

Indicates the value for each RGB color component.

**Old Color Swatch**

Displays the previously selected color.

**New Color Swatch**

Displays the currently selected color.

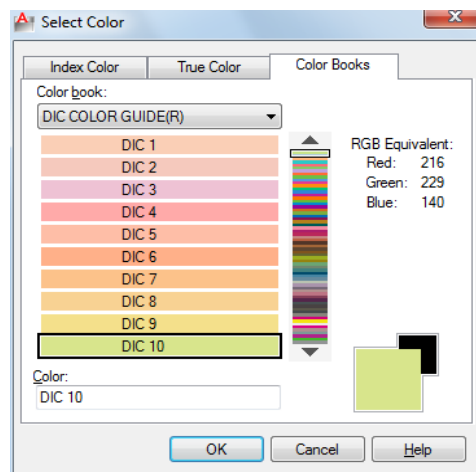
## Color Books Tab (Select Color Dialog Box)

### Quick Reference

See also:

- Set the Current Color

Specifies colors using third-party color books or user-defined color books.



### Summary

Once a color book is selected, the Color Books tab displays the name of the selected color book.

### List of Options

The following options are displayed.

#### Color Book

Specifies the color book to be used when selecting colors.

The list consists of all the color books that are found in the Color Book Locations specified in the Options dialog box, Files tab.

Displays the pages of the selected color book and the colors and color names on each page. Color books containing up to ten colors per page are supported. If a color book is not paginated, the colors are organized into pages containing

seven colors per page. To view color book pages, select an area on the color slider or use the up and down arrows to browse.

**RGB Equivalent** Indicates the value for each RGB color component.

#### **Color**

Indicates the currently selected color book color. You can search for a specific color in a color book by entering the number of the color swatch and pressing Tab. This action updates the New color swatch with the requested color number. If the specified color is not found in the color book, the closest number match is displayed.

#### **Old Color Swatch**

Displays the previously selected color.

#### **New Color Swatch**

Displays the currently selected color.

## **-COLOR**

### **Quick Reference**

#### **See also:**

- Set the Current Color

If you enter **-color** at the Command prompt, the following prompts are displayed.

Enter default object color [[Truecolor](#) on page 223/[Colorbook](#) on page 223]  
<BYLAYER>: *Enter a color, enter **t**, enter **co**, or press Enter*

You can enter a color from the AutoCAD Color Index (a color name or number), a true color, or a color from a color book.

You can enter the color number (1 through 255) or the color name (the names for the first seven colors). For example, you can specify the color red by entering the ACI number **1** or the ACI name **red**.

You can also enter **bylayer** or **byblock**. If you enter **byblock**, all new objects are drawn in the default color (white or black, depending on your background color) until they are grouped into a block. When you insert the block in a drawing, the objects in the block inherit the current setting of COLOR.



---

**WARNING** If you used a mixture of color methods to draw the objects that make up a block, inserting that block or changing its color produces complex results.

---

If you enter **bylayer**, new objects assume the color assigned to the layer on which you create them. See the LAYER command for information about assigning a color to a layer.

### List of Prompts

The following prompts are displayed.

**True Color** Specifies a true color to be used for the selected object. Enter three integer values from 0 to 255 separated by commas to specify a true color

**Color Book** Specifies a color from a loaded color book to be used for the selected object. Enter the name of a color book that has been installed.

If you enter a color book name, you are prompted to enter the color name in the color book.

## COMMANDLINE

### Quick Reference

See also:

- Dock, Resize, and Hide the Command Window

Displays the Command Line window.

### Access Methods



Button

 **Ribbon:** View tab ► Palettes panel ► Command Line

 **Menu:** Tools ► Command Line

### Summary

Displays the command line when it has been hidden.

You can display commands, system variables, options, messages, and prompts in a dockable and resizable window called the *Command Line*.

## COMMANDLINEHIDE

### Quick Reference

#### See also:

- Dock, Resize, and Hide the Command Window

Hides the Command Line window.

### Access Methods



#### Button

 **Ribbon:** View tab ► Palettes panel ► Command Line

 **Menu:** Tools ► Command Line

### Summary

Hides the Command Line. When the Command Line is hidden, you can still enter commands with dynamic prompts turned on.

## CONSTRAINTBAR

### Quick Reference

#### See also:

- Display and Verify Geometric Constraints


Displays or hides the geometric constraints on an object.

## Access Methods



### Button

 **Ribbon:** Parametric tab ► Geometric panel ► Show/Hide

 **Menu:** Parametric ► Constraints Bars ► Select Objects

 **Toolbar:** Parametric

## Summary

The selection preview behavior for constraint bars is as follows:

- Placing the cursor over an icon on a constraint bar highlights related geometry.
- Placing the cursor over a constrained object (while constraint bars are displayed) highlights the constraint icons associated with the selected object.

The [CONSTRAINTBARMODE](#) system variable or the [CONSTRAINTSETTINGS](#) command controls the display of geometric constraints on constraint bars, when constraint bars are displayed.

On the ribbon, you can also show or hide all constraint bars for all constrained geometries.

## List of Prompts

The following prompts are displayed.

Select objects: *Select objects with constraint bars*

Enter an option [[Show](#) on page 225/[Hide](#) on page 225/[Reset](#) on page 226]

<Show>: *Enter the appropriate value to show or hide constraint bars in the drawing.*

### Show

Displays constraint bars for the selected objects with geometric constraints applied to them.

### Hide

Hides constraint bars for the selected objects with geometric constraints applied to them.

### **Reset**

Displays constraint bars for all objects with geometric constraints applied to them and resets them to their default locations relative to their associated parameters.

## **CONSTRAINTSETTINGS**

### **Quick Reference**

#### **See also:**



- Overview of Constraints


Controls the display of geometric constraints on constraint bars.


#### **Access Methods**



#### **Button**

 **Ribbon:** Parametric tab ► Geometric panel ► Dialog Box Launcher 

 **Menu:** Parametric ► Constraint Settings

 **Toolbar:** Parametric

#### **Summary**

The [Constraint Settings dialog box](#) is displayed.

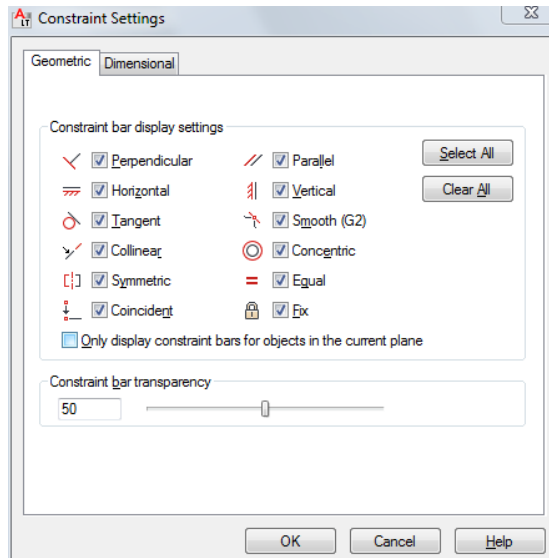
## **Constraint Settings Dialog Box**

### **Quick Reference**

#### **See also:**

- Overview of Constraints

Allows you to control the geometric constraints and dimensional constraints settings.



### List of Options

The following options are displayed.

The Constraint Settings dialog box includes the following:

- [Geometric Tab](#)
- [Dimensional Tab](#)

### Geometric Tab

Controls the display of constraint types on constraint bars.

**Constraint Bar Display Settings** Controls the display of constraint bars or constraint point markers for objects in the drawing editor.

For example, you can hide the display of constraint bars for Horizontal and Vertical constraints.

**Select All** Selects the geometric constraint types.

**Clear All** Clears the selected geometric constraint types.

**Only Display Constraint Bars for Object in the Current Plane** Displays constraint bars for geometrically constrained objects only on the current plane.

Sets the transparency level of constraint bars in a drawing.

### **Dimensional Tab**

Sets preferences in behavior when displaying dimensional constraints.

**Dimensional Constraint Format** Sets the display of the dimensional name format and lock icon.

**Dimension Name Format** Specifies the format for the text displayed when dimensional constraints are applied.

Set the name format to display: Name, Value, or Name and Expression.

For example: Width=Length/2

**Show Lock Icon for Annotational Constraints** Displays a lock icon against an object that has an annotational constraint applied ([DIMCONSTRAINTICON](#) on page 1452 system variable).

**Show Hidden Dynamic Constraints for Selected Objects** Displays dynamic constraints that have been set to hide when selected.

## **+CONSTRAINTSETTINGS**

### **Quick Reference**

**See also:**

- Overview of Constraints

Controls the tab that is displayed by default when the Constraint Settings dialog box is invoked.

<b>Tab Index</b>	<b>Tab Displayed</b>
0	Geometric tab
1	Dimensional tab

# CONTENTEXPLORER

## Quick Reference

### See also:

- Understand the Content Explorer Window
- DesignCenter
- Use Autodesk Seek to Add and Share Drawings

Finds and inserts content such as drawing files, blocks, and styles.

## Access Methods



### Button

 **Ribbon:** Plug-ins tab ► Content Panel ► Explore

## Summary

With Content Explorer you can index design content for quick access, catalog the objects in each file, and search for content in local folders, network folders, and the Autodesk Seek Library.

# CONTENTEXPLORERCLOSE

## Quick Reference

### See also:

- Understand the Content Explorer Window

Closes the Content Explorer window.

### Access Methods



Button

 **Ribbon:** Plug-ins tab ► Content Panel ► Explore

## CONVERT

### Quick Reference

See also:

- Use Drawings from Different Versions and Applications

Optimizes 2D polylines and associative hatches created in AutoCAD LT 95 or earlier.

### Summary

Hatches are not updated automatically when a drawing from a previous release is opened in AutoCAD LT 97 or later. Information about the rotation of a hatch pattern may not be updated properly if you have changed the UCS since creating the hatch. When updating hatches with CONVERT, it is recommended that you use the Select option so that you can check your results.

In most cases, you do not need to update polylines with CONVERT. By default, the PLINETYPE system variable specifies that polylines are updated automatically when you open an older drawing. Polyines may be created in the old format by third-party applications, and they may be contained in an older drawing that was inserted as a block and then exploded.



---

**NOTE** Polylines containing curve-fit or splined segments always retain the old format, as do polylines that store extended object data on their vertices. Editing commands make no distinction between the two formats.

---

### List of Prompts

The following prompts are displayed.

Enter type of objects to convert [Hatch/Polyline/All] <All>: Enter **h** for hatches, **p** for polylines, or **a** for both

**Hatch** Converts all hatches in the drawing.

**Polyline** Converts all polylines in the drawing.

**All** Converts all polylines and hatches in the drawing.

## CONVERTCTB

### Quick Reference

See also:

- Switch the Type of Plot Style Table

Converts a color-dependent plot style table (CTB) to a named plot style table (STB).

### Summary

Displays the Select File dialog box (a [standard file selection dialog box](#)), where you can select the color-dependent plot style table file you want to convert. The Save As dialog box is then displayed. If necessary, specify a new location or name for the converted plot style table file.

CONVERTCTB saves a copy of a color-dependent plot style table as a named plot style table, which you can then attach to drawings that use named plot styles. The original color-dependent plot style table is not affected by CONVERTCTB. The default location for the new named plot style table file is in the *Plot Styles* folder. The default name for the new named plot style table file is the same as the color-dependent plot style table name.

CONVERTCTB creates one named plot style for each color that has unique plot properties, one named plot style for each group of colors that are assigned the same plot properties, and a default named plot style called NORMAL.

For example, if all the colors in a color-dependent plot style table have the same plot properties, CONVERTCTB creates only two named plot styles in the named plot style table: NORMAL, the default plot style, and STYLE 1, which assumes the plot properties that were assigned to all the colors in the color-dependent plot style table. However, suppose that all the colors in a color-dependent plot style table have the same plot properties except for two colors, BLUE and GREEN. If these colors each have unique plot properties, CONVERTCTB creates four named plot styles in the named plot style table: NORMAL, the default plot style; STYLE 1, which assumes the plot properties of GREEN; STYLE 2, which assumes the plot properties of BLUE; and STYLE 3, which assumes the plot properties that were assigned to all the other colors.

CONVERTCTB gives the plot styles in the new named plot style table generic names such as STYLE 1, STYLE 2. You can modify these generic plot style names in the Plot Style Table Editor. Click the Edit button on the Plot Device tab in the [Page Setup dialog box](#). If you want to rename the plot styles, you must do so before applying them to drawing layouts.

## CONVERTPSTYLES

### Quick Reference

#### See also:

- [Switch the Type of Plot Style Table](#)

Converts the current drawing to either named or color-dependent plot styles.

### Summary

A drawing can use either named or color-dependent plot styles, but not both.

CONVERTPSTYLES converts a currently open drawing from color-dependent plot styles to named plot styles, or from named plot styles to color-dependent plot styles, depending on which plot style method the drawing is currently using.

When you convert a drawing, CONVERTPSTYLES sets the PSTYLEMODE system variable to the appropriate setting (0 = named, 1= color-dependent).

For example, a drawing using color-dependent plot styles assigns plot properties to objects and layers by color. In other words, all objects with the same color have the same plot properties. CONVERTPSTYLES converts the drawing to use named plot styles that can be applied to objects or layers independent of

color assignment. In other words, all objects with the same color can have different plot properties.

### **Converting Drawings from Color-Dependent to Named Plot Styles**

A dialog box advises you to convert the drawing's plot style tables before converting the drawing. You can convert the color-dependent plot style tables assigned to the drawing to named plot style tables using CONVERTCTB.

The Select File dialog box (a [standard file selection dialog box](#)) is displayed, where you select the named plot style table file to attach to the converted drawing.

CONVERTPSTYLES requires you to select a named plot style table that was converted using CONVERTCTB or created from a PC2 or PCP file. Normally you should select the named plot style table that was converted from the color-dependent plot style table that was assigned to the same drawing.

CONVERTPSTYLES attaches the selected named plot style table to model space and to all layouts. Drawing layers are each assigned a named plot style (from the converted plot style table) that has the same plot properties that their color-dependent plot style had.

- Drawing objects that had the same color-dependent plot style as their layer are assigned the named plot style BYLAYER.
- Drawing objects that had a color-dependent plot style that was different from their layer are assigned a named plot style that has the same properties that their color-dependent plot style had.

After a drawing is converted to named plot styles, you can change the named plot style table assignment or assign other named plot styles tables to model space or layouts. You can also assign individual plot styles to drawing objects.

### **Converting Drawings from Named to Color-Dependent Plot Styles**

A dialog box advises you that the named plot styles attached to objects and named plot style tables attached to model space and layouts will be detached.

After a drawing is converted to color-dependent plot styles, you can assign a color-dependent plot style table. Plot styles will be applied by color.

# COPY

## Quick Reference

See also:


- Copy Objects


Copies objects a specified distance in a specified direction.

## Access Methods



Button

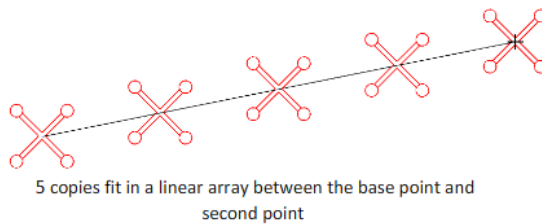
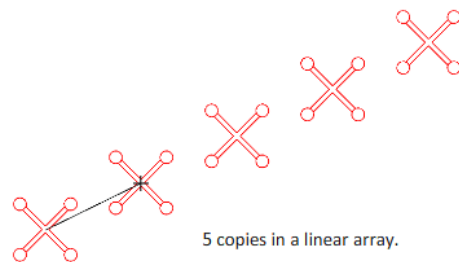
 **Ribbon:** Home tab ► Modify panel ► Copy

 **Menu:** Modify ► Copy

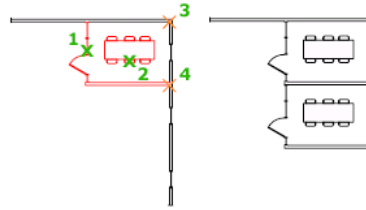
 **Toolbar:** Modify

**Shortcut menu:** Select the objects to copy, and right-click in the drawing area. Click Copy Selection.

## Summary



With the [COPYMODE](#) on page 1422 system variable, you can control whether multiple copies are created automatically.



### List of Prompts

The following prompts are displayed.

Select objects: *Use an object selection method and press Enter when you finish*  
Specify base point or [Displacement/mOde/Multiple] <Displacement>: *Specify a base point or enter an option*  
Specify second point or [Array] <use first point as displacement>: *Specify a second point or enter an option*

### Displacement

Specifies a relative distance and direction using coordinates.

The two points you specify define a vector that indicates how far from the original the copied objects are to be placed and in what direction.

If you press Enter at the Specify Second Point prompt, the first point is interpreted as a relative X,Y,Z displacement. For example, if you specify **2,3** for the base point and press Enter at the next prompt, the objects are copied 2 units in the X direction and 3 units in the Y direction from their current location.

### Mode

Controls whether the command repeats automatically (COPYMODE system variable).

**Single** Creates a single copy of selected objects and ends the command.

**Multiple** Overrides the Single mode setting. The COPY command is set to repeat automatically for the duration of the command.

### Array

Arranges a specified number of copies in a linear array.

**Number of Items to Array** Specifies the number of items in the array, including the original selection set.

**Second Point** Determines a distance and direction for the array relative to the base point. By default, the first copy in the array is positioned at the specified displacement. The remaining copies are positioned in a linear array beyond that point using the same incremental displacement.

**Fit** Positions the final copy in the array at the specified displacement. The other copies are fit in a linear array between the original selection set and the final copy.

**Fit**

Redefines the array to use the specified displacement as the location of the last copy rather than the first copy, fitting the other copies between the original selection set and the final copy.

## COPYBASE

### Quick Reference

See also:


- Cut, Copy, and Paste with the Clipboard

Copies selected objects to the Clipboard along with a specified base point.

### Access Methods



Button

 **Menu:** Edit ► Copy with Base Point

**Shortcut menu:** End any active commands, right-click in the drawing area, and choose Clipboard ► Copy with Base Point.

### Summary

The selected objects are copied to the Clipboard.

- Use PASTECLIP to move the copied objects from the Clipboard to a location in the same document or to another document.

- When you paste an object copied with COPYBASE, it is placed relative to the specified base point.

## COPYCLIP

### Quick Reference

See also:

- Cut, Copy, and Paste with the Clipboard


Copies selected objects to the Clipboard.

### Access Methods




Button

 **Ribbon:** Home tab ► Clipboard panel ► Copy Clip

 **Menu:** Edit ► Copy

 **Toolbar:** Standard

**Shortcut menu:** End any active commands, right-click in the drawing area, and choose Clipboard ► Copy.

 **Command entry:** Ctrl+C

### Summary

COPYCLIP copies all objects you select to the Clipboard. You can paste the contents of the Clipboard into a document or drawing.

---

**NOTE** If the cursor is in the drawing area, the selected objects are copied to the Clipboard. If the cursor is on the command line or in the text window, the selected text is copied to the Clipboard.

---

When you copy objects to the Clipboard, information is stored in all available formats. When you paste the Clipboard contents into a drawing, the format that retains the most information is used. You can also use Copy and Paste to transfer objects between drawings.

## COPYHIST

### Quick Reference

#### See also:

- Navigate and Edit Within the Command Window

Copies the text in the command line history to the Clipboard.

### Summary

The text is copied to the Clipboard.

## COPYLINK

### Quick Reference

#### See also:


- Edit OLE Objects in Drawings

Copies the current view to the Clipboard for linking to other OLE applications.

### Access Methods



#### Button

 **Menu:** Edit ► Copy Link

### Summary

You can copy the current view to the Clipboard and then paste the contents of the Clipboard into another document as a linked OLE object.



# COPYTOLAYER

## Quick Reference

See also:


- Use Layers to Manage Complexity


Copies one or more objects to another layer.

## Access Methods



Button

 **Ribbon:** Home tab ► Layers panel ► Copy Objects to New Layer

 **Menu:** Format ► Layers ► Copy Objects to New Layer

 **Toolbar:** Layers II

## Summary

Creates duplicates of selected objects on a layer that you specify. You can also specify a different location for the duplicated objects.

If you enter **-copytolayer** at the Command prompt, [options are displayed](#).

## List of Prompts

The following prompts are displayed.

Select objects to copy:

Select object on destination layer or [Name] <Name>: *Select an object or enter n*

### Select Object on Destination Layer

Specifies the layer on which the selected objects are placed.

**Specify Base Point** Specifies the base point of the copied objects.

**Displacement** Enters coordinate values that specify a relative distance and direction.

**Name**

Enter or select Name to display the [Copy to Layer dialog box](#) on page 240.

- [Specify Base Point](#) on page 239
- [Displacement](#) on page 239

## Copy To Layer Dialog Box

**Quick Reference**

See also:

- [Use Layers to Manage Complexity](#)

Specifies the layer on which the selected objects are placed.

**List of Options**

The following options are displayed.

**Destination Layer**

Displays a list of layers that you can select as the destination layer. You can also enter a name to create a new layer. The new layer inherits the properties (on/off, freeze/thaw, locked/unlocked, etc.) of the current layer.

## -COPYTOLAYER

**Quick Reference**

See also:

- [Use Layers to Manage Complexity](#)

**List of Prompts**

The following prompts are displayed.

Select objects to copy:

Specify the destination layer name or [?/= (select object)] <0>: *Select an object on the destination layer, enter ?, or enter =*

### **Specify the Destination Layer Name**

Displays a list of layers that you can select as the destination layer. You can also enter a name to create a new layer. The new layer inherits the properties (on/off, freeze/thaw, locked/unlocked, etc.) of the current layer

### **? (List Layers)**

Enter layer name(s) to list <\*>: \*

### **= (Select Object)**

Selects a destination layer by selecting an object on that layer.

## CUI

### **Quick Reference**

See also:

- Understand User Interface Customization

Manages the customized user interface elements in the product.

### **Access Methods**



Button

**Ribbon:** Manage tab ► Customization panel ► User Interface

**Menu:** Tools ► Customize ► Interface

### **Summary**

User interface elements such as workspaces, toolbars, menus, ribbon panels, shortcut menus, and keyboard shortcuts are all managed from this dialog box.

The [Customize User Interface Editor](#) is displayed.

---

**NOTE** The XML-based CUIx file replaces the CUI file used in AutoCAD 2006 through AutoCAD LT 2009, and both the legacy menu (MNS) and legacy menu template (MNU) files used in releases prior to AutoCAD 2006.

---

For information about customizing the different user interface elements found in the Customize User Interface dialog box, see User Interface Customization in the *Customization Guide*.

## Customize User Interface Editor

### Quick Reference

See also:

- Understand User Interface Customization

Manages customized user interface elements such as workspaces, toolbars, menus, shortcut menus, and keyboard shortcuts.

### List of Tabs

- [Customize](#)
- [Transfer](#)

For more information, see User Interface Customization in the *Customization Guide*.

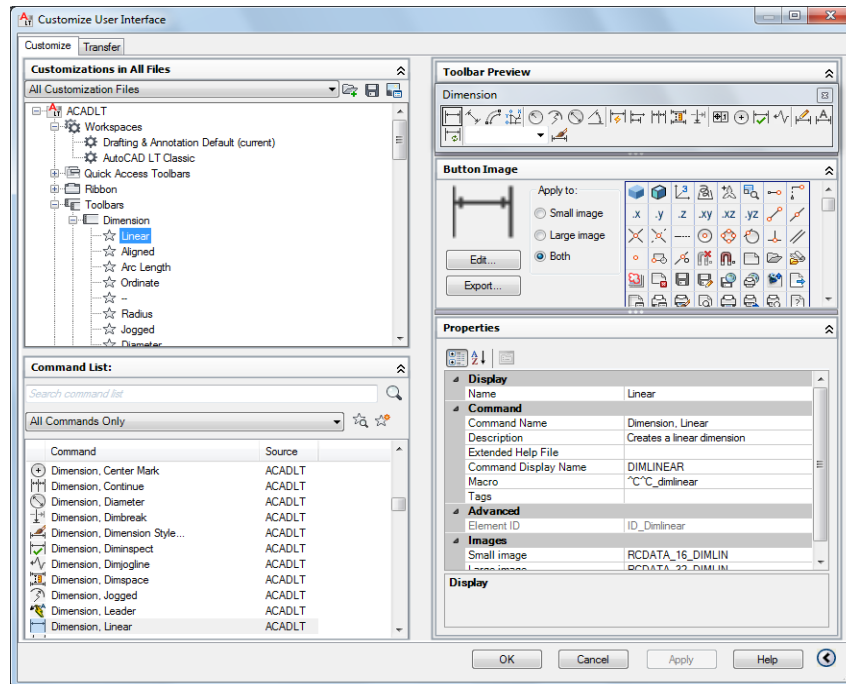
## Customize Tab (Customize User Interface Editor)

### Quick Reference

See also:

- Basics of Customization Files

Manages customized user interface elements such as workspaces, toolbars, menus, shortcut menus, and keyboard shortcuts.



## Summary

Provides an interface for customizing workspaces, toolbars, menus, ribbon panels, shortcut menus, and other user interface elements.

**NOTE** When the Customize User Interface Editor is displayed using the Customize Commands option from the Tool Palettes window or the Customize option from the Quick Access toolbar or a toolbar, the Customizations In pane is collapsed and the Command List pane is expanded.

## List of Options

The following options are displayed.

### Customizations In Pane

Displays a tree structure of user interface elements that can be customized, such as workspaces, toolbars, menus, ribbon panels, partial CUIx files, and so on.

**List box** Displays a list of CUIx files that are loaded and an Open option.

**Available Customizations In toolbar** Contains Load Partial Customization File and Save All Current Customization Files buttons.

**Load Partial Customization File** Loads a CUIx file that you can add to the *acadlt.cuix* file.

**Save All Current Customization Files** Saves changes to all loaded CUIx files.

**Image Manager** Displays the [Image Manager](#) on page 253, in which you can import, export, and delete images stored in a loaded CUIx file.

**Tree View** Displays the current customization file in a structured view so you can add and modify the user interface elements.

### **Dynamic Display Pane**

Displays content specific to the user interface element you select in the tree view in the left pane.

**Information** Describes selected user interface elements that do not have properties (such as the Toolbars node, Menus node, and Shortcut Menus node).

**Properties** Displays the properties of user interface elements or items selected in the tree view. Elements or items that display properties include specific menus, menu commands, toolbars, and toolbar buttons.

**Button Image** Displays the images that can be assigned to a command. You can create new and edit existing images with the [Button Editor](#) on page 252.

**Shortcuts** Displays a list of shortcut key names and temporary override names, their corresponding shortcut key combinations, keyboard shortcut type (shortcut key or temporary override), and the source CUIx file name.

**Toolbar Preview** Displays a preview of the selected toolbar.

**Panel Preview** Displays a preview of the selected ribbon panel.

**Quick Properties** Displays a list of object types and associated properties. You can specify which object types and properties are enabled to use with the Quick Properties panel and rollover tooltips.

### **Command List Pane**

Displays a list of commands that are loaded in the program.

**Categories** Displays filters for the command list, including All Commands, <Product> Commands, User Defined, Toolbar Control Elements, or Ribbon Control Elements. You can also filter the list to display commands within a specific CUIx file.

**Find Command or Text** Searches the current CUIx for a selected command or matching text string. Displays the [Find and Replace dialog box](#).

**Create a New Command** Creates a new command. You can add or change properties and create or edit a button.

### **Properties Pane**

Displays user interface properties that you can view, edit, or delete.

**General** Displays the name and description of a command or user interface element.

- **Name** - Displays the name of the user interface element. The name you enter is the label or tooltip name displayed in the program.
- **Description** - Displays the description for the user interface element. The description you enter is displayed in the status bar or in a tooltip.

### **Properties for Ribbon Tabs and Panels:**

- **Display Text** - Displays the name of the ribbon tab or panel.

### **Properties for Ribbon Tabs:**

- **Contextual Display Type** - Specifies whether the ribbon tab replaces all ribbon tabs on the ribbon or is merged with the ribbon tabs already displayed on the ribbon. (Full or Merged)

**Display** Determines which user interface elements are displayed after start up or when a workspace is set current.

- **Start On** - Specifies if the Model tab or last used layout is set current. (Model, Layout, or Do Not Change)
- **Menu Bar** - Specifies the display of the menu bar. (Off or On)
- **Status Bar** - Specifies the display of the application and drawing status bars. (Application Only, All Off, All On, or Drawing Status Bar Only)
- **Model/Layout Tabs** - Specifies the display of the Model and layout tabs along the bottom of the drawing window. (Off, On, or Do Not Change)
- **Scroll Bars** - Specifies the display of the scroll bars in the drawing window. (Off, On, or Do Not Change)

**Partial File Behavior** Controls how ribbon tabs are displayed when in a CUIx file that is being loaded as a partial customization file.

- **Default Display** - Specifies whether the ribbon tab is displayed on the ribbon when in a CUIx file that is loaded as a partial customization file. (Do Not Add to Workspaces or Add to Workspaces)
- **Workspace Behavior** - Specifies how the ribbon tab is merged or added to the ribbon when this CUIx file is loaded as a partial customization file. (Add Tab Only, Merge Tab Only, or Merge or Add Tab)

**Appearance** Controls the appearance of toolbars, ribbon panels, commands on a ribbon panel, and ribbon tabs.

#### **Properties for Ribbon Panels:**

- **Resize Style** - Specifies the resize style for a ribbon panel when the ribbon is reduced in size. (Collapse as Needed, Never Collapse, or Collapse Last)

#### **Properties for Ribbon Panels on Fold Panels and Sub-Panel:**

- **Top Justify** - Specifies the vertical justification for contents within sub-panels, or for fold panels of different heights.
- **Resize** - Specifies whether the panel can be resized.
- **Resize Priority** - Specifies the resizing priority of panels. When the ribbon is compressed, panels with lower values resize first. When a ribbon is expanded, panels with higher values resize first.

#### **Properties for a Command on Ribbon Panels:**

- **Button Style** - Specifies the orientation, size, and label display of the command. (Large With Text (Vertical), Large With Text (Horizontal), SmallWithText, SmallWithoutText, or LargeWithoutText)
- **Group Name** - Specifies the group name for the command when grouping is enabled for a drop-down.

#### **Properties for Drop-downs on Quick Access Toolbars and Ribbon Panels:**

- **Behavior** - Specifies if the button executes a command or displays a list of commands. (Drop Down Menu with Recent, Drop Down Menu, Split with Recent, Split, or Split with Recent (Static))



- **SplitButtonListStyle** - Specifies how the commands on the drop-down will be displayed. (Icon, IconText, or Descriptive)
- **Button Style** - Specifies the orientation, size, and label display of the button for the drop-down. (Large With Text (Vertical), Large With Text (Horizontal), SmallWithText, SmallWithoutText, or LargeWithoutText)
- **Grouping** - Specifies whether commands under a drop-down are grouped together using their assigned group names. (Yes or No)

#### Properties for Toolbars:

- **Default Display** - Specifies whether the toolbar is displayed when in a CUIx file that is loaded as a partial customization file. (Do Not Add to Workspaces or Add to Workspaces)
- **Orientation** - Specifies the location of the toolbar. (Floating, Top, Bottom, Left, or Right)
- **Default X Location** - Specifies the *X* location of the toolbar when floating.
- **Default Y Location** - Specifies the *Y* location of the toolbar when floating.
- **Rows** - Specifies the number of rows the items on the toolbar are displayed in when the toolbar is floating.

#### Properties for a Separator on Ribbon Panels:

- **Separator Style** - Specifies the style for the separator. (Line or Spacer)

Access Controls the key combination assigned to a shortcut key.

- **Key(s)** - Specifies the key combination assigned to a shortcut key.
- **KeyTip** - Specifies the keytip character to access a command or control from the ribbon.

#### Properties for Drop-downs on Quick Access Toolbars Ribbon Panels:

- **ToolTip Title** - Specifies the alternate title for the tooltip of a drop-down when its Behavior property is set to Drop Down Menu.

#### Resize Style

- **Hide Text** - Specifies that the text is never removed.
- **Wrap** - Specifies that the content does not wrap inside the panel.

- **Shrink** - Specifies the width of Row Panel never decreases below the default size.

#### Properties for Ribbon Fold Panels:

- **Default Size** - Specifies the size of the panel contents in a floating panel.
- **Minimum Size** - Specifies the smallest size each control in the panel collapses.
- **Maximum Size** - Specifies the largest size each control in the panel expands.

---

**IMPORTANT** Maximum Size must be greater than or equal to the Default Size, and Default Size must be greater than or equal to Minimum Size.

---

**Size** Controls the size of a tablet menu.

- **Rows** - Specifies the number of rows for a tablet menu.
- **Columns** - Specifies the number of columns for a tablet menu.

**Slide** Specifies the slide library and slide to use for a command in an image menu.

- **Slide library** - Specifies the slide library for the slide used for the command in an image menu.
- **Slide label** - Specifies the slide to use for the command in an image menu.

**Shortcut** Controls the key combination and macros assigned to a temporary override key.

- **Key(s)** - Specifies the key combination for the temporary override. Click the [...] button to display the Shortcut Keys dialog box. Click in the Press New Shortcut Key text box and assign the desired key combination.
- **Macro 1 (Key Down)** - Displays the macro to execute when the key combination is pressed.
- **Macro 2 (Key Up)** - Displays the macro to execute when the key combination is released.

**Command** Displays the properties assigned to a command.

- **Name** - Displays the name of the command. The name you enter is the label or tooltip name displayed in the program.

- **Description** - Displays the description for the command. The description you enter is displayed in the status bar or in a tooltip.
- **Extended Help File** - Displays the file name and ID from the extended help file that should be displayed when the cursor continues to hover over a toolbar, panel button, or menu item for a specified period of time. Click the [...] button to display the Select Extended Help File dialog box. Select a XAML file that contains tooltip definitions and then select the tooltip content to display from the Select Help ID dialog box.
- **Command Display Name** - Displays the command line text string that is shown in the command tooltip.
- **Macro** - Displays the macro assigned to a selected command. You can create a macro or edit an existing macro. Click the [...] button to display the Long String Editor dialog box and the full contents of the macro.
- **Tags** - Displays the user-defined keywords that are associated with a command. Tags can be used to search for commands in the menu browser. Click the [...] button to display the Tag Editor dialog box. Click the Tags text box to add, modify or remove tags. Each tag must be separated by a comma and the total number of characters for all the tags and separators cannot be more than 256 characters.

**Advanced** Displays the aliases and element IDs that you can define for each user interface element.

- **Aliases** - Specifies a unique value for a user interface element that is used to programmatically reference the user interface element. Click the [...] button to display the Aliases dialog box. Click in the text box and edit the list of assigned aliases.
- **Object Name** - Specifies the object type associated with a double click action.
- **Element ID** - Displays the tag that uniquely identifies a command or user interface element.

**Images** Determines which images are assigned to a command when displayed on a user interface element.

- **Small Image** - Specifies the small image file to use when a command is added to a toolbar, menu, or ribbon panel.
- **Large Image** - Specifies the large image file to use when a command is added to a toolbar or ribbon panel.

**Quick Properties Pane**

Displays a list of object types and the properties associated to the selected object type.

**Edit Object Type List** Controls which object types are used with the Quick Properties panel or rollover tooltips. Displays the Edit Object Type List dialog box.

**Object Type List** Displays a list of the object types you can use with Quick Properties panel or rollover tooltips.

**General** Displays the general properties that are available for all object types in the Properties list.

**Properties List** Displays the properties for the selected object type or the general properties available for all object types.

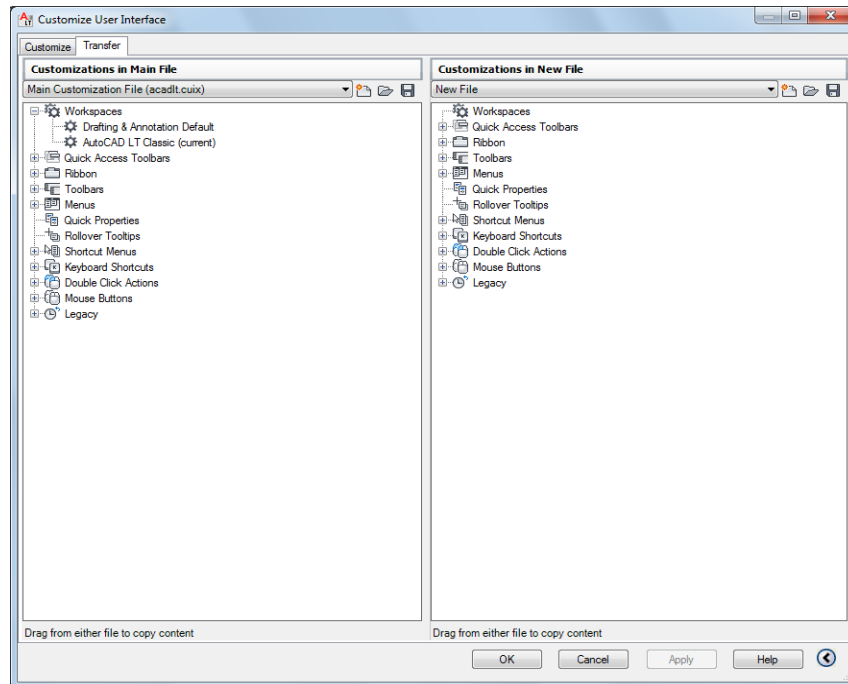
**Reset Overrides** Overrides the selected general properties for all object types.

## Transfer Tab (Customize User Interface Editor)

**Quick Reference****See also:**

- Transfer and Migrate Customization

Transfers user interface elements to or from a main or partial customization (CUIx) file, where your interface element data is stored.



## Summary

You open a CUIx, CUI, MNS, or MNU file to import or export user interface data. When you open CUI, MNU, or MNS files, they are not converted automatically to a CUIx file format until you save the new file that is created. The original CUI, MNU, or MNS file is not modified.

## List of Options

**Customizations In panes** When you enter **cuimport** at the Command prompt, the main CUIx file is displayed (*acadlt.cuix* by default) in the right pane. You open a CUIx or legacy customization file in the left pane to transfer data.

When you enter **cuexport** at the Command prompt, the main CUIx file is displayed in the left pane. You open another CUIx or legacy customization file in the right pane to transfer data.

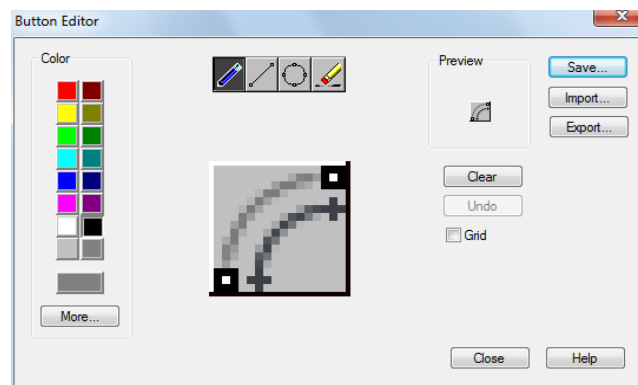
## Button Editor Dialog Box

### Quick Reference

See also:

- Create Custom Images for Commands

Modifies or creates custom images used for commands.



### List of Options

The following options are displayed.

#### Color Palette

Sets the current color used by the editing tools.

**Standard Color Swatches** Color swatches used to set of the standard 16 colors current.

**More** Opens the Select Color dialog box.

#### Editing Tools

Provides tools for editing a custom image.

**Pencil** Edits one pixel at a time using the current color.

**Line** Creates lines using the current color. Click and drag to set the start point and draw the line. Release to complete the line.

**Circle** Creates circles using the current color. Click to set the center and drag to set the radius. Release to complete the circle.

**Erase** Sets pixels to white. Click and drag over colored pixels to change them to white.

**Editing Area**

Provides a close-up view of the image for editing.

**Preview**

Displays a preview of the image currently being edited. The preview displayed shows the actual size of the image.

**Clear**

Clears the editing area.

**Undo**

Undoes the last editing action.

**Grid**

Displays a grid in the editing area. Each grid square represents a single pixel.

**Save**

Displays the Save Image dialog box, which allows you to save the customized image to the working customization file.

**Import**

Imports an externally stored image for editing. Images are stored in the working customization file as bitmap (BMP) files.

**Export**

Exports the customized image to an external local or network storage location.

---

**NOTE** When exporting an image, the Create File dialog box defaults to the folder defined under Custom Icon Location of the Files tab in the Options dialog box. Images that are located in this folder can be migrated with the Migrate Custom Settings dialog box.

---

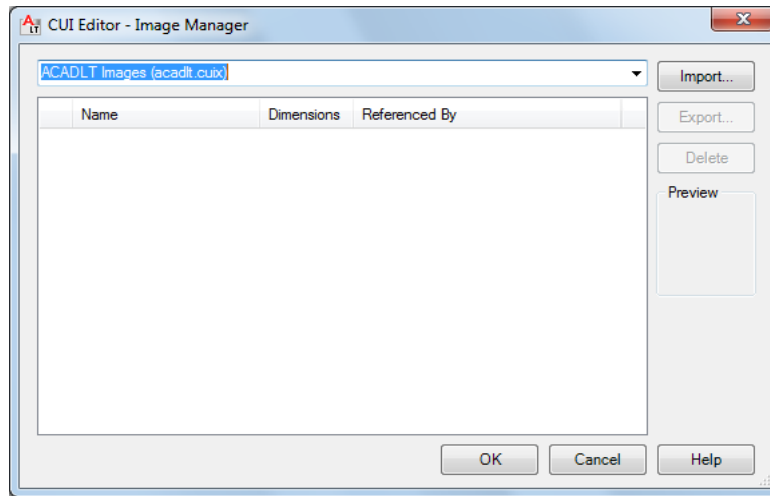
## Image Manager Dialog Box

**Quick Reference**

See also:

- Manage, Import, and Export Custom Images

Manages the images that are in the selected customization file.



### List of Options

The following options are displayed.

**Loaded Customization Files List** Lists the customization files that are currently loaded.

**Custom Images List** Lists the images that are stored in the customization file selected from the Loaded Customization Files list.

**Import** Imports an externally stored image into the selected customization file from the Loaded Customization Files list.

**Export** Exports the selected custom images from the Custom Images list to an external local or network storage location.

**Delete** Permanently deletes the selected image from the Custom Images list and the customization file.

**Preview** Displays a preview of the selected image in the Custom Images list.



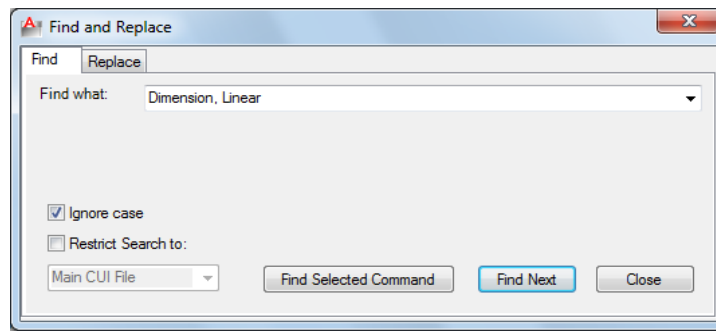
## Find and Replace Dialog Box - CUI

### Quick Reference

See also:

- Find and Replace Commands and Text in a CUIx File

Finds a search string in a command or command property in either the Command List pane or the Available Customizations in *<file name>* pane, or replaces a search string with a new search string



### Summary

Locates and replaces commands or command properties (command names, descriptions, or macros). Use the Find tab to locate a specified text string, and the Replace tab to locate and replace a specified text string.

### List of Options

The following options are displayed.

#### Common

**Find What** Displays the search string you want to locate. If you select a command in the Command List pane, this box displays that string. You can also enter a string. Any previous strings entered in this box are stored in the drop-down list.

**Ignore Case** Locates all commands or command properties regardless of their case (for example, the program would search for both LINE and line).

**Restrict Search To** Limits the search to the CUIx file you select from the drop-down list. By default, the main CUIx file (*acadlt.cuix* by default) is searched.

**Find Next** Locates the next instance of the search string in the Name, Description, or Macros box in the Properties pane. If you search in the Command List pane, only commands in the list are located. If you search in the tree view in the Customizations In pane, the search starts in the tree view and continues to the commands in the Command List pane.

### **Find Tab**

**Find Selected Command** When a command is selected in the Command List pane, locates the next interface element in the tree view that references the selected command.

### **Replace Tab**

**Replace With** Displays the string that will replace the string you searched for.

**Replace** Replaces a single instance of the search string. In the Customize User Interface dialog box, the location of the search string is displayed in the Command List pane, tree view, and Properties pane.

**Replace All** Replaces all instances where the search string is found. You cannot undo this operation.

## **CUIEXPORT**

### **Quick Reference**

**See also:**


- Transfer and Migrate Customization


Exports customized settings from the main CUIx file to an enterprise or partial CUIx file.

### **Access Methods**



**Button**

 **Ribbon:** Manage tab ► Customization panel ► Export

 **Menu:** Tools ► Customize ► Export Customizations

### Summary

Customization information can be transferred between the main and partial CUIx files.

Opens with the [Transfer Tab \(Customize User Interface Editor\)](#) opened by default. The main CUIx file (*acadlt.cuix*) is open in the left pane. You can drag items from one CUIx file to the other. Click Apply to save the changes and view the updated CUIx file.

## CUIIMPORT

### Quick Reference

See also:


- Transfer and Migrate Customization


Imports customized settings from an enterprise or partial CUIx file to the main CUIx file.

### Access Methods



Button

 **Ribbon:** Manage tab ► Customization panel ► Import

 **Menu:** Tools ► Customize ► Import Customizations

### Summary

Customization information can be transferred between the main and partial CUIx files.

Opens with the [Transfer Tab \(Customize User Interface Editor\)](#) opened by default. You can drag items from one CUIx file to the other. Click Apply to save the changes and view the updated CUIx file.

# CUILOAD

## Quick Reference

### See also:

- Create and Manage Customization Files

Loads a CUIx file.

## Summary

Opens the [Load/Unload Customizations dialog box](#), where you can locate and load a CUIx file to customize or transfer user interface settings.

When FILEDIA is set to 0 (off), CUILOAD displays the following Command prompt.

Enter name of customization file to load: *Enter a file name*

---

**NOTE** The Legacy Menu (MNS), Legacy Menu Template (MNU), and Customization (CUI) files used in past releases have been replaced with just one file type, the XML-based CUIx file.

---

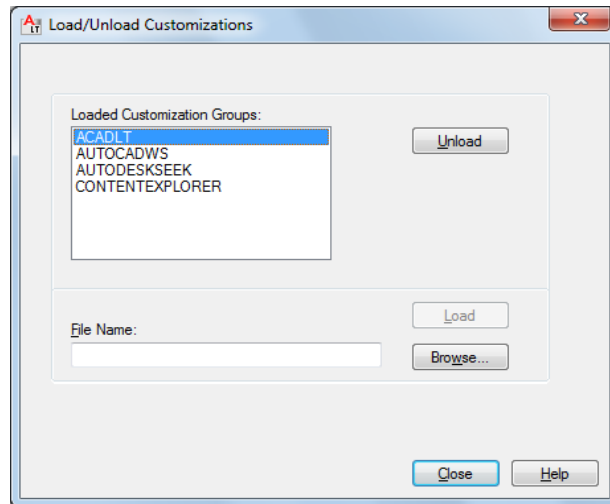
# Load/Unload Customizations Dialog Box

## Quick Reference

### See also:

- Create and Manage Customization Files

Controls the display of customization groups and interface elements.



### List of Options

The following options are displayed.

#### Loaded Customization Groups

Lists the currently loaded customization files.

#### File Name

Specifies the file to load when you choose Load. You can either enter the file name or choose Browse to display the Select Customization File dialog box (a [standard file selection dialog box](#)).

#### Unload

Unloads the customization group selected in the Customization Groups list.

#### Load

Loads the file specified under File Name.

#### Browse

Displays the Select Menu File dialog box (a [standard file selection dialog box](#)), in which you can select a menu file to load.

# CUIUNLOAD

## Quick Reference

### See also:

- Create and Manage Customization Files

Unloads a CUIx file.

## Summary

Opens the [Load/Unload Customizations dialog box](#), which has the same options as CUILOAD. The only difference between the two commands is in the Command prompts.

When FILEDIA is set to 0 (off), CUIUNLOAD displays the following Command prompt.

---

**NOTE** The Legacy Menu (MNS), Legacy Menu Template (MNU), and Customization (CUI) files used in past releases have been replaced with just one file type, the XML-based CUIx file.

---

# CUSTOMIZE

## Quick Reference

### See also:

- Organize Tool Palettes

Customizes tool palettes and tool palette groups.

## Access Methods



Button

 **Ribbon:** Manage tab ► Customization panel ► Tool Palettes

**Menu:** Tools ► Customize ► Tool Palettes

**Shortcut menu:** Right-click any tool palette and click Customize Palettes.

### Summary

The [Customize dialog box](#) is displayed.

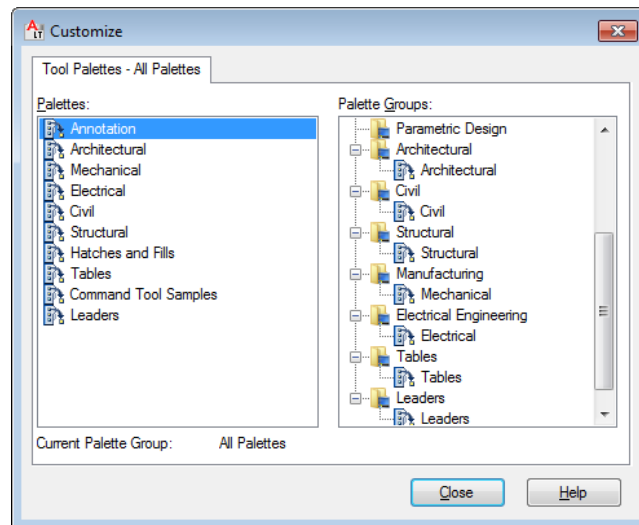
## Customize Dialog Box

### Quick Reference

See also:

- Organize Tool Palettes

Creates, modifies, and organizes tool palettes and tool palette groups. Imports and exports tool palette files.



### Summary

The Tool Palettes window displays only the tool palettes for the current group or displays all tool palettes if no group is current.

In the Customize dialog box, right-click to display shortcut menus. Click and drag items to move them.

## List of Options

The following options are displayed.

**Palettes** Lists all available tool palettes.

Right-click a tool palette to display a shortcut menu with the following options:

- *Rename*. Changes the name of an existing tool palette.
- *New Palette*. Creates a new empty tool palette.
- *Delete*. Removes the tool palette from AutoCAD LT and the associated file on disk.

---

**NOTE** A tool palette cannot be recovered after it is deleted. Export the tool palette to an XTP file before deleting it if you want to access it later.

---

- *Export*. Saves the tool palette to an XTP file.
- *Import*. Merges the tool palette from an XTP file with the other tool palettes in AutoCAD LT.

**Palette Groups** Displays a tree view of your tool palette groups and the tool palettes contained in each.

Right-click a tool palette group to display a shortcut menu with the following options:

- *New Group*. Creates a new tool palette group.
- *Rename*. Changes the name of an existing tool palette group.
- *Delete*. Removes the tool palette group from AutoCAD LT and the current user profile.

---

**NOTE** A tool palette group cannot be recovered after it is deleted. Export the tool palette group to an XPG file before deleting it if you want to access it later.

---

- *Set Current*. Sets a tool palette group current in the Tool Palettes window.
- *Export*. Saves the tool palette group to an XPG file.
- *Export All*. Saves all tool palette groups to an XPG file.
- *Import*. Merges the tool palette groups from an XPG file with the other tool palette groups in AutoCAD LT.



---

**NOTE** Import all tool palettes (XTP files) before importing tool palette groups (XPG files).

---

Right-click a tool palette to display a shortcut menu with the following options:

- *New Group*. Creates a new tool palette group.
- *Remove*. Deletes the reference to the tool palette from the tool palette group only; the tool palette is not removed from AutoCAD LT and the tool palette file on disk is not deleted.

#### **Current Palette Group**

Displays the name of the tool palette group that is current in the Tool Palettes window.

## **CUTCLIP**

### **Quick Reference**

**See also:**


- Cut, Copy, and Paste with the Clipboard


Copies selected objects to the Clipboard and removes them from the drawing.

#### **Access Methods**




**Button**

 **Ribbon:** Home tab ► Clipboard panel ► Cut

 **Menu:** Edit ► Cut

 **Toolbar:** Standard

**Shortcut menu:** End any active commands, right-click in the drawing area, and choose Clipboard ► Cut.

 **Command entry:** Ctrl+X

### **Summary**

CUTCLIP copies selected objects to the Clipboard, removing them from the drawing.

You can paste the contents of the Clipboard into a document or drawing as an embedded OLE object (see PASTECLIP and PASTESPEC). CUTCLIP does not create OLE link information.

When you want to use objects from a drawing file in another application, you can cut these objects to the Clipboard and then paste them into another application. You can also use Cut and Paste to transfer objects between drawings.

# D Commands

# 5

## DATALINK

### Quick Reference

See also:


- Link a Table to External Data

Displays the Data Link dialog box.

### Access Methods



Button

 **Ribbon:** Insert tab ► Linking & Extraction panel ► Data Link

 **Menu:** Tools ► Data Links ► Data Link Manager

### Summary

A table can be linked to data in a Microsoft Excel (XLS, XLSX, or CSV) file. You can link to an entire spreadsheet, individual row, column, cell, or cell range in Excel.

The [Data Link Manager](#) on page 266 is displayed.

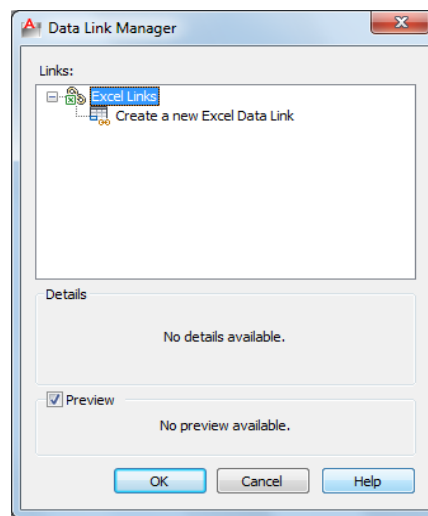
## Data Link Manager

### Quick Reference

See also:

- Link a Table to External Data

Creates, edits, and manages data links.



### List of Options

The following options are displayed.

#### Data Link Tree View

Displays links contained within the drawing. Also gives options for creating new data links.

#### Excel Links

Lists the Microsoft Excel data links within the drawing. If the icon displays a linked chain, then the data link is valid. If the icon displays a broken chain, then the data link is broken.

**Create a New Excel Data Link** Launches a dialog box where you enter the name for a new data link. Once a name has been created, the [New Excel Data Link dialog box](#) on page 267 is displayed.

### Details

Lists information for the data link selected in the tree view above.

### Preview

Displays a preview of the linked data as it would appear in the drawing table. When a data link is not currently selected then no preview is displayed.

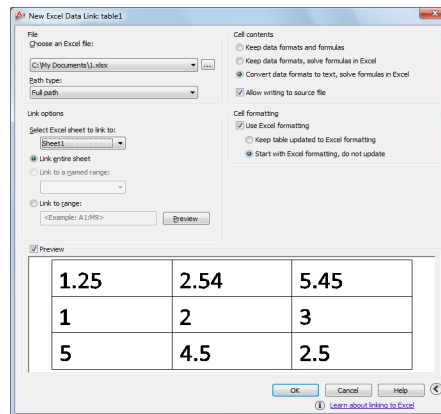
## New Excel Data Link Dialog Box

### Quick Reference

See also:

- [Link a Table to External Data](#)

Links data from a spreadsheet created in Microsoft Excel to a table within your drawing.



### List of Options

The following options are displayed.

#### File

Specifies the file and file path from which to create a data link.

### **Choose an Excel File**

Allows you to choose an established Microsoft XLS, XLSX, or CSV file to link to your drawing. At the bottom of this drop-down list, you can select a new XLS, XLSX, or CSV file from which to create a data link.

Click the [...] button to browse for another Microsoft Excel file on your computer.

**Path Type** Determines the path that will be used to find the file specified above. There are three path options: full path, relative path, and no path.

- **Full Path.** Uses the full path of the file specified above, including the root directory and all subdirectories that contain the linked Microsoft Excel file.
- **Relative Path.** Uses the file path relative to the current drawing file to reference the linked Microsoft Excel file. To use a relative path, the linked file must be saved.
- **No Path.** Uses only the filename of the linked Microsoft Excel file for referencing.

### **Link Options**

Specifies the data in your Excel file to link to your drawing.

#### **Select the Excel Sheet to Link to**

Displays the names of all sheets within the specified XLS, XLSX, or CSV file. The link options specified below are applied to the sheet you choose here.

#### **Link Entire Sheet**

Links the entire specified sheet within your Excel file to a table in your drawing.

#### **Link to a Named Range**

Links a named range of cells already contained within your Excel file to a table in your drawing.

Clicking the arrow displays the available named ranges found in the linked spreadsheet.

#### **Link to Range**

Specifies a range of cells in your Excel file to link to a table in your drawing.

In the text box, enter the range of cells you want linked to your drawing. Valid ranges include

- Rectangular regions (for example, A1:D10)

- Entire columns (for example, A:A)
- Sets of columns (for example, A:D)

Click the button to the right of the text box to preview the linked range.

### **Preview Window**

Displays a preview of your table using the options you have applied.



### **More Options**

Displays more options. This button becomes available when you use an existing Excel file or browse for a new one.

### **Cell Contents**

Options in this box will determine how data is imported into your drawing from your external source.

### **Keep Data Formats and Formulas**

Imports data with formulas and supported data formats attached.

### **Keep Data Formats, Solve Formulas in Excel**

Imports data formats. Data is calculated from formulas in Excel.

### **Convert Data Formats to Text, Solve Formulas in Excel**

Imports Microsoft Excel data as text with data calculated from formulas in Excel (supported data formats not attached).

### **Allow Writing to Source File**

Specifies that the [DATALINKUPDATE](#) on page 270 command can be used to upload any changes made to linked data in your drawing to the original external spreadsheet.

### **Cell Formatting**

#### **Use Excel Formatting**

Specifies that any formatting specified in the original XLS, XLSX, or CSV file will be brought into your drawing. When this option is not selected, the [table style](#) on page 1201 formatting specified in the [Insert Table dialog box](#) on page 1200 is applied.

#### **Keep Table Updated to Excel Formatting**

If the option above is selected, updates any changed formatting when the [DATALINKUPDATE](#) on page 270 command is used.

### Start With Excel Formatting, Do Not Update

Imports the formatting specified in the original XLS, XLSX, or CSV file into your drawing, but any changes made to the formatting are not included when the [DATALINKUPDATE](#) on page 270 command is used.

## DATALINKUPDATE

### Quick Reference

See also:

- Link a Table to External Data

Updates data to or from an established external data link.

### Access Methods



Button

 **Ribbon:** Annotate tab ► Tables panel ► Download from Source

 **Menu:** Tools ► Data Links ► Update Data Links

### Summary

Updates changes to linked data between a table in a drawing and an external data file.

### List of Prompts

The following prompts are displayed.

Select an option [Update data link/Write data link] <Update data link>:

#### **Update Data Link**

Updates the linked data in a table in your drawing with data that has been changed in the external source file.

**Select Objects** Updates selected tables containing data links with data that has been changed in the external source file.



**Data Link** Specifies the name of a data link to update with data that has been changed in the external source file.

Entering [?] lists the data links in the current drawing.

**All Data Links** Updates all data links in all tables in the drawing with data that has been changed in the external source file.

### **Write Data Link**

Updates the linked data in an external file with data that has been changed in a table in your drawing.

A table that contains data links displays indicators around linked cells. If you hover your cursor over the data link, information about the data link is displayed.

**Select Objects** Uploads data that has been changed from the original linked content to the source file.

## **DCDISPLAY**

### **Quick Reference**


Displays or hides the dynamic constraints associated with a selection set of objects.

### **Access Methods**



**Button**

 **Ribbon:** Parametric tab ► Dimensional panel ► Show/Hide

 **Menu:** Parametric ► Dynamic Dimensions ► Select Objects

 **Toolbar:** Parametric

### **List of Prompts**

The following prompts are displayed.

Select objects: *Select objects to display or hide the dimensional constraints*

Enter an option [[Show](#) on page 272/[Hide](#) on page 272] <Show>: *Enter the appropriate value to show or hide dynamic constraints for the selection set of objects*

**Show**

Displays the dynamic dimensional constraints for any selection set of objects.

**Hide**

Hides the dynamic dimensional constraints for any selection set of objects.

## DDEDIT


### Quick Reference

**See also:**

- Change Text

Edits single-line text, dimension text, attribute definitions, and feature control frames.

**Access Methods****Button**

 **Menu:** Modify ► Object ► Text ► Edit

 **Toolbar:** Text

**Shortcut menu:** Select a text object, right-click in the drawing area, and click Edit.

**Pointing device:** Double-click a text object.

**List of Prompts**

The following prompts are displayed.

Select an annotation object or [Undo]:

**Object Selection** Displays the appropriate editing method for the type of text you select:

- When the TEXTED system variable is set to 0 or 2, text created using [TEXT](#) on page 1229 displays the [In-Place Text Editor](#) without the Text Formatting toolbar and the ruler. Right-click to display [options](#) on page 1234.
- Text created using [MTEXT](#) on page 762 displays the [In-Place Text Editor](#).

- Attribute definitions (not part of a block definition) display the [Edit Attribute Definition dialog box](#).
- Feature control frames display the [Geometric Tolerance dialog box](#).

DDEDIT repeats the prompt until you press Enter to end the command.

**Undo** Returns the text or attribute definition to its previous value. You can use this option immediately after editing.

## Edit Text Dialog Box

### Quick Reference

See also:

- Change Text

Edits a single-line text object.

### Summary

When the TEXTED system variable is set to 1, modifies text created with [TEXT](#) on page 1229. Enter the new text and click OK.

## Edit Attribute Definition Dialog Box

### Quick Reference

See also:

- Change Text

Edits an attribute text object.

### List of Options

The following options are displayed.

Tag

Specifies the attribute tag, which identifies the attribute in the drawing. The tag can contain exclamation marks (!). The case change is not immediately displayed in the tag field.

**Prompt**

Specifies the attribute prompt that is displayed when you insert a block containing this attribute definition.

**Default**

Specifies the default attribute value.

## DDPTYPE

### Quick Reference

**See also:**


- Draw Reference Points


Specifies the display style and size of point objects.


### Access Methods



**Button**

 **Ribbon:** Home tab ► Utilities panel dropdown ► Point Style

 **Menu:** Format ► Point Style

 **Command entry:** 'ddptype' for transparent use

### Summary

The [Point Style dialog box](#) is displayed.

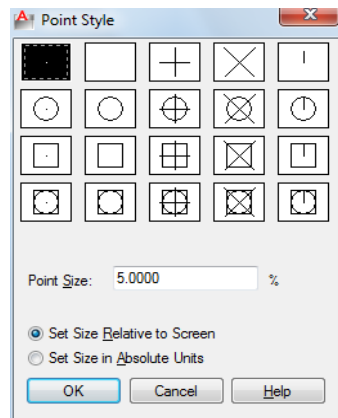
# Point Style Dialog Box

## Quick Reference

See also:

- Draw Reference Points

Shows the current point style and size. Change the point style by selecting an icon.



## List of Options

The following options are displayed.

### Point Display Images

Specifies the image used to display point objects. The point style is stored in the [PDMODE](#) on page 1606 system variable.

### Point Size

Sets the point display size. The value you enter can be relative to the screen or in absolute units. The point display size is stored in the [PDSIZE](#) system variable. Subsequent point objects that you draw use the new value.

**Set Size Relative to Screen** Sets the point display size as a percentage of the screen size. The point display does not change when you zoom in or out.

**Set Size in Absolute Units** Sets the point display size as the actual units you specify under Point Size. Points are displayed larger or smaller when you zoom in or out.

## DDVPOINT


### Quick Reference

#### See also:

- Control the 3D Projection Style

Sets the 3D viewing direction.

#### Access Methods

 **Menu:** View ► 3D Views ► Viewpoint Presets

#### Summary

The [Viewpoint Presets dialog box](#) is displayed.

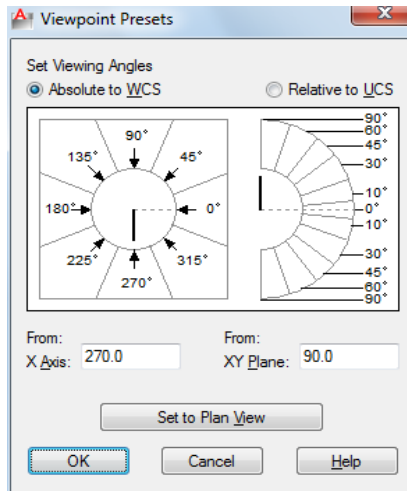
## Viewpoint Presets Dialog Box

### Quick Reference

#### See also:

- Control the 3D Projection Style

Defines 3D view settings.

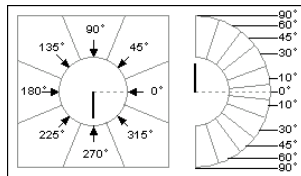


### List of Options

The following options are displayed.

#### Set Viewing Angles

Sets the direction of the view relative to either the world coordinate system (WCS) or a user coordinate system (UCS).



**Absolute to WCS** Sets the view direction relative to the WCS.

**Relative to UCS** Sets the view direction relative to the current UCS.

#### From

Specifies viewing angles.

**X Axis** Specifies the angle from the X axis.

**XY Plane** Specifies the angle from the XY plane.

You can also use the sample image to specify viewing angles. The black arm indicates the new angle. The gray arm indicates the current angle. Specify an angle by selecting the inner region of the circle or half-circle. Selecting the bounded outer regions rounds off the angle to the value displayed in that

region. If you select the inner arc or an area inside it, the angle is not rounded off, and the result may be a fractional number.

### **Set to Plan View**

Sets the viewing angles to display the plan view (*XY* plane) relative to the selected coordinate system.

## **DELAY**


### **Quick Reference**

**See also:**

- Run Slide Shows from Scripts

Provides a timed pause within a script.

### **Access Methods**

 **Command entry:** 'delay for transparent use

### **Summary**

Specifies the duration of a pause. Entering **delay 1000** in your script delays the start of execution of the next command for about one second. The longest delay available is 32767, which is slightly less than 33 seconds.

## **DELCONSTRAINT**

### **Quick Reference**

**See also:**

- Modify Objects with Dimensional Constraints Applied


Removes all geometric and dimensional constraints from a selection set of objects.




### Access Methods



#### Button

 **Ribbon:** Parametric tab ► Manage panel ► Delete Constraints

 **Menu:** Parametric ► Delete Constraints

 **Toolbar:** Parametric

### Summary

The number of constraints removed are displayed on the command line.

Removes all geometric and dimensional constraints from the selected objects.

## DETACHURL

### Quick Reference

#### See also:

- Add Hyperlinks to a Drawing

Removes hyperlinks in a drawing.

### Summary

Hyperlinks are removed from the selected objects. If an area is selected, the polyline is deleted. You can use PURGE to remove the URLAYER layer.

## DGNADJUST


### Quick Reference

#### See also:

- Adjust Underlay Contrast, Fade, Monochrome, and Colors for the Background

Adjust the fade, contrast, and monochrome settings of a DGN underlay.

### Access Methods

 **Ribbon:** DGN Underlay contextual tab ► Adjust panel

### Summary

You can change the default values for Fade, Contrast, and Monochrome for a single or multiple DGN underlays. To confirm the settings on a selected DGN underlay, use the Properties palette.

---

**NOTE** You can also use the [ADJUST](#) on page 20 command to change the fade, contrast, and monochrome settings for DGN underlays as well as DWF, DWFx and PDF underlays or the fade, contrast and brightness for images.

---

### List of Prompts

The following prompts are displayed.

Select DGN underlay: *Select one or more DGN underlays*

Enter DGN underlay option [[Fade/Contrast/Monochrome](#)] <Fade>:

Enter fade value (0-100): *Enter a value*

Enter contrast value (0-100): *Enter a value*

Monochrome? [Yes/No]: *Enter yes or no and then press Enter*

#### **Fade**

Controls the fade effect of the underlay. Values range from 0 through 100. The greater the value, the more transparent the underlay appears against the background. The lesser the value, the less transparent and closer to opaque the underlay appears. A value of 0 makes the underlay appear fully opaque.

#### **Contrast**

Controls the contrast, and indirectly, the fading effect of the underlay. Values range from 0 through 100. The greater the value, the more each pixel is forced to its primary or secondary color.

#### **Monochrome**

Controls the color saturation of all linework while maintaining the luminance. When turned on, the linework appears in varying shades of gray starting at black if the background color luminance is 50 percent or more. If the background color luminance is less than 50 percent, then the colors are inverted, with the darkest linework displaying in white, and the lightest linework displaying in black.

# DGNATTACH

## Quick Reference

See also:


- Attach Files as Underlays

Insert a DGN file as an underlay into the current drawing.

## Access Methods



Button

 **Ribbon:** Insert tab ► Reference panel ► Attach

 **Menu:** Insert ► DGN Underlay

 **Toolbar:** Insert

## Summary

When you attach a DGN file as an underlay, you link that referenced file to the current drawing. Any changes to the referenced file are displayed in the current drawing when it is opened or reloaded.

The Select Reference File dialog box (a [standard file selection dialog box](#)) is displayed. Once you select a DGN file, the [Attach DGN Underlay dialog box](#) is displayed. After the file is attached, you can adjust and clip the underlay through the [DGN Underlay Ribbon Contextual tab](#) on page 284.

---

**NOTE** DGNATTACH is not limited to files with *.dgn* extensions. It supports all DGN files, even those that do not have a *.dgn* extension.

---

If you enter **-dgnattach** at the Command prompt, [options are displayed](#).

---

**NOTE** When a DGN file is attached as an underlay, its levels structure (layers) are combined into a single layer. The DGN underlay is placed on the current layer. To hide the DGN attachment, freeze the layer on which it was attached.

---

## Attach DGN Underlay Dialog Box

### Quick Reference

See also:

- Attach Files as Underlays

Names, locates, and defines the insertion point, scale, and rotation when attaching DGN underlays.

### List of Options

The following options are displayed.

#### **Name**

Identifies the DGN file you have selected to attach.

#### **Browse**

Opens the Select Reference File dialog (a [standard file selection dialog box](#) on page 826).

#### **Select a design model from the DGN file**

Displays all of the design models that are found in the DGN file. If the DGN file only contains a single design model, that model is listed.

If the DGN file contains multiple design models, only a single model can be selected for attachment. The first model in the list is selected by default.

#### **Conversion Units**

Matches the DWF files's drawing units to the master units and sub-units specified in the DGN file. For example, if the DGN file has master units set to meters, and sub-units set to millimeters, and you want the DWG to be set to millimeters, select sub-units in the Attach DGN Underlay dialog box.

**Master Units** Matches the DWG drawing units to the master units set in the DGN file.

**Sub Units** Matches the DWG drawing units to the sub- units set in the DGN file.

#### **Path Type**

Selects the full (absolute) path, the relative path to the DGN file, or No Path, the name of the DGN file (the DGN file must be located in the same folder as the current drawing file).

**Insertion Point**

Specifies the insertion point for the selected DGN file. Specify On-Screen is the default. The default insertion point is 0,0,0.

**Specify On-Screen** Directs input at the Command prompt or the pointing device. If Specify On-Screen is cleared, enter the insertion point in X, Y, and Z.

**X** Sets the X coordinate value.

**Y** Sets the Y coordinate value.

**Z** Sets the Z coordinate value.

**Scale**

Specifies the scale factor of the selected DGN underlay.

If **INSUNITS** is set to “unitless” or if the underlay does not contain resolution information, the scale factor becomes the underlay width in AutoCAD units. If **INSUNITS** has a value such as millimeters, centimeters, inches, or feet, and the underlay has resolution information, the scale factor is applied after the true width of the underlay in AutoCAD units is determined.

**Specify On-screen** Allows you to input at the Command prompt or the pointing device. If Specify On-Screen is cleared, enter a value for the scale factor. The default scale factor is 1.

**Scale Factor Field** Enters a value for the scale factor. The default scale factor is 1.

**Rotation**

Specifies the rotation angle of the selected DGN underlay.

**Specify on-screen** If Specify On-Screen is selected, you may wait until you exit the dialog box to rotate the object with your pointing device or enter a rotation angle value at the Command prompt.

**Angle** If Specify On-Screen is cleared, enter the rotation angle value in the dialog box. The default rotation angle is 0.

**Show Details**

Displays the DGN file path.

**Found In** Displays the path where the DGN file is located.

**Saved Path** Displays the path that is saved with the drawing when the DGN file is attached. The path is dependent upon the Path Type setting.

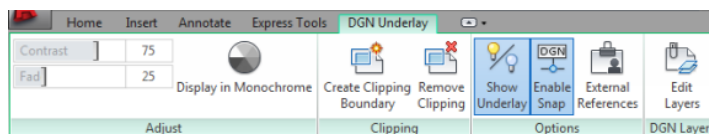
## DGN Underlay Ribbon Contextual tab

### Quick Reference

See also:

- Work with Underlays

Change DGN underlay display, clip, layer, and osnap options.



### Summary

When you select a DGN underlay in a drawing, the DGN Underlay Contextual tab is displayed on the ribbon.

### List of Options

The following options are displayed.

#### Adjust Panel

**Contrast** Controls the contrast and the fading effect of the underlay. The greater the value, the more each pixel is forced to its primary secondary color.

**Fade** Controls the appearance of the linework. The greater the value, the lighter the linework in the underlay appears.

**Display in Monochrome** Displays the underlay in black and white.

#### Clipping Panel

**Create Clipping Boundary** ([DGNCLIP](#) on page 287) Crops the display of a selected DGN underlay to a specified boundary.

**Create Clipping Boundary** ([DGNCLIP](#) on page 287) Deletes the clipping boundary.

#### Options Panel

**Show Underlay** Hides or displays the underlay.

**Enable Snap** Determines whether object snapping is active for geometry in the DGN underlay.

**External References** ([EXTERNALREFERENCES](#) on page 504) Opens the External References palette.

### **DGN Layers Panel**

**Edit Layers** ([ULAYERS](#) on page 1281) Controls the display of layers in a DWF, DWFX, PDF, or DGN underlay.

## **-DGNATTACH**

### **Quick Reference**

**See also:**

- [Attach Files as Underlays](#)

Attach a DGN underlay from the command line.

### **Summary**

When you attach a DGN file as an underlay, you link that referenced file to the current drawing. Any changes to the referenced file are displayed in the current drawing when it is opened or reloaded.

---

**NOTE** DGNATTACH is not limited to files with \*.dgn extensions. It supports all DGN files, even those that do not have a .dgn extension.

---

### **List of Prompts**

The following prompts are displayed.

---

**TIP** You can drag a DGN file onto the drawing window to start the DGNATTACH command.

---

**Path to DGN File to Attach** Enters the full path name to the DGN underlay file. The file name can include up to 255 characters and contain letters, digits, spaces, and any special characters not used by Microsoft Windows or this program.

Entering a tilde (~) displays the Select DGN File dialog box (a [standard file selection dialog box](#)).

To avoid errors when entering a file name, it is recommended that you specify both the DGN file and path as follows:

*path name\filename.dgn*

or

*"path name\filename.dgn"*

If you enter a valid DGN file name without a file extension, the program adds the extension and searches for the file.

**Enter Name of Model or ?** Enter a model name. For a list of models, enter?.

**Enter Model(s) to list <\*>** Lists the design models available in the DGN file in a separate text window.

**Conversion Units** Matches the DWF file's drawing units to the master units and sub-units specified in the DGN file. For example, if the DGN file has master units set to meters, and sub-units set to millimeters, and you want the DWG to be set to millimeters, select sub-units in the Attach DGN Underlay dialog box.

- **Master Units** - Matches the DWG drawing units to the master units set in the DGN file.
- **Sub Units** - Matches the DWG drawing units to the sub- units set in the DGN file.

**Insertion Point** Specifies the insertion point for the selected DGN file. Enter the X, Y, and Z coordinates at the command prompt, or click onscreen.

**Scale Factor** Specifies the scale factor of the selected DGN underlay and the scale factor units. You can enter a scale factor at the command prompt or click onscreen with the mouse.

If **INSUNITS** is set to "unitless" or if the underlay does not contain resolution information, the scale factor becomes the underlay width in AutoCAD units. If **INSUNITS** has a value such as millimeters, centimeters, inches, or feet, and the underlay has resolution information, the scale factor is applied after the true width of the underlay in AutoCAD units is determined.

**Rotation** Specifies the rotation angle of the selected DGN underlay by entering an angle value at the command prompt or by clicking onscreen.



# DGNBIND (-DGNBIND)

## Quick Reference

### See also:

- Attach Files as Underlays

Binds DGN underlays to the current drawing.

## Summary

Converts a specified DGN reference into a block, making it a permanent part of the drawing. The DGN-dependent named objects (such as layer names) of the former DGN reference are added to your drawing. In each DGN-dependent named object, the vertical bar (|) is replaced with three new characters: a number (usually 0) between two dollar signs (\$). The number is increased if the same name already exists in the current drawing.

## List of Prompts

The following prompt is displayed.

Enter DGN underlay name(s) to bind: *Enter one or more DGN underlay names*

# DGNCLIP

## Quick Reference

### See also:


- Clip External References and Blocks

Crops the display of a selected DGN underlay to a specified boundary.

## Access Methods



**Button**

 **Ribbon:** DGN Underlay contextual tab ► Clipping panel ► Create Clipping Boundary

**Shortcut menu:** Select a DGN underlay to clip, right-click in the drawing area, and click DGN Clip

### Summary

The clipping boundary determines the portion of a DGN underlay outside the boundary that is hidden. The visibility of the clipping boundary is controlled by the [DGNFRAME](#) on page 1433 system variable.

The boundary you specify must be in a plane parallel to the DGN underlay.

---

**TIP** Use the generic [CLIP](#) on page 211 command to clip images, external references, viewports, and underlays.

---

### List of Prompts

The following prompts are displayed.

#### **On**

Turns on clipping and displays the DGN underlay clipped to the previously defined boundary.

#### **Off**

Turns off clipping and displays the entire DGN underlay.

If you reclip the DGN underlay while clipping is turned off, clipping is automatically turned back on. You are prompted to delete the old boundary even when clipping is turned off and the clipping boundary is not visible.

#### **Delete**

Removes a predefined clipping boundary and displays the entire DGN underlay.

#### **New Boundary**

Defines a rectangular or polygonal clipping boundary, or generates a polygonal clipping boundary from a polyline.

Specify clipping boundary or select invert option: [Select polyline/Polygonal/Rectangular/Invert clip] <Rectangular>:

**Select Polyline** Defines the boundary with the selected polyline. The polyline can be open but must consist of straight line segments and cannot intersect itself.

**Polygonal** Defines a polygonal clipping boundary with three or more points that you specify for the vertices of a polygon.

**Rectangular** Defines a rectangular boundary with the points that you specify for opposite corners.

**Invert Clip** Inverts the mode of the clipping boundary: objects are clipped either outside the boundary or inside the boundary.

**NOTE** You can only create a new clipping boundary for a selected DGN underlay when the old boundary is deleted.

---

## DGNEXPORT

### Quick Reference

See also:

- Export MicroStation DGN Files

Creates one or more DGN files from the current drawing.

### Access Methods



**Button**

 **Menu:** Application menu  > Export > DGN File

### Summary

The Export DGN File dialog box (a [standard file selection dialog box](#)) is displayed. Once you specify a DGN file name, the [Export DGN Settings dialog box](#) is displayed. You can export a V8 or V7 file using DGNEXPORT.

If you enter **-dgnexport** at the Command prompt, [options are displayed](#) on page 297.

See the [DGNEXPORT Conversion Table](#) on page 294 specific details about the scope of exporting DWG objects and other data to DGN files.

---

**WARNING** Some programs that work with DGN files do not support extended characters that the Windows operating system considers valid for file names. Thus, it is recommended that you do not use accented or Asian characters in file names when using DGNEXPORT.

---

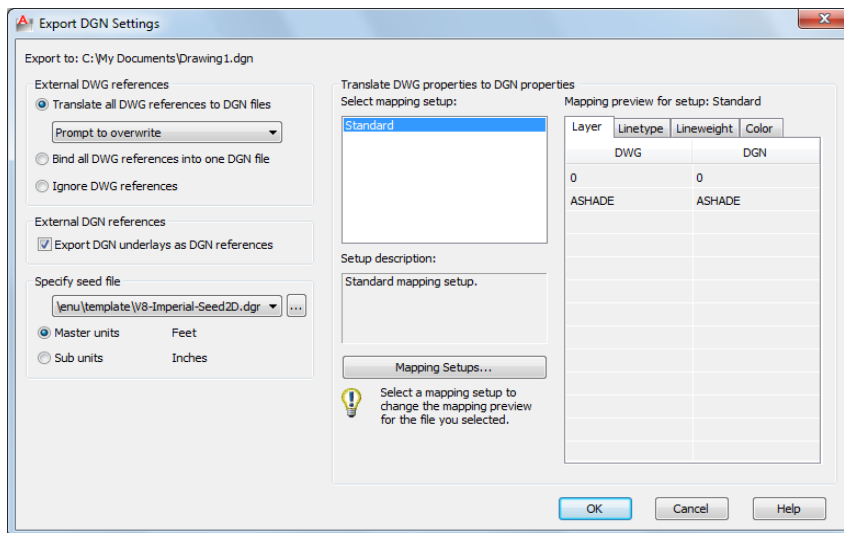
## Export DGN Settings Dialog Box

### Quick Reference

See also:

- Export MicroStation DGN Files

Controls how objects are processed when exporting them to a DGN file.



### List of Options

The following options are displayed.

#### External DWG References

Controls how xrefs are processed.

Translate All DWG References to DGN Files

All referenced DWG files, including nested DWG references, are converted into DGN files. The resulting DGN files use the same file name as the DWG files, but use a *.dgn* file extension.

With the following set of options, you can choose whether or not to overwrite DGN reference files

- Prompt to Overwrite
- Overwrite without Prompting
- Do Not Overwrite

#### **Bind All DWG References into One DGN file**

The parent DWG file and all referenced DWG files are combined into a single DGN file. The referenced DWG files are converted to cells as part of the primary DGN file.

#### **Ignore DWG References**

Referenced DWG files are not included in the resulting DGN file.

#### **External DGN References**

Controls whether DGN underlays in the DWG file are exported as DGN references of the resulting DGN file.

#### **Export DGN Underlays as DGN References**

When checked, any DGN underlays are exported as DGN references along with the base drawing. When cleared, DGN underlays are not exported.

---

**NOTE** Do not export drawings that include V8 DGN underlays to a V7 DGN format file. The V8 DGN references cannot display in a V7 DGN file because the V8 DGN file format is not a valid design file for the resulting V7 DGN file.

---

#### **Specify Seed File**

A *seed file* for a DGN file is similar to a drawing template (DWT) file that contains default settings and attributes, such as working units. Selecting the appropriate DGN seed file (imperial, metric, or user-defined), and conversion units is critical to the translation from DWG to DGN. In addition, the seed file contains settings that are not present in a DWG file, and therefore inherited in the exported DGN.

These settings include working units and resolution as well as whether the file is 2D or 3D.

### Conversion Units

Select the appropriate conversion units for the translation. The DGN seed file contains working units (imperial or metric) called *master units* and *sub-units*. One DWG unit is converted to either one master unit or one sub-unit.

#### Master Units

Specifies that one DWG drawing unit will convert to one master unit of the specified DGN seed file.

#### Sub Units

Specifies that one DWG drawing unit will convert to one sub-unit of the specified DGN seed file.

---

**NOTE** The master units and the sub-units of the selected DGN seed file are displayed next to the buttons for reference.

---

#### Filename drop-down list

Specify the name of the DGN seed file. Several sample seed files are provided upon installation.

**Browse button** Displays the Select Seed File dialog box (a [Standard File Selection Dialog Boxes](#) on page 826), in which you can select the DGN seed file.

See the [DGNEXPORT Conversion Table](#) on page 294 specific details about the scope of exporting DWG objects and other data to DGN files.

### Sample DGN Seed Files

The following table lists the default DGN seed files and their settings. You may need to edit these settings or obtain the appropriate seed file to suit your conversion requirements.

DGN Seed File Name	Master Unit (label)	Sub Unit (label)	Resolution
V7-Imperial-Arch01-Seed2D.dgn	Feet (')	Inches (")	12"/1' and 8000 POS
V7-Imperial-Arch01-Seed3D.dgn	Feet (')	Inches (")	12"/1' and 8000 POS
V7-Imperial-Arch02-Seed2D.dgn	Feet (')	Inches (")	12"/1' and 1000 POS

DGN Seed File Name	Master Unit (label)	Sub Unit (label)	Resolution
V7-Imperial-Arch02-Seed3D.dgn	Feet (')	Inches (")	12"/1' and 1000 POS
V7-Imperial-Civil01-Seed2D.dgn	Feet (')	Tenths (tn)	10tn/1' and 100 POS
V7-Imperial-Civil01-Seed3D.dgn	Feet (')	Tenths (tn)	10tn/1' and 100 POS
V7-Imperial-Civil02-Seed2D.dgn	Feet (')	Tenths (tn)	10tn/1' and 1000 POS
V7-Imperial-Civil02-Seed3D.dgn	Feet (')	Tenths (tn)	10tn/1' and 1000 POS
V7-Metric-Seed2D.dgn	Meters (m)	Millimeters (mm)	1000mm/1m and 1 POS
V7-Metric-Seed3D.dgn	Meters (m)	Millimeters (mm)	1000mm/1m and 1 POS
V8-Imperial-Seed2D.dgn	Feet (')	Inches (")	304800 per foot
V8-Imperial-Seed3D.dgn	Feet (')	Inches (")	304800 per foot
V8-Metric-Seed2D.dgn	Meters (m)	Millimeters (mm)	1000mm per millimeter
V8-Metric-Seed3D.dgn	Meters (m)	Millimeters (mm)	1000mm per millimeter

### **Translate DWG Properties to DGN Properties**

Selects and manages the mapping setup used on the current DGN export.

#### **Select Mapping Setup**

Displays the currently defined mapping setups.

Standard is the default mapping setup which extracts data from the drawing being exported and applies an automatic mapping to DGN layers, linetypes, lineweights, and colors, as shown in the mapping preview.

### Setup Description

Displays the description of the selected mapping setup.

### Mapping Setups

Opens the [DGN Mapping Setups dialog box](#) on page 311 where new mapping setups can be created and existing mapping setups can be renamed, modified, or deleted (see [DGNMAPPING](#) on page 310).

### Mapping Preview for Setup

Lists all properties of both the exported DWG file in the DWG column and the selected mapping setup in the DGN column.

---

**NOTE** The reference properties are not listed in the preview, but any properties that apply to those references that are shown in the mapping preview are applied to the references as well.

---

## DGNEXPORT Conversion Table

### Quick Reference

#### See also:

- [Export MicroStation DGN Files](#)

The following table lists the DGN objects and features that are supported for export, and notes on the scope of the translation.

---

#### DWG to DGN Conversion Table

---

AutoCAD LT	MicroStation	Notes
Geometric Objects	Geometric Elements	The following DWG objects are translated into DGN elements: line, xline, ray, polyline, arc, circle, spline (NURBS), ellipse, elliptical arc, point, donut, mline, hatch (including gradient fills), and wipeout. Variable width polylines maintain only their starting width when translated into SmartLines.
Layers	Levels	Invalid DWG characters in layer names are converted to spaces.

---



---

**DWG to DGN Conversion Table**

---

<b>AutoCAD LT</b>	<b>MicroStation</b>	<b>Notes</b>
Colors	Colors	Colors are matched as closely as possible. Colors set with the ACI (AutoCAD Color Index) are translated directly to the DGN color index. If TrueColor is used and a direct match of RGB values is available in the DGN color index, the colors are also mapped directly. If a TrueColor match is not available, an RGB value is added to the DGN color index.
Linetypes	Line Styles	Custom linetypes are unsupported and could produce unexpected results.
Blocks	Cells	Blocks are exported as shared cells. Dynamic blocks are also exported as cells and lose their dynamic behavior. Invisible, Constant, Verify, and Preset attributes are all converted into tags.
Single-line Text Objects, Multiline Text Objects, Text Styles	Text, Text Nodes, Text Styles	The visual integrity of multiline text is maintained. However, if exported multiline text objects are edited in MicroStation, the formatting is lost. TrueType and SHX fonts in AutoCAD are exported to MicroStation V7 as Engineering. This can result in many visual differences.
Tables	Tables	Table objects are exported as cell elements composed of lines and text.
Fields	Fields	In general, fields are translated as static text. The exceptions are fields that behave identically in both products. This includes the Date fields <i>CreateDate</i> , <i>SaveDate</i> , and <i>PlotDate</i> , and the Document property fields <i>Author</i> , <i>Filename</i> , and <i>Filesize</i> . <hr/> <b>NOTE</b> Use the MicroStation Key-in utility to update text containing fields (field update all). <hr/>

---

DWG to DGN Conversion Table		
AutoCAD LT	MicroStation	Notes
Dimensions, Dimension Styles	Dimensions, Dimension Styles	The size, spacing, style, and shape of dimensions may vary slightly. Dimension associativity is maintained whenever possible, and the correct dimension values are always maintained.
Raster Images	Raster Images	These image file types are supported: <i>.bmp</i> , <i>.cal</i> , <i>.tif</i> , <i>.png</i> , <i>.tga</i> , <i>.jpg</i> , <i>.gif</i> , <i>.rlc</i> , <i>.bil</i> , and <i>.pcx</i> . All other image file types are discarded.
DWG References	DGN References	Depending on the export option specified, all referenced DWG files, including nested DWG references, are either converted into DGN files, combined into a single DGN file as cells, or discarded.  <b>NOTE</b> MicroStation V7 does not support nested references to references that are merged into the host file.
DWG Model	DGN Design Model	The model in a DWG file is converted into a DGN file.
DWG Layout	DGN Sheet Model	When exporting to V8, any initialized layouts are converted into sheet models in the DGN file.  V7 only supports one model. For V7, several DGN files can be exported: one for the model and the other DGN files for any initialized layouts in the DWG file. The layout names get appended to the exported DGN file <file-name> - Layout1.dgn.
AEC Objects		AEC objects are not supported. Use the <a href="#">EXPORTTOAUTOCAD</a> on page 498 command to convert AEC objects to base ACAD objects before exporting to DGN.

## -DGNEXPORT

### Quick Reference

#### See also:

- Export MicroStation DGN Files

If you enter -dgnexport at the Command prompt, the following prompts are displayed.

#### List of Prompts

The following prompts are displayed.

Enter **DGN file format** on page 297 [V7/V8] <V8>: *Specify whether the file is DGN V7 or V8*

Enter **filename** on page 297 for DGN export <default path\filename>: *Specify path and filename of DGN file*

Specify conversion **units** on page 297 [Master/Sub] <Master>: *Specify m or s, or press Enter*

Specify **mapping setup** on page 298 or [?] <Standard>: *Specify mapping setup or ? to specify filter of mapping setup*

Specify **seed file** on page 298 or [?] <default path\filename>: *Specify path and filename of seed file*

---

**TIP** Create a script using -DGNEXPORT to batch process exporting drawings to DGN files.

---

**File Format** Specifies the file format of the DGN file being exported.

**Filename** The file name can include up to 255 characters and contain letters, digits, spaces, and any special characters not used by Microsoft Windows or this program.

To avoid errors when entering a file name, it is recommended that you specify both the DGN file and path as follows:

*path\filename*

or

*"path\filename"*

Specify the path and file name of DGN file.

**Units** Specifies a drawing-units value for scaling the DGN file.

**Mapping Setups** Specifies the mapping setup of the selected design model.

? After specifying a filter, a list of available export mapping setups that match the filter is displayed and will re-prompt.

**Seed File** Specify a seed file that matches the existing behavior of other commands with filters.

? Enter \* to display a list of available seed files in the AutoCAD Text Window.

## DGNIMPORT

### Quick Reference

See also:

- Import MicroStation DGN Files

Imports the data from a DGN file into a new DWG file or the current DWG file, depending on the DGNIMPORTMODE system variable.

### Access Methods



Button

 **Menu:** Application menu  ► Open ► DGN

### Summary

The Import DGN File dialog box (a [standard file selection dialog box](#)) is displayed. Once you select a DGN file, the [Import DGN Settings dialog box](#) is displayed.

If you enter **-dgnimport** at the Command prompt, [options are displayed](#) on page 308.

See the [DGNIMPORT Conversion Table](#) on page 303 for specific details about the scope of importing MicroStation objects and other data.

See the [DGNIMPORT Unit Mapping Table](#) on page 305 for specific details about unit conversions when importing MicroStation objects.

---

**NOTE** The type of plot style drawing (Color-dependent or Named) is based on the value of [PSTYLEPOLICY](#) on page 1627.

---

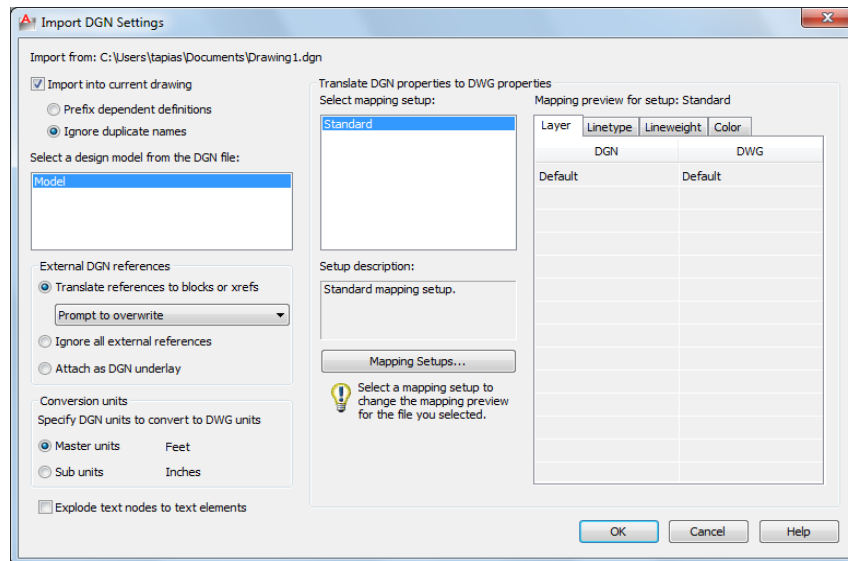
## Import DGN Settings Dialog Box

### Quick Reference

See also:

- Import MicroStation DGN Files

Specifies the import settings for a DGN file.



### List of Options

The following options are displayed.

#### Import into Current Drawing

Inserts the contents of the DGN file into the current DWG file.

**Prefix Dependent Definitions** Adds the DGN file and model name as a prefix to the incoming object's name. If the prefixed name results in a new name conflict, then an incremental number is appended to the name.

**Ignore Duplicate Names** Ignores any duplicate named objects, such as layer names or dimension styles, in the DGN file and gives precedence to the existing definition for duplicates.

You can also control the default settings using the DGNIMPORTMODE system variable.

---

**NOTE** For the correct display of linetypes, the MicroStation RSC (resource file) that is referenced by the DGN file must be available on your computer in a valid AutoCAD Support File Search Path when you import or attach the DGN file. If the resource file is not found, you will get an error message. You can define a search path location in the OPTIONS command, Files tab. You can add a path to the AutoCAD Support File Search Path node. You can also copy the RSC file to an existing Support File Search Path.

---

### Select a Design Model from the DGN file

The DGN design model that you select is imported into the model space of your current DWG file.

V8 DGN files might contain multiple design and sheet models. A DGN design model is equivalent to model space, and a DGN sheet model is equivalent to paper space. Because a DWG file can have only one model space, you need to select the design model in the DGN file that you want to import.

If a design model is selected and is referenced into a sheet model, then the sheet model is also converted as one or more layouts in the DWG file. Only the sheet models that reference the primary design model are imported. These sheet models are translated to paper space layouts, and will include layout viewports that display each reference to the primary design model.

### External DGN References

Controls how DGN references are handled in a DWG environment.

Any DGN files are supported as references. These file types include, but not limited to, these extensions: *.dgn*, *.dwg*, *.cel*, *.s*, *.h*, *.cgm*, *.rdl*, *.d* files. However, DXF files are not supported and are ignored.

### Translate References to Blocks or Xrefs

Converts DGN references to blocks when importing into a current drawing and to xrefs when importing into a new drawing.

All referenced DGN design models, including nested references, are converted into blocks or attached as xrefs in model space.

The relationship of nested references is maintained. Nested references within a DGN design model that reference the primary file are called circular

references. AutoCAD resolves these circular references by creating a block and inserting it into the original primary DGN file.

Design model references to sheet models, and sheet model references to other sheet models are not supported and are ignored. Unique names for references are generated by appending the model name to the design file name separated with a dash (-). If necessary, the resulting block names are truncated and one or more of the last characters might be replaced with numerals to make the file name unique.

With the following set of options, you can choose whether or not to overwrite external reference files:

- Prompt to Overwrite
- Overwrite without Prompting
- Do Not Overwrite

---

**NOTE** If the folder that contains the DGN file is read-only, then any DWG xrefs will be created in the My Documents (Windows XP) or Documents (Windows Vista and Windows 7) folder.

---

**NOTE** If you are importing a DGN file that uses custom line styles and those line styles are defined in an external .rsc file, then the .rsc file needs to be included in the AutoCAD support path.

---

#### **Ignore All External References**

Referenced DGN and DWG files that are *external* to the specified DGN file are not included in the resulting DWG file.

If the DGN file has self references or references to other design models contained within the DGN file, these references are included.

#### **Attach as DGN Underlay**

All DGN external references in the DGN file are imported as DGN underlays in the resulting DWG file. Referenced DWG files remain xrefs when imported.

---

**NOTE** New DWG files are created in this process. These new DWGs are not automatically deleted.

---

#### **Conversion Units**

Select the appropriate conversion units for the translation. The imported DGN file contains working units (imperial or metric) called *master units* and *sub-units*. The selected working units (master units or sub-units) are converted one-for-one into DWG units.

### **Master Units**

Specifies that one master unit of the imported DGN file converts to one DWG drawing unit.

### **Sub Units**

Specifies that one sub-unit of the imported DGN file converts to one DWG drawing unit.

---

**NOTE** The master units and the sub-units of the selected DGN file are displayed next to the buttons for reference.

---

### **Explode Text Node to Text Elements**

*Text node elements* in a DGN file are multiple lines of text stored as one element, and are similar to MTEXT objects. Check this option to maintain text which follows a path.

When cleared, multiple lines of text are maintained as a single multiline text object.

When checked, multiple lines of text are separated into individual text objects. Select this option to maintain visual fidelity when you import a DGN file that includes text created along a curved path. The first character determines the location and rotation of the text object.

### **Translate DGN Properties to DWG Properties**

Selects and manages the mapping setup used on the current DGN import.

#### **Select Mapping Setup**

Displays the currently defined mapping setups.

Standard is the default mapping setup which extracts data from the drawing being exported and applies an automatic mapping to DGN layers, linetypes, lineweights, and colors, as shown in the mapping preview.

#### **Setup Description**

Displays the description of the selected mapping setup.

#### **Mapping Setups**

Opens the [DGN Mapping Setups dialog box](#) on page 311 where new mapping setups can be created and existing mapping setups can be renamed, modified, or deleted (see [DGNMAPPING](#) on page 310).

#### **Mapping Preview for Setup: Standard**



Lists all properties of both the imported DGN file in the DGN column and the selected mapping setup in the DWG column.

---

**NOTE** External reference files properties are not listed in a mapping preview.

---

See the [DGNIMPORT Conversion Table](#) on page 303 for specific details about the scope of importing MicroStation objects and other data.

See the [DGNIMPORT Unit Mapping Table](#) on page 305 for specific details about unit conversions when importing MicroStation objects.

## DGNIMPORT Conversion Table

### Quick Reference

See also:

- Import MicroStation DGN Files

The following table lists the DGN objects and features that are supported for import, and notes on the scope of the translation.

---

#### DGN to DWG Conversion Table

---

MicroStation	AutoCAD LT	Notes
Geometric Elements	Geometric Objects	The following DGN elements are translated into DWG objects: line, SmartLine, LineString, multiline, shape, complex chain, complex shape, arc, ellipse, curve, B-spline curve, and pattern. Pattern elements are limited to simple pattern styles. Bitonal gradient properties are also supported.
Levels	Layers	DGN levels are mapped automatically into the equivalent DWG layers. Invalid DGN characters in level names are converted to spaces.
Colors	Colors	All colors are translated using RGB values either to the ACI (AutoCAD Color Index) or TrueColor index as appropriate.

---

---

**DGN to DWG Conversion Table**

---

<b>MicroStation</b>	<b>AutoCAD LT</b>	<b>Notes</b>
Line Styles	Linetypes	<p>For the correct display of linetypes, the MicroStation .rsc (resource file) that is referenced by the DGN file must be available on your computer in a valid AutoCAD Support File search path when you import or attach the DGN file.</p> <p>Dynamically scaled line styles (Standard DGN Line Styles 1-7) are converted into fixed-scale linetypes. The resulting linetypes take into account the current zoom factor in a view in the DGN file when they are imported or attached as a DGN file into AutoCAD.</p> <hr/> <p><b>NOTE</b> To import standard V7 line styles correctly, you must “Fit View” and “Save Settings” in MicroStation first.</p> <hr/>
Cells	Blocks	<p>Cells are converted into blocks. Tags that are associated with cells are converted into constant-mode block attributes.</p> <hr/>
Text Elements, Text Styles	Single-line Text Objects, Multiline Text Objects, Text Styles	<p>Missing SHX text fonts are converted into the AutoCAD LT text font specified in the FONTALT system variable. The <i>aclt.fmp</i> file can be used to map SHX text fonts to DGN text fonts.</p> <p>TrueType fonts and SHX fonts in AutoCAD are exported to MicroStation V7 as Engineering. This can result in many visual differences.</p> <hr/>
Tables	Tables	<p>Cells that represent tables in DGN are imported as blocks.</p> <hr/>
Dimensions, Dimension Styles	Dimensions, Dimension Styles	<p>The size, spacing, style, and shape of dimensions may vary slightly. Dimension associativity is maintained whenever possible, and the correct dimension values are always maintained.</p> <hr/>

DGN to DWG Conversion Table		
MicroStation	AutoCAD LT	Notes
Fields	Fields	In general, fields are translated as static text. The exceptions are fields that behave identically in both products. This includes the Date fields <i>CreateDate</i> , <i>SaveDate</i> , and <i>PlotDate</i> , and the Document property fields <i>Author</i> , <i>Filename</i> , and <i>Filesize</i> . Fields are converted to text when “Explode Text Nodes to Text Elements” is checked in the Import DGN Settings dialog box.
Raster Images	Raster Images	These image file types: <i>.bmp</i> , <i>.cal</i> , <i>.tif</i> , <i>.png</i> , <i>.tga</i> , <i>.jpg</i> , <i>.pcx</i> , <i>.gif</i> , <i>.rlc</i> , <i>.bil</i> , and <i>.pct</i> are supported. All other image file types are not.
DGN References	DWG References	<i>.dwg</i> and <i>.dgn</i> file types are supported. Other non-DGN file types such as <i>.cel</i> , <i>.h</i> , <i>.s</i> , <i>.d</i> , <i>.rdl</i> , and <i>.cgm</i> are also supported.
DGN Design Model	DWG Model	The selected design model in a DGN file is converted into a DWG file.
DGN Sheet Model	DWG Layout	Only the sheet models that reference the primary design model are imported. DGN sheet models are translated as layouts in a DWG file.

## DGNIMPORT Unit Mapping Table

### Quick Reference

See also:

- Import MicroStation DGN Files

The following table lists the linear units used in the resulting DWG file as determined by the master units, sub-units, and unit precision of the DGN file being imported.

<b>DGN to DWG Unit Mapping Table</b>				
<b>DGN Master Units</b>	<b>DGN Sub Units</b>	<b>DGN Precision</b>	<b>DWG Units</b>	<b>Notes</b>
Feet	Inches	Decimal	Engineering	
Feet	Inches	Fractional	Architectural	
Inches	Inches	Decimal	Engineering	
Inches	Inches	Fractional	Architectural	
Inches	Any Other Unit	Decimal	Engineering	Master Units selected in the Import DGN Settings dialog box.
Inches	Any Other Unit	Decimal	Decimal	Sub Units selected in the Import DGN Settings dialog box.
Inches	Any Other Unit	Fractional	Architectural	Master Units selected in the Import DGN Settings dialog box
Inches	Any Other Unit	Fractional	Fractional	Sub Units selected in the Import DGN Settings dialog box

---

**DGN to DWG Unit Mapping Table**

---

DGN Master Units	DGN Sub Units	DGN Precision	DWG Units	Notes
Inches	Any Other Unit	Decimal	Decimal	
Any Other Unit	Any Other Unit	Fractional	Fractional	

---

For import of a V7 file, Master unit label will be read and will use the following table to set the Master units based on the unit translation table. The Resolution value will be used to set the Sub units.

---

**NOTE** Unknown labels will be treated as "meters" and "decimeters."

---

**V7 DGN Unit Translation Table**

---

DGN Label	Name	DGN Label	Name
km	kilometers	mi	miles
m	meters	yd	yard
dc	decimeters	ft	feet
cm	centimeters	in	inches
mm	millimeters	tn	1/10 feet
um	microns	ti	1/10 inches
		ui	micro inches
		'	feet
		"	inches
		'	feet

---

## -DGNIMPORT

### Quick Reference

#### See also:

- Import MicroStation DGN Files

If you enter -dgnimport at the Command prompt, the following prompts are displayed.

#### List of Prompts

The following prompts are displayed.

Enter **filename** on page 308 for DGN Import: *Specify path and filename of DGN file*

Enter name of model or [**?** on page 308] <Default>: *Enter the name of the design model in the DGN file, enter ? to list all design models, or press Enter*

Specify conversion **units** on page 309 [Master/Sub] <Master>: *Specify m or s, or press Enter*

Specify **mapping setup** on page 309 or [**?**] <Standard>: *Specify mapping setup or ? to specify filter command*

---

**TIP** Create a script using -DGNIMPORT to batch process importing of DGN files.

---

#### Filename

The file name can include up to 255 characters and contain letters, digits, spaces, and any special characters not used by Microsoft Windows or this program.

To avoid errors when entering a file name, it is recommended that you specify both the DGN file and path as follows:

*path\filename.dgn*

or

*"path\filename.dgn"*

If you enter a valid DGN file name without a file extension, the program adds the extension and search for the file.

#### ? - List of Design Models

Lists all design models contained in the DGN file.

**Units**

Specifies a drawing-units value for scaling the DGN file.

**Mapping Setups**

Specifies the mapping setup of the selected design model.

? After specifying a filter, a list of available import mapping setups that match the filter is displayed and will re-prompt.

## DGNLAYERS

**Quick Reference**

See also:

- Control the Display of Layers in an Underlay

Controls the display of layers in a DGN underlay.

**Access Methods**

 **Ribbon:** Insert tab ► Reference panel ► Underlay Layers

**Shortcut menu:** Select a DGN underlay, right-click in the drawing area, and choose DGN Layers.

**Summary**

After selecting the DGN underlay, the [Underlay Layers dialog box](#) on page 1282 is displayed.

---

**NOTE** The [ULAYERS](#) on page 1281 command allows you to manage the layers of all underlays in the current document: DWF, DWFx, PDF, and DGN.

---

# DGNMAPPING

## Quick Reference

### See also:

- Import MicroStation DGN Files

Allows users to create and edit user-defined DGN mapping setups.

## Summary

The [DGN Mapping Setups dialog box](#) on page 311 is displayed. It can also be accessed from the Import DGN Settings and Export DGN Settings dialog boxes.

The import/export process translates basic DGN/DWG data into the corresponding DWG/DGN data. The Standard (default) mapping translation is used to map DGN levels, linestyles, lineweights, and colors to equivalent DWG layers, linetypes, lineweights, and colors.

The DGNMAPPING command allows you to create, modify, rename, or delete mapping translations based on your company's CAD standards such as:

- Change DGN level names to appropriate DWG layer names
- Remap unsupported DGN linestyles to DWG linetypes
- Remap lineweights and adjust color mapping

Therefore, you can streamline the import/export process while minimizing the need for more extensive editing.

The list of translation mapping setups is sorted by mapping type, based on where it was accessed from. The Standard mapping setup is always on the top of the list. This mapping setup is the default translation based on the file being imported or exported. It is not editable.



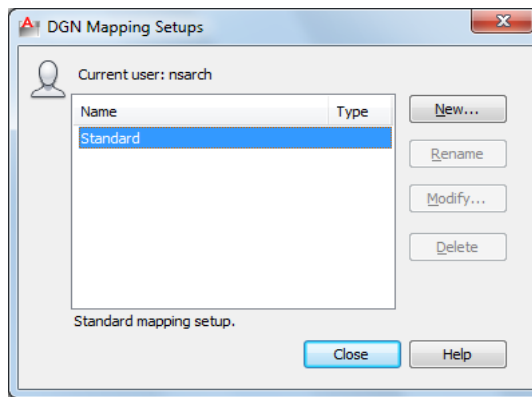
## DGN Mapping Setups Dialog Box

### Quick Reference

See also:

- Import MicroStation DGN Files

Creates new mapping setups, renames mapping setups, modifies mapping setups, and deletes mapping setups.



### List of Options

The following options are displayed.

#### Current User

Displays the user's login name.

#### Name

Lists all mapping setups. If the setup name is too long to be completely displayed, an ellipsis (...) is shown at the end.

**Type** Specifies the mapping setup type: import or export.

**Description** Displays the description of the selected mapping setup.

#### New

Displays the [New Mapping Setup dialog box](#) on page 312, in which you can define a new mapping setup.

### **Rename**

Starts in-place editing of the currently selected mapping setup (direct editing in the list).

---

**NOTE** The Rename button is disabled when the Standard mapping setup is selected.

---

### **Modify**

Displays the [Modify DGN Mapping Setup dialog box](#) on page 314, in which you can modify the currently selected mapping setup.

---

**NOTE** The Modify button is disabled when the Standard mapping setup is selected.

---

### **Delete**

Deletes the currently selected mapping setup. After deletion, the mapping setup directly below the one deleted is selected. If there is none below, the one directly above it is selected.

---

**NOTE** The Delete button is disabled when the Standard mapping setup is selected.

---

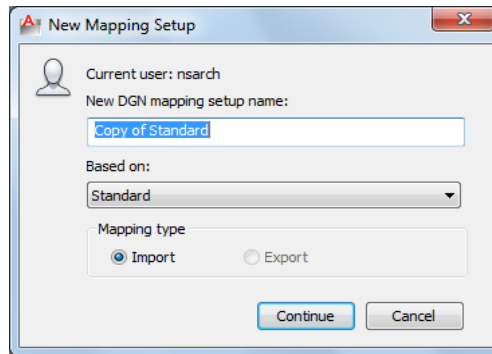
## **New Mapping Setup Dialog Box**

### **Quick Reference**

#### **See also:**

- [Import MicroStation DGN Files](#)

Names the new mapping setup, sets the mapping setup on which to start the new one, and indicates the mapping types to which you want the new style to apply.



### List of Options

The following options are displayed.

#### **Current User**

Displays the user's login name.

#### **New DGN Mapping Setup Name**

Specifies the new mapping setup name.

#### **Based On**

Sets a mapping setup to use as a basis for the new one. For the new mapping setup, you change only the properties that differ from the properties you start with.

#### **Mapping Type**

Specifies what type of mapping setup to create.

#### **Import**

Specifies an import mapping type.

#### **Export**

Specifies an export mapping type.

#### **Continue button**

Opens the [Modify DGN Mapping Setup dialog box](#) on page 314. Depending on the mapping type selected (Import or Export), the appropriate import/export dialog box is displayed.

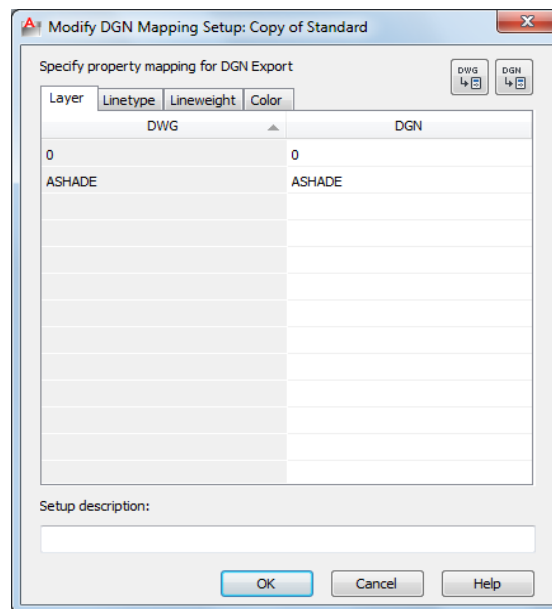
## Modify DGN Mapping Setup Dialog Box

### Quick Reference

See also:

- Export MicroStation DGN Files
- Import MicroStation DGN Files

Sets the properties for the selected mapping setup.



### Summary

When you choose Continue in the New Mapping Setup dialog box, the Modify DGN Mapping Setup dialog box is displayed. You define the properties for the new mapping setup in this dialog box. The dialog box initially displays the properties of the mapping setup that you selected.

## List of Options

The Modify DGN Mapping Setup dialog box includes the following tabs:

- [Layer](#) on page 315
- [Linetype](#) on page 315
- [Lineweight](#) on page 316
- [Color](#) on page 317

### Layer

The corresponding cells are automatically filled with the default mapping. The properties are added depending on which of the following mapping setups you are currently working on. Whenever the target cell is blank (right-hand column), the default system mapping is used. You can only make changes to the right-hand column of the Layer tab. The left-hand column is not editable. Use the Add Properties buttons to add layers/levels to the current mapping setup.

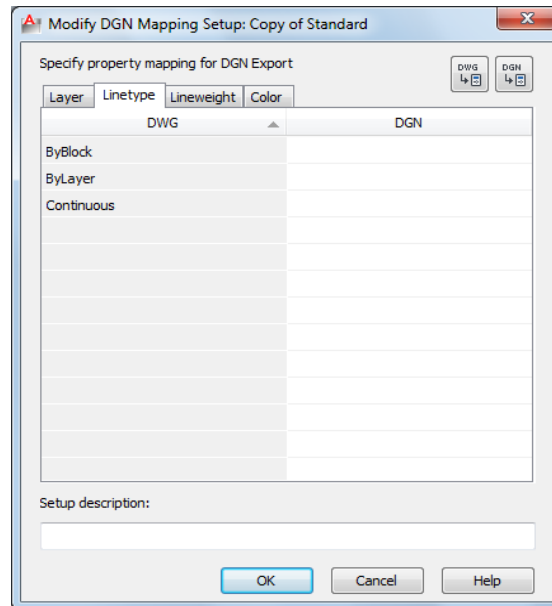
**New mapping setup:** If you have accessed the Modify DGN Mapping Setup dialog box by creating a new mapping setup from the Import/Export DGN Settings dialog boxes, the rows are populated with all defined levels in the imported DGN file or all defined layers in the current drawing file.

**Existing mapping setup:** If you are editing an existing mapping setup (even if you are editing a setup other than Standard from the Import (or Export) DGN Settings dialog box), the properties listed in the mapping table are not derived from the imported DGN file or the exported drawing file.

### Linetype

You can map linetypes and linestyles by editing the right-hand column of the Linetype tab. Select a cell in the right-hand column, and click the drop-down list to select a linetype or linestyle that the property in the left-hand column should be mapped to. Linetypes can be loaded for use in the mapping setup by selecting Other from the drop-down list. The left-hand column is not editable. Use the Add Properties buttons to add linetypes/linestyles to the current mapping setup.

**Export mapping setup:** If you have accessed the Modify DGN Mapping Setups dialog box by creating a new setup from the Export DGN Settings dialog box, the DWG column includes all defined linetypes in the current drawing file. Whenever the target cell is blank (right-hand column), we will use the default system mapping.



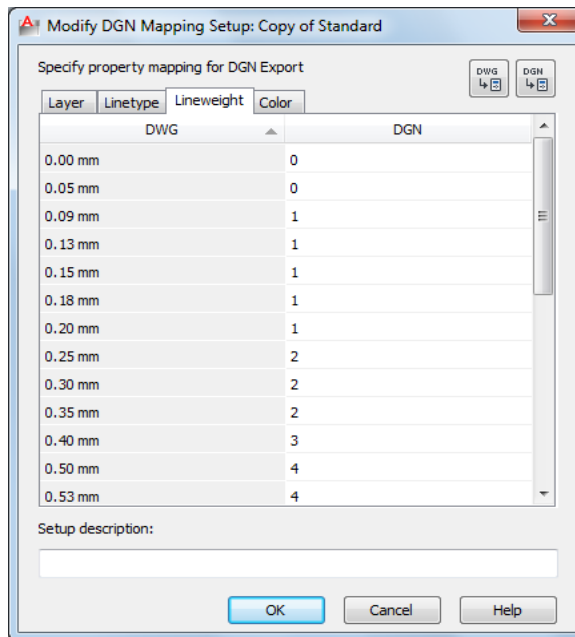
You can directly type DGN linestyle names in the cells in the right column. If unknown linestyle names are added to the right column of the mapping table, they are ignored and default to Continuous.

**Import mapping setup:** If you are in the Modify DGN Mapping Setup dialog box by creating a new setup from the Import DGN Settings dialog box, the DGN column includes all defined DGN linestyles in the imported DGN file, as well as the DGN seed file used when the DGN file was created.

When remapping linetypes in the DWG column, only linetypes from the acad.lin and acadiso.lin files are supported (depending on Units or Measurement type of file). Linetypes stored in custom LIN files are not supported.

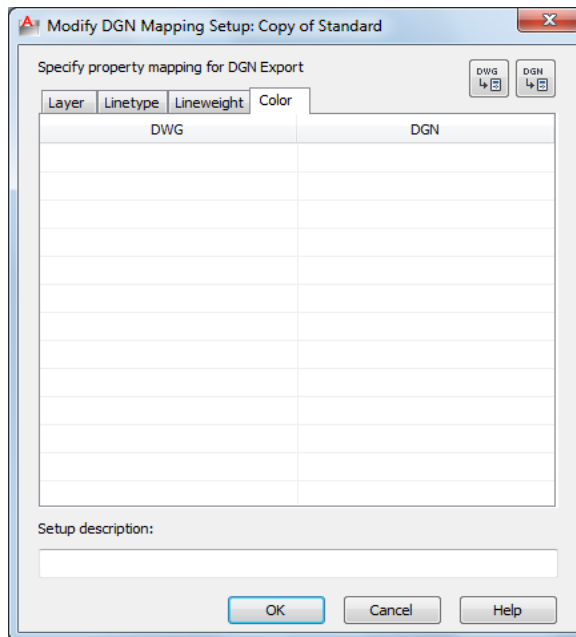
### **Lineweight**

A predefined set of lineweights is displayed which provides the best match between lineweights used in DGN and DWG files. You can copy and paste single or multiple lineweights using the right-click menu in the right-hand column. You can only make changes on the right-hand column of the Lineweight tab. The left-hand column is not editable.



### Color

You can map color values between DGN to DWG files. By default the Color tab is blank and the default color mapping is used. Color translations between DGN color values is done to the closest AutoCAD color values and AutoCAD color values are mapped to the closest DGN color values. The Color tab is the only tab that allows editing in both columns. Values in the left-hand column must be unique. To remap colors, right-click either column and select Add Color from the right-click menu.



**DGN column:** Selecting Add Color... from the right-click menu allows you to add a valid DGN color value to the cell. Valid colors include 0-255, ByLevel and ByCell. The DWG column is automatically populated with the equivalent RGB value. You can modify a DGN color by double-clicking the cell and typing a different value.

**DWG column:** Selecting Add Color... from the right-click menu brings up the [Select Color dialog box](#) on page 319. You can add ACI colors, true colors or color from a Color Book. The DGN column is automatically populated with the DGN equivalent color value. You can modify a DWG color by clicking the cell and selecting an option from the drop-down list. The drop-down list displays the standard color list as well as a list of colors previously added to the DWG column and the Select Color option.

---

**NOTE** The AutoCAD Color Index Values are used to populate the DGN Column on DGNEXPORT only because Microstation users can use their own color table values which map differently. (On DGNIMPORT, you can read the DGN color index value directly from the file).

---

### **Add Properties from DGN File**

Opens the Add Properties from DGN File dialog box (a [standard file selection dialog box](#)). The level and linestyle properties from the chosen DGN file are



added to the DGN columns in the Modify DGN Mapping Setups dialog box table.

In Files of Type, the drop-down list includes MicroStation DGN (\*.dgn) and All DGN Files (\*.\*) to recognize DGN files that have other extensions.

---

**NOTE** Only unique properties are added to the list in the Layer and Linetype tabs when adding properties from files.

---

### **Add Properties from Drawing File**

Opens the Add Properties from Drawing File dialog box (a [standard file selection dialog box](#)). The layer and linetype properties from the chosen DWT/DWG/DWS files are added to the DWG columns in the Modify DGN Mapping Setups dialog box table.

In Files of Type, the drop-down list includes the following:

- Drawing template (\*.dwt)
- Drawing (\*.dwg)
- Standards (\*.dws)

### **Setup Description**

Specifies a mapping setup description. You can also edit the description for an existing mapping setup.

---

**NOTE** Only unique properties are added to the list in the Layer and Linetype tabs when adding properties from files.

---

## **Select Color Dialog Box**

### **Quick Reference**

**See also:**

- Import MicroStation DGN Files

The Select Color dialog box is displayed when you click Select Color from the color drop-down list.

### Summary

- [Index Color](#) on page 216
- [True Color](#) on page 218
- [Color Books](#) on page 221

## DIM and DIM1

### Quick Reference

#### See also:

- [Overview of Dimensioning](#)

Accesses Dimensioning mode commands.

### Summary

The Dim prompt indicates that you're in Dimensioning mode, in which you can use a special set of [dimensioning commands](#) on page 320. (DIM and DIM1 are provided only for compatibility with previous releases.)

Use DIM to remain in Dimensioning mode after you have used a dimensioning command. Use DIM1 to execute a dimensioning command and immediately return to the Command prompt. To exit Dimensioning mode, enter **e** or **exit**, or press Esc.

### List of Prompts

The following prompts are displayed.

Dim: *Enter a Dimensioning mode command*

### **Dimensioning Mode Commands**

The following commands are available at the DIM prompt.

---

#### Dimensioning mode commands

---

Command	Description
EXIT	Exits Dimensioning mode and returns to the Command prompt. You can also press Esc to exit Dimensioning mode.
REDRAW	Redraws the current viewport.

---

---

**Dimensioning mode commands**

---

<b>Command</b>	<b>Description</b>
STYLE	Changes the current text style.
UNDO or U	Erases the most recently created dimension objects and cancels any new dimension system variable setting. When you exit Dimensioning mode, UNDO reverses the effects of the entire dimensioning session.

---

The following table shows which AutoCAD LT commands are equivalent to the rest of the Dimensioning mode commands. For information about these Dimensioning mode commands, see the equivalent AutoCAD LT command.

---

**Dimensioning mode command equivalents**

---

<b>Dimensioning mode command</b>	<b>Equivalent command</b>
ALIGNED	DIMALIGNED
ANGULAR	DIMANGULAR
BASELINE	DIMBASELINE
CENTER	DIMCENTER
CONTINUE	DIMCONTINUE
DIAMETER	DIMDIAMETER
HOMETEXT	DIMEDIT Home
HORIZONTAL	DIMLINEAR Horizontal
LEADER	LEADER
JOG	DIMJOGGED
NEWTEXT	DIMEDIT New
OBLIQUE	DIMEDIT Oblique
ORDINATE	DIMORDINATE

---

<b>Dimensioning mode command equivalents</b>	
<b>Dimensioning mode command</b>	<b>Equivalent command</b>
OVERRIDE	DIMOVERRIDE
RADIUS	DIMRADIUS
RESTORE	-DIMSTYLE Restore
ROTATED	DIMLINEAR Rotated
SAVE	-DIMSTYLE Save
STATUS	-DIMSTYLE Status
TEDIT	DIMTEDIT
TROTATE	DIMEDIT Rotate
UPDATE	-DIMSTYLE Apply
VARIABLES	-DIMSTYLE Variables
VERTICAL	DIMLINEAR Vertical

## DIMALIGNED

### Quick Reference

#### See also:

- Create Aligned Dimensions

Creates an aligned linear dimension.

## Access Methods



### Button

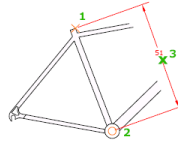
**Ribbon:** Annotate tab ► Dimensions panel ► Aligned

**Menu:** Dimension ► Aligned

**Toolbar:** Dimension

## Summary

Creates a linear dimension that is aligned with the origin points of the extension lines.



## List of Prompts

The following prompts are displayed.

Specify first **extension line origin** or <select object>: *Specify a point for manual extension lines, or press Enter for automatic extension lines*

After you specify either manual or automatic extension lines, the following prompt is displayed:

Specify **dimension line location** on page 324 or [Mtext/Text/Angle]: *Specify a point or enter an option*

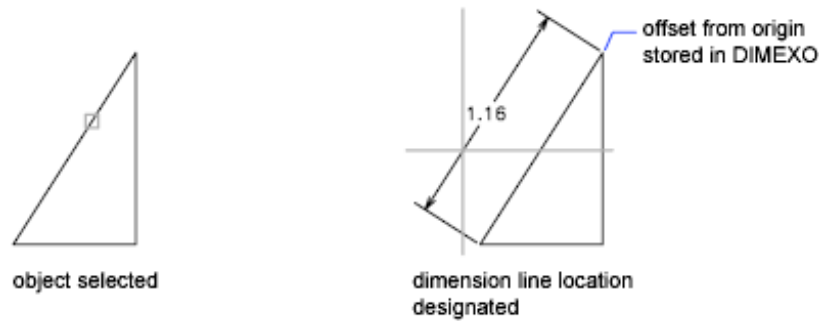
**Extension Line Origin** Specifies the first extension line origin (1). You are prompted to specify the second one.

**Object Selection** Automatically determines the origin points of the first and second extension lines after you select an object.

For polylines and other explodable objects, only the individual line and arc segments are dimensioned. You cannot select objects in a nonuniformly scaled block reference.

If you select a line or an arc, its endpoints are used as the origins of the extension lines. The extension lines are offset from the endpoints by the distance specified in Offset from Origin on the Lines and Arrows tab of the

New, Modify, and Override Dimension Style dialog boxes (see DIMSTYLE). This value is stored in the DIMEXO system variable.



If you select a circle, the endpoints of its diameter are used as the origins of the extension line. The point used to select the circle defines the origin of the first extension line.

**Dimension Line Location** Specifies the placement of the dimension line and determines the direction to draw the extension lines. After you specify the location, the DIMALIGNED command ends.

**Mtext** Displays the [In-Place Text Editor](#), which you can use to edit the dimension text. The generated measurement is represented with angle brackets (<>). To add a prefix or a suffix to the generated measurement, enter the prefix or suffix before or after the angle brackets. Use control codes and Unicode character strings to enter special characters or symbols. See [Control Codes and Special Characters](#) on page 1235.

To edit or replace the generated measurement, delete the angle brackets, enter the new dimension text, and then click OK. If alternate units are not turned on in the dimension style, you can display them by entering square brackets ([ ]). For more information, see "Select and Modify Objects".

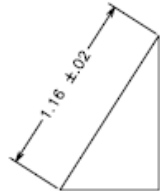
The current dimension style determines the appearance of the generated measurements.

**Text** Customizes the dimension text at the command prompt. The generated dimension measurement is displayed within angle brackets.

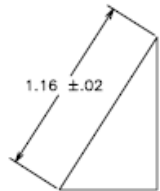
Enter the dimension text, or press Enter to accept the generated measurement. To include the generated measurement, use angle brackets (<>) to represent the generated measurement. If alternate units are not turned on in the dimension style, you can display alternate units by entering square brackets ([ ]).

Dimension text properties are set on the Text tab of the New, Modify, and Override Dimension Style dialog boxes.

**Angle** Changes the angle of the dimension text.



before angle



after angle

## DIMANGULAR

### Quick Reference

See also:


- Create Angular Dimensions


Creates an angular dimension.


### Access Methods



Button

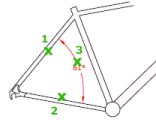
 **Ribbon:** Annotate tab ► Dimensions panel ► Angular

 **Menu:** Dimension ► Angular

 **Toolbar:** Dimension

## Summary

Measures the angle between selected objects or 3 points. Objects that can be selected include arcs, circles, and lines, among others.



## List of Prompts

The following prompts are displayed.

Select **arc**, **circle**, **line**, or **<specify vertex>**: *Select an arc, circle, or line, or press Enter to create the angular dimension by specifying three points*

After you define the angle to dimension, the following prompt is displayed:

Specify **dimension arc line location** or **[Mtext/Text/Angle/Quadrant]**:

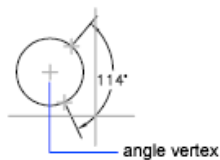
**Arc Selection** Uses points on the selected arc as the defining points for a three-point angular dimension. The center of the arc is the angle vertex. The arc endpoints become the origin points of the extension lines.



The dimension line is drawn as an arc between the extension lines. The extension lines are drawn from the angle endpoints to the intersection of the dimension line.

**Circle Selection** Uses the selection point (1) as the origin of the first extension line. The center of the circle is the angle vertex.

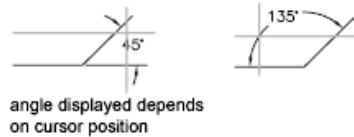
The second angle endpoint is the origin of the second extension line and does not have to lie on the circle.





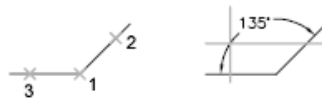
**Line Selection** Defines the angle using two lines.

The program determines the angle by using each line as a vector for the angle and the intersection of the lines for the angle vertex. The dimension line spans the angle between the two lines. If the dimension line does not intersect the lines being dimensioned, extension lines are added as needed to extend one or both lines. The arc is always less than 180 degrees.



**Three-Point Specification** Creates a dimension based on three points you specify.

The angle vertex can be the same as one of the angle endpoints. If you need extension lines, the endpoints are used as origin points.



The dimension line is drawn as an arc between the extension lines. The extension lines are drawn from the angle endpoints to the intersection of the dimension line.

**Dimension Arc Line Location** Specifies the placement of the dimension line and determines the direction to draw the extension lines.

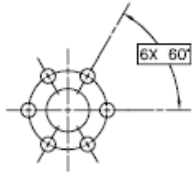
**Mtext** Displays the In-Place Text Editor, which you can use to edit the dimension text. To add a prefix or a suffix, enter the prefix or suffix text before or after the generated measurement. Use control codes and Unicode character strings to enter special characters or symbols. See [Control Codes and Special Characters](#) on page 1235.

For more information, see “Select and Modify Objects”.

The current dimension style determines the appearance of the generated measurements.

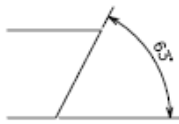
**Text** Customizes the dimension text at the Command prompt. The generated dimension measurement is displayed within angle brackets.

To include the generated measurement, use angle brackets (< >) to represent the generated measurement.

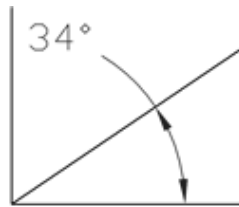


Dimension text properties are set on the Text tab of the New, Modify, and Override Dimension Style dialog boxes.

**Angle** Changes the angle of the dimension text.



**Quadrant** Specifies the quadrant that the dimension should be locked to. When quadrant behavior is on, the dimension line is extended past the extension line when the dimension text is positioned outside of the angular dimension.



## DIMARC

### Quick Reference

See also:

- Create Arc Length Dimensions

Creates an arc length dimension.

## Access Methods



Button

**Ribbon:** Annotate tab ► Dimensions panel ► Arc Length

**Menu:** Dimension ► Arc Length

**Toolbar:** Dimension

## List of Prompts

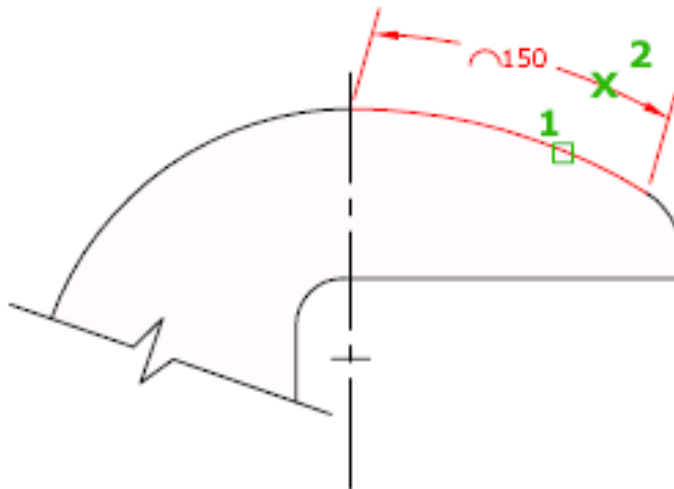
The following prompts are displayed.

Select arc or polyline arc segment: *Use an object selection method*

Specify **arc length dimension location** or [Mtext/Text/Angle/Partial/Leader]:

Specify a point or enter an option

Arc length dimensions measure the distance along an arc or polyline arc segment. The extension lines of an arc length dimension can be orthogonal or radial. An arc symbol is displayed either above or preceding the dimension text.



**Arc Length Dimension Location** Specifies the placement of the dimension line and determines the direction of the extension lines.

**Mtext** Displays the In-Place Text Editor, which you can use to edit the dimension text. Use control codes and Unicode character strings to enter special characters or symbols. See [Control Codes and Special Characters](#) on page 1235.

If alternate units are not turned on in the dimension style, you can display them by entering square brackets ([ ]). For more information, see “Select and Modify Objects”.

The current dimension style determines the appearance of the generated measurements.

**Text** Customizes the dimension text at the Command prompt. The generated dimension measurement is displayed within angle brackets.

To include the generated measurement, use angle brackets (< >) to represent the generated measurement. If alternate units are not turned on in the dimension style, you can display alternate units by entering square brackets ([ ]).

Dimension text properties are set on the Text tab of the New, Modify, and Override Dimension Style dialog boxes.

**Angle** Changes the angle of the dimension text.

**Partial** Reduces the length of the arc length dimension.

**Leader** Adds a leader object. This option is displayed only if the arc (or arc segment) is greater than 90 degrees. The leader is drawn radially, pointing towards the center of the arc being dimensioned.

**No Leader** Cancels the Leader option before the leader is created.

To remove a leader, delete the arc length dimension and recreate it without the leader option.

## DIMBASELINE

### Quick Reference

**See also:**

- Create Baseline and Continued Dimensions

Creates a linear, angular, or ordinate dimension from the baseline of the previous or selected dimension.

## Access Methods



### Button

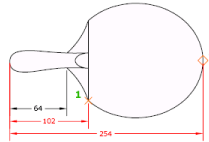
**Ribbon:** Annotate tab ► Dimensions panel ► Baseline

**Menu:** Dimension ► Baseline

**Toolbar:** Dimension

## Summary

The default spacing between baseline dimensions can be set from the Dimension Style Manager, Lines tab, Baseline Spacing ([DIMDLI](#) on page 1454 system variable).



If no dimension was created in the current session, you are prompted to select a linear, ordinate, or angular dimension to use as the base for the baseline dimension.

## List of Prompts

The following prompts are displayed.

Select base dimension: *Select a linear, ordinate, or angular dimension*

Otherwise, the program skips this prompt and uses the dimension object that was last created in the current session. If the base dimension is linear or angular, the following prompt is displayed:

Specify a [second extension line origin](#) on page 331 or [Undo/Select] <Select>:  
*Specify a point, enter an option, or press Enter to select a base dimension*

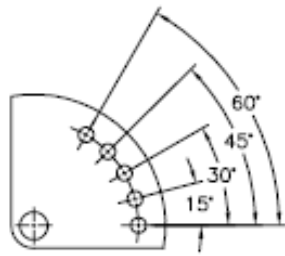
If the base dimension is ordinate, the following prompt is displayed:

Specify [feature location](#) on page 332 or [Undo/Select] <Select>:

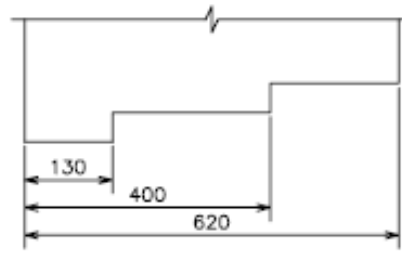
To end the command, press Enter twice, or press Esc. The current dimension style determines the appearance of the text.

**Second Extension Line Origin** By default, the first extension line of the base dimension is used as the extension line origin for the baseline dimension. To

override this default behavior, explicitly select the base dimension; the extension line origin becomes the extension line of the base dimension closest to the pick point of the selection. When you select a second point, the baseline dimension is drawn and the Specify a Second Extension Line Origin prompt is redisplayed. To end the command, press Esc. To select another linear, ordinate, or angular dimension to use as the basis for the baseline dimension, press Enter.



angular baseline dimensioning



linear baseline dimensioning

**Feature Location** Uses the endpoint of the base dimension as the endpoint for the baseline dimension; you are prompted for the next feature location. When you select a feature location, the baseline dimension is drawn and the Specify Feature Location prompt is redisplayed. To select another linear, ordinate, or angular dimension to use as the basis for the baseline dimension, press Enter.

**Undo** Undoes the last baseline dimension entered during this command session.

**Select** Prompts you to select a linear, ordinate, or angular dimension to use as the base for the baseline dimension.

## DIMBREAK

### Quick Reference

See also:

- Break a Dimension Line

Breaks or restores dimension and extension lines where they cross other objects.

## Access Methods



### Button

**Ribbon:** Annotate tab ► Dimensions panel ► Break.

**Menu:** Dimension ► Dimension Break

**Toolbar:** Dimension

## Summary

Dimension breaks can be added to linear, angular, and ordinate dimensions, among others.

## List of Prompts

The following prompts are displayed.

Select a dimension to add/remove break or [[Multiple](#) on page 333]: *Select a dimension, or enter **m** and press Enter*

After you select a dimension, the following prompt is displayed:

Select object to break dimension or [[Auto/Manual/Remove](#)] <Auto>: *Select an object that intersects the dimension or extension lines of the selected dimension, enter an option, or press Enter*

After you select an object to break the dimension with, the following prompt is displayed:

Select object to break dimension: *Select an object that passes through the dimension or press Enter to end the command*

---

**NOTE** Dimension breaks can be added to dimensions for objects that do not intersect the dimension or extension lines using the by Manual option.

---

**Multiple** Specifies multiple dimensions to add breaks to or remove breaks from.

**Auto** Places dimension breaks automatically at all the intersection points of the objects that intersect the selected dimension. Any dimension break created using this option is updated automatically when the dimension or an intersecting object is modified.

When a new object is drawn over the top of a dimension that has any dimension breaks, no new dimension breaks are automatically applied at the

intersecting points along the dimension object. To add the new dimension breaks, must be run the command again.

**Remove** Removes all dimension breaks from the selected dimensions.

**Manual** Places a dimension break manually. You specify two points on the dimension or extension lines for the location of the break. Any dimension break that is created using this option is not updated if the dimension or intersecting objects are modified. You can only place a single manual dimension break at a time with this option.

## DIMCENTER

### Quick Reference

See also:

- Create Radial Dimensions


Creates the center mark or the centerlines of circles and arcs.


### Access Methods



Button

 **Ribbon:** Annotate tab ► Dimensions panel ► Center Mark

 **Menu:** Dimension ► Center Mark

 **Toolbar:** Dimension

### Summary

The default sizes of the center mark components can be set from the Dimension Style Manager, Symbols and Arrows tab, Center Marks (DIMCEN system variable).



You can choose between center marks and centerlines and specify their size when you set up the dimension style. See DIMSTYLE. You can also change center mark settings using the DIMCEN system variable.





center mark



centerlines

## DIMCONTINUE

### Quick Reference

See also:

- Create Baseline and Continued Dimensions


Creates a dimension that starts from an extension line of a previously created dimension.

### Access Methods



Button

 **Ribbon:** Annotate tab ► Dimensions panel ► Continue

 **Menu:** Dimension ► Continue

 **Toolbar:** Dimension

### Summary

Automatically continues creating additional dimensions from the last linear, angular, or ordinate dimension created, or from a selected extension line. The dimension lines are lined up automatically.



If no dimension was created in the current session, you are prompted to select a linear, ordinate, or angular dimension to use as the base for the continued dimension.

### List of Prompts

The following prompts are displayed.

Select continued dimension: *Select a linear, ordinate, or angular dimension*

Otherwise, the program skips this prompt and uses the dimension object that was last created in the current session. If the base dimension is linear or angular, the following prompt is displayed:

Specify a **second extension line origin** or [Undo/Select] <Select>: *Specify a point, enter an option, or press Enter to select a base dimension*

If the base dimension is ordinate, the following prompt is displayed:

Specify **feature location** or [Undo/Select] <Select>:

To end the command, press Enter twice, or press Esc. The current dimension style determines the appearance of the text.

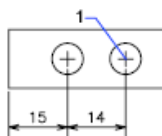


**Second Extension Line Origin** Uses the second extension line origin of the continued dimension for the first extension line origin of the next dimension. The current dimension style determines the appearance of the text.

After you select a continued dimension, the Specify a Second Extension Line Origin prompt is redisplayed. To end the command, press Esc. To select another linear, ordinate, or angular dimension to use as the basis for the continued dimension, press Enter.

Select continued dimension: *Select a linear, ordinate, or angular dimension*

Select a base dimension, or press Esc to end the command.



**Feature Location** Uses the endpoint of the base dimension as the endpoint for the continued dimension; you are prompted for the next feature location. When you select a feature location, the continued dimension is drawn and the Specify Feature Location prompt is redisplayed. To end the command, press Esc. To select another linear, ordinate, or angular dimension to use as the basis for the continued dimension, press Enter.

Select continued dimension: *Select a linear, ordinate, or angular dimension*

Select a base dimension, or press Esc to end the command.

**Undo** Undoes the last continued dimension entered during the command session.

**Select** Prompts you to select a linear, ordinate, or angular dimension to use as the continued dimension. After you select a continued dimension, the Specify a Second Extension Line Origin prompt or the Specify Feature Location prompt is redisplayed. To end the command, press Esc.

## DIMDIAMETER

### Quick Reference

See also:

- Create Radial Dimensions


Creates a diameter dimension for a circle or an arc.


### Access Methods



Button

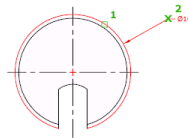
 **Ribbon:** Annotate tab ► Dimensions panel ► Diameter

 **Menu:** Dimension ► Diameter

 **Toolbar:** Dimension

### Summary

Measures the diameter of a selected circle or arc, and displays the dimension text with a diameter symbol in front of it. You can use grips to easily reposition the resulting diameter dimension.



## List of Prompts

The following prompts are displayed.

Select arc or circle:

Specify [dimension line location](#) on page 338 or [[Mtext/Text/Angle](#)]: *Specify a point or enter an option*

**Dimension Line Location** Determines the angle of the dimension line and the location of the dimension text. If the dimension is placed off of an arc resulting in the dimension pointing outside the arc, AutoCAD LT automatically draws an arc extension line.

**Mtext** Displays the In-Place Text Editor, which you can use to edit the dimension text. Use control codes and Unicode character strings to enter special characters or symbols. See [Control Codes and Special Characters](#) on page 1235.

If alternate units are not turned on in the dimension style, you can display them by entering square brackets ([ ]). For more information, see “Select and Modify Objects”.

The current dimension style determines the appearance of the dimension text.

**Text** Customizes the dimension text at the Command prompt. The generated dimension measurement is displayed within angle brackets.

To include the generated measurement, use angle brackets (< >) to represent the generated measurement. If alternate units are not turned on in the dimension style, you can display alternate units by entering square brackets ([ ]).

Dimension text properties are set on the Text tab of the New, Modify, and Override Dimension Style dialog boxes.

**Angle** Changes the angle of the dimension text.

## DIMDISASSOCIATE

### Quick Reference

See also:

- [Change Dimension Associativity](#)

Removes associativity from selected dimensions.

## Summary

DIMDISASSOCIATE filters the selection set to include only associative dimensions that are not on locked layers, and that are not in a different space than the current space (for example, if model space is active, associative dimensions in paper space are excluded). DIMDISASSOCIATE then disassociates these dimensions and reports the number of dimensions that are filtered out and the number that are disassociated.

# DIMEDIT

## Quick Reference

See also:


- Modify Dimension Text


Edits dimension text and extension lines.


## Access Methods



Button

 **Ribbon:** Annotate tab ► Dimensions panel ► Oblique

 **Menu:** Dimension ► Oblique

 **Toolbar:** Dimension, Oblique

## Summary

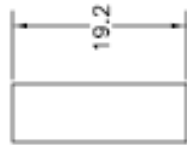
Rotates, modifies, or restores dimension text. Changes the oblique angle of extension lines. The companion command that moves text and the dimension line is [DIMTEDIT](#) on page 400.

## List of Prompts

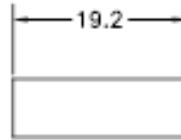
The following prompts are displayed.

Enter type of dimension editing [[Home](#)/[New](#)/[Rotate](#)/[Oblique](#)] <Home>: *Enter an option or press Enter*

**Home** Moves rotated dimension text back to its default position.



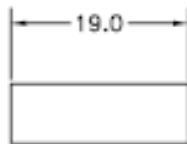
**before Home**



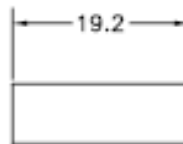
**after Home**

The selected dimension text is returned to its default position and rotation as specified in its dimension style.

**New** Changes dimension text using the [In-Place Text Editor](#).



**before New**



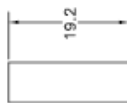
**after New**

The generated measurement is represented with angle brackets (< >). Use control codes and Unicode character strings to enter special characters or symbols. See [Control Codes and Special Characters](#) on page 1235.

To edit or replace the generated measurement, delete the angle brackets, enter the new dimension text, and then choose OK. If alternate units are not turned on in the dimension style, you can display them by entering square brackets ([ ]). For more information, see “Select and Modify Objects”.

**Rotate** Rotates dimension text. This option is similar to the Angle option of DIMTEDIT.

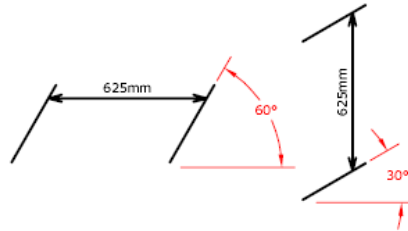
Entering **0** places the text in its default orientation, which is determined by the vertical and horizontal text settings on the Text tab of the New, Modify, and Override Dimension Style dialog boxes. See DIMSTYLE. The DIMTIH and DIMTOH system variables control this orientation.



**rotated text**

### **Oblique**

The Oblique option is useful when extension lines conflict with other features of the drawing. The oblique angle is measured from the X axis of the UCS.



## DIMINSPECT

### Quick Reference

See also:

- Convert Dimensions into Inspection Dimensions

Adds or removes inspection information for a selected dimension.

### Access Methods



Button

**Ribbon:** Annotate tab ► Dimensions panel ► Inspect

**Menu:** Dimension ► Inspection

**Toolbar:** Dimension

### Summary

Inspection dimensions specify how frequently manufactured parts should be checked to ensure that the dimension value and tolerances of the parts are within the specified range.



The [Inspection Dimension Dialog Box](#) is displayed and allows you to add or remove inspection dimensions from an existing dimension. Inspection dimensions allow you to effectively communicate how frequently manufactured parts should be checked to ensure that the dimension value and tolerances of the parts are within the specified range.

If you enter `-diminspect` at the Command prompt, [options are displayed](#).

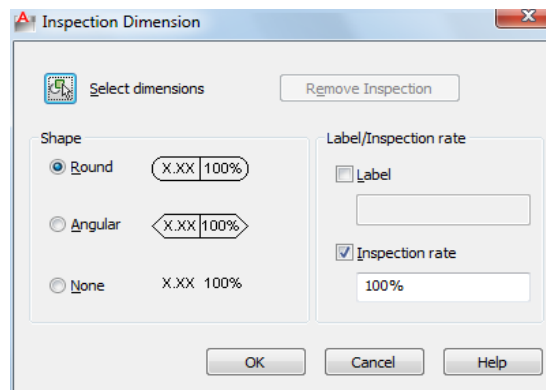
## Inspection Dimension Dialog Box

### Quick Reference

See also:

- [Convert Dimensions into Inspection Dimensions](#)

Allows you to add or remove an inspection dimension from selected dimensions.



### Summary

Use the Shape and Inspection Label/Rate settings to the appearance of the frame of the inspection dimension and the inspection rate value.

### List of Options

The following options are displayed.



**Select Dimensions**

Specifies the dimensions that an inspection dimension should be added to or removed from.

**Remove Inspection**

Removes the inspection dimension from the selected dimension.

**Shape**

Controls the shape of the frame that is drawn around the label, dimension value, and inspection rate of the inspection dimension.

**Round**

Creates a frame with semi-circles on the two ends; the fields within the frame are separated by vertical lines.

**Angular**

Creates a frame with lines that form a 90-degree angle on the two ends; the fields within the frame are separated by vertical lines.

**None**

Specifies that no frame is drawn around the values; the fields are not separated by vertical lines.

**Label/Inspection Rate**

Specifies the label text and inspection rate for an inspection dimension.

**Label**

Turns the display of the label field on and off.

**Label Value**

Specifies the label text.

The label is displayed in the leftmost section of the inspection dimension when the Label check box is selected.

**Inspection Rate**

Turns the display of the rate field on and off.

**Inspection Rate Value**

Specifies how frequently a part should be inspected.

The value is expressed as a percentage, and the valid range is 0 to 100. The inspection rate is displayed in the rightmost section of the inspection dimension when the Inspection Rate check box is selected.

## -DIMINSPECT

### Quick Reference

See also:

- Convert Dimensions into Inspection Dimensions

### List of Prompts

The following prompts are displayed.

[Add inspection data](#) on page 344 or [[Remove](#) on page 344] <Add>: *Enter an option or press Enter*

#### **Add**

Adds an inspection dimension to the selected dimensions.

**Round** Creates a frame with semi-circles on the two ends; the fields within the frame are separated by vertical lines.

**Angular** Creates a frame with lines that form a 90-degree angle on the two ends; the fields within the frame are separated by vertical lines.

**None** Specifies that no frame is drawn around the values; the fields are not separated by vertical lines.

**None** No label is displayed with the inspection dimension.

#### **Remove**

Removes the inspection dimension from the selected dimensions.

## DIMJOGGED

### Quick Reference

See also:

- Create Radial Dimensions


Creates jogged dimensions for circles and arcs.


### Access Methods



#### Button

 **Ribbon:** Annotate tab ► Dimensions panel ► Jogged

 **Menu:** Dimension ► Jogged

 **Toolbar:** Dimension

### Summary

DIMJOGGED measures the radius of the selected object and displays the dimension text with a radius symbol in front of it. The origin point of the dimension line can be specified at any convenient location.

---

**NOTE** Jogged radius dimensions are also called *foreshortened radius dimensions*.

---

Creates jogged radius dimensions when the center of an arc or circle is located off the layout and cannot be displayed in its true location. The origin point of the dimension can be specified at a more convenient location called the center location override.



### List of Prompts

The following prompts are displayed.

Select arc or circle: Select an arc, circle, or polyline arc segment

Specify center location override: *Specify a point*

Accepts a new center point for a jogged radius dimension that takes the place of the true center point of the arc or circle.

Specify [dimension line location](#) on page 345 or [Mtext/Text/Angle]: *Specify a point or enter an option*

**Dimension Line Location** Determines the angle of the dimension line and the location of the dimension text. If the dimension is placed off of an arc resulting in the dimension pointing outside the arc, AutoCAD LT automatically draws an arc extension line.

**Mtext** Displays the In-Place Text Editor, which you can use to edit the dimension text. Use control codes and Unicode character strings to enter

special characters or symbols. See [Control Codes and Special Characters](#) on page 1235.

If alternate units are not turned on in the dimension style, you can display them by entering square brackets ([ ]). For more information, see “Select and Modify Objects”.

The current dimension style determines the appearance of the generated measurements.

**Text** Customizes the dimension text at the Command prompt. The generated dimension measurement is displayed within angle brackets.

To include the generated measurement, use angle brackets (< >) to represent the generated measurement. If alternate units are not turned on in the dimension style, you can display alternate units by entering square brackets ([ ]).

Dimension text properties are set on the Text tab of the New, Modify, and Override Dimension Style dialog boxes.

**Angle** Changes the angle of the dimension text.

Also determines the angle of the dimension line and the location of the dimension text.

**Specify Jog Location** Locates the middle point of the jog. The transverse angle of the jog is determined by the Dimension Style Manager.

## DIMJOGLINE

### Quick Reference

See also:


- Dimension Jog

Adds or removes a jog line on a linear or aligned dimension.

### Access Methods



Button

 **Ribbon:** Annotate tab ► Dimensions panel ► Dimension, Dimjogline

 **Menu:** Dimension ► Jogged Linear

 **Toolbar:** Dimension

### Summary

Jog lines in a dimension indicate a break in the objects being dimensioned. The dimension value represents the actual distance, rather than the measured distance in the drawing.



### List of Prompts

The following prompts are displayed.

Select dimension to [add jog](#) on page 347 or [Remove](#) on page 347]: *Select a linear or aligned dimension*

**Add Jog** Specifies the linear or aligned dimension to which to add a jog. You are prompted for the location of the jog.

Press Enter to place the jog at the midpoint between the dimension text and the first extension line or the midpoint of the dimension line based on the location of the dimension text

**Remove** Specifies the linear or aligned dimension from which to remove the jog.

## DIMLINEAR

### Quick Reference

See also:

- Create Linear Dimensions


Creates a linear dimension.


### Access Methods



Button

 **Ribbon:** Annotate tab ► Dimensions panel ► Linear

 **Menu:** Dimension ► Linear

 **Toolbar:** Dimension

### Summary

Creates a linear dimension with a horizontal, vertical, or rotated dimension line. This command replaces the DIMHORIZONTAL and DIMVERTICAL commands.



### List of Prompts

The following prompts are displayed.

Specify first **extension line origin** or <select object>: *Specify a point or press Enter to select an object to dimension*

After you specify the extension line origin points or the object to dimension, the following prompt is displayed:

Specify **dimension line location** or [Mtext/Text/Angle/Horizontal/Vertical/Rotated]: *Specify a point or enter an option*

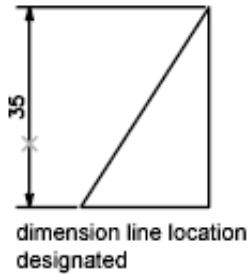
#### **First Extension Line Origin**

Prompts for the origin point of the second extension line after you specify the origin point of the first.



#### **Dimension Line Location**

Uses the point you specify to locate the dimension line and determines the direction to draw the extension lines. After you specify the location, the dimension is drawn.



### Mtext

Displays the In-Place Text Editor, which you can use to edit the dimension text. Use control codes and Unicode character strings to enter special characters or symbols. See [Control Codes and Special Characters](#) on page 1235.

If alternate units are not turned on in the dimension style, you can display them by entering square brackets ([ ]). For more information about formatting dimension text, see “Select and Modify Objects”.

The current dimension style determines the appearance of the generated measurements.

### Text

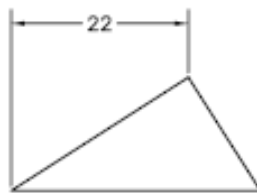
Customizes the dimension text at the Command prompt. The generated dimension measurement is displayed within angle brackets.

To include the generated measurement, use angle brackets (< >) to represent the generated measurement. If alternate units are not turned on in the dimension style, you can display alternate units by entering square brackets ([ ]).

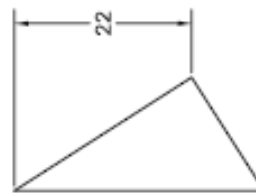
Dimension text properties are set on the Text tab of the New, Modify, and Override Dimension Style dialog boxes.

### Angle

Changes the angle of the dimension text.



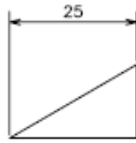
before Angle



after Angle

## Horizontal

Creates horizontal linear dimensions.

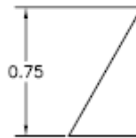


**Dimension Line Location** Uses the point you specify to locate the dimension line.

- [Mtext](#) on page 349
- [Text](#) on page 349
- [Angle](#) on page 349

## Vertical

Creates vertical linear dimensions.

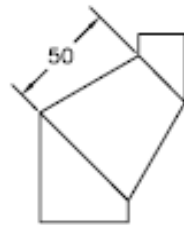


**Dimension Line Location** [Dimension Line Location](#) on page 348

- [Mtext](#) on page 349
- [Text](#) on page 349
- [Angle](#) on page 349

## Rotated

Creates rotated linear dimensions.



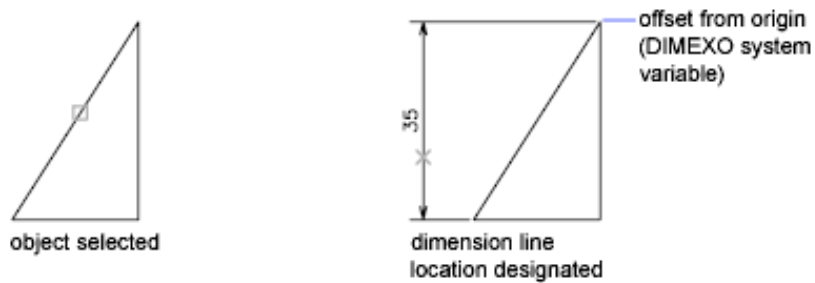


## Object Selection

Automatically determines the origin points of the first and second extension lines after you select an object.

For polylines and other explodable objects, only the individual line and arc segments are dimensioned. You cannot select objects in a non-uniformly scaled block reference.

If you select a line or an arc, the line or arc endpoints are used as the origins of the extension lines. The extension lines are offset from the endpoints by the distance you specify in Offset from Origin in the Lines and Arrows tab of the New, Modify, and Override Dimension Style dialog boxes. See DIMSTYLE. This value is stored in the DIMEXO system variable.



If you select a circle, the diameter endpoints are used as the origins of the extension line. When the point used to select the circle is close to the north or south quadrant point, a horizontal dimension is drawn. When the point used to select the circle is close to the east or west quadrant point, a vertical dimension is drawn.

## DIMORDINATE

### Quick Reference

See also:

- Create Ordinate Dimensions


Creates ordinate dimensions.


## Access Methods



### Button

 **Ribbon:** Annotate tab ► Dimensions panel ► Ordinate

 **Menu:** Dimension ► Ordinate

 **Toolbar:** Dimension

## Summary

Ordinate dimensions measure the horizontal or vertical distance from an origin point called the datum to a feature, such as a hole in a part. These dimensions prevent escalating errors by maintaining accurate offsets of the features from the datum.



## List of Prompts

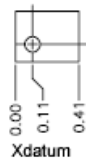
The following prompts are displayed.

Specify feature location: *Specify a point or snap to an object*

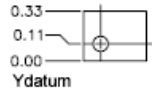
Specify **leader endpoint** or [**Xdatum/Ydatum/Mtext/Text/Angle**]: *Specify a point or enter an option*

**Leader Endpoint Specification** Uses the difference between the feature location and the leader endpoint to determine whether it is an *X* or a *Y* ordinate dimension. If the difference in the *Y* ordinate is greater, the dimension measures the *X* ordinate. Otherwise, it measures the *Y* ordinate.

**Xdatum** Measures the *X* ordinate and determines the orientation of the leader line and dimension text. The Leader Endpoint prompt is displayed, where you can specify the endpoint.



**Ydatum** Measures the *Y* ordinate and determines the orientation of the leader line and dimension text. The Leader Endpoint prompts are displayed, where you can specify the endpoint.



**Mtext** Displays the In-Place Text Editor, which you can use to edit the dimension text. Use control codes and Unicode character strings to enter special characters or symbols. See [Control Codes and Special Characters](#) on page 1235.

If alternate units are not turned on in the dimension style, you can display them by entering square brackets ([ ]). For more information about formatting dimension text, see “Select and Modify Objects”.

The current dimension style determines the appearance of the generated measurements.

**Text** Customizes the dimension text at the Command prompt. The generated dimension measurement is displayed within angle brackets.

To include the generated measurement, use angle brackets (< >) to represent the generated measurement. If alternate units are not turned on in the dimension style, you can display alternate units by entering square brackets ([ ]).

Dimension text properties are set on the Text tab of the New, Modify, and Override Dimension Style dialog boxes.

**Angle** Changes the angle of the dimension text.

## DIMOVERRIDE

### Quick Reference

See also:

- [Override a Dimension Style](#)

Controls overrides of system variables used in selected dimensions.

### Access Methods



Button

- ✎ **Ribbon:** Annotate tab ► Dimensions panel ► Override
- ✎ **Menu:** Dimension ► Override

### Summary

Overrides a specified dimensioning system variable for selected dimensions, or clears the overrides of selected dimension objects, returning them to the settings defined by their dimension style.

### List of Prompts

The following prompts are displayed.

Enter **dimension variable name to override** or **[Clear overrides]**: *Enter the name of a dimension variable, or enter c*

**Dimension Variable Name to Override** Overrides the value of the dimensioning system variable you specify.

**Clear Overrides** Clears any overrides on selected dimensions.

The dimension objects return to the settings defined by their dimension style.

## DIMRADIUS

### Quick Reference

See also:

- Create Radial Dimensions

Creates a radius dimension for a circle or an arc.

### Access Methods

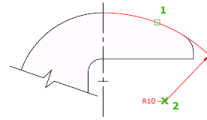


Button

- ✎ **Ribbon:** Annotate tab ► Dimensions panel ► Radius
- ✎ **Menu:** Dimension ► Radius
- ✎ **Toolbar:** Dimension

## Summary

Measures the radius of a selected circle or arc and displays the dimension text with a radius symbol in front of it. You can use grips to reposition the resulting radius dimension easily.



## List of Prompts

The following prompts are displayed.

Select arc or circle:

Specify [dimension line location](#) or [[Mtext/Text/Angle](#)]: *Specify a point or enter an option*

**Dimension Line Location** Determines the angle of the dimension line and the location of the dimension text. If the dimension is placed off of an arc resulting in the dimension pointing outside the arc, AutoCAD LT automatically draws an arc extension line.

**Mtext** Displays the In-Place Text Editor, which you can use to edit the dimension text. Use control codes and Unicode character strings to enter special characters or symbols. See [Control Codes and Special Characters](#) on page 1235.

If alternate units are not turned on in the dimension style, you can display them by entering square brackets ([ ]). For more information about formatting dimension text, see “Select and Modify Objects”.

The current dimension style determines the appearance of the generated measurements.

**Text** Customizes the dimension text at the Command prompt. The generated dimension measurement is displayed within angle brackets (< >).

To include the generated measurement, use angle brackets (< >) to represent the generated measurement. If alternate units are not turned on in the dimension style, you can display alternate units by entering square brackets ([ ]).

Dimension text properties are set on the Text tab of the New, Modify, and Override Dimension Style dialog boxes.

**Angle** Changes the angle of the dimension text.

# DIMREASSOCIATE

## Quick Reference

See also:

- Change Dimension Associativity

Associates or reassociates selected dimensions to objects or points on objects.

## Access Methods



Button

 **Ribbon:** Annotate tab ► Dimensions panel ► Reassociate

 **Menu:** Dimension ► Reassociate Dimensions

## Summary

Each selected dimension is highlighted in turn, and prompts for association points appropriate for the selected dimension are displayed.

A marker is displayed for each association point prompt.

- If the definition point of the current dimension is not associated to a geometric object, the marker appears as an X
- if the definition point is associated, the marker appears as an X inside a box.

---

**NOTE** The marker disappears if you pan or zoom with a wheel mouse.

---

## List of Prompts

The following prompts are displayed.

Select dimensions to reassociate...

Select objects or [Disassociated]: *Select the dimension objects to reassociate or press D to select all disassociated dimensions.*

Press Esc to terminate the command without losing the changes that were already specified. Use UNDO to restore the previous state of the changed dimensions.

The prompts for the different types of dimensions are:

**Linear** Specify first extension line origin or [Select object] <next>: *Specify an object snap location, enter s and select a geometric object, or press Enter to skip to the next prompt*

Specify second extension line origin <next>: *Specify an object snap location, or press Enter to skip to the next dimension object, if any*

**Aligned** Specify first extension line origin or [Select object] <next>: *Specify an object snap location, enter s and select a geometric object, or press Enter to skip to the next prompt*

Specify second extension line origin <next>: *Specify an object snap location, or press Enter to skip to the next dimension object, if any*

**Angular (Three Point)** Specify angle vertex or [Select arc or circle] <next>: *Specify an object snap location, enter s and select an arc or a circle, or press Enter to skip to the next prompt*

Specify first angle endpoint <next>: *Specify an object snap location or press Enter to skip to the next prompt*

Specify second angle endpoint <next>: *Specify an object snap location or press Enter to skip to the next dimension object, if any*

**Angular (Two Line)** Select first line <next>: *Select a line, or press Enter to skip to the next prompt*

Select second line <next>: *Select another line, or press Enter to skip to the next dimension object, if any*

**Diameter** Select arc or circle <next>: *Select an arc or a circle, or press Enter to skip to the next dimension object, if any*

**Leader** Specify leader association point <next>: *Specify an object snap location, or press Enter to skip to the next dimension object, if any*

**Ordinate** Specify feature location <next>: *Specify an object snap location, or press Enter to skip to the next dimension object, if any*

**Radius** Select arc or circle <next>: *Select an arc or a circle, or press Enter to skip to the next dimension object, if any*

---

**NOTE** DIMREASSOCIATE does not change the setting of DIMLFAC in a dimension. Use DIMOVERRIDE to clear dimension linear factors in legacy drawings.

---

## DIMREGEN

### Quick Reference

**See also:**

- Associative Dimensions

Updates the locations of all associative dimensions.

### Summary

The locations of all associative dimensions in the current drawing are updated.

Associative dimensions need to be updated manually with DIMREGEN in the following cases:

- After panning or zooming with a wheel mouse in a layout with model space active; update associative dimensions created in paper space.
- After opening a drawing containing external references that are dimensioned in the current drawing; update associative dimensions if the associated external reference geometry has been modified.

---

**NOTE** After opening a drawing that has been modified with a previous version, the association between dimensions and objects or points may need to be updated. You can use the [DIMREASSOCIATE](#) on page 356 command to reassociate modified dimensions with the objects or points that they dimension.

---

## DIMROTATED

### Quick Reference

**See also:**

- Create Linear Dimensions

Creates a rotated linear dimension.



## Summary

Creates a linear dimension with a rotated dimension line.

## List of Prompts

The following prompts are displayed.

Specify angle of dimension line <0>: *Specify an angle or press Enter to accept the default value*

Specify first [extension line origin](#) or <select object>: *Specify a point or press Enter to select an object to dimension*

After you specify the extension line origin points or the object to dimension, the following prompt is displayed:

Specify [dimension line location](#) or [Mtext/Text/Angle]: *Specify a point or enter an option*

### First Extension Line Origin

Prompts for the origin point of the second extension line after you specify the origin point of the first.

### Dimension Line Location

Uses the point you specify to locate the dimension line and determines the direction to draw the extension lines. After you specify the location, the dimension is drawn.

### Mtext

Displays the In-Place Text Editor, which you can use to edit the dimension text. Use control codes and Unicode character strings to enter special characters or symbols. See [Control Codes and Special Characters](#) on page 1235.

If alternate units are not turned on in the dimension style, you can display them by entering square brackets ([ ]). For more information about formatting dimension text, see “Select and Modify Objects”.

The current dimension style determines the appearance of the generated measurements.

### Text

Customizes the dimension text at the Command prompt. The generated dimension measurement is displayed within angle brackets.

To include the generated measurement, use angle brackets (< >) to represent the generated measurement. If alternate units are not turned on in the dimension style, you can display alternate units by entering square brackets ([ ]).

Dimension text properties are set on the Text tab of the New, Modify, and Override Dimension Style dialog boxes.

### **Angle**

Changes the angle of the dimension text.

### **Object Selection**

Automatically determines the origin points of the first and second extension lines after you select an object.

For polylines and other explodable objects, only the individual line and arc segments are dimensioned. You cannot select objects in a non-uniformly scaled block reference.

If you select a line or an arc, the line or arc endpoints are used as the origins of the extension lines. The extension lines are offset from the endpoints by the distance you specify in Offset from Origin in the Lines and Arrows tab of the New, Modify, and Override Dimension Style dialog boxes. See DIMSTYLE. This value is stored in the DIMEXO system variable.

If you select a circle, the location of the origins for the extension lines is calculated based on the center of the circle and the angle of the rotated dimension line.

## **DIMSPACE**

### **Quick Reference**

See also:

- Adjust Dimension Spacing


Adjusts the spacing between linear dimensions or angular dimensions.

### **Access Methods**



**Button**

 **Ribbon:** Annotate tab ► Dimensions panel ► Adjust Space

 **Menu:** Dimension ► Dimension Space

 **Toolbar:** Dimension

## Summary

The spacing between parallel dimension lines is made equal. You can also make the dimension lines of a series of linear or angular dimensions line up by using a spacing value of 0.



Spacing is applied only to parallel linear dimensions or to angular dimensions that share a common vertex.

## List of Prompts

The following prompts are displayed.

Select base dimension: *Select a parallel linear or angular dimension*

Select dimensions to space: *Select a parallel linear or angular dimension to equally space from the base dimension and press Enter*

[Enter value](#) on page 361 or [[Auto](#) on page 361] <Auto>: *Specify a spacing distance or press Enter*

**Enter Spacing Value** Applies a spacing value to the selected dimensions from the base dimension. For example, if you enter a value of 0.5000, all selected dimensions will be separated by a distance of 0.5000.

You can use a spacing value of 0 (zero) to align the dimension lines of selected linear and angular dimensions end to end.

**Auto** Calculates the spacing distance automatically based on the text height specified in the dimension style of the selected base dimension. The resulting spacing value is twice the height of the dimension text.

# DIMSTYLE

## Quick Reference

**See also:**

- Use Dimension Styles

Creates and modifies dimension styles.

## Access Methods



**Button**

**Ribbon:** Annotate tab ► Dimensions panel ► ► Dimension Style

**Menu:** Format ► Dimension Style

**Toolbar:** Styles

## Summary

The [Dimension Style Manager](#) is displayed.

A dimension style is a named collection of dimension settings that control the appearance of dimensions. You create dimension styles to specify the format of dimensions quickly, and to ensure that dimensions conform to standards.

If you enter **-dimstyle** at the Command prompt, [options are displayed](#).

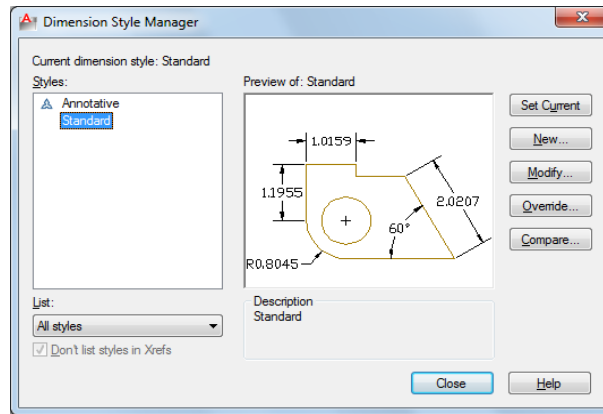
# Dimension Style Manager

## Quick Reference

See also:

- Use Dimension Styles

Creates new styles, sets the current style, modifies styles, sets overrides on the current style, and compares styles.



### List of Options

The following options are displayed.

#### Current Dimension Style

Displays the name of the dimension style that is current. The default dimension style is STANDARD. The current style is applied to dimensions you create.

#### Styles

Lists dimension styles in the drawing. The current style is highlighted. Right-click in the list to display a shortcut menu with options to set the current style, rename styles, and delete styles. You cannot delete a style that is current

or in use in the current drawing. A  icon before the style name indicates that the style is .

Unless you select Don't List Styles in Xrefs, dimension styles are displayed in externally referenced drawings using the syntax for externally referenced named objects. (See “Overview of Referenced Drawings (Xrefs)”.) Although you cannot change, rename, or make current externally referenced dimension styles, you can create new styles based on them.

The item selected in List controls the dimension styles displayed.

#### List

Controls the display of styles in the Styles list. Select All Styles if you want to see all dimension styles in a drawing. Select Styles in Use if you want to see only the dimension styles currently used by dimensions in the drawing.

**Don't List Styles in Xrefs**

When selected, suppresses display of dimension styles in externally referenced drawings in the Styles list.

**Preview**

Shows a graphic representation of the style selected in the Styles list.

**Description**

Describes the style selected in the Styles list relative to the current style. If the description is longer than the space provided, you can click in the pane and use arrow keys to scroll down.

**Set Current**

Sets the style selected under Styles to current. The current style is applied to dimensions you create.

**New**

Displays the [Create New Dimension Style dialog box](#) on page 365, in which you can define a new dimension style.

**Modify**

Displays the [Modify Dimension Styles dialog box](#) on page 366, in which you can modify dimension styles. Dialog box options are identical to those in the New Dimension Style dialog box.

**Override**

Displays the [Override Current Style dialog box](#) on page 366, in which you can set temporary overrides to dimension styles. Dialog box options are identical to those in the New Dimension Style dialog box. Overrides are displayed as unsaved changes under the dimension style in the Styles list.

**Compare**

Displays the [Compare Dimension Styles dialog box](#), in which you can compare two dimension styles or list all the properties of one dimension style.

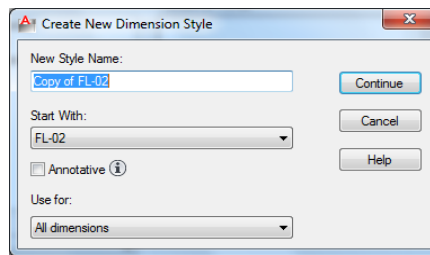
## Create New Dimension Style Dialog Box

### Quick Reference

#### See also:

- Use Dimension Styles

Names the new dimension style, sets the style on which to start the new one, and indicates the dimension types to which you want the new style to apply.



### List of Options

The following options are displayed.

#### New Style Name

Specifies the new dimension style name.

#### Start With

Sets a style to use as a basis for the new one. For the new style, you change only the properties that differ from the properties you start with.

#### Annotative

Specifies that the dimension style is . Click the information icon to learn more about annotative objects.

#### Use For

Creates a dimension substyle that applies only to specific dimension types. For example, you could create a version of the STANDARD dimension style to be used only for diameter dimensions.

#### Continue

Displays the [New Dimension Style dialog box](#), in which you define the new dimension style properties.

## New, Modify, and Override Dimension Style Dialog Boxes

### Quick Reference

See also:

- [Use Dimension Styles](#)

Set properties for dimension styles.

### Summary

When you choose Continue in the Create New Dimension Style dialog box, the New Dimension Style dialog box is displayed. You define the properties for the new style in this dialog box. The dialog box initially displays the properties of the dimension style that you selected to start the new style in the Create New Dimension Style dialog box.

Choosing either Modify or Override in the Dimension Style Manager displays the Modify Dimension Style or the Override Dimension Style dialog box. The content of these dialog boxes is identical to the New Dimension Style dialog box, although you are modifying or overriding an existing dimension style rather than creating a new one.

The sample image on each tab displays the effects of each option.

### List of Tabs

- [Lines](#) on page 367
- [Symbols and Arrows](#) on page 371
- [Text](#) on page 375
- [Fit](#) on page 380
- [Primary Units](#) on page 385
- [Alternate Units](#) on page 389
- [Tolerances](#) on page 392



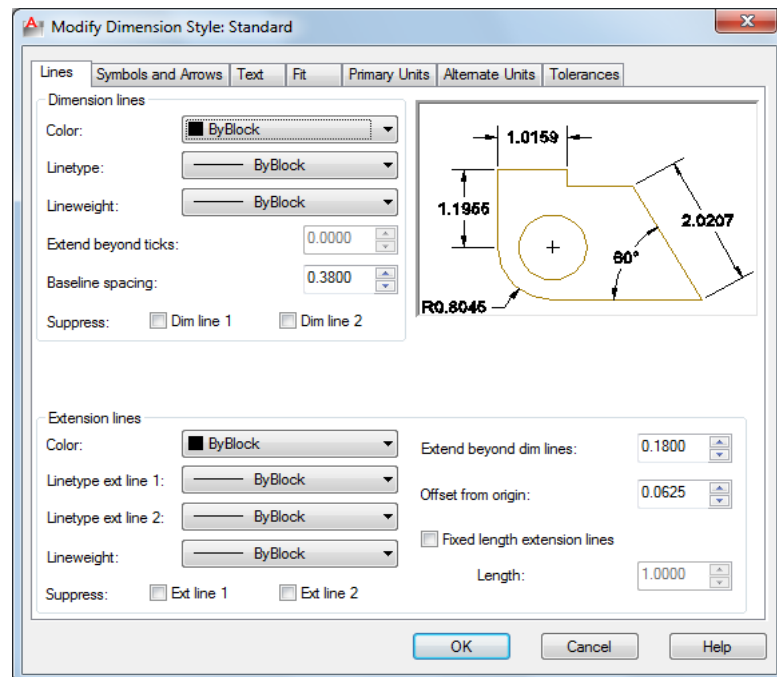
## Lines Tab

### Quick Reference

See also:

- Use Dimension Styles

Sets the format and properties for dimension lines, extension lines, arrowheads, and center marks.



### Summary

Sets the dimension line properties.

### List of Options

The following options are displayed.

#### Dimension Lines

Color

Displays and sets the color for the dimension line. If you click Select Color (at the bottom of the Color list), the [Select Color dialog box](#) is displayed. You can also enter a color name or number. (DIMCLRD system variable)

### Linetype

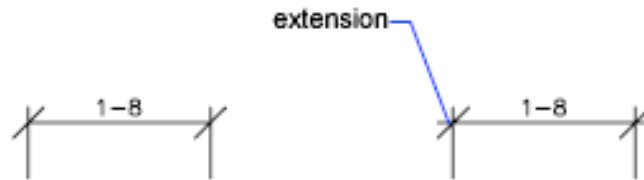
Sets the linetype of the dimension line. (DIMLTYPE system variable)

### Lineweight

Sets the lineweight of the dimension line. (DIMLWD system variable)

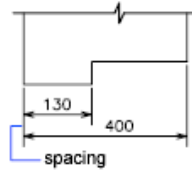
### Extend Beyond Ticks

Specifies a distance to extend the dimension line past the extension line when you use oblique, architectural, tick, integral, and no marks for arrowheads. (DIMDLE system variable)



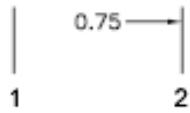
### Baseline Spacing

Sets the spacing between the dimension lines of a baseline dimension. Enter a distance. For information about baseline dimensions, see DIMBASELINE. (DIMDLI system variable)

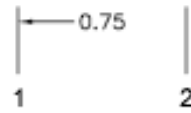


### Suppress

Suppresses display of dimension lines. Dim Line 1 suppresses the first dimension line; Dim Line 2 suppresses the second dimension line. (DIMSD1 and DIMSD2 system variables)



first dimension line suppressed



second dimension line suppressed

### Extension Lines

Controls the appearance of the extension lines.

#### Color

Sets the color for the extension line. If you click Select Color (at the bottom of the Color list), the [Select Color dialog box](#) is displayed. You can also enter a color name or number. (DIMCLRE system variable.)

#### Linetype Ext Line 1

Sets the linetype of the first extension line. (DIMLTEX1 system variable)

#### Linetype Ext Line 2

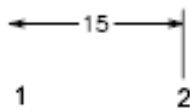
Sets the linetype of the second extension line. (DIMLTEX2 system variable)

#### Lineweight

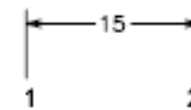
Sets the lineweight of the extension line. (DIMLWE system variable)

#### Suppress

Suppresses the display of extension lines. Ext Line 1 suppresses the first extension line; Ext Line 2 suppresses the second extension line. (DIMSE1 and DIMSE2 system variables)



first extension line suppressed



second extension line suppressed

#### Extend Beyond Dim Lines

Specifies a distance to extend the extension lines above the dimension line. (DIMEXE system variable)



### Offset From Origin

Sets the distance to offset the extension lines from the points on the drawing that define the dimension. (DIMEXO system variable)

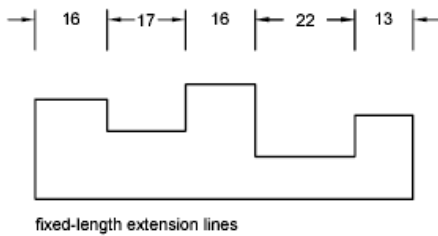


### Fixed Length Extension Lines

Enables fixed length extension lines. (DIMFXLON system variable)

#### Length

Sets the total length of the extension lines starting from the dimension line toward the dimension origin. (DIMFXL system variable)



### Preview

Displays sample dimension images that show the effects of changes you make to dimension style settings.

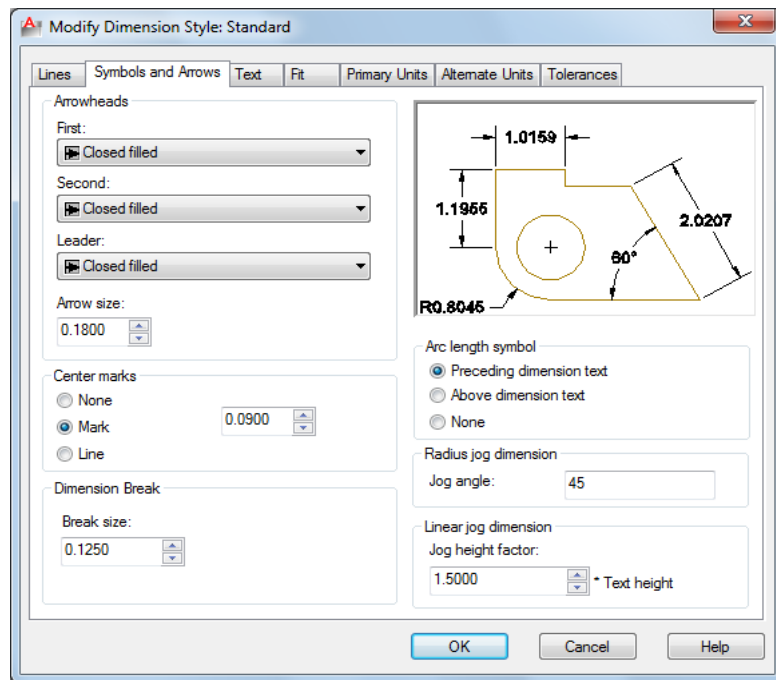
# Symbols and Arrows Tab

## Quick Reference

See also:

- Use Dimension Styles

Sets the format and placement for arrowheads, center marks, arc length symbols, and jogged radius dimensions.



## Summary

Controls the appearance of the dimension arrowheads.

## List of Options

The following options are displayed.

### Arrowheads

First

Sets the arrowhead for the first dimension line. When you change the first arrowhead type, the second arrowhead automatically changes to match it. (DIMBLK1 system variable)

To specify a user-defined arrowhead block, select User Arrow. The Select Custom Arrow Block dialog box is displayed. Select the name of a user-defined arrowhead block. (The block must be in the drawing.)

### **Second**

Sets the arrowhead for the second dimension line. (DIMBLK2 system variable)

To specify a user-defined arrowhead block, select User Arrow. The Select Custom Arrow Block dialog box is displayed. Select the name of a user-defined arrowhead block. (The block must be in the drawing.)

### **Leader**

Sets the arrowhead for the leader line. (DIMLDRBLK system variable)

To specify a user-defined arrowhead block, select User Arrow. The Select Custom Arrow Block dialog box is displayed. Select the name of a user-defined arrowhead block. (The block must be in the drawing.)

### **Arrow Size**

Displays and sets the size of arrowheads. (DIMASZ system variable)

---

**NOTE** blocks cannot be used as custom arrowheads for dimensions or leaders.

---

## **Center Marks**

Controls the appearance of center marks and centerlines for diameter and radial dimensions. The DIMCENTER, DIMDIAMETER, and DIMRADIUS commands use center marks and centerlines. For DIMDIAMETER and DIMRADIUS, the center mark is drawn only if you place the dimension line outside the circle or arc.

### **Type**

Sets the type of center mark or line to use.

#### **None**

Creates no center mark or centerline. The value is stored as 0 in the DIMCEN system variable.

#### **Mark**

Creates a center mark. The size of the center mark is stored as a positive value in the DIMCEN system variable.

**Line**

Creates a centerline. The size of the centerline is stored as a negative value in the DIMCEN system variable.

**Size**

Displays and sets the size of the center mark or centerline. (DIMCEN system variable)

**Dimension Break**

Controls the gap width of dimension breaks.

**Break Size**

Displays and sets the size of the gap used for dimension breaks.

**Arc Length Symbol**

Controls the display of the arc symbol in an arc length dimension. (DIMARCSYM system variable)

**Preceding Dimension Text**

Places arc length symbols before the dimension text. (DIMARCSYM system variable)

**Above Dimension Text**

Places arc length symbols above the dimension text. (DIMARCSYM system variable)

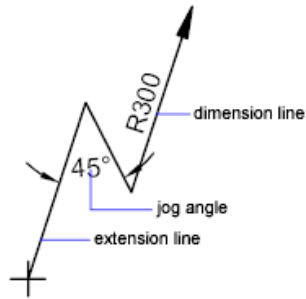
**None**

Suppresses the display of arc length symbols. (DIMARCSYM system variable)

**Radius Jog Dimension**

Controls the display of jogged (zigzag) radius dimensions.

Jagged radius dimensions are often created when the center point of a circle or arc is located off the page.



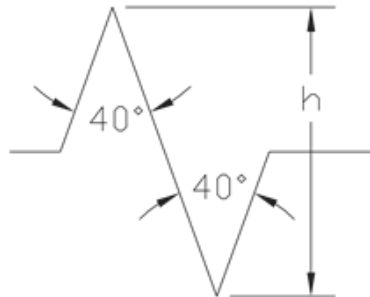
### Jog Angle

Determines the angle of the transverse segment of the dimension line in a jogged radius dimension. (DIMJOGANG system variable)

### Linear Jog Dimension

Controls the display of the jog for linear dimensions.

Jog lines are often added to linear dimensions when the actual measurement is not accurately represent by the dimension. Typically the actual measurement is smaller than the desired value.



### Jog Height Factor

Determines the height of the of the jog, which is determined by the distance between the two vertices of the angles that make up the jog.

### Preview

Displays sample dimension images that show the effects of changes you make to dimension style settings.



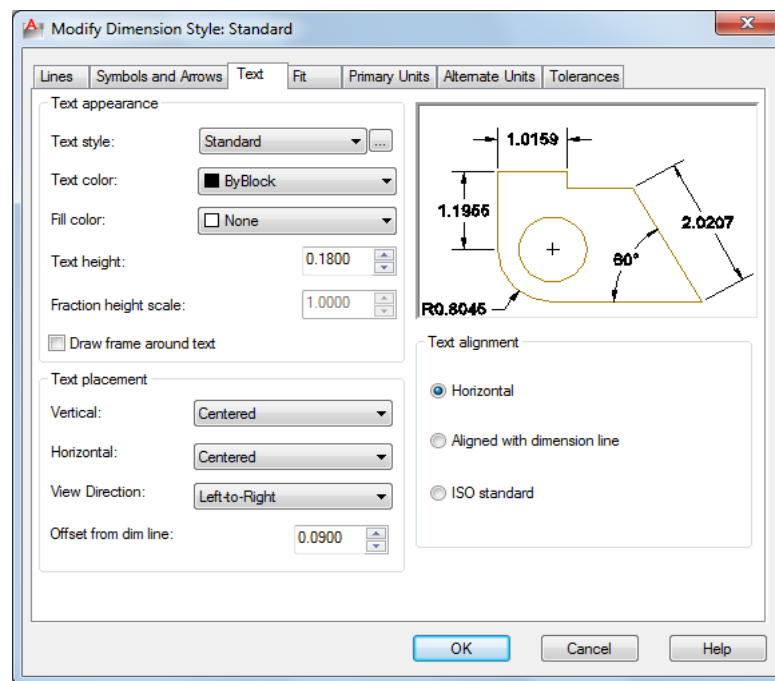
## Text Tab

### Quick Reference

See also:

- Use Dimension Styles

Sets the format, placement, and alignment of dimension text.



### List of Options

The following options are displayed.

#### Text Appearance

Controls the dimension text format and size.

#### Text Style

Lists the available text styles.

### **Text Style Button**

Displays the [Text Style Dialog Box](#) on page 1181 where you can create or modify text styles. (DIMTXSTY system variable)

### **Text Color**

Sets the color for the dimension text. If you click Select Color (at the bottom of the Color list), the [Select Color dialog box](#) is displayed. You can also enter color name or number. (DIMCLRT system variable)

### **Fill Color**

Sets the color for the text background in dimensions. If you click Select Color (at the bottom of the Color list), the [Select Color dialog box](#) is displayed. You can also enter color name or number. (DIMTFILL and DIMTFILLCLR system variables)

### **Text Height**

Sets the height of the current dimension text style. Enter a value in the text box. If a fixed text height is set in the Text Style (that is, the text style height is greater than 0), that height overrides the text height set here. If you want to use the height set on the Text tab, make sure the text height in the Text Style is set to 0. (DIMTXT system variable)

### **Fraction Height Scale**

Sets the scale of fractions relative to dimension text. This option is available only when Fractional is selected as the Unit Format on the Primary Units tab. The value entered here is multiplied by the text height to determine the height of dimension fractions relative to dimension text. (DIMTFAC system variable)

### **Draw Frame Around Text**

When selected, draws a frame around dimension text. Selecting this option changes the value stored in the DIMGAP system variable to a negative value.

### **Text Placement**

Controls the placement of dimension text.

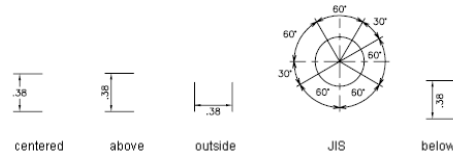
#### **Vertical**

Controls the vertical placement of dimension text in relation to the dimension line. (DIMTAD system variable)

Vertical position options include the following:

- *Centered*: Centers the dimension text between the two parts of the dimension line.

- *Above*: Places the dimension text above the dimension line. The distance from the dimension line to the baseline of the lowest line of text is the current text gap. See the Offset from Dim Line option.
- *Outside*: Places the dimension text on the side of the dimension line farthest away from the first defining point.
- *JIS*: Places the dimension text to conform to a Japanese Industrial Standards (JIS) representation.
- *Below*: Places the dimension text under the dimension line. The distance from the dimension line to the baseline of the lowest line of text is the current text gap. See the Offset from Dim Line option.

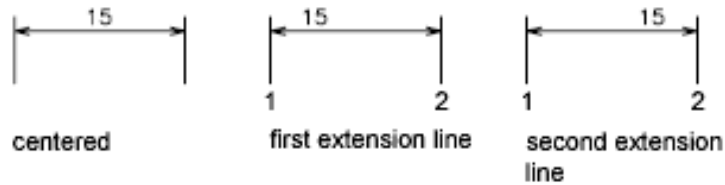


### Horizontal

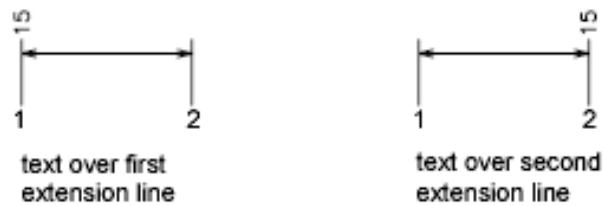
Controls the horizontal placement of dimension text along the dimension line, in relation to the extension lines. (DIMJUST system variable)

Horizontal position options include the following:

- *Centered*: Centers the dimension text along the dimension line between the extension lines.
- *At Ext Line 1*: Left-justifies the text with the first extension line along the dimension line. The distance between the extension line and the text is twice the arrowhead size plus the text gap value. See Arrowheads and Offset from Dim Line.
- *At Ext Line 2*: Right-justifies the text with the second extension line along the dimension line. The distance between the extension line and the text is twice the arrowhead size plus the text gap value. See Arrowheads and Offset from Dim Line.



- *Over Ext Line 1*: Positions the text over or along the first extension line.
- *Over Ext Line 2*: Positions the text over or along the second extension line.



### View Direction

Controls the dimension text viewing direction. (DIMTXTDIRECTION system variable)

View Direction includes the following options:

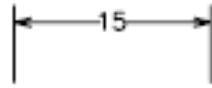
- *Left-to-Right*: Places the text to enable reading from left to right.
- *Right-to-Left*: Places the text to enable reading from right to left.

### Offset from Dim Line

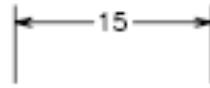
Sets the current text gap, which is the distance around the dimension text when the dimension line is broken to accommodate the dimension text.

This value is also used as the minimum length required for dimension line segments.

Text is positioned inside the extension lines only if the resulting segments are at least as long as the text gap. Text above or below the dimension line is placed inside only if the arrowheads, dimension text, and a margin leave enough room for the text gap. (DIMGAP system variable)



DIMGAP = 0



DIMGAP = 0.1

### **Text Alignment**

Controls the orientation (horizontal or aligned) of dimension text whether it is inside or outside the extension lines. (DIMITH and DIMTOH system variables)

#### **Horizontal**

Places text in a horizontal position.

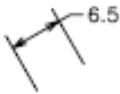


#### **Aligned with Dimension Line**

Aligns text with the dimension line.

#### **ISO Standard**

Aligns text with the dimension line when text is inside the extension lines, but aligns it horizontally when text is outside the extension lines.



#### **Preview**

Displays sample dimension images that show the effects of changes you make to dimension style settings.

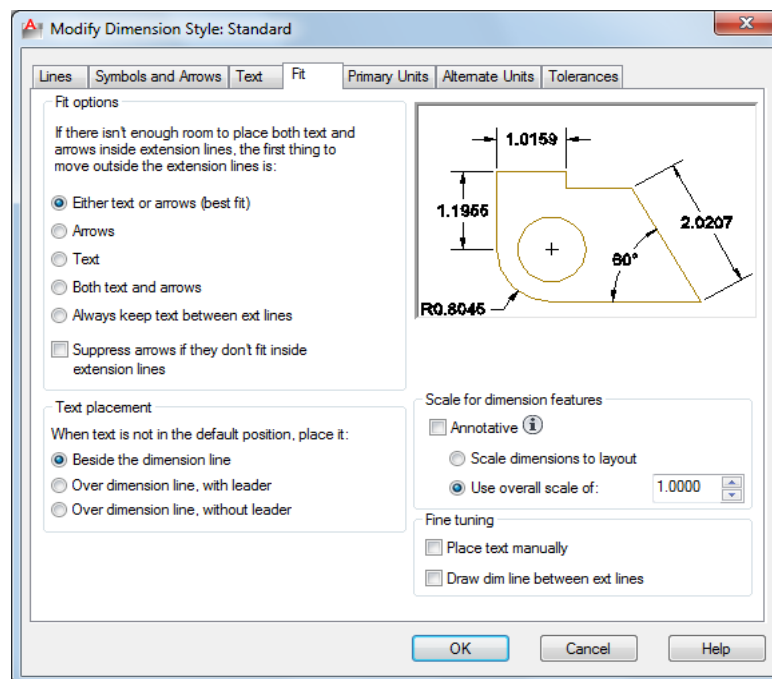
## Fit Tab

### Quick Reference

See also:

- Use Dimension Styles

Controls the placement of dimension text, arrowheads, leader lines, and the dimension line.



### List of Options

The following options are displayed.

### Fit Options

Controls the placement of text and arrowheads based on the space available between the extension lines.



When space is available, text and arrowheads are placed between the extension lines. Otherwise, text and arrowheads are placed according to the Fit options. (DIMATFIT, DIMTIX, and DIMSOXD system variables)

#### **Either Text or Arrows (Best Fit)**

Moves either the text or the arrowheads outside the extension lines based on the best fit (DIMATFIT system variable).

- When enough space is available for text and arrowheads, places both between the extension lines. Otherwise, either the text or the arrowheads are moved based on the best fit.
- When enough space is available for text only, places text between the extension lines and places arrowheads outside the extension lines.
- When enough space is available for arrowheads only, places them between the extension lines and places text outside the extension lines.
- When space is available for neither text nor arrowheads, places them both outside the extension lines.

#### **Arrows**

Moves arrowheads outside the extension lines first, then text (DIMATFIT system variable).

- When enough space is available for text and arrowheads, places both between the extension lines.
- When space is available for arrowheads only, places them between the extension lines and places text outside them.
- When not enough space is available for arrowheads, places both text and arrowheads outside the extension lines.

#### **Text**

Moves text outside the extension lines first, then arrowheads (DIMATFIT system variable).

- When space is available for text and arrowheads, places both between the extension lines.

- When space is available for text only, places the text between the extension lines and places arrowheads outside them.
- When not enough space is available for text, places both text and arrowheads outside the extension lines.

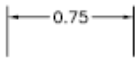
### Both Text and Arrows

When not enough space is available for text and arrowheads, moves both outside the extension lines (DIMATFIT system variable).



### Always Keep Text Between Ext Lines

Always places text between extension lines. (DIMITIX system variable)

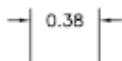


### Suppress Arrows If They Don't Fit Inside Extension Lines

Suppresses arrowheads if not enough space is available inside the extension lines. (DIMSOXD system variable)

### Text Placement

Sets the placement of dimension text when it is moved from the default position, that is, the position defined by the dimension style. (DIMTMOVE system variable)



### Beside the Dimension Line

If selected, moves the dimension line whenever dimension text is moved. (DIMTMOVE system variable)

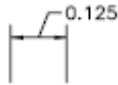


### Over the Dimension Line, with Leader

If selected, dimension lines are not moved when text is moved. If text is moved away from the dimension line, a leader line is created connecting the text to

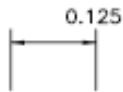


the dimension line. The leader line is omitted when text is too close to the dimension line. (DIMTMOVE system variable)



### **Over the Dimension Line, Without Leader**

If selected, dimension lines are not moved when text is moved. Text that is moved away from the dimension line is not connected to the dimension line with a leader. (DIMTMOVE system variable)



### **Scale for Dimension Features**

Sets the overall dimension scale value or the paper space scaling.

#### **Annotative**

Specifies that the dimension is . Click the information icon to learn more about annotative objects.

#### **Scale Dimensions To Layout**

Determines a scale factor based on the scaling between the current model space viewport and paper space. (DIMSCALE system variable)

When you work in paper space, but not in a model space viewport, or when TILEMODE is set to 1, the default scale factor of 1.0 is used or the DIMSCALE system variable.

#### **Use Overall Scale Of**

Sets a scale for all dimension style settings that specify size, distance, or spacing, including text and arrowhead sizes. This scale does not change dimension measurement values. (DIMSCALE system variable)

### **Fine Tuning**

Provides additional options for placing dimension text.

#### **Place Text Manually**

Ignores any horizontal justification settings and places the text at the position you specify at the Dimension Line Location prompt. (DIMUPT system variable)

#### **Draw Dim Line Between Ext Lines**

Draws dimension lines between the measured points even when the arrowheads are placed outside the measured points. (DIMTOFL system variable)

### Preview

Displays sample dimension images that show the effects of changes you make to dimension style settings.

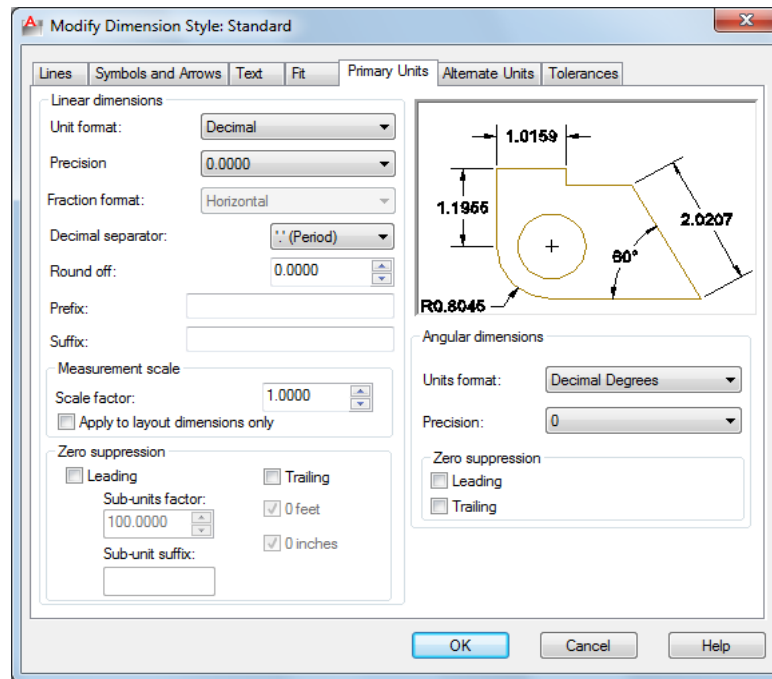
## Primary Units Tab

### Quick Reference

See also:

- Use Dimension Styles

Sets the format and precision of primary dimension units and sets prefixes and suffixes for dimension text.



## List of Options

The following options are displayed.

### Linear Dimensions

Sets the format and precision for linear dimensions.

#### Unit Format

Sets the current units format for all dimension types except Angular. (DIMLUNIT system variable)

The relative sizes of numbers in stacked fractions are based on the DIMTFAC system variable (in the same way that tolerance values use this system variable).

#### Precision

Displays and sets the number of decimal places in the dimension text. (DIMDEC system variable)

#### Fraction Format

Sets the format for fractions. (DIMFRAC system variable)

#### Decimal Separator

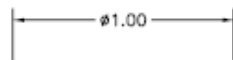
Sets the separator for decimal formats. (DIMDSEP system variable)

#### Round Off

Sets rounding rules for dimension measurements for all dimension types except Angular. If you enter a value of **0.25**, all distances are rounded to the nearest 0.25 unit. If you enter a value of **1.0**, all dimension distances are rounded to the nearest integer. The number of digits displayed after the decimal point depends on the Precision setting. (DIMRND system variable)

#### Prefix

Includes a prefix in the dimension text. You can enter text or use control codes to display special symbols. For example, entering the control code **%%c** displays the diameter symbol. When you enter a prefix, it overrides any default prefixes such as those used in diameter and radius dimensioning. (DIMPOST system variable)



If you specify tolerances, the prefix is added to the tolerances as well as to the main dimension.

For more information, see [Control Codes and Special Characters](#) on page 1235.

### **Suffix**

Includes a suffix in the dimension text. You can enter text or use control codes to display special symbols. For example, entering the text **mm** results in dimension text similar to that shown in the illustration. When you enter a suffix, it overrides any default suffixes. (DIMPOST system variable)



If you specify tolerances, the suffix is added to the tolerances as well as to the main dimension.

For more information, see [Control Codes and Special Characters](#) on page 1235.

### **Measurement Scale**

Defines linear scale options. Applies primarily to legacy drawings.

#### **Scale Factor**

Sets a scale factor for linear dimension measurements. It is recommended that you do not change this value from the default value of 1.00. For example, if you enter **2**, the dimension for a 1-inch line is displayed as two inches. The value does not apply to angular dimensions and is not applied to rounding values or to plus or minus tolerance values. (DIMLFAC system variable)

#### **Apply to Layout Dimensions Only**

Applies the measurement scale factor only to dimensions created in layout viewports. Except when using nonassociative dimensions, this setting should remain unchecked. (DIMLFAC system variable)

### **Zero Suppression**

Controls the suppression of leading and trailing zeros and of feet and inches that have a value of zero. (DIMZIN system variable)

#### **Leading**

Suppresses leading zeros in all decimal dimensions. For example, 0.5000 becomes .5000. Select leading to enable display of dimension distances less than one unit in sub units.

#### **Sub-units factor**

Sets the number of sub units to a unit. It is used to calculate the dimension distance in a sub unit when the distance is less than one unit. For example, enter **100** if the suffix is *m* and the sub-unit suffix is to display in *cm*.

#### **Sub-unit suffix**

Includes a suffix to the dimension value sub unit. You can enter text or use control codes to display special symbols. For example, enter **cm** for .96m to display as 96cm.

#### **Trailing**

Suppresses trailing zeros in all decimal dimensions. For example, 12.5000 becomes 12.5, and 30.0000 becomes 30.

#### **0 Feet**

Suppresses the feet portion of a feet-and-inches dimension when the distance is less than one foot. For example, 0'-6 1/2" becomes 6 1/2".

#### **0 Inches**

Suppresses the inches portion of a feet-and-inches dimension when the distance is an integral number of feet. For example, 1'-0" becomes 1'.

### **Angular Dimensions**

Displays and sets the current angle format for angular dimensions.

#### **Units Format**

Sets the angular units format. (DIMAUNIT system variable)

#### **Precision**

Sets the number of decimal places for angular dimensions. (DIMADEC system variable)

#### **Zero Suppression**

Controls the suppression of leading and trailing zeros. (DIMAZIN system variable)

#### **Leading**

Suppresses leading zeros in angular decimal dimensions. For example, 0.5000 becomes .5000.

You can also display dimension distances less than one unit in sub units.

#### **Trailing**

Suppresses trailing zeros in angular decimal dimensions. For example, 12.5000 becomes 12.5, and 30.0000 becomes 30.

### Preview

Displays sample dimension images that show the effects of changes you make to dimension style settings.

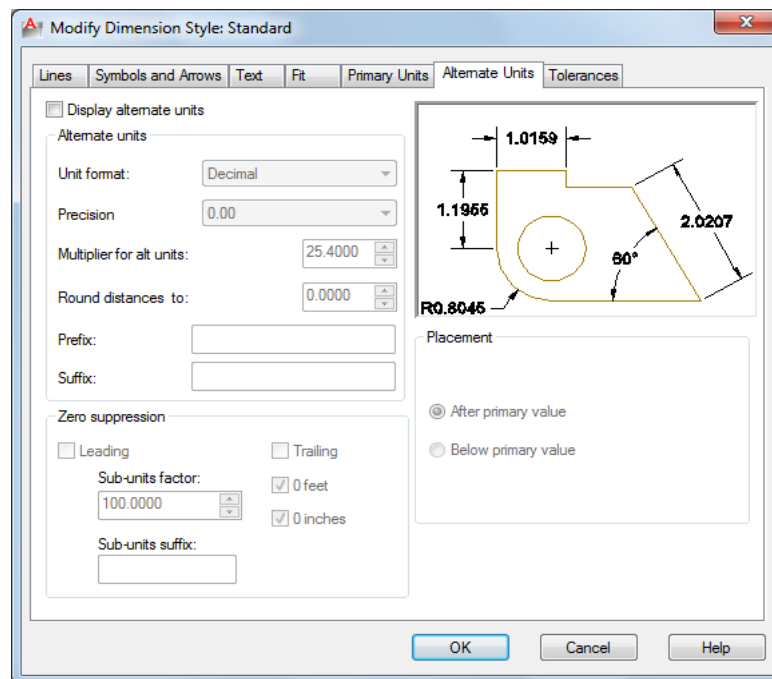
## Alternate Units Tab

### Quick Reference

See also:

- Use Dimension Styles

Specifies display of alternate units in dimension measurements and sets their format and precision.



## List of Options

The following options are displayed.

### Display Alternate Units

Adds alternate measurement units to dimension text. Sets the DIMALT system variable to 1.

### Alternate Units

Displays and sets the current alternate units format for all dimension types except Angular.

### Unit Format

Sets the unit format for alternate units. (DIMALTU system variable)

The relative sizes of numbers in stacked fractions are based on DIMTFAC (in the same way that tolerance values use this system variable).

### Precision

Sets the number of decimal places for alternate units. (DIMALTD system variable)

### Multiplier for Alt Units

Specifies the multiplier used as the conversion factor between primary and alternate units. For example, to convert inches to millimeters, enter **25.4**. The value has no effect on angular dimensions, and it is not applied to the rounding value or the plus or minus tolerance values. (DIMALTF system variable)

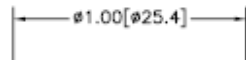
### Round Distances To

Sets rounding rules for alternate units for all dimension types except Angular. If you enter a value of **0.25**, all alternate measurements are rounded to the nearest 0.25 unit. If you enter a value of **1.0**, all dimension measurements are rounded to the nearest integer. The number of digits displayed after the decimal point depends on the Precision setting. (DIMALTRND system variable)

### Prefix

Includes a prefix in the alternate dimension text. You can enter text or use control codes to display special symbols. For example, entering the control code **%%c** displays the diameter symbol. (DIMAPOST system variable)

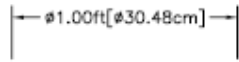
For more information, see [Control Codes and Special Characters](#) on page 1235.



### Suffix

Includes a suffix in the alternate dimension text. You can enter text or use control codes to display special symbols. For example, entering the text **cm** results in dimension text similar to that shown in the illustration. When you enter a suffix, it overrides any default suffixes. (DIMAPOST system variable)

For more information, see [Control Codes and Special Characters](#) on page 1235.



### Zero Suppression

Controls the suppression of leading and trailing zeros and of feet and inches that have a value of zero. (DIMALTZ system variable)

#### Leading

Suppresses leading zeros in all decimal dimensions. For example, 0.5000 becomes .5000.

#### Sub-units factor

Sets the number of sub units to a unit. It is used to calculate the dimension distance in a sub unit when the distance is less than one unit. For example, enter **100** if the suffix is *m* and the sub-unit suffix is to display in *cm*.

#### Sub-unit suffix

Includes a suffix to the dimension value sub unit. You can enter text or use control codes to display special symbols. For example, enter **cm** for .96m to display as 96cm.

#### Trailing

Suppresses trailing zeros in all decimal dimensions. For example, 12.5000 becomes 12.5, and 30.0000 becomes 30.

#### 0 Feet

Suppresses the feet portion of a feet-and-inches dimension when the distance is less than 1 foot. For example, 0'-6 1/2" becomes 6 1/2".

#### 0 Inches

Suppresses the inches portion of a feet-and-inches dimension when the distance is an integral number of feet. For example, 1'-0" becomes 1'.



**Placement**

Controls the placement of alternate units in dimension text.

**After Primary Value**

Places alternate units after the primary units in dimension text.

**Below Primary Value**

Places alternate units below the primary units in dimension text.

**Preview**

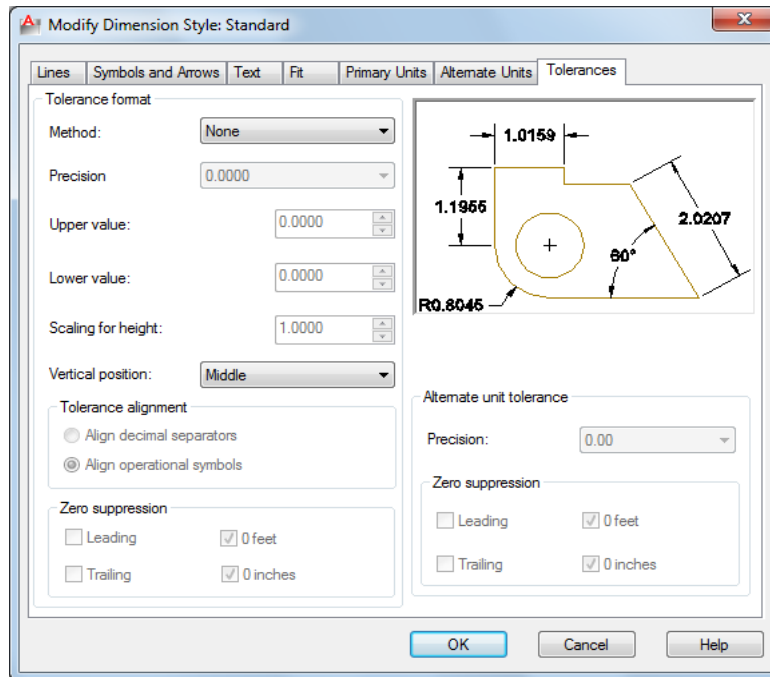
Displays sample dimension images that show the effects of changes you make to dimension style settings.

## Tolerances Tab

**Quick Reference****See also:**

- Use Dimension Styles

Specifies the display and format of dimension text tolerances.



### List of Options

The following options are displayed.

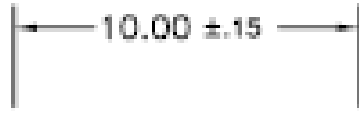
#### **Tolerance Format**

Controls the tolerance format.

#### **Method**

Sets the method for calculating the tolerance. (DIMTOL system variable)

- *None*: Does not add a tolerance. The DIMTOL system variable is set to 0.
- *Symmetrical*: Adds a plus/minus expression of tolerance in which a single value of variation is applied to the dimension measurement. A plus-or-minus sign appears after the dimension. Enter the tolerance value in Upper Value. The DIMTOL system variable is set to 1. The DIMLIM system variable is set to 0.



- *Deviation:* Adds a plus/minus tolerance expression. Different plus and minus values of variation are applied to the dimension measurement. A plus sign (+) precedes the tolerance value entered in Upper Value, and a minus sign (-) precedes the tolerance value entered in Lower Value. The DIMTOL system variable is set to 1. The DIMLIM system variable is set to 0.



- *Limits:* Creates a limit dimension. A maximum and a minimum value are displayed, one over the other. The maximum value is the dimension value plus the value entered in Upper Value. The minimum value is the dimension value minus the value entered in Lower Value. The DIMTOL system variable is set to 0. The DIMLIM system variable is set to 1.



- *Basic:* Creates a basic dimension, which displays a box around the full extents of the dimension. The distance between the text and the box is stored as a negative value in the DIMGAP system variable.



#### **Precision**

Sets the number of decimal places. (DIMTDEC system variable)

#### **Upper Value**

Sets the maximum or upper tolerance value. When you select Symmetrical in Method, this value is used for the tolerance. (DIMTP system variable)

#### Lower Value

Sets the minimum or lower tolerance value. (DIMTM system variable)

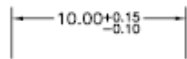
#### Scaling for Height

Sets the current height for the tolerance text. The ratio of the tolerance height to the main dimension text height is calculated and stored in the DIMTFAC system variable.

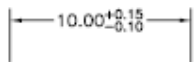
#### Vertical Position

Controls text justification for symmetrical and deviation tolerances.

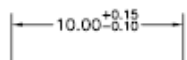
- *Top*: Aligns the tolerance text with the top of the main dimension text. When you select this option, the DIMTOLJ system variable is set to 2.



- *Middle*: Aligns the tolerance text with the middle of the main dimension text. When you select this option, the DIMTOLJ system variable is set to 1.



- *Bottom*: Aligns the tolerance text with the bottom of the main dimension text. When you select this option, the DIMTOLJ system variable is set to 0.



#### Tolerance Alignment

Controls the alignment of upper and lower tolerance values when stacked

#### Align Decimal Separators

Values are stacked by their decimal separators.

#### Align Operational Symbols

Values are stacked by their operational symbols.

### **Zero Suppression**

Controls the suppression of leading and trailing zeros and of feet and inches that have a value of zero. (DIMTZIN system variable)

#### **Leading**

Suppresses leading zeros in all decimal dimensions. For example, 0.5000 becomes .5000.

#### **Trailing**

Suppresses trailing zeros in all decimal dimensions. For example, 12.5000 becomes 12.5, and 30.0000 becomes 30.

#### **0 Feet**

Suppresses the feet portion of a feet-and-inches dimension when the distance is less than 1 foot. For example, 0'-6 1/2" becomes 6 1/2".

#### **0 Inches**

Suppresses the inches portion of a feet-and-inches dimension when the distance is an integral number of feet. For example, 1'-0" becomes 1'.

### **Alternate Unit Tolerance**

Formats alternate tolerance units.

#### **Precision**

Displays and sets the number of decimal places. (DIMALTTD system variable)

### **Zero Suppression**

Controls the suppression of leading and trailing zeros and of feet and inches that have a value of zero. (DIMALTTZ system variable)

#### **Leading**

Suppresses leading zeros in all decimal dimensions. For example, 0.5000 becomes .5000.

#### **Trailing**

Suppresses trailing zeros in all decimal dimensions. For example, 12.5000 becomes 12.5, and 30.0000 becomes 30.

#### **0 Feet**

Suppresses the feet portion of a feet-and-inches dimension when the distance is less than 1 foot. For example, 0'-6 1/2" becomes 6 1/2".

### 0 Inches

Suppresses the inches portion of a feet-and-inches dimension when the distance is an integral number of feet. For example, 1'-0" becomes 1'.

### Preview

Displays sample dimension images that show the effects of changes you make to dimension style settings.

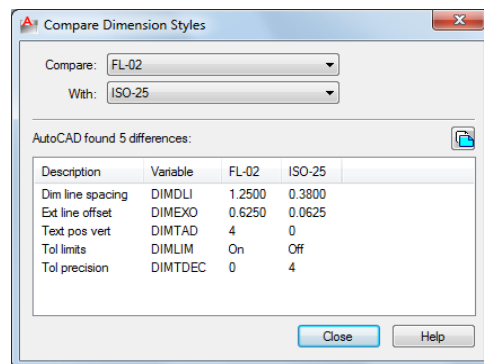
## Compare Dimension Styles Dialog Box

### Quick Reference

See also:

- Use Dimension Styles

Compares the properties of two dimension styles or displays all properties of one style.



### Summary

You can output the results of the comparison to the Clipboard, and then paste to other applications.

### **List of Options**

The following options are displayed.

#### **Compare**

Specifies the first dimension style for the comparison.

#### **With**

Specifies the second dimension style for the comparison. If you set the second style to <none> or to the same style as the first, all the properties of the dimension style are displayed.

Comparison results are displayed automatically under the following headings:

- Description of the dimension style property
- System variable that controls the property
- System variable values of style properties that differ for each dimension style

#### **Results**

Displays the results of the dimension style comparison. If you compare two different styles, the properties that differ are displayed. If you set the second style to <none> or to the same style as the first, all the properties of the dimension style are displayed.

#### **Copy to Clipboard button**

Copies the results of the comparison to the Clipboard. You can then paste the results to other applications, such as word processors and spreadsheets.

## **-DIMSTYLE**

### **Quick Reference**

**See also:**

- Use Dimension Styles

Creates and modifies dimension styles.

## Summary

You can save or restore dimensioning system variables to a selected dimension style.

## List of Prompts

The following prompts are displayed.

Current dimension style: <current> Annotative: <current>

Enter a dimension style option

[[ANnotative](#) on page 398/[Save](#) on page 398/[Restore](#) on page 398/[S](#)tatus on page 399/[V](#)ariables on page 399/[A](#)pply on page 399/? on page 399] <Restore>: *Enter an option or press Enter*

### **Annotative**

Creates an dimension style.

### **Save**

Saves the current settings of dimensioning system variables to a dimension style.

**Name** Saves the current settings of dimensioning system variables to a new dimension style using the name you enter. The new dimension style becomes the current one.

If you enter the name of an existing dimension style, the following prompts are displayed:

That name is already in use, redefine it? <N>: *Enter y or press Enter*

If you enter **y**, associative dimensions that use the redefined dimension style are regenerated.

To display the differences between the dimension style name you want to save and the current style, enter a tilde (~) followed by the style name at the Enter Name for New Dimension Style prompt. Only settings that differ are displayed, with the current setting in the first column, and the setting of the compared style in the second column.

?—**List Dimension Styles** Lists the named dimension styles in the current drawing.

### **Restore**

Restores dimensioning system variable settings to those of a selected dimension style.

**Name** Makes the dimension style you enter the current dimension style.

To display the differences between the dimension style name you want to restore and the current style, enter a tilde (~) followed by the style name at the Enter Dimension Style Name prompt. Only settings that differ are



displayed, with the current setting in the first column, and the setting of the compared style in the second column. After the differences are displayed, the previous prompt returns.

?—**List Dimension Styles** Lists the named dimension styles in the current drawing.

**Select Dimension** Makes the dimension style of the selected object the current dimension style.

### **Status**

Displays the current values of all dimension system variables.

### **Variables**

Lists the dimension system variable settings of a dimension style or selected dimensions without modifying the current settings.

**Name** Lists the settings of dimension system variables for the dimension style name you enter.

To display the differences between a particular dimension style and the current style, enter a tilde (~) followed by the style name at the Enter Dimension Style Name prompt. Only settings that differ are displayed, with the current setting in the first column, and the setting of the compared style in the second column.

?—**List Dimension Styles** Lists the named dimension styles in the current drawing.

**Select Dimension** Lists the dimension style and any dimension overrides for the dimension object you select.

### **Apply**

Applies the current dimensioning system variable settings to selected dimension objects, permanently overriding any existing dimension styles applied to these objects.

The dimension line spacing between existing baseline dimensions is not updated (see the DIMDLI system variable); dimension text variable settings do not update existing leader text.

### ?—**List Dimension Styles**

Lists the named dimension styles in the current drawing.

# DIMTEDIT

## Quick Reference

See also:

- Modify Dimension Text

Moves and rotates dimension text and relocates the dimension line.

## Access Methods



Button

- ☒ **Ribbon:** Annotate tab ► Dimensions panel ► Text Angle
- ☒ **Menu:** Dimension ► Align Text ► Angle
- ☒ **Toolbar:** Dimension

## Summary

The companion command that edits the dimension text and changes the extension line angle is DIMEDIT.

## List of Prompts

The following prompts are displayed.

Select dimension: *Select a dimension object*

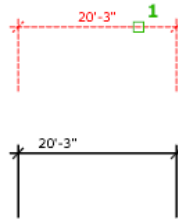
You are prompted for the new location of the dimension text.

Specify **new location for dimension text** or [Left/Right/Center/Home/Angle]:  
*Specify a point or enter an option*

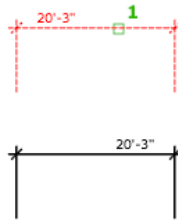
**Location for Dimension Text** Updates the location of the dimension text dynamically as you drag it. To determine whether text appears above, below, or in the middle of the dimension line, use the Text tab in the New, Modify, and Override Dimension Style dialog box.

**Left** Left-justifies the dimension text along the dimension line.

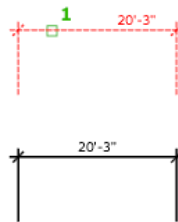
This option works only with linear, radius, and diameter dimensions.



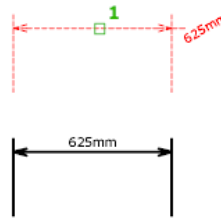
**Right** Right-justifies the dimension text along the dimension line.  
This option works only with linear, radius, and diameter dimensions.



**Center** Centers the dimension text on the dimension line.  
This option works only with linear, radius, and diameter dimensions.



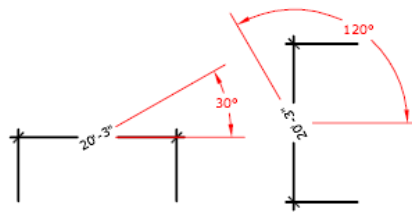
**Home** Moves the dimension text back to its default position.  
For example:



**Angle** Changes the angle of the dimension text.

The center point of the text does not change. If the text moves or the dimension is regenerated, the orientation set by the text angle is retained. Entering an angle of 0 degrees puts the text in its default orientation.

The text angle is measured from the X axis of the UCS.



## DIST


### Quick Reference

See also:

- Obtain Distances, Angles, and Point Locations

Measures the distance and angle between two points.

### Access Method

 **Command entry:** 'dist for transparent use

## Summary

In general, the DIST command reports 3D distances in model space and 2D distances on a layout in paper space.

In model space, changes in X, Y, and Z component distances and angles are measured in 3D relative to the current UCS.

In paper space, distances are normally reported in 2D paper space units. However, when using object snaps on model space objects that are displayed in a single viewport, distances are reported as 2D model space distances projected onto a plane parallel to your screen.

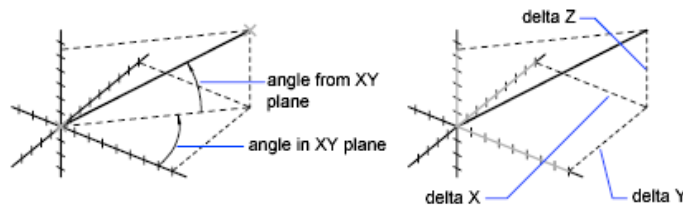
## List of Prompts

The following prompts are displayed.

Specify first point: *Specify a point*

Specify second point or <Multiple points>: *Specify a second point*

The distance is displayed in the current units format.



DIST assumes the current elevation for the first or second point if you omit the Z coordinate value.

---

**NOTE** When using the DIST command for 3D distances, it is recommended that you switch to model space.

---

**Multiple Points** If you specify multiple points, a running total of the distance based on the existing line segments and the current rubberband line is displayed in the tooltip. A dynamic dimension is also displayed. The distance is updated as you move the cursor.

# DIVIDE

## Quick Reference

### See also:

- Divide an Object into Equal Segments

Creates evenly spaced point objects or blocks along the length or perimeter of an object.

### Access Methods



### Button

 **Ribbon:** Home tab ► Draw panel ► Divide

 **Menu:** Draw ► Point ► Divide

### List of Prompts

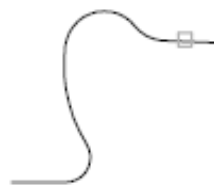
The following prompts are displayed.

Select object to divide: *Use an object selection method*

Enter **number of segments** on page 404 or [**Block**]: *Enter a value from 2 through 32,767, or enter b*

### Number of Segments

Places point objects at equal intervals along the selected objects.

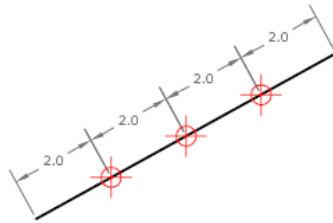


select polyline



divided into five parts

Use **DDPTYPE** on page 274 to set the style and size of all point objects in a drawing.



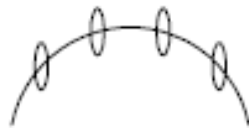
### Block

Places blocks at equal intervals along the selected object. If the block has variable attributes, these attributes are not included.

**Yes** Specifies that the *X* axes of the inserted blocks be tangent to, or collinear with, the divided object at the dividing points.

**No** Aligns the blocks according to their normal orientation.

The illustration shows an arc divided into five equal parts using a block consisting of a vertically oriented ellipse.



block not aligned



block aligned

## DLINE

### Quick Reference

See also:

- Draw Double Lines

Creates a double line using straight line segments and arcs.

### Access Method

 **Menu:** Draw ► Double Line

### List of Prompts

The following prompts are displayed.

Specify start point or ["Break"/"Caps"/"Dragline"/"Snap"/"Width"]: *Specify a point, enter an option, or press Enter*

#### **Break**

Determines whether a double line breaks when it intersects another double line, a single line, or an arc.

#### **Caps**

Specifies the placement of endcaps on a double line.

The specified ends are capped, whether or not they snap to an object.

**Both** Places endcaps on both the start point and endpoint of a double line.

**End** Places an endcap only on the endpoint of a double line.

**None** Places no endcaps on either the start point or the endpoint of a double line.

**Start** Places endcaps only on the start point of a double line.

**Auto** Breaks an arc or line, including another double line, at the intersection. Otherwise, places endcaps on both ends of the double line.

#### **Dragline**

Draws a double line by locating points centered on or offset from the double line. You can also draw along the left and right legs of the double line.

A negative value offsets the double line to the left of the located points, the rubber-band line. A positive number offsets the double line to the right of the located points.

#### **Snap**

Starts or ends a double line by snapping to an existing object. When the Snap option is on, the Break option determines whether to break the object at the intersection of the double line.

The Size option specifies the size of a search area, in pixels. The double line starts or terminates by snapping to the object it finds within the search area and adjusts each of its legs to form a clean junction with the object. Selecting the Size option displays the following prompt:

#### **Width**

Sets the width of a double line. The width is the perpendicular distance from one leg of the double line to the other.



# DONUT

## Quick Reference

### See also:

- Draw Donuts

Creates a filled circle or a wide ring.

## Access Methods



### Button

 **Ribbon:** Home tab ► Draw panel ► Donut

 **Menu:** Draw ► Donut

## Summary

A donut consists of two arc polylines that are joined end-to-end to create a circular shape. The width of the polylines is determined by the specified inside and outside diameters. To create solid-filled circles, specify an inside diameter of zero.



## List of Prompts

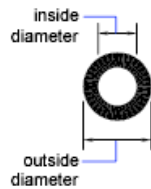
The following prompts are displayed.

Specify inside diameter of donut <current>: *Specify a distance or press Enter*

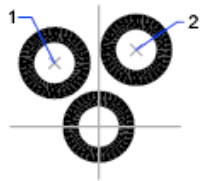
If you specify an inside diameter of 0, the donut is a filled circle.

Specify outside diameter of donut <current>: *Specify a distance or press Enter*

Specify center of donut or <exit>: *Specify a point (1) or press Enter to end the command*



The location of the donut is set based on the center point. After you specify the diameters, you are prompted for the locations at which to draw donuts. A donut is drawn at each point specified (2). How the interior of a donut is filled depends on the current setting of the FILL command.



## DOWNLOADMANAGER

### Quick Reference

#### See also:

- Browse Material Libraries

Reports the status of the of the current download.

### Summary

If a download was previously interrupted, it provides an opportunity to continue downloading. Currently, this command applies only to downloading the Autodesk Medium Image Library.

### List of Prompts

No prompts are displayed.

# DRAGMODE

## Quick Reference

See also:

- Set Up the Drawing Area

Controls the way dragged objects are displayed.

## Access Method

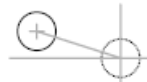
 **Command entry:** 'dragmode for transparent use

## List of Prompts

The following prompts are displayed.

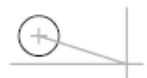
Enter new value [ON/OFF/Auto] <current>: *Enter an option or press Enter*

**On** Permits dragging, but you must enter **drag** where appropriate in a drawing or editing command to initiate dragging.



DRAGMODE on

**Off** Ignores all dragging requests, including those embedded in menu items.



DRAGMODE off

**Auto** Turns on dragging for every command that supports it. Dragging is performed whenever it is possible. Entering **drag** each time is not necessary.

# DRAWINGRECOVERY

## Quick Reference

### See also:

- Recover from a System Failure

Displays a list of drawing files that can be recovered after a program or system failure.

## Access Methods



### Button



 **Menu:** Application menu  ► Drawing Utilities ► Open the Drawing Recovery Manager

 **Menu:** File ► Drawing Utilities ► Drawing Recovery

## Summary

Opens the [Drawing Recovery Manager](#).

# Drawing Recovery Manager

## Quick Reference

### See also:

- Recover from a System Failure

Displays a list of all drawing files that were open at the time of a program or system failure.

## Summary

You can preview and open each drawing or backup file to choose which one should be saved as the primary DWG file.

## List of Options

The following options are displayed.

### Backup Files

Displays the drawings that may need to be recovered after a program or system failure. A top-level drawing node contains a set of files associated with each drawing. If available, up to four files are displayed including

- The recovered drawing file saved at the time of a program failure (DWG, DWS)
- The automatic save file, also called the “autosave” file (SV\$)
- The drawing backup file (BAK)
- The original drawing file (DWG, DWS)

Once a drawing or backup file is opened and saved, the corresponding top-level drawing node is removed from the Backup Files area.

### Details

Provides the following information about the currently selected node in the Backup Files area:

- When a top-level drawing node is selected, information about each available drawing or backup file associated with the original drawing is displayed.
- When an individual drawing or backup file is selected, additional information about that file is displayed.

### Preview

Displays a thumbnail preview of the currently selected drawing or backup file.

### Shortcut Menu Options

Right-click a drawing node, drawing or backup file, or a blank area in the Backup Files area to display a shortcut menu with relevant options.

**Open All** Opens all the drawing and backup files associated with the selected, top-level drawing node.

**Remove** Removes the selected, top-level drawing node.

**Open** Opens the selected drawing or backup file for drawing recovery. You can select multiple files using Shift and Ctrl.

**Properties** Displays the File Properties dialog box from Windows Explorer for the selected drawing or backup file.

**Expand All** Expands all top-level drawing nodes. Access this option by right-clicking a blank area in the Backup Files area.

**Collapse All** Collapses all top-level drawing nodes. Access this option by right-clicking a blank area in the Backup Files area.

## DRAWINGRECOVERYHIDE

### Quick Reference

See also:

- Recover from a System Failure

Closes the Drawing Recovery Manager.

### Summary

Closes the Drawing Recovery Manager.

## DRAWORDER

### Quick Reference

See also:

- Control How Overlapping Objects Are Displayed

Changes the draw order of images and other objects.

## Access Methods



### Button

 **Ribbon:** Home tab ► Modify panel ► Bring to Front

 **Menu:** Tools ► Draw Order ► Bring to Front

 **Toolbar:** Draw Order



**Shortcut menu:** Select an object, right-click, and then click Draw Order.

## Summary

Use the DRAWORDERCTL system variable to control the default display behavior of overlapping objects. In addition, the TEXTTOFRONT command brings all text and dimensions in a drawing in front of other objects, and the HATCHTOBACK command sends all hatch objects behind other objects.

## List of Prompts

The following prompts are displayed.

Select objects: *Use an object selection method*

Enter object ordering option [[Above objects](#)/[Under objects](#)/[Front](#)/[Back](#)] <Back>:

*Enter an option or press Enter*

**Above Objects** Moves the selected object above the specified reference objects.

**Under Objects** Moves the selected objects below the specified reference objects.

**Front** Moves the selected objects to the top of the order of objects in the drawing.

**Back** Moves the selected objects to the bottom of the order of objects in the drawing.

When you change the draw order (display and plotting order) of multiple objects, the relative draw order of the selected objects is maintained.

By default, when you create new objects from existing ones (for example, FILLET or PEDIT), the new objects are assigned the draw order of the original object you selected first. By default, while you edit an object (for example, MOVE or STRETCH), the object is displayed on top of all objects in the drawing. When you are finished editing, your drawing is partially regenerated so that the object is displayed according to its correct draw order. This can result in

some edit operations taking slightly longer. You can use DRAWORDERCTL to change the default draw order settings.

## DSETTINGS

### Quick Reference

See also:

- Use Precision Tools

Sets grid and snap, polar and object snap tracking, object snap modes, Dynamic Input, and Quick Properties.

### Access Methods

 **Menu:** Tools ► Drafting Settings

**Shortcut menu:** Right-click Snap, Grid, Polar, Osnap, Otrack, Dyn or Quick Properties on the status bar. Click Settings.

### Summary

The [Drafting Settings dialog box](#) is displayed.

## Drafting Settings Dialog Box

### Quick Reference

See also:

- Use Precision Tools

Specifies drafting settings organized for drawing aids.

### Summary

The following categories are available.

- [Snap and Grid](#) on page 415
- [Polar Tracking](#) on page 418



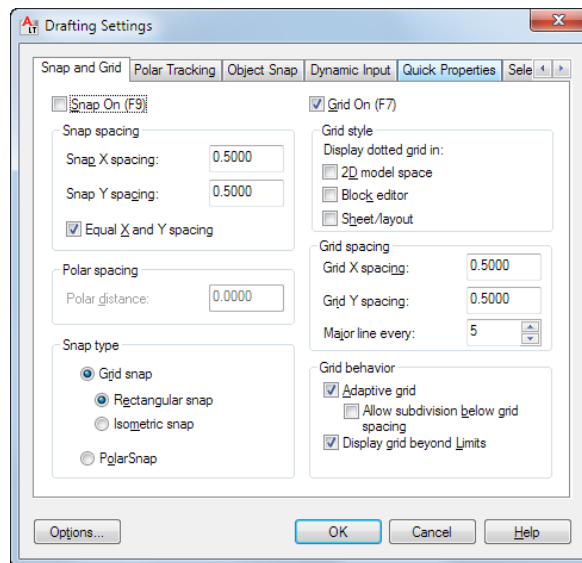
- [Object Snap](#) on page 420
- [Dynamic Input](#) on page 424
- [Quick Properties](#) on page 426
- [Selection Cycling](#) on page 428

### List of Options

The following options are displayed.

### Snap and Grid Tab (Drafting Settings Dialog Box)

Specifies Snap and Grid settings.



### Snap On

Turns Snap mode on or off. You can also turn Snap mode on or off by clicking Snap on the status bar, by pressing F9, or by using the SNAPMODE system variable.

### Snap Spacing

Controls an invisible, rectangular grid of snap locations that restricts cursor movement to specified X and Y intervals.

### Snap X Spacing

Specifies the snap spacing in the *X* direction. The value must be a positive real number. (SNAPUNIT system variable)

#### **Snap Y Spacing**

Specifies the snap spacing in the *Y* direction. The value must be a positive real number. (SNAPUNIT system variable)

#### **Equal X and Y Spacing**

Forces the *X* and *Y* spacing to the same values for snap spacing and for grid spacing. The snap spacing intervals can be different from the grid spacing intervals.

#### **Polar Spacing**

Controls the PolarSnap™ increment distance.

#### **Polar Distance**

Sets the snap increment distance when PolarSnap is selected under Snap Type & Style. If this value is 0, the PolarSnap distance assumes the value for Snap X Spacing. The Polar Distance setting is used in conjunction with polar tracking and/or object snap tracking. If neither tracking feature is enabled, the Polar Distance setting has no effect. (POLARDIST system variable)

#### **Snap Type**

Sets the snap style and snap type.

#### **Grid Snap**

Sets the snap type to Grid. When you specify points, the cursor snaps along vertical or horizontal grid points. (SNAPTYPE system variable)

#### **Rectangular Snap:**

Sets the snap style to standard Rectangular snap mode. When the snap type is set to Grid snap and Snap mode is on, the cursor snaps to a rectangular snap grid. (SNAPSTYL system variable)

#### **Isometric Snap**

Sets the snap style to Isometric snap mode. When the snap type is set to Grid snap and Snap mode is on, the cursor snaps to an isometric snap grid. (SNAPSTYL system variable)

#### **PolarSnap**

Sets the snap type to Polar. When Snap mode is on and you specify points with polar tracking turned on, the cursor snaps along polar alignment angles

set on the Polar Tracking tab relative to the starting polar tracking point. (SNAPTYPE system variable)

### **Grid On**

Turns the grid on or off. You can also turn grid mode on or off by clicking Grid on the status bar, by pressing F7, or by using the [GRIDMODE](#) on page 1522 system variable.

### **Grid Style**

Sets the grid style in 2D contexts. You can also set grid style by using the [GRIDSTYLE](#) on page 1522 system variable.

#### **2D Model Space**

Sets the grid style to dotted grid for 2D model space. ([GRIDSTYLE](#) on page 1522 system variable)

#### **Block Editor**

Sets the grid style to dotted grid for the Block Editor. ([GRIDSTYLE](#) on page 1522 system variable)

#### **Sheet/Layout**

Sets the grid style to dotted grid for sheet and layout. ([GRIDSTYLE](#) on page 1522 system variable)

### **Grid Spacing**

Controls the display of a grid that helps you visualize distances.

---

**NOTE** The limits of the grid are controlled by the LIMITS command and the GRIDDISPLAY system variable.

---

#### **Grid X Spacing**

Specifies the grid spacing in the X direction. If this value is 0, the grid assumes the value set for Snap X Spacing. (GRIDUNIT system variable)

#### **Grid Y Spacing**

Specifies the grid spacing in the Y direction. If this value is 0, the grid assumes the value set for Snap Y Spacing. (GRIDUNIT system variable)

#### **Major Line Every**

Specifies the frequency of major grid lines compared to minor grid lines. Grid lines rather than grid dots are displayed when SHADEMODE is set to Hidden. (GRIDMAJOR system variable)

## Grid Behavior

Controls the appearance of the grid lines that are displayed when SHADEMODE is set to Hidden.

### Adaptive Grid

Limits the density of the grid when zoomed out. (GRIDDISPLAY system variable)

*Allow Subdivision Below Grid Spacing:*

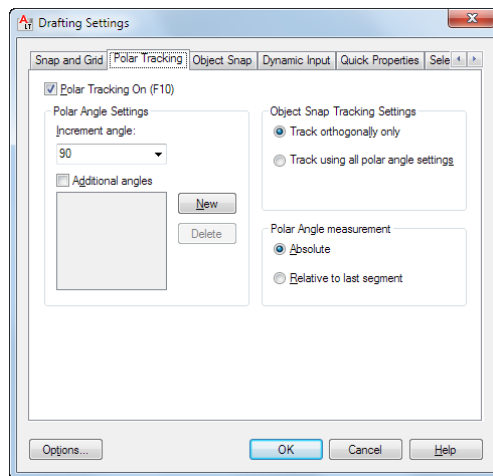
Generates additional, more closely spaced grid lines when zoomed in. The frequency of these grid lines is determined by the frequency of the major grid lines. (GRIDDISPLAY and GRIDMAJOR system variables)

### Display Grid Beyond Limits

Displays the grid beyond the area specified by the LIMITS command. (GRIDDISPLAY system variable)

## Polar Tracking Tab (Drafting Settings Dialog Box)

Controls the AutoTrack settings.



### Polar Tracking On

Turns polar tracking on and off. You can also turn polar tracking on or off by pressing F10 or by using the AUTOSNAP system variable.

### Polar Angle Settings

Sets the alignment angles for polar tracking. (POLARANG system variable)

### **Increment Angle**

Sets the polar increment angle used to display polar tracking alignment paths. You can enter any angle, or select a common angle of 90, 45, 30, 22.5, 18, 15, 10, or 5 degrees from the list. (POLARANG system variable)

### **Additional Angles**

Makes any additional angles in the list available for polar tracking. The Additional Angles check box is also controlled by the POLARMODE system variable, and the list of additional angles is also controlled by the POLARADDANG system variable.

---

**NOTE** Additional angles are absolute, not incremental.

---

### **List of Angles**

If Additional Angles is selected, lists the additional angles that are available. To add new angles, click New. To remove existing angles, click Delete. (POLARADDANG system variable)

### **New**

Adds up to 10 additional polar tracking alignment angles.

---

**NOTE** Before adding fractional angles, you must set the AUPREC system variable to the appropriate decimal precision to avoid undesired rounding. For example, if the value of AUPREC is 0 (the default value), all fractional angles you enter are rounded to the nearest whole number.

---

### **Delete**

Deletes selected additional angles.

### **Object Snap Tracking Settings**

Sets options for object snap tracking.

#### **Track Orthogonally Only**

Displays only orthogonal (horizontal/vertical) object snap tracking paths for acquired object snap points when object snap tracking is on. (POLARMODE system variable)

#### **Track Using All Polar Angle Settings**

Applies polar tracking settings to object snap tracking. When you use object snap tracking, the cursor tracks along polar alignment angles from acquired object snap points. (POLARMODE system variable)

---

**NOTE** Clicking Polar and Otrack on the status bar also turns polar tracking and object snap tracking on and off.

---

### **Polar Angle Measurement**

Sets the basis by which polar tracking alignment angles are measured.

#### **Absolute**

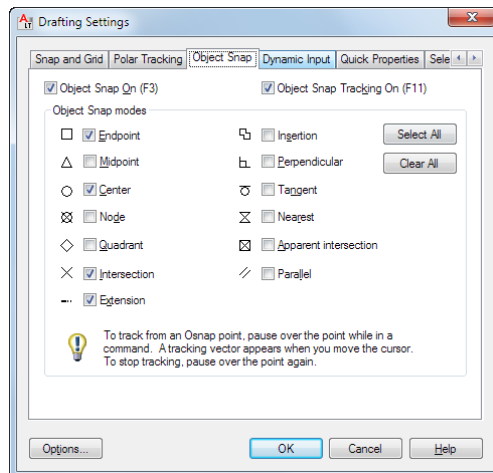
Bases polar tracking angles on the current user coordinate system (UCS).

#### **Relative to Last Segment**

Bases polar tracking angles on the last segment drawn.

### **Object Snap Tab (Drafting Settings Dialog Box)**

Controls running object snap settings. With running object snap settings, also called Osnap, you can specify a snap point at an exact location on an object. When more than one option is selected, the selected snap modes are applied to return a point closest to the center of the aperture box. Press TAB to cycle through the options.



### **Object Snap On**

Turns running object snaps on and off. The object snaps selected under Object Snap Modes are active while object snap is on. (OSMODE system variable)

### **Object Snap Tracking On**

Turns object snap tracking on and off. With object snap tracking, the cursor can track along alignment paths based on other object snap points when

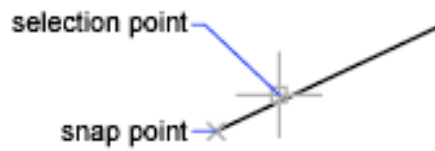
specifying points in a command. To use object snap tracking, you must turn on one or more object snaps. (AUTOSNAP system variable)

### **Object Snap Modes**

Lists object snaps that you can turn on as running object snaps.

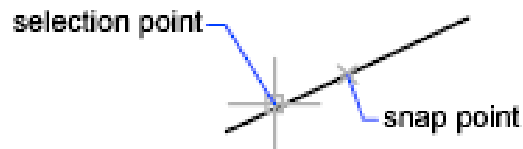
#### **Endpoint**

Snaps to the closest endpoint of an arc, elliptical arc, line, polyline segment, spline, region, or ray.



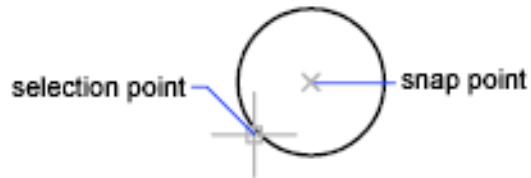
#### **Midpoint**

Snaps to the midpoint of an arc, ellipse, elliptical arc, line, polyline segment, region, spline, or xline.



#### **Center**

Snaps to the center of an arc, circle, ellipse, or elliptical arc.



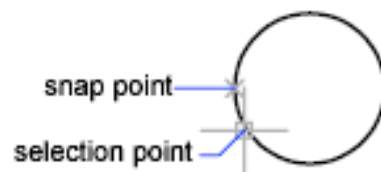
#### **Node**

Snaps to a point object, dimension definition point, or dimension text origin.



### Quadrant

Snaps to a quadrant point of an arc, circle, ellipse, or elliptical arc.



### Intersection

Snaps to the intersection of an arc, circle, ellipse, elliptical arc, line, polyline, ray, region, spline, or xline. Extended Intersection is not available as a running object snap.

Intersection and Extended Intersection do not work with edges or corners of 3D solids created in AutoCAD.

**NOTE** You might get varying results if you have both the Intersection and Apparent Intersection running object snaps turned on at the same time.

---



### Extension

Causes a temporary extension line or arc to be displayed when you pass the cursor over the endpoint of objects, so you can specify points on the extension.

**NOTE** When working in perspective view, you cannot track along the extension line of an arc or elliptical arc.

---

### Insertion



Snaps to the insertion point of an attribute, a block, or text.

### Perpendicular

Snaps to a point perpendicular to an arc, circle, ellipse, elliptical arc, line, polyline, ray, region, 2D solid, spline, or xline.

Deferred Perpendicular snap mode is automatically turned on when the object you are drawing requires that you complete more than one perpendicular snap. You can use a line, arc, circle, polyline, ray, or xline as an object from which to draw a perpendicular line. You can use Deferred Perpendicular to draw perpendicular lines between such objects. When the aperture box passes over a Deferred Perpendicular snap point, an AutoSnap™ tooltip and marker are displayed.



### Tangent

Snaps to the tangent of an arc, circle, ellipse, elliptical arc, or spline. Deferred Tangent snap mode is automatically turned on when the object you are drawing requires that you complete more than one tangent snap. You can use Deferred Tangent to draw a line or xline that is tangent to arcs, polyline arcs, or circles. When the aperture box passes over a Deferred Tangent snap point, a marker and an AutoSnap tooltip are displayed.



---

**NOTE** When you use the From option in conjunction with the Tangent snap mode to draw objects other than lines from arcs or circles, the first point drawn is tangent to the arc or circle in relation to the last point selected in the drawing area.

---

### Nearest

Snaps to the nearest point on an arc, circle, ellipse, elliptical arc, line, point, polyline, ray, spline, or xline.

### Apparent Intersection

Snaps to the visual intersection of two objects that do not intersect in 3D space but may appear to intersect in the current view.

Extended Apparent Intersection snaps to the imaginary intersection of two objects that would appear to intersect if the objects were extended along their natural paths. Apparent and Extended Apparent Intersection do not work with edges or corners of 3D solids created in AutoCAD.

---

**NOTE** You might get varying results if you have both the Intersection and Apparent Intersection running object snaps turned on at the same time.

---

### **Parallel**

Constrains a line segment, polyline segment, ray or xline to be parallel to another linear object. After you specify the first point of a linear object, specify the parallel object snap. Unlike other object snap modes, you move the cursor and *hover* over another linear object until the angle is acquired. Then, move the cursor back toward the object that you are creating. When the path of the object is parallel to the previous linear object, an alignment path is displayed, which you can use to create the parallel object.

---

**NOTE** Turn off ORTHO mode before using the parallel object snap. Object snap tracking and polar snap are turned off automatically during a parallel object snap operation. You must specify the first point of a linear object before using the parallel object snap.

---

### **Select All**

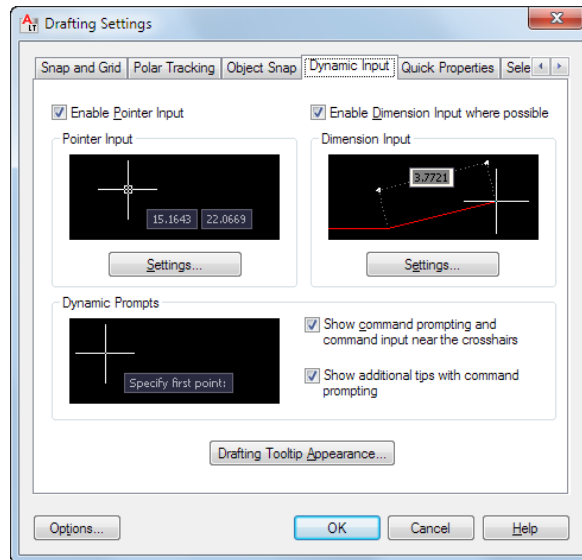
Turns on all object snap modes.

### **Clear All**

Turns off all object snap modes.

### **Dynamic Input Tab (Drafting Settings Dialog Box)**

Controls pointer input, dimension input, dynamic prompting, and the appearance of drafting tooltips.



### **Enable Pointer Input**

Turns on pointer input. When pointer input and dimensional input are both turned on, dimensional input supersedes pointer input when it is available. (DYNMODE system variable)

### **Pointer Input**

Displays the location of the crosshairs as coordinate values in a tooltip near the cursor. When a command prompts you for a point, you can enter coordinate values in the tooltip instead of in the Command window.

#### **Preview Area**

Shows an example of pointer input.

#### **Settings**

Displays the [Pointer Input Settings dialog box](#).

### **Enable Dimension Input**

Turns on dimensional input. Dimensional input is not available for some commands that prompt for a second point. (DYNMODE system variable)

### **Dimension Input**

Displays a dimension with tooltips for distance value and angle value when a command prompts you for a second point or a distance. The values in the

dimension tooltips change as you move the cursor. You can enter values in the tooltip instead of on the command line.

**Preview Area**

Shows an example of dimensional input.

**Settings**

Displays the [Dimension Input Settings dialog box](#).

**Dynamic Prompts**

Displays prompts in a tooltip near the cursor when necessary in order to complete the command. You can enter values in the tooltip instead of on the command line.

**Preview Area**

Shows an example of dynamic prompts.

**Show Command Prompting and Command Input near the Crosshairs**

Displays prompts in Dynamic Input tooltips. (DYNPROMPT system variable)

**Show Additional Tips with Command Prompting**

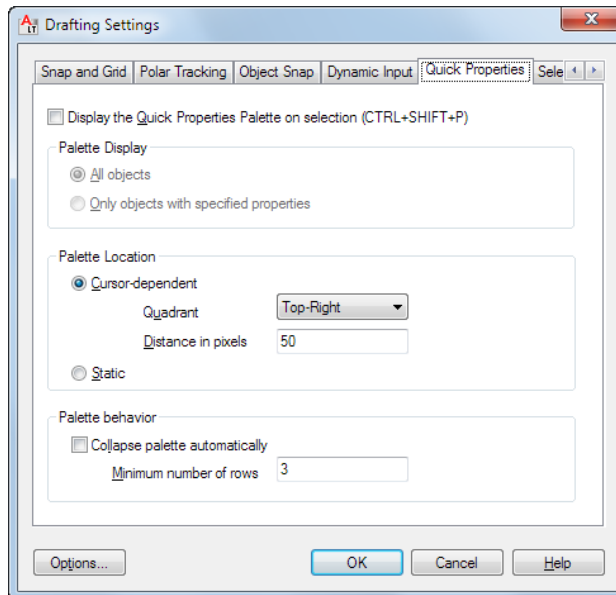
Controls whether tips for using Shift and Ctrl for grip manipulation are displayed. (DYNINFOTIPS system variable)

**Drafting Tooltip Appearance**

Displays the [Tooltip Appearance dialog box](#).

**Quick Properties Tab (Drafting Settings Dialog Box)**

Specifies the settings for displaying the Quick Properties palette.



### **Enable Quick Properties Palette**

Displays the Quick Properties palette when you select objects, depending on the object type. ([QPMODE](#) on page 1632 system variable)

The [PICKFIRST](#) on page 1612 system variable must be turned on to display the Quick Properties palette. Alternatively, you can enter the [QUICKPROPERTIES](#) on page 1060 command to select objects.

### **Palette Display**

Sets the display settings of the Quick Properties palette. See Quick Properties for more information.

#### **All Objects**

Sets the Quick Properties palette to display for any selection of objects, not just the object types specified in the Customize User Interface (CUI) editor to display properties.

#### **Only Objects with Specified Properties**

Sets the Quick Properties palette to display only the object types that are specified in the Customize User Interface (CUI) editor to display properties.

### **Palette Location**

Controls where the Quick Properties palette is displayed.

**Cursor-Dependent**

The Quick Properties palette displays in a location relative to the cursor. ([QPLOCATION](#) on page 1631 system variable)

**Quadrant:**

Specifies which of four quadrants relative to the cursor to display the Quick Properties palette relative to the cursor location. The default location is above and to the right of the cursor.

**Distance in Pixels:**

Specifies the distance in pixels from the cursor to display the Quick Properties palette. You can specify integer values from 0 to 400.

**Static**

Displays the Quick Properties palette in a fixed location. You can specify a new location by dragging the palette. ([QPLOCATION](#) on page 1631 system variable)

**Palette Behavior**

Sets the behavior of the Quick Properties palette.

**Collapse Palette Automatically**

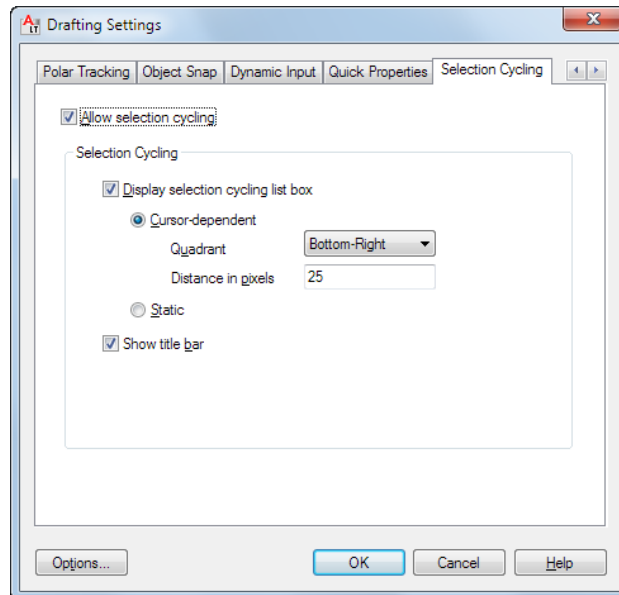
The Quick Properties palette displays only the specified number of properties. The palette expands when the cursor rolls over it.

**Minimum Number of Rows:**

Sets the number of properties that the Quick Properties palette displays when it is collapsed. You can specify integer values from 1 to 30.

**Selection Cycling Tab (Draft Settings Dialog Box)**

Selection cycling allows you to select objects that are overlapping. You can configure the display settings of the selection cycling list box. To filter the *type* of subobjects displayed (vertices, edges, or faces) use the `SUBOBJSELECTIONMODE` system variable.



### **Allow Selection Cycling**

You can also set this option with the [SELECTIONCYCLING](#) on page 1651 system variable.

### **Display Selection Cycling List Box**

Displays the Selection Cycling List box.

### **Cursor Dependent**

Moves the list box relative to the cursor.

### **Quadrant**

Specifies in which quadrant of the cursor to position the list box.

### **Distance in Pixels**

Specifies the distance between the cursor and the list box.

### **Static**

The list box does not move with the cursor and remains in the same position. To change the position of the list box, click and drag.

### **Show Title Bar**

To save screen space, turn the title bar off.

## Pointer Input Settings Dialog Box

### Quick Reference

See also:

- Use Dynamic Input

Controls the settings of pointer input tooltips.

### List of Options

The following options are displayed.

#### Format

Controls coordinate format in the tooltips that are displayed when pointer input is turned on.

#### Polar Format

Displays the tooltip for the second or next point in polar coordinate format. Enter a comma (,) to change to Cartesian format. (DYNPIFORMAT system variable)

#### Cartesian Format

Displays the tooltip for the second or next point in Cartesian coordinate format. Enter an angle symbol (<) to change to polar format. (DYNPIFORMAT system variable)

#### Relative Coordinates

Displays the tooltip for the second or next point in relative coordinate format. Enter a pound sign (#) to change to absolute format. (DYNPICOORDS system variable)

#### Absolute Coordinates

Displays the tooltip for the second or next point in absolute coordinate format. Enter an at sign (@) to change to relative format. Note that you cannot use the direct distance method when this option is selected. (DYNPICOORDS system variable)

#### Visibility

Controls when pointer input is displayed. (DYNPIVIS system variable)

#### As Soon As I Type Coordinate Data



When pointer input is turned on, displays tooltips only when you start to enter coordinate data. (DYNPIVIS system variable)

**When a Command Asks for a Point**

When pointer input is turned on, displays tooltips whenever a command prompts you for a point. (DYNPIVIS system variable)

**Always—Even When Not in a Command**

Always displays tooltips when pointer input is turned on. (DYNPIVIS system variable)

## Dimension Input Settings Dialog Box

### Quick Reference

See also:

- Use Dynamic Input

Controls the settings of dimension input tooltips.

### List of Options

The following options are displayed.

#### Visibility

Controls which tooltips are displayed during grip stretching when dimensional input is turned on. (DYNDIVIS system variable)

#### Show Only 1 Dimension Input Field at a Time

Displays only the length change dimensional input tooltip when you are using grip editing to stretch an object. (DYNDIVIS system variable)

#### Show 2 Dimension Input Fields at a Time

Displays the length change and resulting dimensional input tooltips when you are using grip editing to stretch an object. (DYNDIVIS system variable)

#### Show the Following Dimension Input Fields Simultaneously

When you are using grip editing to stretch an object, displays the dimensional input tooltips that are selected below. (DYNDIVIS and DYNDIGRIP system variables)

**Resulting Dimension**

Displays a length dimensional tooltip that is updated as you move the grip.

**Length Change**

Displays the change in length as you move the grip.

**Absolute Angle**

Displays an angle dimensional tooltip that is updated as you move the grip.

**Angle Change**

Displays the change in the angle as you move the grip.

**Arc Radius**

Displays the radius of an arc, which is updated as you move the grip.

## Tooltip Appearance Dialog Box

**Quick Reference**

See also:

- Use Dynamic Input

Controls the appearance of tooltips.

**Summary**

Use the TOOLTIPMERGE system variable to combine drafting tooltips into a single tooltip.

For more information about tooltips, see Set Interface Options.

**List of Options**

The following options are displayed.

**Previews**

Displays an example of the current tooltip appearance settings.

**Colors**

Displays the [Drawing Window Colors dialog box](#), where you can specify a color for drafting tooltips and their backgrounds in a specified context.

### **Size**

Specifies a size for tooltips. The default size is 0. Use the slider to make tooltips larger or smaller.

### **Transparency**

Controls the transparency of tooltips. The lower the setting, the less transparent the tooltip. A value of 0 sets the tooltip to opaque.

### **Apply To**

Specifies whether the settings apply to all drafting tooltips or only to Dynamic Input tooltips. (DYNTOOLTIPS system variable)

### **Override OS Settings for All Drafting Tooltips**

Applies the settings to all tooltips, overriding the settings in the operating system.

### **Use Settings Only for Dynamic Input Tooltips**

Applies the settings only to the drafting tooltips used in Dynamic Input.

## **DWFADJUST**

### **Quick Reference**

#### **See also:**


- [Adjust Underlay Contrast, Fade, Monochrome, and Colors for the Background](#)

Adjust the fade, contrast, and monochrome settings of a DWF or DWFx underlay.

### **Access Methods**



#### **Button**

 **Ribbon:** DWF Underlay contextual tab ► Adjust panel

## Summary

You can change the default values for Fade, Contrast, and Monochrome for a single or multiple DWF and DWFX underlays. To confirm the settings on a selected DWF or DWFX underlay, use the Properties palette.

---

**NOTE** You can also use the [ADJUST](#) on page 20 command to change the fade, contrast, and monochrome settings for DWF underlays as well as DWF, DWFX and PDF underlays or the fade, contrast and brightness for images.

---

To adjust colors in the DWF or DWFX underlay, open the Properties palette for the DWF or DWFX underlay. For more information, see Adjust Underlay Contrast, Fade, Monochrome, and Colors for the Background.

## List of Prompts

The following prompts are displayed.

### Fade

Controls the fade effect of the underlay. Values range from 0 through 100. The greater the value, the lighter the linework in the underlay appears. Works indirectly with the contrast effect; a higher contrast value blends the underlay into the background when fade is set to a higher value.

### Contrast

Controls the contrast, and indirectly, the fading effect, of the underlay. Values range from 0 through 100. The greater the value, the more each pixel is forced to its primary or secondary color.

### Monochrome

Controls the color saturation of all linework while maintaining the luminance. When turned on, the linework appears in varying shades of gray starting at black if the background color luminance is 50 percent or more. If the background color luminance is less than 50 percent, then the colors are inverted, with the darkest linework displaying in white, and the lightest linework displaying in black.

## DWFATTACH

### Quick Reference

See also:


- Attach Files as Underlays


Insert a DWF or DWFX file as an underlay into the current drawing.

### Access Methods



#### Button

 **Ribbon:** Insert tab ► Reference panel ► Attach

 **Menu:** Insert ► DWF Underlay

 **Toolbar:** Insert

### Summary

The Select DWF File dialog box (a [standard file selection dialog box](#)) is displayed. Once you select a DWF or DWFX file, the [Attach DWF Underlay dialog box](#) is displayed. After the file is attached, you can adjust and clip the underlay through the [DWF Underlay Ribbon Contextual Tab](#) on page 438.

When you attach a DWF or DWFX file as an underlay, you link that referenced file to the current drawing. Any changes to the referenced file are displayed in the current drawing when it is opened or reloaded.

## Attach DWF Underlay Dialog Box

### Quick Reference

See also:

- Attach Files as Underlays

Sets options such as rotation and scale when you attach a DWF underlay.

### Summary

Names, locates, and defines the insertion point, scale, and rotation of attached DWF or DWFX underlays.

### List of Options

The following options are displayed.

**Name**

Identifies the DWF or DWFX file you have selected to attach.

**Browse**

Opens the Select Reference File dialog (a [standard file selection dialog box](#) on page 826).

**Select one or more sheets from the DWF file**

Displays all of the sheets that are found in the DWF file. If the DWF file only contains a single sheet, that sheet is listed. You can select multiple sheets by holding the Shift key or the Ctrl key while selecting the sheets to attach. If you hover over the preview, the file name displays.

**Path Type**

Select the full (absolute) path, the relative path to the DWF file, or No Path, the name of the DWF file (the DWF file must be located in the same folder as the current drawing file).

**Insertion Point**

Specifies the insertion point for the selected DWF file. Specify On-Screen is the default. The default insertion point is 0,0,0.

**Specify On-Screen** Directs input at the Command prompt or the pointing device. If Specify On-Screen is cleared, enter the insertion point in X, Y, and Z.

**Scale**

Specifies the scale factor of the selected DWF underlay.

If **INSUNITS** is set to “unitless” or if the underlay does not contain resolution information, the scale factor becomes the underlay width in AutoCAD units. If **INSUNITS** has a value such as millimeters, centimeters, inches, or feet, and the underlay has resolution information, the scale factor is applied after the true width of the underlay in AutoCAD units is determined.

**Specify On-screen** Allows you to input at the Command prompt or the pointing device. If Specify On-Screen is cleared, enter a value for the scale factor. The default scale factor is 1.

**Scale Factor Field** Enter a value for the scale factor. The default scale factor is 1.

**Rotation**

Specifies the rotation angle of the selected DWF underlay.

**Specify on-screen** If Specify On-Screen is selected, you may wait until you exit the dialog box to rotate the object with your pointing device or enter a rotation angle value at the Command prompt.

**Angle** If Specify On-Screen is cleared, enter the rotation angle value in the dialog box. The default rotation angle is 0.

**Show Details**

Displays the DWF file path.

**Found In** Displays the path where the DWF file is located.

**Saved Path** Displays the path that is saved with the drawing when the DWF file is attached. The path is dependent upon the Path Type setting.

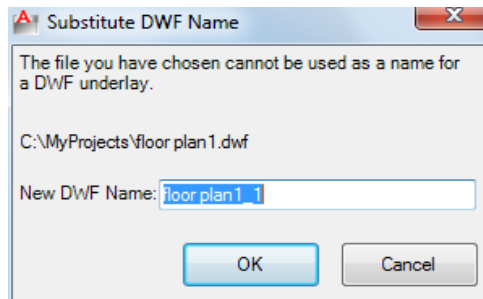
## Substitute DWF Name Dialog Box

### Quick Reference

See also:

- Attach Files as Underlays

Allows you to rename a DWF underlay if the name is not unique.



### Summary

The names of DWF or DWFX references you attach must be unique. Attempts to attach two DWF or DWFX references that have the same name displays the Substitute DWF Name dialog box.

### New DWF Name

Enter a unique name for the DWF or DWFX underlay you are attempting to attach.

Once a new name is supplied, you can continue with the attachment process.

---

**NOTE** This only changes the name of the DWF or DWFx reference when it is attached. It does not affect the name of the DWF or DWFx file.

---

## DWF Underlay Ribbon Contextual Tab

### Quick Reference

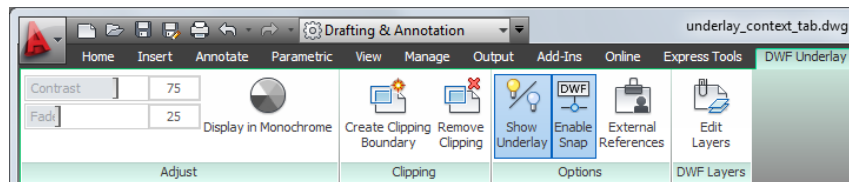
See also:

- Work with Underlays

Change DWF underlay display, clip, layer, and osnap options.

### Summary

When you select a DWF underlay in a drawing, the DWF Underlay Contextual tab is displayed on the ribbon.



### List of Panels

#### Adjust Panel

**Contrast** Controls the contrast and the fading effect of the underlay. The greater the value, the more each pixel is forced to its primary or secondary color.

**Fade** Controls the appearance of linework. The greater the value, the lighter the linework in the underlay appears.

**Display in Monochrome** Displays the underlay in black and white.

#### Clipping Panel

**Create Clipping Boundary** Deletes the old clipping boundary (if one exists) and creates a new one.

**Remove Clipping** Deletes the clipping boundary.



### **Options Panel**

**Show Underlay** Hides or displays the underlay.

**Enable Snap** Determines whether object snapping is active for geometry in the DWF underlay.

**External References** Displays the External References palette.

### **DWF Layers Panel**

**Edit Layers** Controls the display of layers in a DWF Underlay.

## **-DWFATTACH**

### **Quick Reference**

See also:

- Attach Files as Underlays

Attach a DWF underlay from the command line.

### **Summary**

When you attach a DWF or DWFX file as an underlay, you link that referenced file to the current drawing. Any changes to the referenced file are displayed in the current drawing when it is opened or reloaded.

### **List of Prompts**

The following prompts are displayed.

---

**TIP** You can drag a DWF file onto the drawing window to start the DWFATTACH command.

---

**Path to DWF File to Attach** Enters the full path name to the DWF underlay file. The file name can include up to 255 characters and contain letters, digits, spaces, and any special characters not used by Microsoft Windows or this program.

Entering a tilde (~) displays the Select DWF File dialog box (a [standard file selection dialog box](#)).

To avoid errors when entering a file name, it is recommended that you specify both the DWF file and path as follows:

*path name\filename.dgn*

or

*"path name\filename.dgn"*

If you enter a valid DWF file name without a file extension, the program adds the extension and searches for the file.

**Enter Name of Sheet or ?** Enter a sheet name. For a list of sheets, enter ?.

**Enter Sheet(s) to list <\*>** Lists the sheets available in the DWF file in a separate text window.

**Insertion Point** Specifies the insertion point for the selected DWF file.

**Scale Factor** Specifies the scale factor of the selected DWF underlay and the scale factor units.

If **INSUNITS** is set to "unitless" or if the underlay does not contain resolution information, the scale factor becomes the underlay width in AutoCAD units. If **INSUNITS** has a value such as millimeters, centimeters, inches, or feet, and the underlay has resolution information, the scale factor is applied after the true width of the underlay in AutoCAD units is determined.

**Rotation** Specifies the rotation angle of the selected DWF underlay by entering an angle value at the Command prompt or by clicking onscreen.

## DWFCLIP

### Quick Reference

See also:


- Clip External References and Blocks

Crops the display of a selected DWF or DWFX underlay to a specified boundary.

### Access Methods



**Button**

 **Ribbon:** DWF Underlay contextual tab ► Clipping panel ► Create Clipping Boundary

**Shortcut menu:** Select a DWF or DWFX underlay to clip, right-click in the drawing area, and click DWF Clip

## Summary

The clipping boundary determines the portion of an image outside the boundary that is hidden. The visibility of the clipping boundary is controlled by the [DWFFRAME](#) on page 1486 system variable.

The boundary you specify must be in a plane parallel to the DWF or DWFX underlay.

---

**TIP** Use the generic [CLIP](#) on page 211 command to clip images, external references, viewports, and underlays.

---

## List of Prompts

The following prompts are displayed.

### **On**

Turns on clipping and displays the DWF underlay clipped to the previously defined boundary.

### **Off**

Turns off clipping and displays the entire DWF or DWFX underlay and frame.

If you reclip the DWF or DWFX underlay while clipping is turned off, clipping is automatically turned back on. You are prompted to delete the old boundary even when clipping is turned off and the clipping boundary is not visible.

### **Delete**

Removes a predefined clipping boundary and displays the full original underlay.

### **New Boundary**

Defines a rectangular or polygonal clipping boundary, or generates a polygonal clipping boundary from a polyline.

**Select Polyline** Defines the boundary with the selected polyline. The polyline can be open but must consist of straight line segments and cannot intersect itself.

**Polygonal** Defines a polygonal clipping boundary with three or more points that you specify for the vertices of a polygon.

**Rectangular** Defines a rectangular boundary with the points that you specify for opposite corners.

**Invert Clip** Inverts the mode of the clipping boundary: objects are clipped either outside the boundary or inside the boundary.

---

**NOTE** You can only create a new clipping boundary for a selected DWF underlay when the old boundary is deleted.

---

## DWFFORMAT

### Quick Reference

See also:

- Publish Drawings

Sets the default format to DWF or DWFX for output in specific commands.

### Summary

The latest version of Autodesk's Design Web Format (DWF) is DWFX. DWFX uses Microsoft's XML Paper Specification (XPS) to provide viewing and publishing capabilities that are independent from Autodesk software.

DWFX files can be opened directly within Microsoft's XPS Viewer, which is automatically installed with the Microsoft Vista and Windows 7 operating systems, bundled with .NET 3.0, and is available as an optional download for Windows XP users.

Use the PUBLISH command to create DWFX files from DWG drawing files.

## DWFLAYERS

### Quick Reference

See also:


- Control the Display of Layers in an Underlay

Controls the display of layers in a DWF or DWFX underlay.

### Access Methods



Button

 **Ribbon:** Insert tab ► Reference panel ► Underlay Layers

**Shortcut menu:** Select a DWF or DWFX underlay, right-click in the drawing area, and choose DWF Layers

### Summary

After selecting the DWF underlay, the [Underlay Layers dialog box](#) on page 1282 is displayed.

The [ULAYERS](#) on page 1281 command allows you to manage the layers of all underlays in the current document: DWF, DWFX, PDF, and DGN.

## DWGCONVERT

### Quick Reference

See also:

- Convert Drawing File Formats
- Open a Drawing

Converts drawing format version for selected drawing files.

### Access Methods



**Button**



 **Menu:** Application menu ► Save As ► DWG Convert

 **Menu:** File ► DWG Convert

### Summary

Opens the [DWG Convert dialog box](#) on page 444. All files to be converted are indicated by a check mark next to the file name. Right-click in the file display area to display a shortcut menu with several options.

## DWG Convert Dialog Box

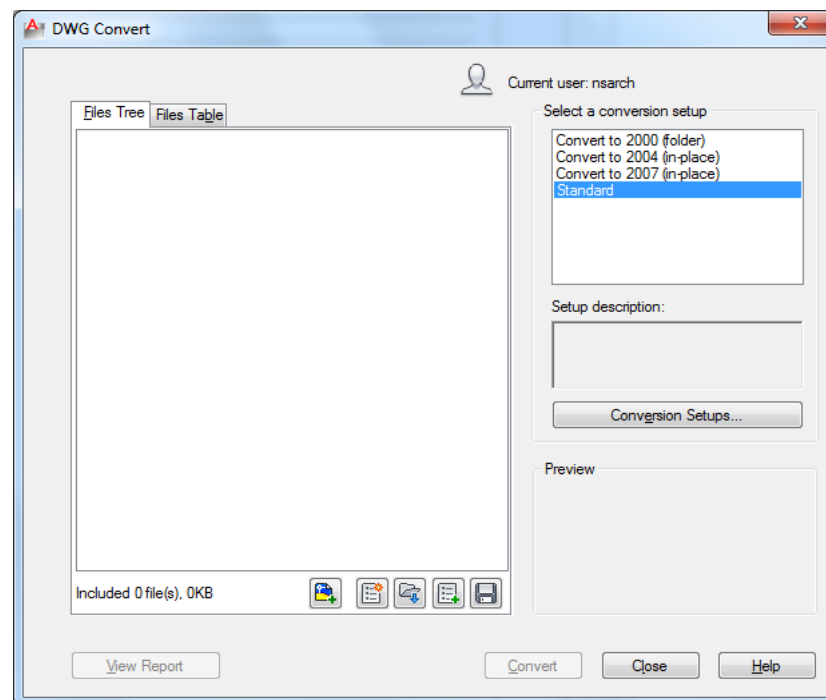
### Quick Reference

See also:

- Convert Drawing File Formats

Change drawings from one AutoCAD drawing type to another.

Displays a list of drawing files that you want to convert. All files to be converted are indicated by a checkmark next to the file name. Right-click in the file display area to display a shortcut menu with several options.



### List of Options

The dialog box contains the following options

**Files Tree Tab** Displays a list of drawing files selected for conversion. Includes the drawing name and path, current format, and conversion status. You can

add drawing files by clicking the Add button or by dragging a file. You can sort the order of the drawings by clicking a column heading.

**Files Table Tab** Displays the list of drawing files to be converted in a table format. By default, all files associated with the drawing (such as related external references) are listed.

**Add File Button** Opens a standard file selection dialog box, in which you can select drawing files to add to the conversion list. This button is available on both the Files Tree tab and the Files Table tab.

**New List Button** Clears the list of all drawings so you can select a new list of drawings for conversion. If the list has changed, you are prompted to save the current list.

**Open List Button** Opens a standard file selection dialog box, in which you can select a batch convert list file (BCL file), and then click Open to open the file.

**Append List Button** Opens a standard file selection dialog box, in which you can select a batch convert list file (BCL file) to append to an existing list of drawings in the conversion list.

**Save List Button** Opens a standard file selection dialog box. Select a batch convert list file (BCL file), or enter a new file name.

**Select a Conversion Setup group** Lists previously saved conversion setups. The default conversion setup is named Standard. Click to select a different conversion setup, if multiple setups are present. To create a new conversion setup or to modify an existing one in the list, click Conversion Setups. Right-click to display a shortcut menu with several options.

If a conversion setup has been given a description when it was created or when modified, the description will appear in the Setup Description field. Click the Conversion Setups button to access the [Conversion Setups dialog box](#) on page 446.

**Preview group** Displays a thumbnail image of a drawing that is currently shown in the list of drawings to convert.

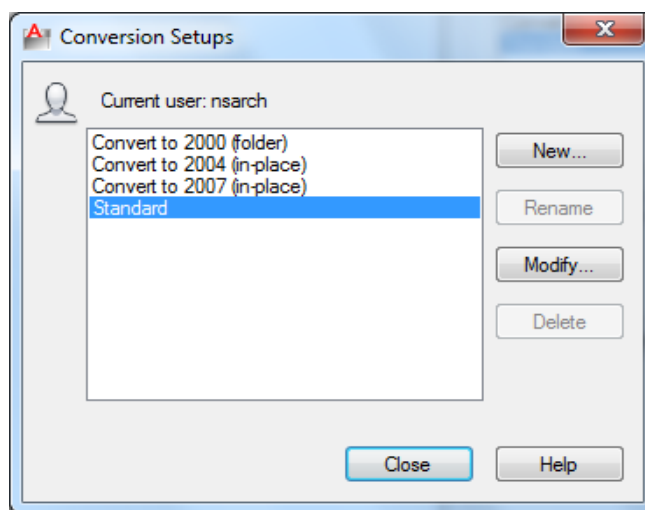
## Conversion Setups Dialog Box

### Quick Reference

See also:

- Convert Drawing File Formats

Creates, renames, modifies, and deletes conversion setups.



### List of Options

**Conversion Setups** Displays a list of previously saved conversion setups as well as the default setup; Standard.

**New** Opens the [New Conversion Setup dialog box](#) on page 447, where you can add a new conversion setup based on an existing conversion setup.

**Rename** Renames a conversion setup that appears in the list. Only conversion setups that you have created can be renamed. The Standard conversion setup cannot be renamed.

**Modify** Displays the [Modify Conversion Setup dialog box](#) on page 447, in which you can specify options for the selected drawing conversion.

**Delete** Removes the currently highlighted conversion setup. The Standard conversion setup cannot be deleted.



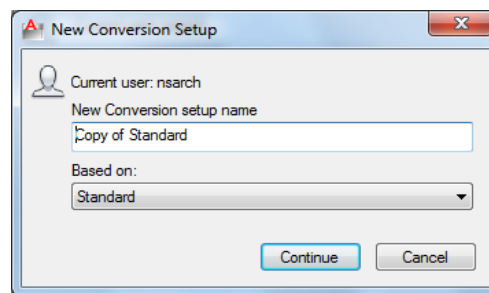
## New Conversion Setup Dialog Box

### Quick Reference

See also:

- Convert Drawing File Formats

Creates a new conversion setup



### List of Options

**New Conversion Setup Name** Enter the name of the new conversion setup.

**Based On** Select an existing conversion setup that the new one will use as its basis.

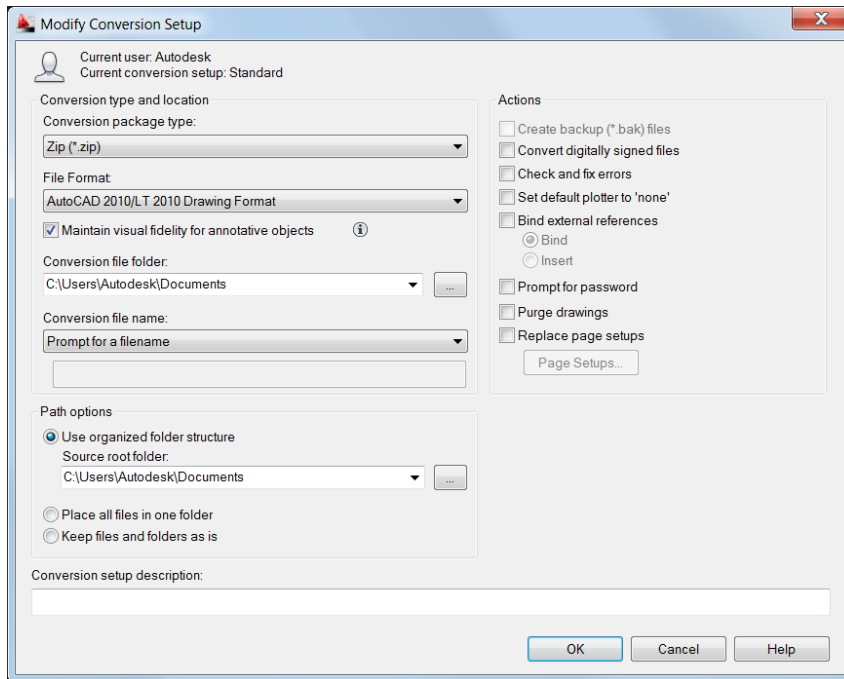
## Modify Conversion Setup Dialog Box

### Quick Reference

See also:

- Convert Drawing File Formats

Specifies the type of conversion package associated with the selected conversion setup along with its location and unique options.



## List of Options

**Conversion Package Type** Specifies the type and location of the selected conversion setup.

**In-place (Overwrite Files)** Creates a conversion package of uncompressed files that overwrite the existing files in the original folder.

**Folder (Set of Files)** Creates a conversion package of uncompressed files in a new or existing folder.

**Self-extracting Executable (\*.exe)** Creates a conversion package of files as a compressed, self-extracting executable file. Double-clicking the resulting EXE file decompresses the conversion package and restores the files to the folder location that you specify.

**Zip (\*.zip)** Creates a conversion package of files as a compressed ZIP file.

**File Format** Specifies the file format to which all drawings included in a conversion package will be converted. You can select a drawing file format from the drop-down list.

**Maintain Visual Fidelity for Annotative Objects** Specifies whether or not drawings are saved with visual fidelity for annotative objects. Annotative

objects may have multiple scale representations. Annotative objects are decomposed and scale representations are saved to separate layers, which are named based on their original layer and appended with a number.

**Conversion File Folder** Specifies the location in which the conversion package is created. Lists the last nine locations in which conversion packages were created. To specify a new location, click Browse and navigate to the location you want. If this field is left unchanged, the conversion file is created in the folder containing the first specified drawing file. In a sheet set context, the conversion file is created in the folder containing the sheet set data (DST) file.

**Browse [...]** Opens a standard file selection dialog box, in which you can navigate to a location where you create the conversion package.

**Conversion File Name** Specifies the method for naming the conversion package. Displays the default file name for the conversion package. This option is not available if the conversion package type is set to Folder.

**Prompt for a File Name** Displays a standard file selection dialog box where you can enter the name of the conversion package.

**Overwrite if Necessary** Uses a logical default file name. If the file name already exists, the existing file is automatically overwritten.

**Increment File Name if Necessary** Uses a logical default file name. If the file name already exists, a number is added to the end. This number is incremented each time a new conversion package is saved.

**Path Options** Provides options for organizing the files and folders that are included in the conversion package.

**Use Organized Folder Structure** Duplicates the folder structure for the files being converted. The root folder is the top-level folder within a hierarchical folder tree.

**The following the considerations apply:**

- Relative paths remain unchanged. Relative paths outside the source root folder retain up to one level of the folder path above them, and are placed in the root folder.
- Full (absolute) paths within the root folder tree are converted to relative paths. Full paths outside the source root folder retain up to one level of the folder path above them, and are placed in the root folder.
- Full paths outside the root folder tree are converted to No Path and are moved to the root folder or to a folder within the root folder tree.

- A Fonts folder is created, if necessary.
- A PlotCfgs folder is created, if necessary.
- A SheetSets folder is created to hold all support files for sheet sets, if necessary. The sheet set data (DST) file, however, is placed in the root folder.

---

**NOTE** This option is not available if you're saving a conversion package to an Internet location.

---

**Source Root Folder** Defines the source root folder for relative paths of drawing-dependent files, such as external references. The source root folder also contains the sheet set data (DST) file when a sheet set is converted.

**Browse [...]** Opens a standard file selection dialog box, in which you can navigate to a location where you create the conversion package.

**Place All Files in One Folder** All files are installed to a single, specified target folder when the conversion package is installed.

**Keep Files and Folders As Is** Preserves the folder structure of all files in the conversion package, facilitating ease of installation on another system. This option is not available if you're saving a conversion package to an Internet location.

### **Actions**

**Create backup (\*.bak) Files Backup** (.bak) files of are created during the conversion. This option is only active when the Conversion Package Type is set to In-place (Overwrite Files).

**Convert Digitally Signed Files** Controls whether digitally signed drawings are converted.

**Check and Fix Errors** When active, drawings are checked for the presence of errors. Drawings are automatically recovered if errors are found. Set Default Plotter to 'None' Changes the printer/plotter setting in the conversion package to None. Your local printer/plotter settings are usually not relevant to the recipient.

**Bind External References** Opens a standard file selection dialog box, in which you can navigate to a location where you create the conversion package.

**Prompt for Password** Opens the Archive - Set Password dialog box, before completing the conversion, where you can specify a password for your conversion package.

**Replace Page Setups** Page setups specified in drawings you want to convert can be replaced with a page setup from another drawing. When active, the Page Setups button is made available.

**Page Setups** Opens the Page Setups dialog box where you can select a drawing that contains a page setup to apply to the converted drawings.

**Conversion Setup Description** Enter a description for the conversion setup. This description is displayed in the DWG Convert dialog box and the Conversion Setups dialog box below the list of conversion file setups. You can select any conversion setup in the list to display its description.

## DWGPROPS

### Quick Reference

See also:

- Add Identifying Information to Drawings

Sets and displays the file properties of the current drawing.

### Access Methods



**Button**

 **Menu:** Application menu  ► Drawing Utilities ► Drawing Properties  
 **Menu:** File ► Drawing Properties

### Summary

The [Drawing Properties dialog box](#) is displayed.

General information, keywords, and custom properties can be created and stored with a drawing file. These file properties are accessible from the Desktop or a folder view, can be used to help identify drawing files.

## Drawing Properties Dialog Box

### Quick Reference

**See also:**

- [Add Identifying Information to Drawings](#)

Displays read-only statistics or general information about your drawing, assigns summary properties, and assigns names and values to custom properties. These custom properties can help you identify your drawing.

### Summary

Document properties are displayed in the list of field names in the [Field dialog box](#) on page 514.

- [General](#) on page 452
- [Summary](#) on page 454
- [Statistics](#) on page 455
- [Custom](#) on page 457

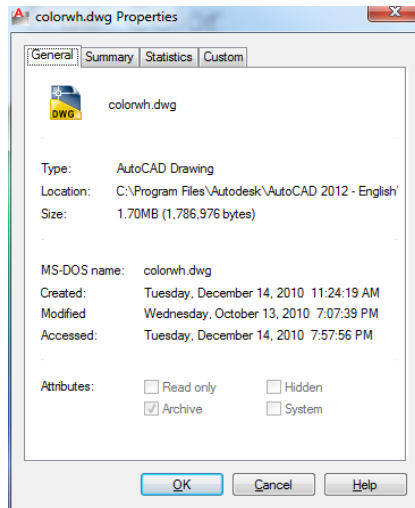
## General Tab (Drawing Properties Dialog Box)

### Quick Reference

**See also:**

- [Add Identifying Information to Drawings](#)

Displays read-only information about the drawing file. This data is derived from the operating system.



### List of Options

The following options are displayed.

#### **File Name**

Shows the file icon and the file name.

#### **File Type, Location, Size**

Shows the file type, the file location, and the size of the file.

#### **MS-DOS Name, Created, Modified, Accessed**

Shows MS-DOS name, when the file was created, and the date and time it was last modified and last accessed.

#### **Attributes**

Shows system-level file attributes. These values can be modified in Windows Explorer.

#### **Read-Only**

Indicates that the file is read-only; it cannot be changed or deleted accidentally.

#### **Archive**

Indicates that this file should be archived. This setting is used to determine which files should be backed up.

#### **Hidden**

Indicates that the file is hidden; you cannot see or use it unless you know its name.

### System

Indicates that the file is a system file. A drawing cannot have the System attribute set.

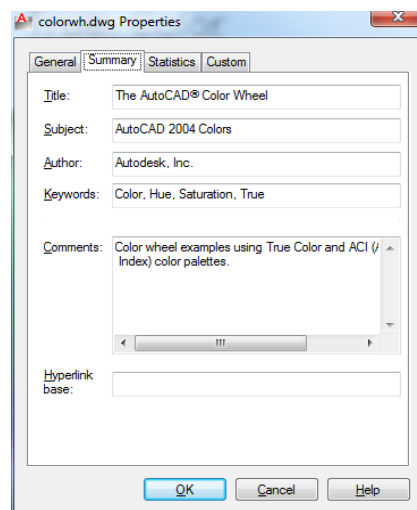
## Summary Tab (Drawing Properties Dialog Box)

### Quick Reference

#### See also:

- Add Identifying Information to Drawings

Displays properties such as author, title, and subject that are predefined. For example, you can add keywords to all your drawing files and then use DesignCenter™ to search for all drawing files with a particular keyword.



### List of Options

The following options are displayed.

#### Title



Specifies the title you want to use when searching for this drawing. The title can be different from the drawing file name.

#### **Subject**

Specifies the subject of the drawing. You can use the subject name to group drawings that have the same subject.

#### **Author**

Specifies the author of the drawing. The author name can only be entered or changed by the user. To change the author, delete the existing name and enter a new one.

#### **Keywords**

Specifies the keywords you want to use to locate the drawing.

#### **Comments**

Provides a space to add comments to the drawing.

#### **Hyperlink Base**

Specifies the base address that is used for all relative links inserted within the drawing. You can specify an Internet location, for example, *http://www.autodesk.com*, or a path to a folder on a network drive.

## **Statistics Tab (Drawing Properties Dialog Box)**

### **Quick Reference**

#### **See also:**

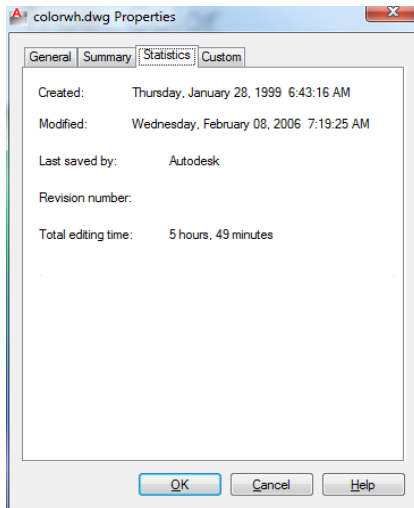
- Add Identifying Information to Drawings

Displays data such as the dates the drawing was created and last modified. These file properties are automatically maintained for you and can help you search for drawings created or modified during a specific period.

---

**NOTE** If the drawing was last saved using an application other than Autodesk<sup>®</sup> software, a warning message is displayed. Display of the warning message is controlled by the DWGCHECK system variable.

---



### List of Options

The following options are displayed.

#### Created

Displays the date and time the drawing was created. This value is stored in the TDCREATE system variable.

#### Modified

Displays the date and time the drawing was last modified. This value is stored in the TDUPDATE system variable.

#### Last Saved By

Displays the name of the last person who modified the file.

#### Revision Number

Displays the revision number. This value is not accessible. To track revisions, create a custom property on the Custom tab.

#### Total Editing Time

Displays the total amount of editing time in the drawing. This value is stored in the TDINDWG system variable.

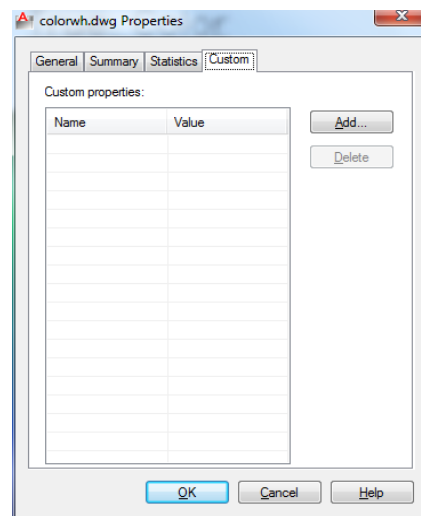
## Custom Tab (Drawing Properties Dialog Box)

### Quick Reference

See also:

- Add Identifying Information to Drawings

Assigns custom properties to the drawing.



### Summary

For example, you could create a custom property called Project and assign the actual project name as the value. To assign the same custom properties to a group of drawings, create the custom properties in a drawing template file.

### List of Options

The following options are displayed.

#### Custom Properties

Lists names and values of custom properties for the current drawing.

#### Add

Displays the [Add Custom Property dialog box](#), where you can enter a name and a value for the new custom property. The name must be unique. The value can be left blank.

#### **Delete**

Deletes the custom property that is selected in the list.

---

**NOTE** If you delete a custom property that is used in a field, the field displays #### the next time it is updated.

---

## **Add Custom Property Dialog Box**

### **Quick Reference**

#### **See also:**

- [Add Identifying Information to Drawings](#)

Adds a custom property to the drawing file.

### **List of Options**

The following options are displayed.

#### **Custom Property Name**

Specifies a unique name for the custom property. The name can contain up to 255 characters. The following characters are not permitted: asterisk (\*), equal sign (=), less-than and greater-than signs (< >), slash (/), backslash (\), quotation marks ("), reverse quote (´), pipe sign (|), colon (:), and semicolon (;).

#### **Value**

Specifies a value for the property. The value can be left blank.

# E Commands

# 6

## EATTEDIT

### Quick Reference

See also:


- Modify a Block Attribute Definition


Edits attributes in a block reference.

### Access Methods



Button

 **Ribbon:** Home tab ► Block panel ► Edit Single Attribute

 **Menu:** Modify ► Object ► Attribute ► Single

 **Toolbar:** Modify II

### Summary

Edits the values, text options, and properties of each attribute in a block.

### List of Prompts

The following prompts are displayed.

Select a block:

After you select a block with attributes, the [Enhanced Attribute Editor](#) is displayed.

## Enhanced Attribute Editor

### Quick Reference

See also:

- [Modify a Block Attribute Definition](#)

Lists the attributes in a selected block instance and displays the properties of each attribute.

### Summary

The Enhanced Attribute Editor contains the following tabs:

- [Attribute](#)
- [Text Options](#)
- [Properties](#)

### List of Options

The following options are displayed.

#### Block

Name of the block whose attributes you are editing.

#### Tag

Tag identifying the attribute.

#### Select Block

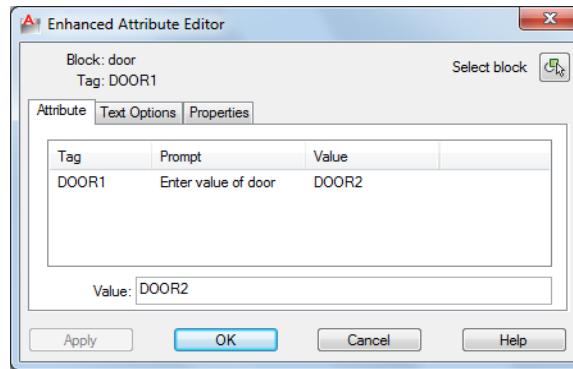
Temporarily closes the dialog box while you select a block with your pointing device.

#### Apply

Updates the drawing with the attribute changes you have made, and leaves the Enhanced Attribute Editor open.

### **Attribute Tab (Enhanced Attribute Editor)**

Displays the tag, prompt, and value assigned to each attribute. You can change only the attribute value.



### **List**

Lists the attributes in the selected block instance and displays the tag, prompt, and value for each attribute.

### **Value**

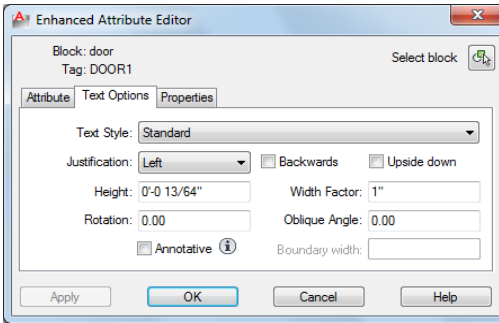
Assigns a new value to the selected attribute.

Multiple-line attributes include a button with an ellipsis. Click to open the [In-Place Text Editor](#) with the Text Formatting toolbar and the ruler. Depending on the setting of the ATTIPE system variable, the Text Formatting toolbar displayed is either the abbreviated version, or the full version

To use a field as the value, right-click and click Insert Field on the shortcut menu to display the [Field dialog box](#).

### **Text Options Tab (Enhanced Attribute Editor)**

Sets the properties that define the way an attribute's text is displayed in the drawing. Change the color of attribute text on the Properties tab.



### **Text Style**

Specifies the text style for the attribute text. Default values for this text style are assigned to the text properties displayed in this dialog box.

### **Justification**

Specifies how the attribute text is justified (left-, center-, or right-justified).

### **Height**

Specifies the height of the attribute text.

### **Rotation**

Specifies the rotation angle of the attribute text.

### **Annotative**

Specifies that the attribute is . Click the information icon to learn more about annotative objects.

### **Backwards**

Specifies whether or not the attribute text is displayed backwards. Not available for multiple-line attributes.

### **Upside Down**

Specifies whether or not the attribute text is displayed upside down. Not available for multiple-line attributes.

### **Width Factor**

Sets the character spacing for the attribute text. Entering a value less than **1.0** condenses the text. Entering a value greater than **1.0** expands it.

### **Oblique Angle**



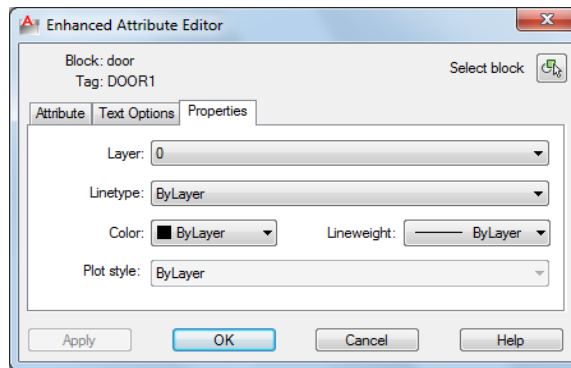
Specifies the angle that the attribute text is slanted away from its vertical axis. Not available for multiple-line attributes.

### Boundary Width

Specifies the maximum length of the lines of text in a multiple-line attribute before wrapping to the next line. A value of 0.000 means that there is no restriction on the length of a line of text. Not available for single-line attributes.

### Properties Tab (Enhanced Attribute Editor)

Defines the layer that the attribute is on and the lineweight, linetype, and color for the attribute text. If the drawing uses plot styles, you can assign a plot style to the attribute using the Properties tab.



### Layer

Specifies the layer that the attribute is on.

### Linetype

Specifies the linetype of the attribute.

### Color

Specifies the color of the attribute.

### Lineweight

Specifies the lineweight of the attribute.

Changes you make to this option are not displayed if the [LWDISPLAY](#) on page 1575 system variable is off.

### Plot Style

Specifies the plot style of the attribute.

If the current drawing uses color-dependent plot styles, the Plot Style list is not available.

## Edit PGP

### Quick Reference

See also:

- Enter Commands on the Command Line

Opens the Program Parameters (PGP) text file that defines command abbreviations

### Access Methods



**Button**

**Ribbon:** Tools tab ► Customization panel ► Edit Aliases.

**Menu:** Tools ► Customize ► Customize, Edit Command Aliases

### Summary

Commands can have abbreviated names called command aliases that you can enter at the Command prompt. Command aliases are defined in the PGP file.

If you edit the PGP file while the program is running, enter REINIT to use the revised file. You can also restart program to reload the file automatically.

## ELEV


### Quick Reference

See also:

- Control the User Coordinate System (UCS)
- Add 3D Thickness to Objects

Sets elevation and extrusion thickness of new objects.

### Access Methods

 **Command entry:** 'elev for transparent use

### Summary

The ELEV command sets the default Z value for new objects above or below the XY plane of the current UCS. This value is stored in the ELEVATION system variable.

---

**NOTE** Generally, it is recommended that you leave the elevation set to zero and control the XY plane of the current UCS with the UCS on page 1266 command.

---

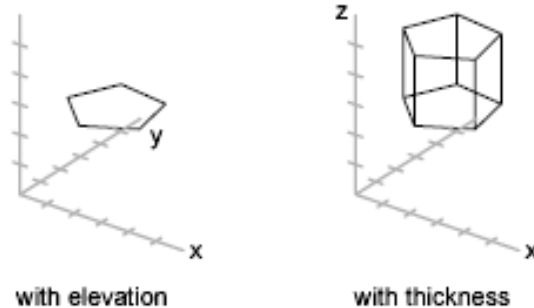
ELEV controls only new objects; it does not affect existing objects. The elevation is reset to 0.0 whenever you change the coordinate system to the world coordinate system (WCS).

### List of Prompts

The following prompts are displayed.

**Specify New Default Elevation** The current elevation is the default Z value for new objects when you specify only X and Y values for a 3D point.

**Specify New Default Thickness** The thickness sets the distance to which a 2D object is extruded above or below its elevation. A positive value is extruded along the positive Z axis; a negative value is extruded along the negative Z axis.



# ELLIPSE

## Quick Reference

See also:


- Draw Ellipses

Creates an ellipse or an elliptical arc.

## Access Methods



Button

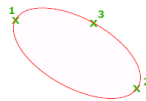
 **Ribbon:** Home tab ► Draw panel ► Ellipse drop-down ► Center

 **Menu:** Draw ► Ellipse ► Center

 **Toolbar:** Draw

## Summary

The first two points of the ellipse determine the location and length of the first axis. The third point determines the distance between the center of the ellipse and the end point of the second axis.



## List of Prompts

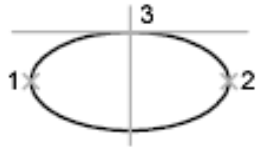
The following prompts are displayed.

Specify [axis endpoint](#) on page 466 of ellipse or [[Arc](#) on page 467/[Center](#) on page 468/[Isocircle](#) on page 469]: *Specify a point or enter an option*

### Axis Endpoint

Defines the first axis by its two endpoints. The angle of the first axis determines the angle of the ellipse. The first axis can define either the major or the minor axis of the ellipse.

**Distance to Other Axis** Defines the second axis using the distance from the midpoint of the first axis to the endpoint of the second axis (3).



ellipse by axis endpoint

**Rotation** Creates the ellipse by appearing to rotate a circle about the first axis. Move the crosshairs around the center of the ellipse and click. If you enter a value, the higher the value, the greater the eccentricity of the ellipse. Entering 0 defines a circular ellipse.



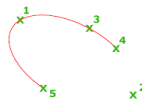
ellipse by rotation

### Arc

Creates an elliptical arc.

The angle of the first axis determines the angle of the elliptical arc. The first axis can define either the major or the minor axis depending on its size.

The first two points of the elliptical arc determine the location and length of the first axis. The third point determines the distance between the center of the elliptical arc and the endpoint of the second axis. The fourth and fifth points are the start and end angles.

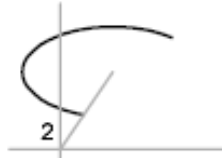


**Axis Endpoint** Defines the start point of the first axis.

**Rotation** Defines the major to minor axis ratio of the ellipse by rotating a circle about the first axis. The higher the value from 0 through 89.4 degrees, the greater the ratio of minor to major axis. Values between 89.4 degrees and

90.6 degrees are invalid because the ellipse would otherwise appear as a straight line. Multiples of these angle values result in a mirrored effect every 90 degrees.

**Start Angle** Defines the first endpoint of the elliptical arc. The Start Angle option toggles from Parameter mode to Angle mode. The mode controls how the ellipse is calculated.



**Parameter** Requires the same input as Start Angle, but creates the elliptical arc using the following parametric vector equation:

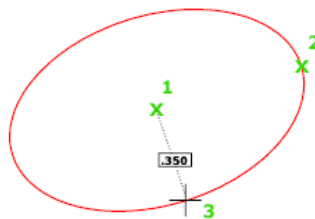
$$p(u) = c + a * \cos(u) + b * \sin(u)$$

where  $c$  is the center of the ellipse and  $a$  and  $b$  are its major and minor axes, respectively.

- **End Parameter:** Defines the end angle of the elliptical arc by using a parametric vector equation. The Start Parameter option toggles from Angle mode to Parameter mode. The mode controls how the ellipse is calculated.
- **Angle:** Defines the end angle of the elliptical arc. The Angle option toggles from Parameter mode to Angle mode. The mode controls how the ellipse is calculated.
- **Included Angle:** Defines an included angle beginning at the start angle.

### Center

Creates an ellipse using a center point, the endpoint of the first axis, and the length of the second axis. You can specify the distances by clicking a location at the desired distance or by entering a value for the length.



**Distance to Other Axis** Defines the second axis as the distance from the center of the ellipse, or midpoint of the first axis, to the point you specify.

**Rotation** Creates the ellipse by appearing to rotate a circle about the first axis. Move the crosshairs around the center of the ellipse and click. If you enter a value, the higher the value, the greater the eccentricity of the ellipse. Entering 0 defines a circle.

### **Isocircle**

Creates an isometric circle in the current isometric drawing plane.

---

**NOTE** The Isocircle option is available only when you set the Style option of SNAP to Isometric.

---



**Radius** Creates a circle using a radius you specify.

**Diameter** Creates a circle using a diameter you specify.  
Specify diameter of isocircle: *Specify a distance*

## **ERASE**

### **Quick Reference**

See also:

- Erase Objects

Removes objects from a drawing.

### **Access Methods**



Button

 **Ribbon:** Home tab ► Modify panel ► Erase

 **Menu:** Modify ► Erase

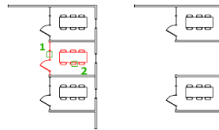
 **Toolbar:** Modify

**Shortcut menu:** Select the objects to erase, right-click in the drawing area, and click Erase.

### Summary

You can erase selected objects from the drawing. This method does not move objects to the Clipboard, where they can then be pasted to another location.

Instead of selecting objects to erase, you can enter an option, such as **L** to erase the last object drawn, **p** to erase the previous selection set, or **ALL** to erase all objects. You can also enter **?** to get a list of all options.



## ETRANSMIT

### Quick Reference

See also:

- Package a Set of Files for Internet Transmission

Packages a set of files for Internet transmission.


### Access Methods



Button



 **Menu:** Application Menu ► Publish ► eTransmit

 **Menu:** File ► eTransmit



### Summary

The [Create Transmittal dialog box](#) is displayed.

If you enter `-etransmit` at the Command prompt, [options are displayed](#).

When you select a set of drawing files in a transmittal package, it automatically includes all related dependent files such as xrefs and font files.

## Create Transmittal Dialog Box

### Quick Reference

#### See also:

- [Package a Set of Files for Internet Transmission](#)

Packages a set of files for Internet transmission.

### Summary

All files to be included in the transmittal package are indicated by a check mark next to the file name. Right-click in the file display area to display a shortcut menu with several options.

### List of Options

The following options are displayed.

#### Files Tree Tab

Lists the files to be included in the transmittal package in a hierarchical tree format. By default, all files associated with the current drawing (such as related xrefs, plot styles, and fonts) are listed. You can add files to the transmittal package or remove existing files. Related files that are referenced by URLs are not included in the transmittal package.

The drawings to be transmitted are listed under the following categories:

- **Current Drawing.** Lists the files associated with the current drawing.
- **User Added Files.** Lists the files that have been added manually with the Add File option.

### **Files Table Tab**

Displays the files to be included in the transmittal package in a table format. By default, all files associated with the current drawing (such as related xrefs, plot styles, and fonts) are listed. You can add files to the transmittal package or remove existing files. Related files that are referenced by URLs are not included in the transmittal package.

### **Add File**

Opens a [standard file selection dialog box](#), in which you can select an additional file to include in the transmittal package. This button is available on both the Files Tree tab and the Files Table tab.

### **Enter Notes to Be Included with This Transmittal Package**

Provides a space where you can enter notes related to a transmittal package. The notes are included in the transmittal report. You can specify a template of default notes to be included with all your transmittal packages by creating an ASCII text file called *etransmit.txt*. This file must be saved to a location specified by the Support File Search Path option on the [Files tab](#) in the Options dialog box.

### **Select a Transmittal Setup**

Lists previously saved transmittal setups. The default transmittal setup is named STANDARD. To create a new transmittal setup or to modify an existing one in the list, click Transmittal Setups.

### **Transmittal Setups**

Displays the [Transmittal Setups dialog box](#), in which you can create, modify, and delete transmittal setups.

### **View Report**

Displays report information that is included with the transmittal package. Includes any transmittal notes that you entered and distribution notes automatically generated that detail what steps must be taken for the transmittal package to work properly. For example, if SHX fonts are detected in one of the transmittal drawings, you are instructed where to copy these files so that they can be detected on the system where the transmittal package is being installed. If you have created a text file of default notes, the notes are also included in the report.

**Save As** Opens a File Save dialog box, in which you can specify a location in which to save a report file. Note that a report file is automatically included with all transmittal packages that you generate; by choosing Save As, you can save an additional copy of a report file for archival purposes.

## Transmittal Setups Dialog Box

### Quick Reference

See also:

- Package a Set of Files for Internet Transmission

Creates, modifies, and deletes transmittal setups.

### List of Options

The following options are displayed.

#### Transmittal Setups

Lists transmittal setups.

#### New

Creates a new transmittal setup.

#### New Transmittal Setup Name

Enter the name of the new transmittal setup.

#### Based On

Select an existing transmittal setup from which the new one will be created.

#### Rename

Renames the currently highlighted transmittal setup.

#### Modify

Displays the [Modify Transmittal Setup dialog box](#), in which you can specify options for the transmittal package.

#### Delete

Removes the currently highlighted transmittal setup.

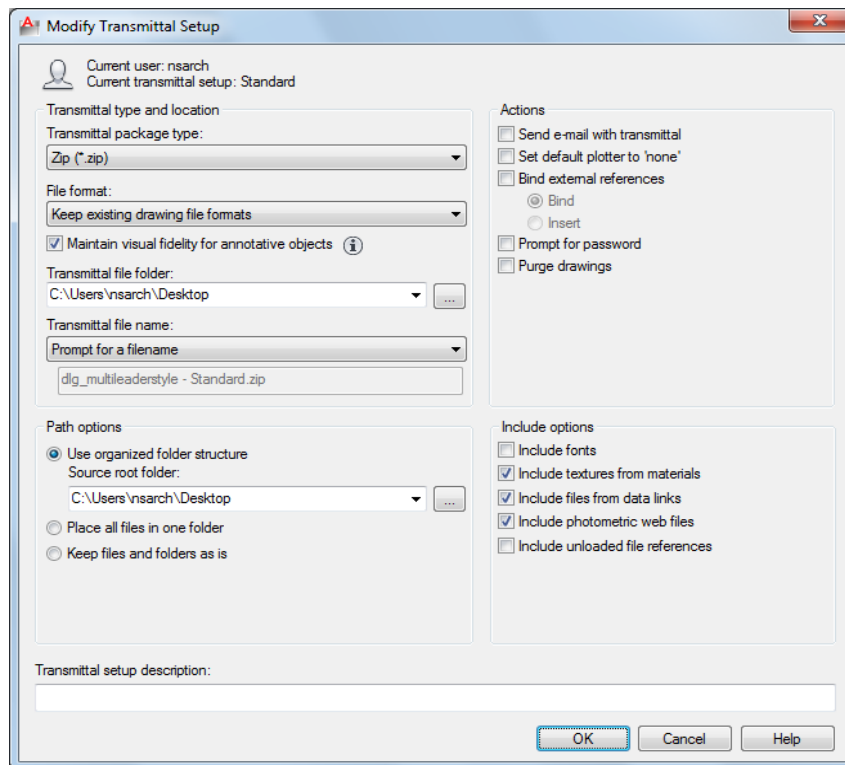
#### Import

# Modify Transmittal Setup Dialog Box

## Quick Reference

See also:

- Package a Set of Files for Internet Transmission



## List of Options

The following options are displayed.

### Transmittal Type and Location

Specifies the type and path to the transmittal package created.

### Transmittal Package Type

Specifies the type of transmittal package created.

<b>Transmittal Package Type</b>	<b>Description</b>
Folder	Creates a transmittal package of uncompressed files in a new or existing folder.
Self-Extracting Executable	Creates a transmittal package of files as a compressed, self-extracting executable file. Double-clicking the resulting EXE file decompresses the transmittal package and restores the files to the folder location that you specify.
Zip	Creates a transmittal package of files as a compressed ZIP file. To restore the files to the folder location that you specify, you need a decompression utility such as the shareware application PKZIP or WinZip.

#### **File Format**

Specifies the file format to which all drawings included in a transmittal package will be converted. You can select a drawing file format from the dropdown list.

#### **Maintain Visual Fidelity for Annotative Objects**

Specifies whether or not drawings are saved with visual fidelity for objects. Click the information icon to learn more about saving drawings with visual fidelity.

Annotative objects may have multiple . Annotative objects are decomposed and scale representations are saved to separate layers, which are named based on their original layer and appended with a number.

#### **Transmittal File Folder**

Specifies the location in which the transmittal package is created. Lists the last nine locations in which transmittal packages were created. To specify a new location, click Browse and navigate to the location you want.

#### **Transmittal File Name**

Specifies the method for naming the transmittal package. Displays the default file name for the transmittal package. This option is not available if the transmittal package type is set to Folder.

<b>Transmittal File Type Property</b>	<b>Description</b>
Prompt for a File Name	Displays a standard file selection dialog box where you can enter the name of the transmittal package.
Overwrite if Necessary	Uses a logical default file name. If the file name already exists, the existing file is automatically overwritten.
Increment File Name if Necessary	Uses a logical default file name. If the file name already exists, a number is added to the end. This number is incremented each time a new transmittal package is saved.

### **Path Options**

Provides options for organizing the files and folders that are included in the transmittal package.

#### **Use Organized Folder Structure**

Duplicates the folder structure for the files being transmitted. The root folder is the top-level folder within a hierarchical folder tree.

The following considerations apply:

- Relative paths remain unchanged. Relative paths outside the source root folder retain up to one level of the folder path above them, and are placed in the root folder.
- Full (absolute) paths within the root folder tree are converted to relative paths. Full paths outside the source root folder retain up to one level of the folder path above them, and are placed in the root folder.
- Full paths outside the root folder tree are converted to No Path and are moved to the root folder or to a folder within the root folder tree.
- A *Fonts* folder is created, if necessary.
- A *PlotCfgs* folder is created, if necessary.

This option is not available if you're saving a transmittal package to an Internet location.

#### **Source Root Folder**

Defines the source root folder for relative paths of drawing-dependent files, such as xrefs.

#### **Place All Files in One Folder**

All files are installed to a single, specified target folder when the transmittal package is installed.

#### **Keep Files and Folders As Is**

Preserves the folder structure of all files in the transmittal package, facilitating ease of installation on another system. This option is not available if you're saving a transmittal package to an Internet location.

#### **Actions**

Provides options for organizing the actions that can be associated with the transmittal package.

#### **Send E-mail with Transmittal**

Launches the default system email application when the transmittal package is created so that you can send an email that includes the transmittal package as an attachment.

#### **Set Default Plotter to 'None'**

Changes the printer/plotter setting in the transmittal package to None. Your local printer/plotter settings are usually not relevant to the recipient.

#### **Bind External References**

Binds all AutoCAD drawing file (DWG) external references to the files to which they were attached.

#### **Bind**

Binds the selected DWG external reference to the current drawing.

#### **Insert**

Binds the DWG external reference to the current drawing in a way similar to detaching and inserting the reference drawing.

#### **Prompt for Password**

Opens the [Transmittal - Set Password dialog box](#), where you can specify a password for your transmittal package.

### **Purge Drawings**

Does a complete purge of all the drawings in the transmittal package.

---

**NOTE** As the purge is done in silent mode, you will not receive any notifications when purged items in the drawings have been removed.

---

### **Include Options**

Provides a means for including additional options with the transmittal package.

### **Include Fonts**

Includes any associated font files (TTF and SHX) with the transmittal package.

---

**NOTE** Because TrueType fonts are proprietary, you should make sure that the recipient of the transmittal package also owns the TrueType fonts. If you are not sure whether the recipient owns the TrueType fonts, clear this option. If any required TrueType fonts are not available to the recipient, the font specified by the FONTALT system variable is substituted.

---

### **Include Textures from Materials**

Includes textures from materials that are attached to objects or faces.

### **Include Files from Data Links**

Adds external files referenced by a data link to the transmittal package.

### **Include Photometric Web Files**

Includes photometric web files that are associated with web lights in the drawing.

### **Include Unloaded File References**

Includes all unloaded external references, images, and underlays. The unloaded file references are listed in the Files Tree and Files Table and report under their appropriate category.

### **Transmittal Setup Description**

Enter a description for the transmittal setup. This description is displayed in the Create Transmittal dialog box below the list of transmittal file setups. You can select any transmittal setup in the list to display its description.



## Transmittal - Set Password Dialog Box

### Quick Reference

#### See also:

- Package a Set of Files for Internet Transmission

### List of Options

The following options are displayed.

**Password for Compressed Transmittal** Provides a space for an optional password for the transmittal package. When others attempt to open the transmittal package, they must provide this password to access the files. Password protection cannot be applied to folder transmittal packages.

**Password Confirmation** Provides a space to confirm the password that you entered in the Password field.

## -ETRANSMIT

### Quick Reference

#### See also:

- Package a Set of Files for Internet Transmission

### List of Prompts

The following prompts are displayed.

Enter an option [Create transmittal package/Report only/CUrrent setup/CHoose setup] <Report only>: *Enter an option*

**Create Transmittal Package** Packages a set of files according to the [transmittal setups](#) on page 472 for Internet transmission. Drawing files in the transmittal package automatically include all related dependent files such as xrefs and font files.

**Report Only** Creates a report (TXT) file without creating a transmittal package. This report file is based on the current transmittal setup.

### Current Setup

Displays the name of the current transmittal setup.

**Choose Setup** Specifies the transmittal setup to use for the transmittal package.

## EXPLODE

### Quick Reference

#### See also:

- Disassociate Compound Objects (Explode)


Breaks a compound object into its component objects.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Modify panel ► Explode

 **Menu:** Modify ► Explode

 **Toolbar:** Modify

### Summary

Explodes a compound object when you want to modify its components separately. Objects that can be exploded include blocks, polylines, and regions, among others.



The color, linetype, and lineweight of any exploded object might change. Other results differ depending on the type of compound object you're exploding. See the following list of objects that can be exploded and the results for each.

To explode objects and change their properties at the same time, use XPLODE.

**2D Polyline** Discards any associated width or tangent information. For wide polylines, the resulting lines and arcs are placed along the center of the polyline.



**3D Polyline** Explodes into line segments. Any linetype assigned to the 3D polyline is applied to each resulting line segment.

**3D Solid (AutoCAD drawings)** Explodes solids into surfaces and regions.

**Annotative Objects** Explodes the current scale representation into its constituent parts which are no longer . Other scale representations are removed.

**Arc** If within a nonuniformly scaled block, explodes into elliptical arcs.

**Block** Removes one grouping level at a time. If a block contains a polyline or a nested block, exploding the block exposes the polyline or nested block object, which must then be exploded to expose its individual objects.

Blocks with equal  $X$ ,  $Y$ , and  $Z$  scales explode into their component objects. Blocks with unequal  $X$ ,  $Y$ , and  $Z$  scales (nonuniformly scaled blocks) might explode into unexpected objects.

Exploding a block that contains attributes deletes the attribute values and redisplay the attribute definitions.

Blocks inserted with external references (xrefs) and their dependent blocks cannot be exploded.

**Body (AutoCAD drawings)** Explodes into a single-surface body (nonplanar surfaces), regions, or curves.

**Circle** If within a nonuniformly scaled block, explodes into ellipses.

**Leaders** Explodes into lines, splines, solids (arrow heads), block inserts (arrow heads, annotation blocks), multiline text, or tolerance objects, depending on the leader.

**Multiline Text** Explodes into text objects.

**Multiline (AutoCAD drawings)** Explodes into lines and arcs.

**Polyface Mesh (AutoCAD drawings)** Explodes one-vertex meshes into a point object. Two-vertex meshes explode into a line. Three-vertex meshes explode into 3D faces.

**Region** Explodes into lines, arcs, or splines.

# EXPORT

## Quick Reference

### See also:

Saves the objects in a drawing to a different file format.

### Access Methods



Button

 **Menu:** File ► Export

### Summary

The Export Data dialog box (a [standard file selection dialog box](#)) is displayed.

If you do not see the file format that you need in the Files of Type drop-down list, also check the PLOT command for other file types, including PDF.

---

**NOTE** The Export Data dialog box records the last used file format selection and stores it for use during the current drawing session and between drawing sessions.

---

The following output types are available:

- *Block (\*.dwg)*: Drawing file (see WBLOCK)
- *IGES (\*.iges)*: IGES file (see [IGESEXP](#) on page 600)
- *IGES (\*.igs)*: IGES file (see [IGESEXP](#) on page 600)
- *Metafile (\*.wmf)*: Microsoft Windows<sup>®</sup> Metafile (see WMFOUT)
- *V7 DGN (\*.dgn)*: MicroStation DGN file (see [DGNEXP](#))
- *V8 DGN (\*.dgn)*: MicroStation DGN file (see DGNEXP)

# -EXPORT

## Quick Reference

### See also:

- Export DWF and DWFX Files
- Export FBX Files

Creates a DWF, DWFX, or PDF file from the command line.

### Summary

The command prompt version of [EXPORTDWF](#), [EXPORTDWFX](#), and [EXPORTPDF](#) provides an interface for publishing drawing sheets that can be controlled by a script.

### List of Prompts

The following prompts are displayed.

#### **File Format**

Select DWF, DWFX, or PDF as the output file type.

#### **Plot Area**

Specify the area of the drawing to export:

**Display** Exports the view in the current viewport in Model space.

**Extents** Exports the portion of the current space of the drawing that contains objects in Model space. All geometry in the current space is exported.

**Window** Exports any portion of the drawing you specify in Model space. Click the Window button to use the mouse to specify opposite corners of the area to be exported, or enter coordinate values.

**Current Layout/All Layouts** If you are exporting from paper space, specify to export the current layout or all layouts.

#### **Detailed Plot Configuration?**

Specifies detailed page settings for the Model tab or layout tab you are plotting.

---

**NOTE** If you enter No, the Save As dialog appears if [FILEDIA](#) is set to 1. If [FILEDIA](#) is set to 0, you are prompted to enter a file name at the command prompt.

---

**Paper Size** Enter the paper size or enter ? to view a list of paper sizes defined for the default plotter driver.

**Paper Units** Specify Inches or Millimeters as the paper size unit.

---

**NOTE** This prompt does not display if you are exporting a raster image, such as a BMP or TIFF file, because the size of the plot defaults to pixels.

---

**Drawing Orientation** Specify if the output displays in portrait or landscape.

**Plot Scale** Specify how to scale the drawing in the DWF, DWFx, or PDF file.

- **Plotted Inches=Drawing Units:** Calculates the plot scale based on the inches or millimeters to drawing units that you specify. You can also enter a real number as a fraction (for example, you can enter 1=2 or .5).
- **Fit:** Automatically calculates the scale to fit the area on the paper size specified earlier.

**Plot with Plot Styles?** Specify whether to export using the plot styles applied to objects and defined in the plot style table.

- **Yes:** If you enter Yes (plot with plot styles), enter the plot style table name, press Enter for none or enter ? to list to view plot style tables.
- **No:** If you select No, enter . at the next prompt to select none.

**Plot Style Table Name** All style definitions with different property characteristics are stored in the current plot style table and can be attached to the geometry.

**Plot with Lineweights** Specifies whether or not to use the lineweight (measured in pixels) specified in the PC3 driver.

## EXPORTDWF

### Quick Reference

**See also:**

- Export DWF and DWFx Files

Creates a DWF file and allows you to set individual page setup overrides on a sheet by sheet basis.


## Access Methods



### Button

 **Ribbon:** Output tab ► Export to DWF/PDF panel ► Export drop-down  
► DWF



 **Menu:** Application Menu ► Export ► DWF

### Summary

When you create DWF files with the EXPORTDWF command, you can quickly override the device driver's page setup options, add a plot stamp, and change file options. You can change these settings in the [Save as DWF dialog box](#).

To include layer information, change file location, add password-protection, and other file options, use the [Export to DWF/PDF Options palette](#).

## Save as DWF Dialog Box

### Quick Reference

#### See also:

- [Export DWF and DWFX Files](#)

Sets file options such as file name and location when you create a DWFX file.

### Summary

When you export your drawing to a DWF file, the Save As DWF dialog box appears. This dialog box allows you to specify the file name and location, but also allows you to change export, page setup, and plot stamp settings.

### List of Options

The following options are displayed.

**Options**

Opens the [Export to DWF/PDF Options palette](#) where you can change DWF file settings such as file location, password-protection, and layer information.

**Output Controls**

**Open in Viewer When Done** Opens the DWF file in the default viewer after export.

**Include Plot Stamp** Adds user-defined information such as drawing name, date and time, or plot scale in the DWF file. To edit the plot stamp, click the Plot Stamp button to open the [Plot Stamp dialog box](#).

**Export**

Selects which part of the drawing to export. If you are in paper space, you can select the current layout or all layouts. If you are in model space, you can select the objects currently displayed, the drawing extents, or a selected area.

**Window Selection button**

Selects a window area to export from model space.

**Page Setup**

Exports the DWF file using the settings in the Page Setup Manager or choose to override these settings.

**Page Setup Override**

Overrides the page settings. Click the Page Setup Override button to display the [Page Setup Override dialog box](#) on page 488.

## Export to DWF/PDF Options Palette

**Quick Reference**

See also:

- [Export DWF and DWFx Files](#)

Specifies the general export options for the DWF, DWFx, or PDF file, such as file location, password protection, and whether or not to include layer information.

**List of Options**

The following options are displayed.



### **General DWF/PDF options**

Changes general settings for DWF, DWFx, and PDF files.

**Location** Specifies where the DWF, DWFx, or PDF files are saved when you export drawings.

**Type** Specifies whether to export single sheets or multiple sheets from the drawing.

**Override Precision** Selects a precision preset that offers the best file resolution for your field or creates a new precision preset by selecting [Manage Precision Presets](#). This dpi setting overrides the dpi settings in the DWF, DWFx, or PDF driver.

**Naming** Names multi-sheet files, prompts for name during export, or specifies the name before export.

**Layer Information** Includes layer information in the DWF, DWFx, or PDF file.

**Merge control** Specifies whether overlapping lines merge (the colors of the lines blend together into a third color) or overwrite (the last plotted line obscures the line beneath it).

### **DWF Data Options**

Changes settings that are only available for DWF and DWFx files.

**Password protection** Provides password protection for the DWF, DWFx, or PDF file. You decide whether or not to prompt for the new password during export or to specify the password in this dialog box.

**Password** Enters the password for the DWF, DWFx, or PDF file.

**Block Information** Specifies block property and attribute information in the DWF, DWFx, or PDF file

**Block Template File** Provides options for creating a new block template (DXE) file, editing an existing block template file, or using the settings of a previously created block template file.

## Page Setup Override Dialog Box

### Quick Reference

See also:

- Export DWF and DWFx Files

Allows you to override individual settings when you export a file.

### Access Methods



Button

 **Ribbon:** Output tab ► Export to DWF/PDF ► Page Setup

### Summary

You can override the regular page settings applied to the layout through the Page Setup dialog box. The override settings remain until you exit the application. So, you do not have to reset the overrides every time you export to a DWF, DWFx, or PDF file.

### List of Options

The following options are displayed.

#### **Paper Size**

Select the paper size from the drop-down list of paper sizes defined for the default plotter driver.

#### **Plot Style Table (Pen Assignments)**

**Plot Style Name** Select a plot style table from the drop-down list to apply to all layouts.

**Plot Style Table Editor** Click to open the [Plot Style Table Editor](#).

#### **Drawing Orientation**

Specify if the output displays in portrait or landscape.

### **Plot Scale**

**Fit to Paper** Select to automatically scale the selection to fit the area on the paper size specified earlier.

**Scale** Specify a scaling ratio for the drawing. This ratio varies depending on whether you select inches or millimeters as the measurement units.

**Scale Lineweights** Scales lineweights in proportion to the plot scale. Lineweights normally specify the linewidth of plotted objects and are plotted with the linewidth size regardless of the plot scale.

## **Precision Presets Manager**

### **Quick Reference**

**See also:**

- Export DWF and DWFX Files

Allows you to override dpi settings on a sheet-by-sheet basis when you export and publish digital files.

### **Access Methods**



**Button**

**Ribbon:** Output tab ► Export to DWF/PDF panel ► Export to DWF/PDF Options

In the Export to DWF/PDF Options window, under General DWF/PDF Options, select Override Precision. Then, from Override Precision drop-down, click Manage Precision Presets.

### **Summary**

With the Precision Presets Manager you can override the PC3 file's dpi setting and automatically adjust the dpi on a sheet-by-sheet basis during export and publish. The override calculation uses both the desired precision and the sheet scale to optimize the DWF, DWFX, and PDF file resolution. There are predefined settings for Manufacturing, Architecture, and Civil Engineering, or you can create your own.

### List of Options

The following options are displayed.

#### Current Preset

Lists the preset currently in use.

#### Name

The name of the selected preset.

#### Description

You can add a description to track presets.

#### Scale Dependent Properties

**Unit** Sets the format for units of measure: Imperial or Metric.

**Desired Precision** Sets the number of decimal places or fractional size displayed for linear measurements.

#### Non-Scale Dependent Properties

**Gradient Resolution** Sets the resolution for gradients in the DWF, DWFX, or PDF file. The default setting is 200 dpi. This setting cannot exceed the current vector resolution setting.

**Color and Grayscale Resolutions** Sets the resolution for color and grayscale raster images in the DWF, DWFX, or PDF file. The default is 200 dpi. This setting cannot exceed the current vector resolution setting.

**Black and White Resolution** Sets the resolution for black and white raster images in the DWF, DWFX, and PDF file. The default setting is 200 dpi. This setting cannot exceed the current vector resolution setting.

## New Precision Preset Dialog Box

### Quick Reference

See also:

- [Export DWF and DWFX Files](#)

Allows you to name and describe a custom precision preset.

### Access Methods

From the [Export to DWF/PDF Options Palette](#), select Manage Precision Presets in Override Precision and click New.

### List of Options

The following options are displayed.

**Name** Assign a name for the custom precision preset.

**Description** (Optional) Enter a description for what this preset applies to.

## Import Precision Preset Dialog Box

### Quick Reference

See also:

- Export DWF and DWFX Files

Imports precision presets from an existing sheet set

### Summary

You can import precision presets from an existing sheet set (DSD file). The Select List of Sheets dialog opens (a [standard file selection dialog box](#)).

To open the Import Precision Preset dialog box, click **Import** in the [Precision Presets Manager](#).

## Export to DWF/PDF Ribbon Panel

### Quick Reference

See also:

- Export DWF and DWFX Files

Creates a DWFX file where you can set individual page setup overrides on a sheet-by-sheet basis.

### Summary

With the Export DWF/PDF panel, you can quickly create DWF, DWFX, and PDF files and override page setup options without changing the default PC3 driver or resetting page setup options.

### List of Options

The following options are displayed.

#### Export

Selects which part of the drawing to export to the DWF, DWFx, or PDF file.

**Display** Exports objects in the current display. This option is available only in model space.

**Extents** Exports the objects in the drawing extents. This option is available only in model space.

**Window** Exports the objects in the window. This option is available only in model space.

**Window Selection Button** Selects a window area to export from model space.

**Current Layout** Exports only the current layout. This option is available only in paper space.

**All Layouts** Exports all layouts. This option is available only in paper space.

#### Page Setup

Exports the objects to a DWF, DWFx, or PDF file using the drawings page setup options or overrides the current options.

**Page Setup Override Button** Allows you to override the [page settings](#) on page 488.

#### Preview

Displays the objects in a Preview window before you export.

#### Options

Opens the [Export to DWF/PDF Options palette](#) where you can change DWF, DWFx, and PDF file settings such as file location, password-protection, and layer information.

## EXPORTDWFx

### Quick Reference

See also:

- [Export DWF and DWFx Files](#)

Creates a DWfx file where you can set individual page setup overrides on a sheet-by-sheet basis.

### Access Methods



#### Button

 **Ribbon:** Output tab ► Export to DWF/PDF panel ► Export drop-down ► DWfx

 **Menu:** Application Menu  ► Export ► DWfx

### Summary

When you create DWfx files with the EXPORTDWFx command, you can quickly override the device driver's page setup options, add a plot stamp, and change file options. You can change these settings in the [Save as DWfx dialog box](#).

To include layer information, change file location, add password-protection, and other file options, use the [Export to DWF/PDF Options palette](#).

## Save as DWfx Dialog Box

### Quick Reference

See also:

- Export DWF and DWfx Files

Sets file options such as file name and location when you create a DWfx file.

### Summary

When you export your drawing to a DWfx file, the Save As DWfx dialog box appears. This dialog box allows you to specify the file name and location, but also allows you to change export, page setup, and plot stamp settings.

### List of Options

The following options are displayed.

#### Options

Opens the [Export to DWF/PDF Options palette](#) where you can change DWFx file settings such as file location, password-protection, and layer information.

#### Output Controls

**Open in Viewer when Done** The DWFx file will open in the default viewer after the export completes when this option is selected.

**Include Plot Stamp** Select to include user-defined information such as drawing name, date and time, or plot scale in the DWFx file. To edit the plot stamp, click the Plot Stamp button to open the [Plot Stamp dialog box](#).

#### Export

Selects which part of the drawing to export. If you are in paper space, you can select the current layout or all layouts. If you are in model space, you can select the objects currently displayed, the drawing extents, or a selected area.

#### Window Selection button

Select a window area to export from model space.

#### Page Setup

Export the DWFx file using the settings in the Page Setup Manager or choose to override these settings.

#### Page Setup Override

Allows you to override the page settings.

## EXPORTLAYOUT

### Quick Reference

See also:

- [Export a Layout to Model Space](#)

Creates a visual representation of the current layout in the model space of a new drawing.



## Access Methods



Button



**Menu:** Application menu  ► Save As ► Save Layout as a Drawing

**Shortcut menu:** Right-click the layout tab and click Export Layout to Model.

## Summary

Exported objects are duplicated visually in the new drawing and, as a result, they might be trimmed, scaled, copied, or exploded.

The [Export Layout to Model Space Drawing dialog box](#) is displayed.

Select the location and file name for the new exported drawing. All drawings are exported as Drawing (\*.dwg).

---

**NOTE** The EXPORTLAYOUT command is only available in a layout. The command is not available from the Model tab, while in the block editor, during reference editing, or while using a maximized viewport.

---

# Export Layout to Model Space Drawing Dialog Box

## Quick Reference

See also:

- Export a Layout to Model Space

Saves all visible objects from the current layout to the model space of a new drawing. Also exports objects that are outside the boundaries of the “paper” in the layout.

## Summary

The Export Layout to Model Space Drawing dialog box is displayed. You can specify a file name and location. The default location is the location of the

current drawing. The default file name is the concatenation of the name of the current drawing and the current layout name.

The Export Layout to Model Space Drawing dialog box is a [standard file selection dialog box](#). However, on the Tools drop-down list, Options is not displayed.

## EXPORTPDF

### Quick Reference

See also:

- Export PDF Files



Creates a PDF file where you can set individual page setup overrides on a sheet-by-sheet basis.

### Access Methods



Button

 **Ribbon:** Output tab ► Export to DWF/PDF panel ► Export drop-down ► PDF

 **Menu:** Application Menu  ► Export ► PDF

### Summary

When you create PDF files with the EXPORTPDF command, you can quickly override the device driver's page setup options, add a plot stamp, and change file options. You can change these settings in the [Save as PDF dialog box](#).

To include layer information, change file location, add password-protection, and other file options, use the [Export to DWF/PDF Options palette](#).

# Save as PDF Dialog Box

## Quick Reference

### See also:

- [Export DWF and DWFx Files](#)

Sets file options such as file name and location when you create a PDF file.

## Summary

When you export your drawing to a PDF file, the Save As PDF dialog box is displayed. This dialog box allows you to specify the file name and location, but also allows you to change export, page setup, and plot stamp settings.

## List of Options

The following options are displayed.

### Options

Opens the [Export to DWF/PDF Options palette](#) where you can change PDF file settings such as file location, password-protection, and layer information.

### Output Controls

**Open in Viewer when Done** The PDF file will open in the default viewer after the export completes when this option is selected.

**Include Plot Stamp** Select to include user-defined information such as drawing name, date and time, or plot scale in the PDF file. To edit the plot stamp, click the Plot Stamp button to open the [Plot Stamp dialog box](#).

### Export

Selects which part of the drawing to export. If you are in paper space, you can select the current layout or all layouts. If you are in model space, you can select the objects currently displayed, the drawing extents, or a selected area.

### Window Selection button

Select a window area to export from model space by selecting the area with the mouse or entering the X, Y coordinates.

### Page Setup

Export the PDF file using the settings in the Page Setup Manager or choose to override these settings.

### **Page Setup Override**

Allows you to override the page settings.

## **EXPORTSETTINGS**

### **Quick Reference**

See also:

- [Export DWF and DWFx Files](#)

Adjusts the page setup and drawing selection when exporting to a DWF, DWFx, or PDF file.

### **List of Prompts**

The following prompts are displayed.

**Preview** Opens the area you want to export in a preview window.

**Options** Opens the [Export to DWF/PDF Options palette](#).

**Page Setup** Opens the [Page Setup Override dialog box](#).

**Window Select** Allows you to define a rectangular area to export by specifying two diagonal points. Only the objects visible in this area will be exported.

**Export Window** Exports the area defined by the Window Select option.

You can change export options such as file location and export options in the Save As dialog box. The default file format (DWF, DWFx, or PDF) set in [EXPORTEPLOTFORMAT](#) on page 1501, determines which dialog box appears: the [Save as DWF dialog](#), the [Save as DWFx dialog box](#), or the [Save as PDF dialog box](#).

## **EXPORTTOAUTOCAD**

### **Quick Reference**

See also:

- [Work with Custom and Proxy Objects](#)

Creates a new DWG file with all AEC objects exploded.

### Access Methods

 **Command entry:** -exporttoautocad or aectoacad

### Summary

You can create a new version of a drawing file with all proxy AEC objects exploded into basic AutoCAD LT objects. The new version of the drawing loses the intelligence of the custom AEC objects, but the resulting basic objects can be displayed and accessed in earlier versions of AutoCAD LT when object enablers are not available for those versions.

---

**NOTE** Any subsequent changes you make to this new drawing file do not affect the original drawing file.

---

### List of Prompts

The following prompts are displayed.

Export options [[Format/Bind/bind Type/Maintain/Prefix/Suffix/?](#)] <Enter for filename>: *Enter an option or press Enter to specify a file name*

#### **Enter for Filename**

Creates a new drawing file with the specified name.

---

**NOTE** You can use the Prefix option to create a unique file name for this drawing and to prevent overwriting the existing drawing file.

---

#### **Format**

Determines the drawing file format for the resulting drawing file.

#### **Bind**

Determines how xrefs are treated when creating the new drawing.

**Yes** Binds all xrefs to the drawing. Layers and other xref-dependent named objects are merged into the new drawing.

**No** Maintains the xrefs as links to other drawings.

#### **Bind Type**

Determines how xref-dependent objects are treated when the Bind option is turned on.

**Bind** Maintains the names of layers and other xref-dependent objects when binding xrefs.

**Insert** Merges the names of xref-dependent objects into the new drawing without including the original file name.

**Maintain**

Determines how blocks within custom AEC objects are treated.

**Yes** Explodes all block instances within custom AEC objects into basic AutoCAD LT objects. The resulting basic objects revert to their original properties rather than the properties of the block definitions.

**No** Does not explode any block instances within custom AEC objects. The properties of the block instances are determined in the usual way, depending on how the objects in the blocks were created and the property settings of the layers on which the blocks are inserted.

**Prefix**

Specifies the prefix to be added to the current drawing file name.

**Suffix**

Specifies the suffix to be added to the current drawing file name.

**? List Settings**

Lists the current settings for the command.

## EXTEND

### Quick Reference

See also:


- Trim or Extend Objects


Extends objects to meet the edges of other objects.

### Access Methods



Button

 **Ribbon:** Home tab ► Modify panel ► Extend

 **Menu:** Modify ► Extend

 **Toolbar:** Modify

## Summary

To extend objects, first select the boundaries. Then press Enter and select the objects that you want to extend. To use all objects as boundaries, press Enter at the first Select Objects prompt.



## List of Prompts

The following prompts are displayed.

Current settings: Projection = *current*, Edge = *current*

Select boundary edges...

Select objects or <select all>: *Select one or more objects and press Enter, or press*

*Enter to select all displayed objects*

Select *object to extend* or *shift-select to trim* or

*[Fence/Crossing/Project/Edge/Undo]*: *Select objects to extend, or hold down SHIFT and select an object to trim, or enter an option*

### Boundary Object Selection

Uses the selected objects to define the boundary edges to which you want to extend an object.

### Object to Extend

Specifies the objects to extend. Press Enter to end the command.

### Shift-Select to Trim

Trims the selected objects to the nearest boundary rather than extending them. This is an easy method to switch between trimming and extending.

### Fence

Selects all objects that cross the selection fence. The selection fence is a series of temporary line segments that you specify with two or more fence points. The selection fence does not form a closed loop.

### Crossing

Selects objects within and crossing a rectangular area defined by two points.

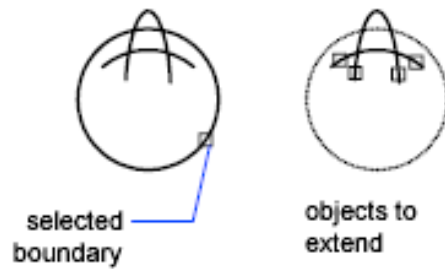
---

**NOTE** Some crossing selections of objects to be extended are ambiguous. EXTEND resolves the selection by following along the rectangular crossing window in a clockwise direction from the first point to the first object encountered.

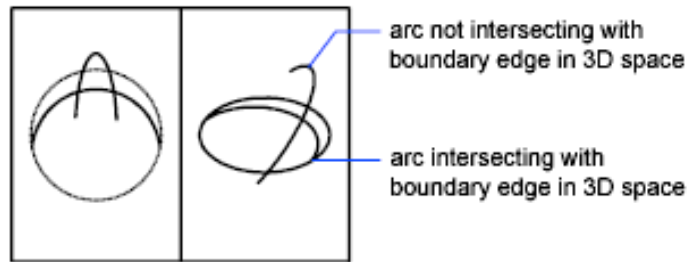
---

### Project

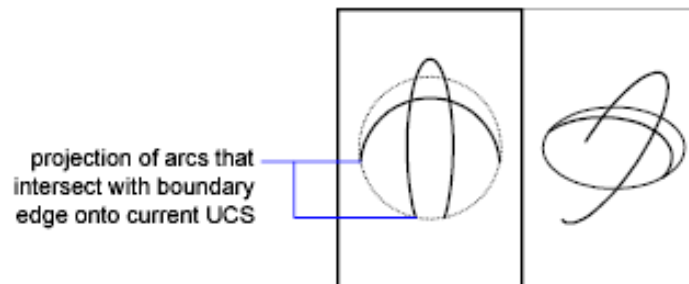
Specifies the projection method used when extending objects.



**None** Specifies no projection. Only objects that intersect with the boundary edge in 3D space are extended.

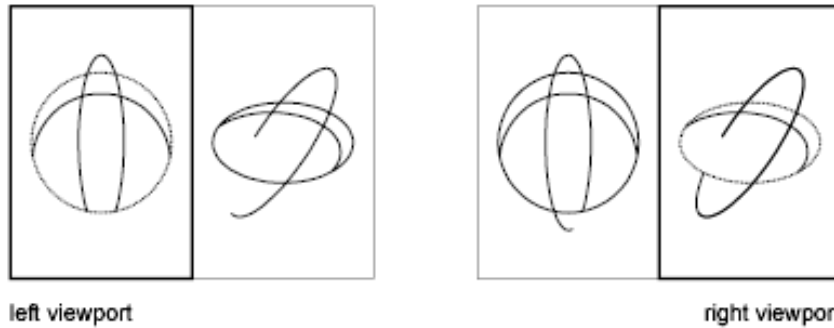


**UCS** Specifies projection onto the *XY* plane of the current user coordinate system (UCS). Objects that do not intersect with the boundary objects in 3D space are extended.



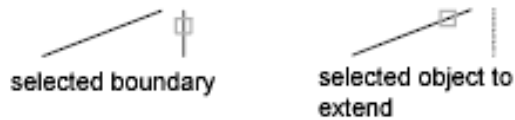
**View** Specifies projection along the current view direction.



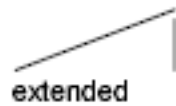


### Edge

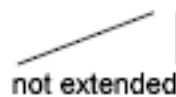
Extends the object to another object's implied edge, or only to an object that actually intersects it in 3D space.



**Extend** Extends the boundary object along its natural path to intersect another object or its implied edge in 3D space.



**No Extend** Specifies that the object is to extend only to a boundary object that actually intersects it in 3D space.



### Undo

Reverses the most recent changes made by EXTEND.

# EXTERNALREFERENCES

## Quick Reference

See also:


- Attach and Detach Referenced Drawings

Opens the External References palette.

## Access Methods



Button

- ☒ **Ribbon:** Insert tab ► Reference panel ►  ► External References
- ☒ **Menu:** Insert ► External References
- ☒ **Toolbar:** Reference

## Summary

The EXTERNALREFERENCES command opens the [External References palette](#) if the palette is inactive. If the External References palette is active but hidden, executing EXTERNALREFERENCES will open the palette. If you click anywhere outside of the External References palette, the palette returns to its auto-hidden state.

---

**NOTE** The FILEDIA system variable is ignored when attaching files from the External References palette.

---

## External References Palette

### Quick Reference

See also:

- Attach and Detach Referenced Drawings

Manage external references attached to the current drawing.

### Summary

The External References palette organizes, displays, and manages *referenced files*, such as DWG files (xrefs), DWF, DWFx, PDF, or DGN underlays, and raster images.

Only DWG, DWF, DWFx, PDF, and raster image files can be opened directly from the External References palette.

The External References palette contains several [buttons](#), and is split into two panes. The upper pane, called the [File References Pane](#), can display file references in a list or in a tree structure. [Shortcut menus and function keys provide options for working with the files](#). The lower pane, called the [Details / Preview Pane](#), can display properties for the selected file references or it can display a thumbnail preview of the selected file reference.

---

**NOTE** When using the External References palette, it is recommended that you turn on the Auto-hide feature or anchor the palette. The palette will then hide automatically when you move the cursor away from the palette.

---

## External References Palette Buttons

### Quick Reference

See also:

- [Attach and Detach Referenced Drawings](#)

Use the buttons at the top of the External References palette to choose the types of files to attach to the drawing and to refresh the status of file references that you already have attached.

### List of Options

The following options are displayed.

#### **Attach (file type) Button**

The Attach button displays a list of file types that you can attach. The following options are displayed:

- [Attach DWG](#). Starts the XATTACH command.

- Attach Image. Starts the IMAGEATTACH command.
- Attach DWF. Starts the DWFATTACH command.
- Attach DGN. Starts the [DGNATTACH](#) command
- Attach PDF. Starts the [PDFATTACH](#) command

### Refresh/Reload All References Button

The following options are available:

**Refresh** Synchronizes the status data of referenced drawing files with the data in memory.

**Reload All References** Updates all file references to ensure that the most current version is used. Updating also occurs when you first open a drawing that contains file references.

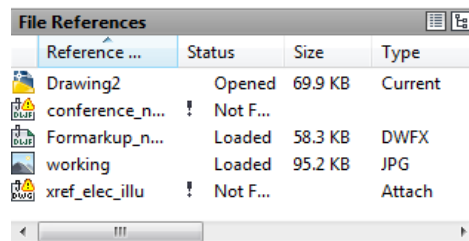
## File References List View / Tree View Pane

### Quick Reference

See also:

- Attach and Detach Referenced Drawings

The upper File References pane displays a list of all file references in the current drawing. You can display these file references in a list or in a tree structure.



Reference ...	Status	Size	Type
Drawing2	Opened	69.9 KB	Current
conference_n...	! Not F...		
Formmarkup_n...	Loaded	58.3 KB	DWFX
working	Loaded	95.2 KB	JPG
xref_elec_illu	! Not F...		Attach

### List of Options

The following options are displayed.

### **List View**

The listed information includes the reference name, status, file size, file type, creation date and saved path.

**Reference Name** The reference name column always displays the current drawing as the first entry, followed by additional attached files that are listed in the order they were attached.

**Status** The status of the referenced file:

- *Loaded* - The referenced file is currently attached to the drawing.
- *Unloaded* - The referenced file is marked to be unloaded from the drawing.
- *Not Found* - The referenced file is no longer exists in the valid search paths.
- *Unresolved* - The referenced file cannot be read.
- *Orphaned* - The referenced file is attached to another file that has an *Unresolved* status.
- *Unreferenced* - The referenced file is removed by either the delete or erase tool instead of detach.

**Size** The size of the attached file reference.

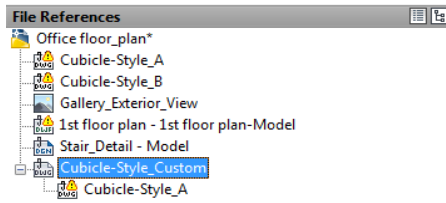
**Type** The file type of the referenced file. Drawing (Xref) files display as attachments or overlays, raster images show their file format; and DWF, DWFx, DGN, and PDF underlays are listed as their respective file types.

**Date** The date when the referenced file was created or last saved.

**Saved Path** Displays the path that is saved with the drawing when the referenced file is attached.

### **Tree View**

The top level of the tree view always shows the current drawing. Referenced files appear at the next level. Referenced files that contain their own nested file references can be opened to show deeper levels. When making selections in tree view, only one file reference can be selected at a time.



## File References Pane Shortcut Menus and Function Keys

### Quick Reference

#### See also:

- Attach and Detach Referenced Drawings

When working in the File References pane, there are several shortcut menus that can be displayed when you right-click on file references or empty areas of the pane. The following tables show the shortcut menu items that you are presented under certain conditions.

#### No Reference Selected

When no file references are selected, the shortcut menu presents the following functions:

Menu Item	Description
Reload All References	Reloads all referenced files. (Unavailable if no file references are attached)
Select All	Selects all file references, excluding the current drawing. This item is not displayed in tree view.
Attach DWG	Starts the XATTACH command.
Attach Image	Starts the IMAGEATTACH command.
Attach DWF	Starts the DWFATTACH command.

Menu Item	Description
Attach DGN	Starts the DGNATTACH command.
Attach PDF	Starts the PDFATTACH command.
Bind DGN	Starts the -DGNBIND on page 287 command.
Tooltip Style	Modifies the tooltip that appears when you hover over an item in the list view of the palette.
Preview/Details Pane	Turns the display of the Preview/Details pane off and on.
Close	Closes the External References palette.

### Reference Selected

When you select a file reference, the shortcut menu presents the following functions:

Menu Item	Description	Reference Status
Open	Opens the selected reference file in the original application in which it was created (specified by the operating system).	Available only for file references with a Loaded status - Unavailable when Unloaded, Not Found or Unresolved.
Attach	Allows you to change settings such as scale, insertion point, and path type. You can also attach a different page from the attached PDF file, a different sheet from an attached DWF file, or a different model name from an attached DGN file.	Always available - status has no affect on this function.
Unload	Unloads the selected file references.	Always available - status has no affect on this function.
Reload	Reloads the selected file references.	Always available - status has no affect on this function.
Detach	Detaches the selected file references.	Available for all file references except data link.

Menu Item	Description	Reference Status
Bind	Displays the <a href="#">Bind Xrefs dialog box</a> . Only available for referenced DWG files. This is not available for images and underlays.	Available only for file references with a Loaded status - Unavailable when Unloaded, Not Found or Unresolved.

## Details / Preview Pane

### Quick Reference

#### See also:

- Attach and Detach Referenced Drawings

The lower data pane of the External References palette can be set to display file reference properties or a preview image of the selected file reference.



### List of Options

The following options are displayed.

### Details Pane

When displaying the Details mode, properties for the selected file reference are reported. Each file reference has a core set of properties and some file references, like referenced images, display properties specific to the file type. The core set of details include the reference name, status, file size, file type, creation date, saved path and found at path. Some of the properties can be edited.

**Reference Name** Displays the file reference name. This property can be edited only if single file references are selected. The reference name shows *\*Varies\** if multiple file references are selected. This property is editable for all the file references.



**Status** Shows whether the file reference is loaded, unloaded or not found. This property cannot be edited.

**Size** Shows the file size of the selected file reference. The size is not displayed for file references that are unloaded or not found. This property cannot be edited.

**Type** Indicates whether the file reference is an attachment or overlay, the type of image file, a DWF/DWFX underlay, DGN underlay, or PDF underlay. This property cannot be edited.

However, if the file reference is a DWG xref, the Attach or Overlay property can be toggled.

**Date** Displays the last date the file reference was modified. This date is not displayed if the file reference is unloaded or not found. This property cannot be edited.

**Saved Path** Shows the saved path of the selected file reference (this is not necessarily where the file reference is found). This property cannot be edited.

**Found At** Displays the full path of the currently selected file reference. This is where the referenced file is actually found and is not necessarily the same as the saved path. Clicking the [...] button displays the Select Image File dialog box where you can select a different path or file name. You can also type directly into the path field. These changes are stored to the Saved Path property if the new path is valid.

**File Version** File Version property defined by the Vault client. This property is only displayed when you are logged into the Vault.

### **Specific Image Properties**

If you select a referenced image, additional properties are displayed. None of the added image properties can be edited.

**Color System** Displays the color system.

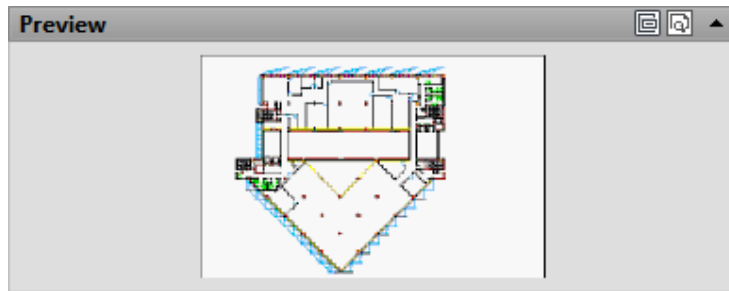
**Color Depth** The amount of information that is stored in each pixel of a raster image. Higher color depth values produce smoother degrees of shading.

**Pixel Width** The width of the raster image measured in pixels.

**Pixel Height** The height of the raster image measured in pixels.

**Resolution** The width and height resolution in dots per inch (dpi).

**Default Size (in AutoCAD units)** The width and height of the raster image measured in AutoCAD units.



### Preview Pane

The preview image is displayed only when a single file reference is selected from the File References pane. There are no other controls for this data pane. When no reference file is selected, the preview pane displays a solid grey field. If there is no preview available, the text "Preview not available" is displayed in the center of the pane.

### Messaging Field

Below the Details / Preview pane is a messaging field that supplies information about certain selected file references. When you select one or more nested references, information is displayed regarding the file references. Messages also appear if you decide to change the name of a file reference.

## EXTERNALREFERENCESCLOSE

### Quick Reference

#### See also:

- Attach and Detach Referenced Drawings

Closes the External References palette.

### Summary

The EXTERNALREFERENCESCLOSE command closes the [External References palette](#) when currently displayed, either in an auto-hidden state or open state.

# F Commands

# 7

## FIELD

### Quick Reference

See also:


- Use Fields in Text

Creates a multiline text object with a field that can be updated automatically as the field value changes.

### Access Methods



Button

 **Ribbon:** Insert tab ► Data panel ► Field

 **Menu:** Insert ► Field

**Shortcut menu:** Right-click while editing text in an in-place text editor, and click Insert Field.

### Summary

Fields can be inserted in any kind of text except tolerances. The FIELDEVAL system variable and the UPDATEFIELD command determine how fields are updated.

The [Field dialog box](#) is displayed.

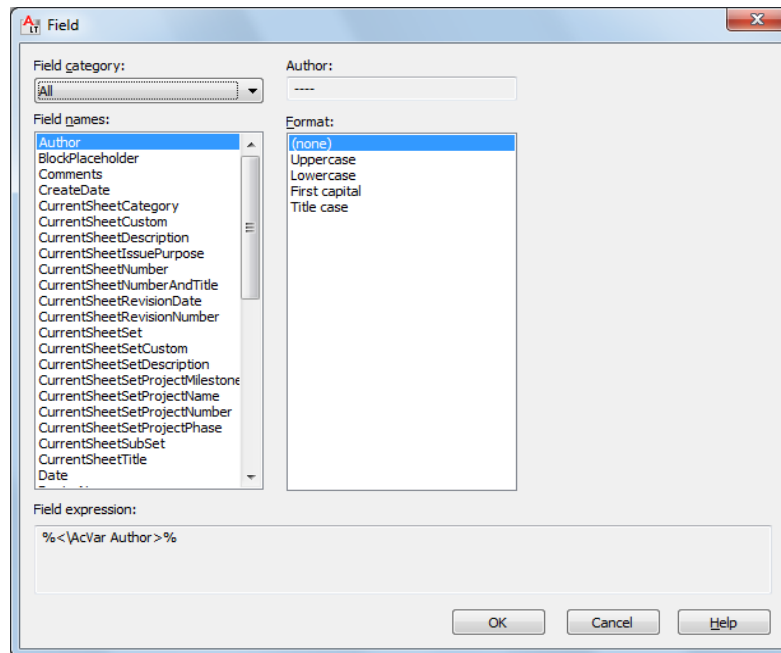
## Field Dialog Box

### Quick Reference

See also:

- Use Fields in Text

Inserts a field in the drawing.



### Summary

The options available change based on the selected field category and field name.

### List of Options

The following options are displayed.

**Field Category** Sets the types of fields to be listed under Field Names (for example, Date & Time, Document, and Objects).

**Field Names** Lists the fields that are available in a category. Select a field name to display the options available for that field.

**Field Value** Displays the current value of the field, or displays an empty string (---) if the field value is invalid.

The label for this item changes with the field name. For example, when Filename is selected in the Field Names list, the label is Filename and the value is the name of the current drawing file. The label is Property for object fields. Exception: when a date field is selected, the selected date format is displayed; for example, M/d/yyyy.

**Format List** Lists options for display of the value of the field. For example, date fields can display the name of the day or not, and text strings can be uppercase, lowercase, first capital, or title case. The value displayed in the Fields dialog box reflects the format that you select.

**Field Expression** Displays the expression that underlies the field. The field expression cannot be edited, but you can learn how fields are constructed by reading this area.

### **Options for Sheet Set and Sheet View Fields**

**Sheet Set** Specifies the name of the sheet set.

**Sheet Navigation Tree** Displays a tree view of sheets or sheet views from the Sheet Set Manager, from which you can select an item for the field.

**Property** Displays the properties available as fields for the item selected in the tree.

**Associate Hyperlink** Adds a hyperlink to the field when it is created. You can use Ctrl + click to jump to the sheet or view. This option is not available for the ViewportScale field.

---

**NOTE** If you recreate the field, because the sheet is already in a sheet set, you should use a sheet set property field, not a placeholder field.

---

Sheet set fields (fields that were selected from the sheet set category) behave differently than other types of fields. By default, other types of fields update automatically when you save the drawing or when you use REGEN. In contrast, sheet set fields store the last values that were used, and they display these stored values if the information referenced by the sheet set field is not accessible. To update the value in a sheet set field, use [UPDATEFIELD](#) command.

---

**NOTE** If the information referenced by sheet set field is not accessible, the value for the field will be displayed as "####."

---

### **Options for BlockPlaceholder Fields**

BlockPlaceholder fields are only available for insertion in the Attribute Definition dialog box when the [Block Editor](#) is open.

**Block Name** Displays the name of the current block definition.

**Temporary Value** Displays the value for the placeholder field in the selected format.

**Block Reference Properties** Displays a list of block reference properties for the current block definition.

### **Options for SheetSetPlaceholder Fields**

**Placeholder Type** Displays a list of available placeholder fields.

**Temporary Value** Displays the value for the placeholder field in the selected format.

For example, with SheetSet Placeholder selected in the Field Names list, SheetTitle selected in the Placeholder Type list, and Uppercase selected in the Format list, Temporary Value displays SHEETTITLE. When the drawing is placed in a sheet set, this field displays the title of the sheet.

### **Options for Fields in the Objects Field Category**

**Named Object Type/Object Type** When NamedObject is selected in Field Names, lists the types of named objects in the drawing. When Object is selected, displays the type of object selected. Use the Select Object button to temporarily close the dialog box and select an object in the drawing.

**Property/Name** When NamedObject is selected in Field Names, lists the names of all the objects in the drawing of the selected type. When Object is selected in Field Names, lists the properties of the selected object that are available as fields. When a block with attributes is selected, the attribute names are displayed in the list of properties.

### **Formula**

When Formula is selected in Field Names, provides a place for creating a formula to insert in text or in a table cell.

**Average/Sum/Count** When Formula is selected in Field Names, closes the Field dialog box temporarily while you specify table cells. The result is appended to the formula.

**Cell** When Formula is selected in Field Names, closes the Field dialog box temporarily while you specify a table cell. The cell address is appended to the formula.

**Precision** Specifies precision for fields based on the selected format. Select Current Precision to use the current setting of the [LUPREC](#) on page 1574 system variable.

**Additional Format** Displays the [Additional Format dialog box](#).

**Evaluate** Updates the value in Preview when you have manually changed the text in Formula.

**Display Value for Block Reference** Specifies that the object property fields in a block reference evaluate the properties of nested objects relative to the block reference's size and orientation within the drawing, not within the block definition.

## FILL

### Quick Reference

See also:

- [Control the Display of Polylines, Hatches, Gradient Fills, Lineweights, and Text](#)

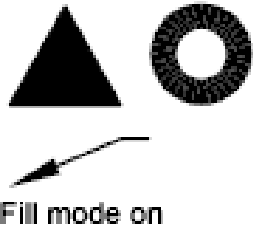
Controls the filling of objects such as hatches, 2D solids, and wide polylines.

### List of Prompts

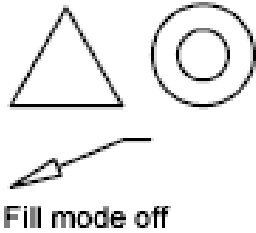
The following prompts are displayed.

Enter mode [\[ON/OFF\]](#) *<current>*: Enter **on** or **off**, or press Enter

**On** Turns on Fill mode. For the filling of a 3D object to be visible, its extrusion direction must be parallel to the current viewing direction, and hidden lines must not be suppressed.



**Off** Turns off Fill mode. Only the outlines of objects are displayed and plotted. Changing Fill mode affects existing objects after the drawing is regenerated. The display of lineweights is not affected by the Fill mode setting.



## FILLET

### Quick Reference

See also:


- Create Fillets

Rounds and fillets the edges of objects.

### Access Methods



Button

 **Ribbon:** Home tab ► Modify panel ► Fillet.

 **Menu:** Modify ► Fillet



 **Toolbar:** Modify

### Summary

In the example, an arc is created that is tangent to both of the selected lines. The lines are trimmed to the ends of the arc. To create a sharp corner instead, enter a radius of zero.



You can fillet arcs, circles, ellipses, elliptical arcs, lines, polylines, rays, splines, and xlines.

### List of Prompts

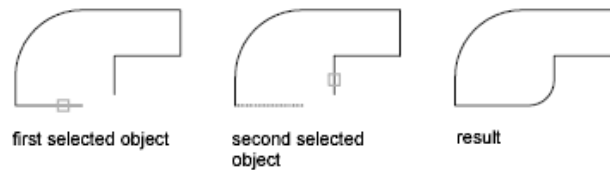
The following prompts are displayed.

Current settings: Mode = *current*, Radius = *current*

Select **first object** or [Undo/Polyline/Radius/Trim/Multiple]: *Use an object selection method or enter an option*

#### **First Object**

Selects the first of two objects required to define a 2D fillet.

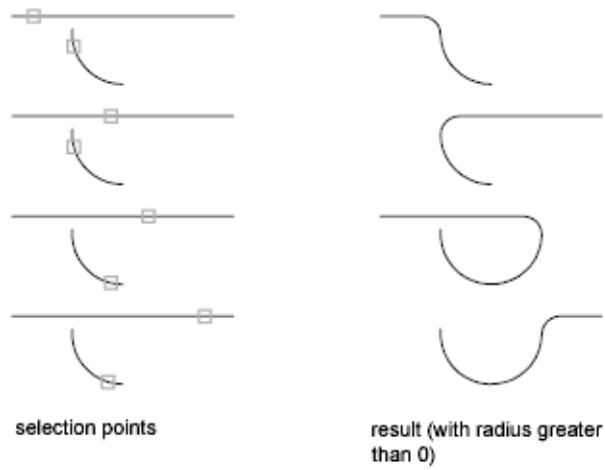


Select second object or shift-select to apply corner: *Use an object selection method or hold down Shift and select an object to create a sharp corner*

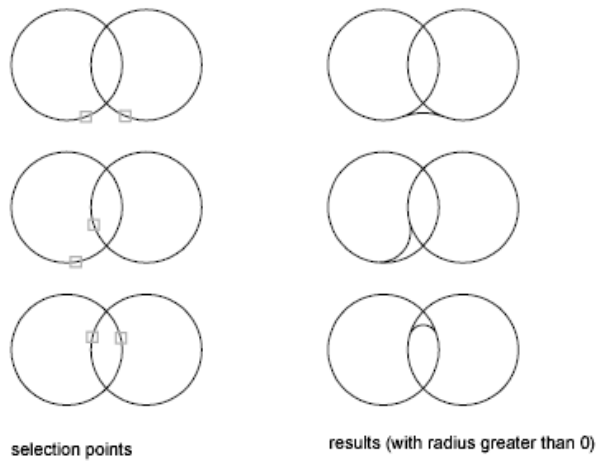
If you select lines, arcs, or polylines, their lengths adjust to accommodate the fillet arc. You can hold down Shift while selecting the objects to override the current fillet radius with a value of 0.

If the selected objects are straight line segments of a 2D polyline, they can be adjacent or separated by one other segment. If they are separated by another polyline segment, FILLET deletes the segment that separates them and replaces it with the fillet.

More than one fillet can exist between arcs and circles. Select the objects close to where you want the endpoints of the fillet.



FILLET does not trim circles; the fillet arc meets the circle smoothly.



### Loop

Specifies a loop of edges on the face of a solid. For any edge, there are two possible loops. After selecting a loop edge, you are prompted to *Accept* the current selection, or choose the *Next* loop.

### Undo

Reverses the previous action in the command.

### Polyline

Inserts fillet arcs at each vertex of a 2D polyline where two line segments meet.

Select 2D polyline:

If one arc segment separates two line segments that converge as they approach the arc segment, FILLET removes the arc segment and replaces it with a fillet arc.



### **Radius**

Defines the radius of the fillet arc.

The value you enter becomes the current radius for subsequent FILLET commands. Changing this value does not affect existing fillet arcs.

### **Trim**

Controls whether FILLET trims the selected edges to the fillet arc endpoints.

### **Multiple**

Rounds the edges of more than one set of objects.

## **FILTER**


### **Quick Reference**

See also:

- Select Objects by Properties

Creates a list of requirements that an object must meet to be included in a selection set.

### **Access Methods**

 **Command entry:** 'filter for transparent use

### **Summary**

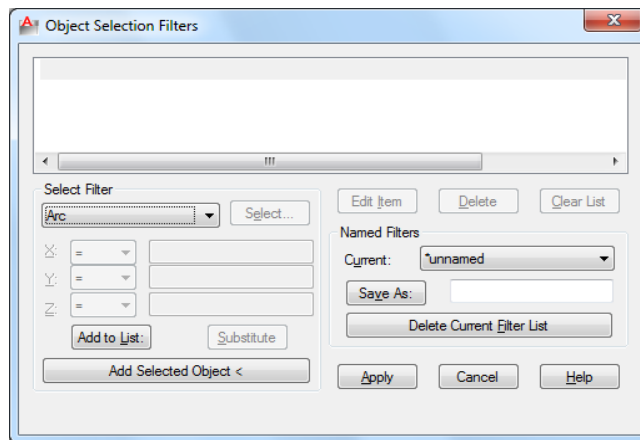
The [Object Selection Filters dialog box](#) is displayed.

## Object Selection Filters Dialog Box

### Quick Reference

See also:

- Select Objects by Properties



Selects, edits, and names filters for object selection.

### List of Options

The following options are displayed.

#### Filter Property List

Displays a list of the filter properties that compose the current filter. The current filter is the filter that you select in Current in the Named Filters area.

#### Select Filter

Adds filter properties to the current filter.

**Object Types and Logical Operators** Lists object types that you can filter and logical operators (AND, OR, XOR, and NOT) for grouping the filter expressions.

If you use logical operators, make sure that you pair and balance them correctly in the filter list. The number of operands you can enclose depends on the operation.

<b>Logical operators</b>		
<b>Starting operator</b>	<b>Encloses</b>	<b>Ending operator</b>
Begin AND	One or more operands	End AND
Begin OR	One or more operands	End OR
Begin XOR	Two operands	End XOR
Begin NOT	One operand	End NOT

For example, the following filter selects all circles except the ones with a radius greater than or equal to 1.0:

```
Object =Circle
**Begin NOT
Circle Radius >= 1.00
**End NOT
```

**X, Y, Z Parameters** Define additional filter parameters depending on the object. For example, if you select Line Start, you can enter the X, Y, and Z coordinate values that you want to filter.

In the filter parameters, you can use relative operators such as < (less than) or > (greater than). For example, the following filter selects all circles with center points greater than or equal to 1,1,0 and radii greater than or equal to 1:

```
Object = Circle
Circle Center X >= 1.0000 Y >= 1.0000 Z >= 0.0000
Circle Radius >= 1.0000
```

**Select** Displays a dialog box listing all items of the specified type in the drawing. Select the items to filter. For example, if you select the object type Color, Select displays a list of colors to choose for the filter.

**Add to List** Adds the current Select Filter property to the filter list. Filter properties that you add to the unnamed filter remain available during the current work session unless you manually delete them.

**Substitute** Replaces the filter property selected in the filter property list with the one displayed in Select Filter.

**Add Selected Object** Adds one selected object in the drawing to the filter list.

**Edit Item**

Moves the selected filter property into the Select Filter area for editing. The edited filter replaces the selected filter property.

**Delete**

Deletes a selected filter property from the current filter.

**Clear List**

Deletes all the listed properties from the current filter.

**Named Filters**

Displays, saves, and deletes filters.

**Current** Displays saved filters. Select a filter list to make it current. The named filter and its list of properties are loaded from the default file, *filter.nfl*.

**Save As** Saves a filter and its list of properties. The filter is saved in the *filter.nfl* file. Names can contain up to 18 characters.

**Delete Current Filter List** Deletes a filter and all its properties from the default filter file.

**Apply**

Exits the dialog box and displays the Select Objects prompt, where you create a selection set. The current filter is used on the objects you select.

## FIND

### Quick Reference

See also:

- Find and Replace Text

Finds the text that you specify, and can optionally replace it with other text.

### Access Methods



Button

**Ribbon:** Annotate tab ► Text panel ► Find Text

**Menu:** Edit ► Find

**Toolbar:** Text Formatting

**Shortcut menu:** With no commands active, right-click in the drawing area and click Find.

### Summary

The [Find and Replace dialog box](#) is displayed.

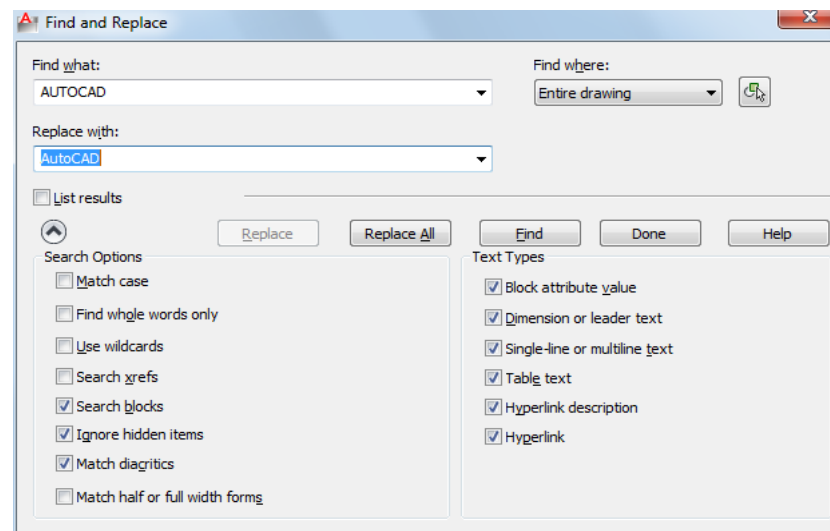
## Find and Replace Dialog Box - FIND

### Quick Reference

See also:

- Find and Replace Text

Specifies the text you want to find, replace, or select and controls the scope and results of the search.



### List of Options

The following options are displayed.

**Find What**

Specifies the text string you want to find. Enter a text string, including any wild-card characters, or choose one of the six most recently used strings from the list.

For more information on wild-card searches, see Find and Replace Text in the User's Guide.

**Replace With**

Specifies the text string you want to use to replace the found text. Enter a string, or choose one of the most recently used strings from the list.

**Find Where**

Specifies whether to search the entire drawing, the current layout, or the currently-selected object. If an object is already selected, then Selected Objects is the default value. If no object is selected, then Entire Drawing is the default value. You can use the Select Objects button to temporarily close the dialog box and create or modify the selection set.

**Select Objects Button**

Closes the dialog box temporarily so that you can select objects in your drawing. Press Enter to return to the dialog box.

When you select objects, Find Where displays Selected Objects by default.

**List Results**

Lists results in a table displaying the location (model or paper space), object type, and text. The resulting table can be sorted by column.

**Advanced Find Options**

Displays options to define the type of objects and words that you want to find.

**Replace**

Replaces found text with the text that you enter in Replace With.

**Replace All**

Finds all instances of the text that you enter in Find What and replaces it with the text in Replace With.

The Find Where setting controls whether to find and replace text in the entire drawing or text in the currently selected object or objects.

**Zoom to Highlighted Result**



Zooms to the selected object in the list. You can also zoom to a result when you double-click the selected object.

#### **Create Selection Set (Highlighted)**

Creates a selection set from the objects that contain the text highlighted on the list of results. The selected objects must all be located either in model space or in a single layout.

#### **Create Selection Set (All)**

Creates a selection set from all the objects that contain the text on the list of results. The objects must all be located either in model space or in a single layout.

#### **Find**

Finds the text that you enter in Find What. If you have not entered text in Find What, this option is not available. Found text is zoomed to or displayed in the List Results table. Once you find the first instance of the text, the Find option becomes Find Next, which you can use to find the next instance.

#### **Search Options**

Defines the type of objects and words to be found.

##### **Match Case**

Includes the case of the text in Find What as part of the search criteria.

##### **Find Whole Words Only**

Finds only whole words that match the text in Find What. For example, if you select Find Whole Words Only and search for "Front Door," FIND does not locate the text string "Front Doormat."

##### **Use Wildcards**

Allows the use of wild-card characters in searches.

For more information on wild-card searches, see Find and Replace Text in the User's Guide.

##### **Search XRefs**

Includes text in externally referenced files in search results.

##### **Search Blocks**

Includes text in blocks in search results.

##### **Ignore Hidden Items**

Ignores hidden items in search results. Hidden items include text on layers that are frozen or turned off, text in block attributes created in invisible mode, and text in visibility states within dynamic blocks.

**Match Diacritics**

Matches diacritical marks, or accents, in search results.

**Match Half or Full Width Forms**

Matches half- and full-width characters in search results.

**Text Types**

Specifies the type of text objects you want to include in the search. By default, all options are selected.

**Block Attribute Value**

Includes block attribute text values in search results.

**Dimension or Leader Text**

Includes dimension and leader object text in search results.

**Single-Line or Multiline Text**

Includes text objects such as single-line and multiline text in search results.

**Table Text**

Includes text found in AutoCAD LT table cells in search results.

**Hyperlink Description**

Includes text found in hyperlink descriptions in search results.

**Hyperlink**

Includes hyperlink URLs in search results.

# G Commands

# 8

## GEOGRAPHICLOCATION

### Quick Reference

See also:


- Specify the Geographic Location of a Drawing

Specifies the geographic location information for a drawing file.

### Access Methods



Button

 **Menu:** Tools ► Geographic Location

### Summary

[Define Geographic Location Dialog Box](#) on page 530      Appears only if a geographic location does not exist, and the drawing does not contain a foreign coordinate system.

[Location Already Exists Dialog Box](#) on page 530      Appears if a geographic location exists, and the drawing does not contain a foreign coordinate system.

[Coordinate System Already Defined Dialog Box](#) on page 531    Appears if an alternate coordinate system is found.

## Define Geographic Location Dialog Box

### Quick Reference

See also:

- [Specify the Geographic Location of a Drawing](#)

Defines a geographic location.

### List of Options

The following options are displayed.

**Import a .kml or a .kmz File** Displays the Import a .kml or .kmz file dialog box.

**Import the Current Location from Google Earth** Retrieves location information from a specific location in Google Earth.

---

**NOTE** Google Earth should be installed and open with the location selected.

---

**Enter the Location Values** Displays the [Geographic Location Dialog Box](#), where you can enter the location information manually.

See also:

- [Geographic Location Dialog Box](#)

## Location Already Exists Dialog Box

### Quick Reference

See also:

- [Specify the Geographic Location of a Drawing](#)

Enables you to edit, redefine, or remove an existing location.

#### **List of Options**

The following options are displayed.

**Edit Current Geographic Location** Displays the [Geographic Location Dialog Box](#) on page 532, where you can edit the existing location information.

**Redefine Geographic Location** Displays the [Define Geographic Location Dialog Box](#) on page 530, where you can redefine the geographic location.

**Remove Geographic Location** Displays a confirmation dialog box before removing the geographic location.

## **Coordinate System Already Defined Dialog Box**

### **Quick Reference**

**See also:**

- [Specify the Geographic Location of a Drawing](#)

Provides an option to convert the alternate coordinate system to the LL84 coordinate system used by AutoCAD.

#### **List of Options**

The following options are displayed.

**Leave existing coordinate system** Does not convert the alternate coordinate system to the LL84 coordinate system.

**Convert to AutoCAD's coordinate system** Converts the alternate coordinate system to AutoCAD's LL84 coordinate system.

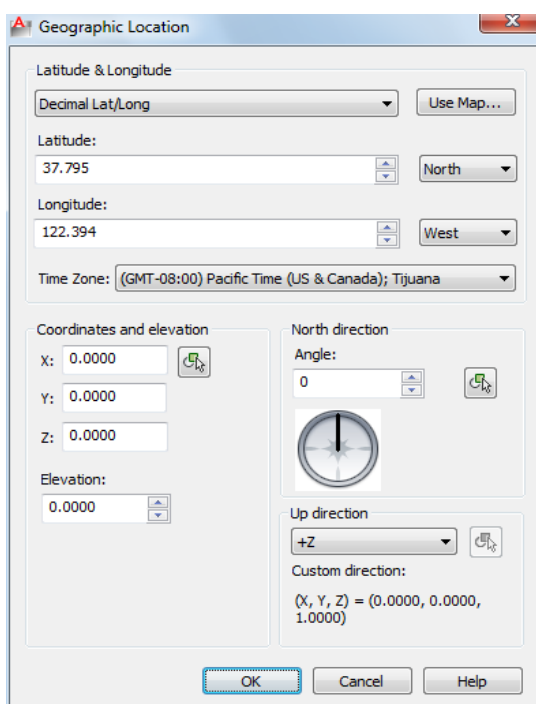
## Geographic Location Dialog Box

### Quick Reference

See also:

- Specify the Geographic Location of a Drawing

Sets the latitude, longitude, and north direction of a geographic location in a drawing.



### List of Options

The following options are displayed.

#### **Latitude and Longitude**

Displays or sets latitude, longitude, and direction in decimal values.

#### **Decimal Lat / Long**

Sets the format of the latitude and longitude representation in the drawing.

**Use Map** Displays the [Location Picker Dialog Box](#) on page 535.

Specifies a location by using the pointing device.

The latitude and longitude values are updated when you select a location.

If you enter latitude and longitude values, then the map displays the updated location.

#### **Latitude**

Sets the latitude of the current location. You can enter a value or select a location on the map.

The valid range is -90 and +90 as a floating point number.

([LATITUDE](#) on page 1562 system variable).

#### **North/South**

Controls whether a positive value is north of the equator or a positive value is south of the equator.

#### **Longitude**

Displays the longitude of the current location. You can enter a value or select a location on the map.

The valid range is -180 to +180 as a floating point number.

([LONGITUDE](#) on page 1573 system variable).

#### **East/West**

Controls whether a positive value is west of the Prime Meridian or a positive value is east of the Prime Meridian.

#### **Time Zone**

Specifies the time zone. Time zones are estimated by reference to the location.

You can set the time zone directly.

([TIMEZONE](#) on page 1684 (system variable)).

#### **Coordinates and Elevation**

Sets the values for the World Coordinate System (WCS), X,Y,Z, and the elevation.

#### **X**

Sets the X component of the world coordinate system for the geographic location.

## **Y**

Sets the Y component of the world coordinate system for the geographic location.

## **Z**

Sets the Z component of the world coordinate system for the geographic location.

## **Pick Point**

Specifies the X, Y, and Z values of the Geographic Location marker based on the World Coordinate System (WCS).

## **Elevation**

Sets the relative height along the specified up-direction defined for a geographic location.

## **North Direction**

By default, north is the positive Y direction in the World Coordinate System (WCS).

## **Angle**

Specifies the angle from 0 for the north direction

## **Pick Point**

Specifies the north angle based on the direction vector specified. A rubber band line appears denoting the north direction.

## **Interactive North Direction Preview**

Specifies the north angle. The range is 0-359.9.

## **Up Direction**

By default, the up direction is the positive Z-axis (0,0,+1). The Up direction and the north direction are always constrained such that they are perpendicular to each other.

## **Up Direction**

Sets the up direction.

## **Pick Point**

Specifies the up direction (from the current WCS coordinate) based on the direction vector specified.

Enabled only if the up direction is set to Custom.



## Location Picker Dialog Box

### Quick Reference

#### See also:

- [Specify the Geographic Location of a Drawing](#)

Sets the latitude and longitude of the selected location.

### List of Options

The following options are displayed.

#### Map

Specifies a location on the map.

#### Region

Specifies a region of the world.

#### Nearest City

Specifies a city in the selected region.

#### Time Zone

Time zones are estimated by reference to the location. You can set the time zone directly ([TIMEZONE](#) on page 1684 system variable).

#### Nearest Big City

Uses the latitude and longitude values for the nearest big city that you select.

#### See also:

- [Geographic Location Dialog Box](#) on page 532

## GETENV

### Quick Reference

**See also:**

- Overview of Hatch Patterns and Fills

Shows values of specified system registry variables.

### Summary

The values of system registry variables can be displayed with GETENV. Use GETENV to view the registry settings of the MaxArray and MaxHatch registry variables.

GETENV is case sensitive, so MaxArray and MaxHatch must be entered exactly as shown. For example, to display the current value for MaxHatch, enter

### List of Prompts

The following prompts are displayed.

Enter variable name: *Enter the variable name*

Command: **getenv**

Enter variable name: **MaxHatch**

**10000**

## GETLINK

### Quick Reference

**See also:**

- Use AutoCAD WS for Drawing File Collaboration

Generates a URL to the AutoCAD WS online copy of the current drawing.

## Access Methods



### Button

**Ribbon:** Online tab ► Share panel ► Get Link

**Menu:** File ► AutoCAD WS ► Get Link

### Summary

The [Get Link dialog box](#) on page 537 is displayed.

---

**NOTE** You may first be prompted to log in to AutoCAD WS. If you do not have an account, click Create an Account and follow the on-screen instructions.

---

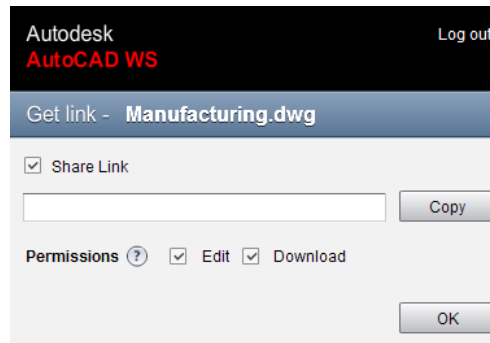
## Get Link Dialog Box

### Quick Reference

#### See also:

- Use AutoCAD WS for Drawing File Collaboration

Generates a URL to the AutoCAD WS online copy of the current drawing.



### Summary

A public URL is provided to the online copy of the current drawing. Clicking the generated link opens the drawing in a new AutoCAD WS Editor in a

browser. You can control whether recipients can edit the drawing online or download a local copy. Use this link to allow recipients without AutoCAD WS accounts to view or edit the drawing online.

### **List of Options**

The following options are displayed.

**Share Link** Generates a link to an online copy of the current drawing. Distribute this link to recipients so they may access the online file.

**Copy** Copies the link to the clipboard.

**Permissions** Defines the access permissions for each recipient.

- **Edit.** Allows recipients to edit any object in the shared drawing. When this option is cleared, recipients can mark up and add to the drawing, but they cannot change existing objects.
- **Download.** Allows recipients to download a copy of the drawing.

## **GOTOURL**

### **Quick Reference**

**See also:**

- Use a Hyperlink to Access a File or a Web Page

Opens the file or web page associated with the hyperlink attached to an object.

### **Summary**

Select an object that has an attached hyperlink. The file or web page (URL) that is associated with the hyperlink opens.

# GRADIENT

## Quick Reference

### See also:


- Choose a Hatch Pattern or Fill


Fills an enclosed area or selected objects with a gradient fill.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Draw panel ► Gradient

 **Menu:** Draw ► Gradient

 **Toolbar:** Draw

### Summary

When the ribbon is active, the [Hatch Creation contextual tab](#) on page 558 is displayed. When the ribbon is off, the [Hatch and Gradient dialog box](#) on page 546 is displayed.

A gradient fill creates a smooth transition between one or two colors.



# GRAPHSCR

## Quick Reference

### See also:

- Navigate and Edit Within the Command Window

Switches from the text window to the drawing area.

### Access Methods

 **Command entry:** 'graphscr for transparent use

### Summary

GRAPHSCR closes the text window. You can also press F2 to open or close the text window. This command is ignored on dual-screen systems.

## GRID

### Quick Reference



#### See also:

- Adjust Grid and Grid Snap

Displays a grid pattern in the current viewport.

### Access Methods

 **Menu:** Tools ► Drafting Settings

 **Toolbar:** Status bar ► Grid 

### List of Prompts

The following prompts are displayed.

Specify [grid spacing\(X\)](#) or [[ON/OFF/Snap/Major/aDaptive/Limits/Follow/Aspect](#)]  
<current>: *Specify a value or enter an option*

**Grid Spacing (X)** Sets the grid to the specified value. Entering **x** after the value sets the grid spacing to the specified value multiplied by the snap interval.

**On** Turns on the grid using the current spacing.

**Off** Turns off the grid.

**Snap** Sets the grid spacing to the snap interval specified by the SNAP command.

**Major** Specifies the frequency of major grid lines compared to minor grid lines. Grid lines rather than grid dots are displayed when SHADEMODE is set to Hidden. (GRIDMAJOR system variable)

**Adaptive** Controls the density of grid lines when zoomed in or out.

- **Adaptive Behavior.** Limits the density of grid lines or dots when zoomed out. This setting is also controlled by the GRIDDISPLAY system variable.
- **Allow Subdivision Below Grid Spacing.** If turned on, generates additional, more closely spaced grid lines or dots when zoomed in. The frequency of these grid lines is determined by the frequency of the major grid lines.

**Limits** Displays the grid beyond the area specified by the LIMITS command.

**Follow** Changes the grid plane to follow the XY plane of the dynamic UCS. This setting is also controlled by the GRIDDISPLAY system variable.

**Aspect** Changes the grid spacing in the X and Y directions, which can have different values.

Entering **x** following either value defines it as a multiple of the snap interval rather than the drawing units.

The Aspect option is not available when the current snap style is Isometric.

## GROUP

### Quick Reference

See also:

- Group Objects

Creates and manages saved sets of objects called groups.

### Access Methods



**Button**

**Ribbon:** Home tab ► Groups panel ► Group

**Menu:** Tools ► Group

**Toolbar:** Group

If you enter **-group** at the Command prompt, options are displayed.

## -GROUP

### Related procedures:

#### ■ Group Objects

Creates and manages saved sets of objects called groups.

### List of Prompts

The following prompts are displayed.

Enter a group option [[?—List Groups](#) on page 542/[Order](#) on page 542/[Add](#) on page 542/[Remove](#) on page 542/[Explode](#) on page 542/[REName](#) on page 542/[Selectable](#) on page 542/[Create](#) on page 543] <Create>: *Enter an option or press Enter*

#### **?—List Groups**

Lists names and descriptions of groups defined in the drawing.

#### **Order**

Changes the numerical order of objects within a group. Reordering is useful when creating tool paths. For example, you can change the cut order for the horizontal and vertical lines of a tool path pattern.

#### **Position Number**

#### **Reverse Order**

#### **Add**

Adds objects to a group.

#### **Remove**

Removes objects from a group.

If you remove all the group's objects, the group remains defined. You can remove the group definition from the drawing by using the Explode option.

#### **Explode**

Deletes a group definition by exploding the group into its component objects.

#### **Rename**

Assigns a new name to an existing group.

#### **Selectable**

Specifies whether a group is selectable. When a group is selectable, selecting one object in the group selects the whole group. Objects on locked or frozen layers are not selected.



### **Create**

Creates a group.

Group names can be up to 31 characters long and can include letters, numbers, and special characters dollar sign (\$), hyphen (-), and underscore (\_) but not spaces. The name is converted to uppercase characters.

## **GROUPEDIT**

### **Quick Reference**

**See also:**

- Group Objects

Adds and removes objects from the selected group, or renames a selected group.

### **Access Methods**



**Button**

 **Ribbon:** Home tab ► Groups panel ► Group Edit

 **Toolbar:** Group

### **Summary**

For existing groups, add or remove objects; or rename a group.

The following prompts are displayed.

*Select group or [Name]:*

In the drawing area, select a group or enter the name of a group. If a selected object is not included in a group, you are prompted again.

### **List of Options**

When a group is selected, the following options are displayed.

Enter an option [[Add objects](#) on page 544/[Remove objects](#) on page 544/[REName](#) on page 544]:

**Add Objects** Select objects to add to the current group.

**Remove Objects** Select grouped objects to remove from the current group.

**Rename** Name or rename the current group.

# H Commands

# 9

## HATCH

### Quick Reference

See also:


- Overview of Hatch Patterns and Fills

Fills an enclosed area or selected objects with a hatch pattern, solid fill, or gradient fill.

### Access Methods



Button

 **Ribbon:** Home tab ► Draw panel ► Hatch

 **Menu:** Draw ► Hatch

 **Toolbar:** Draw

### Summary

When the ribbon is active, the [Hatch Creation contextual tab](#) on page 558 is displayed. When the ribbon is off, the [Hatch and Gradient dialog box](#) on page 546 is displayed.

If you enter **-hatch** at the Command prompt, [options are displayed](#) on page 565.

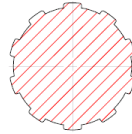
---

**NOTE** To prevent the creation of an enormous number of hatch lines, the maximum number of hatch lines created in a single hatch operation is limited. This limit prevents memory and performance problems. However, you can change the maximum number of hatch lines with the [HPMAXLINES](#) on page 1543 system variable.

---

Choose from several methods to specify the boundaries of a hatch.

- Specify a point in an area that is enclosed by objects.
- Select objects that enclose an area.
- Specify boundary points using the -HATCH Draw option.
- Drag a hatch pattern into an enclosed area from a tool palette or DesignCenter.



## Hatch and Gradient Dialog Box

### Quick Reference

See also:

- [Overview of Hatch Patterns and Fills](#)

Defines the boundaries, pattern, or fill properties, and other parameters for hatches and fills.

### List of Options

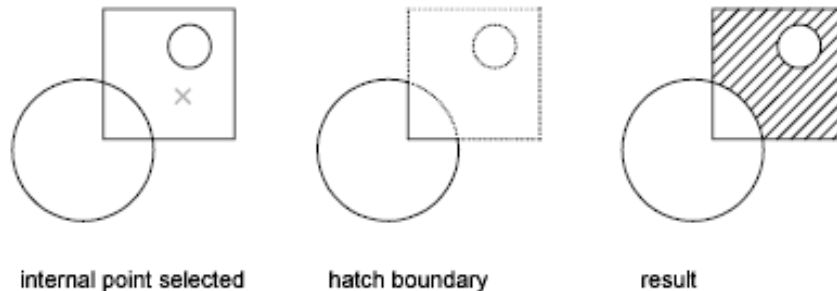
- [Hatch tab](#) on page 551
- [Gradient tab](#) on page 553
- [More Options section](#) on page 555
- [Add: Pick Points](#) on page 547

- [Add: Select Objects](#) on page 547
- [Remove Boundaries](#) on page 548
- [Recreate Boundary](#) on page 549
- [View Selections](#) on page 549
- [Select Boundary Objects](#) on page 549
- [Options](#) on page 549
- [Inherit Properties](#) on page 550
- [Preview](#) on page 550

### **Add: Pick Points**

Determines a boundary from existing objects that form an enclosed area around the specified point.

**Pick Internal Point** While specifying internal points, you can right-click in the drawing area at any time to display a shortcut menu that contains several options.



If you turn on Island Detection, objects that enclose areas within the outermost boundary are detected as islands. How HATCH detects objects using this option depends on which island detection method is specified.

---

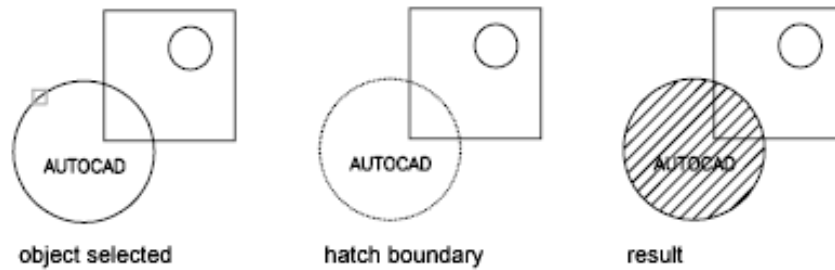
**NOTE** Red circles are displayed at unconnected endpoints of boundary objects to identify gaps in the hatch boundary. These circles are temporary and can be removed with [REDRAW](#) on page 1070 or [REGEN](#) on page 1079.

---

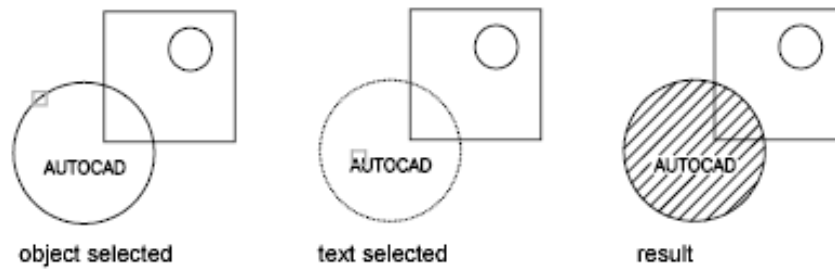
### **Add: Select Objects**

Determines a boundary from selected objects that form an enclosed area.

**Select Objects** Interior objects are not automatically detected. You must select the objects within the selected boundary to hatch or fill those objects according to the current island detection style.



Each time you click Select Objects, HATCH clears the previous selection set.

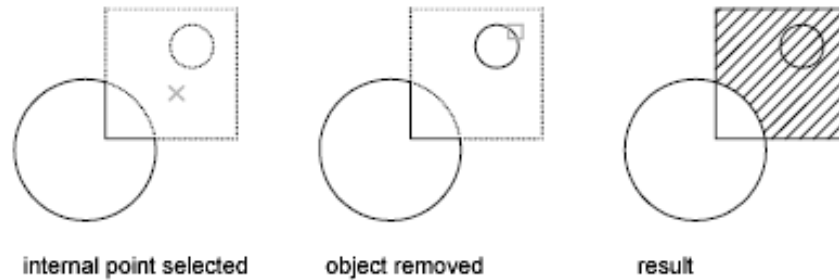


While selecting objects, you can right-click at any time in the drawing area to display a shortcut menu. You can undo the last selection or all selections, change the selection method, change the island detection style, or preview the hatch or fill.

### **Remove Boundaries**

Removes from the boundary definition any of the objects that were added previously.

**Select Objects** Removes objects from the boundary definition.



**Add Boundaries** Adds objects to the boundary definition.

### Recreate Boundary

Creates a polyline or region around the selected hatch or fill, and optionally associates the hatch object with it.

### View Selections

Displays the currently defined boundaries with the current hatch or fill settings. This option is available only when a boundary has been defined.

### Select Boundary Objects

Selects the objects that form the boundaries of the selected associative hatch object. Use the displayed grips to modify the hatch boundaries.

---

**NOTE** This option is available only in the [Hatch Edit dialog box](#) on page 573 and replaces the View Selections option.

---

When you select an *associative* hatch, a single, circular grip called the *control grip* is displayed. No boundary grips are displayed because the boundaries of an associative hatch can be modified only by changing its associated boundary objects. Use the Select Boundary Objects option to select and grip-edit the boundary objects.

To modify the boundaries of a *nonassociative* hatch, you modify the boundaries of the hatch object itself. Thus, when you select a nonassociative hatch, both the control grip and the boundary grips are displayed.

### Options

Controls several commonly used hatch or fill options.

#### Annotative

Specifies that the hatch is *annotative*. This property automates the process of scaling annotations so that they plot or display at the correct size on the paper. ([HPANNOTATIVE](#) on page 1534 system variable)

**Associative**

Specifies that the hatch or fill is associative. A hatch or fill that is associative is updated when you modify its boundary objects. (HPASSOC system variable)

**Create Separate Hatches**

Controls whether a single hatch object or multiple hatch objects are created when several separate closed boundaries are specified. (HPSEPARATE system variable)

**Draw Order**

Assigns a draw order to a hatch or fill. You can place a hatch or fill behind all other objects, in front of all other objects, behind the hatch boundary, or in front of the hatch boundary. (HPDRAWORDER system variable)

**Layer**

Assigns new hatch objects to the specified layer, overriding the current layer. Select Use Current to use the current layer. ([HPLAYER](#) on page 1542 system variable)

**Transparency**

Sets the transparency level for new hatch or fills, overriding the current object transparency. Select Use Current to use the current object transparency setting. ([HPTRANSPARENCY](#) on page 1548 system variable)

**Inherit Properties**

Hatches or fills specified boundaries using the hatch or fill properties of a selected hatch object.

After selecting the hatch object whose properties you want the hatch to inherit, right-click in the drawing area and use the options on the shortcut menu to switch between the Select Objects and Pick Internal Point options.

The HPINHERIT system variable controls whether the hatch origin of the resulting hatch is determined by HPORIGIN or by the source object.

**Preview**

Displays the currently defined boundaries with the current hatch or fill settings. Click in the drawing area or press Esc to return to the dialog box. Right-click or press Enter to accept the hatch or fill.

**More Options**

Expands the Hatch and Gradient dialog box to display [more options](#) on page 555.



## Hatch Tab (Hatch and Gradient Dialog Box)

### Quick Reference

#### See also:

- Overview of Hatch Patterns and Fills

Defines the appearance of the hatch pattern to be applied.

### List of Options

The following options are displayed.

#### Type and Pattern

Specifies the hatch's type, pattern, color, and background color.

##### Type

Specifies whether to create a predefined, user-defined, or custom hatch pattern.

Predefined patterns are stored in the *acl.pat* or *acltiso.pat* files supplied with the program.

User-defined patterns are based on the current linetype in your drawing. A custom pattern is a pattern that is defined in any custom PAT files that you have added to the search path.

##### Pattern

Displays a selection of ANSI, ISO, and other industry-standard hatch patterns. Select SOLID to create solid fill. The Pattern option is available only when Type is set to Predefined. (HPNAME system variable)

##### [ ] Button

Displays the [Hatch Pattern Palette dialog box](#) on page 563, in which you can preview images for all predefined patterns.

##### Color

Overrides the current color with a specified color for hatch patterns and solid fills. (HPCOLOR on page 1537 system variable)

##### Background Color

Specifies the background color for new hatch objects. Choose None to turn off the background color. ([HPBACKGROUND](#) on page 1535 system variable)

### **Swatch**

Displays a preview of the selected pattern. Click the swatch to display the [Hatch Pattern Palette dialog box](#) on page 563.

### **Custom Pattern**

Lists the available custom patterns. The most recently used custom patterns appear at the top of the list. The Custom Pattern option is available only when Type is set to Custom. (HPNAME system variable)

### **[ ] Button**

Displays the [Hatch Pattern Palette dialog box](#) on page 563, in which you can preview images for all custom patterns.

### **Angle and Scale**

Specifies an angle and scale for the selected hatch pattern.

#### **Angle**

Specifies an angle for the hatch pattern relative to the X axis of the current UCS. (HPANG system variable)

#### **Scale**

Expands or contracts a predefined or custom pattern. This option is available only when Type is set to Predefined or Custom. (HPSCALE system variable)

#### **Double**

For user-defined patterns, draws a second set of lines at 90 degrees to the original lines, creating a crosshatch. This option is available only when Type is set to User Defined. (HPDOUBLE system variable)

#### **Relative to Paper Space**

Scales the hatch pattern relative to paper space units. This allows you to display hatch patterns at a scale that is appropriate for your named layout. This option is available only from a named layout.

#### **Spacing**

Specifies the spacing of lines in a user-defined pattern. This option is available only when Type is set to User Defined. (HPSPACE system variable)

#### **ISO Pen Width**

Scales an ISO predefined pattern based on the selected pen width. This option is available only when Type is set to Predefined and Pattern is set to one of the available ISO patterns.

### **Hatch Origin**

Controls the starting location of hatch pattern generation. Some hatches, such as brick patterns, are meant to be aligned with a point on the hatch boundary. By default, all hatch origins correspond to the current UCS origin.

#### **Use Current Origin**

Uses the hatch origin point stored in the [HPORIGIN](#) on page 1544 system variable.

#### **Specified Origin**

Assigns a new hatch origin using the following options.

#### **Click to Set New Origin**

Specifies the new hatch origin point directly.

#### **Default to Boundary Extents**

Calculates a new origin based on the rectangular extents of the boundary for the hatch object. Choices include each of the four corners of the extents and its center. (HPORIGINMODE system variable)

#### **Store as Default Origin**

Stores the value of the new hatch origin in the HPORIGIN system variable.

## **Gradient Tab (Hatch and Gradient Dialog Box)**

### **Quick Reference**

#### **See also:**

- Overview of Hatch Patterns and Fills

Defines the appearance of the gradient fill to be applied.

#### **List of Options**

The following options are displayed.

**Color**

Specifies whether to fill the hatch boundary with a monochromatic or two-color blend.

**One Color**

Specifies a fill that uses a smooth transition between a color and a specified tint (the color mixed with white) or between a color and a specified shade (the color mixed with black). ([GFCLRSTATE](#) on page 1518 system variable)

**Two Color**

Specifies a fill that uses a smooth transition between two colors. ([GFCLRSTATE](#) on page 1518 system variable)

**Color Swatches**

Specifies the colors for the gradient fill (either one color or two colors). Click the Browse button [ ] to display the [Select Color dialog box](#), where you can select an AutoCAD Color Index (ACI) color, true color, or color book color. ([GFCLR1](#) on page 1517 and [GFCLR2](#) on page 1517 system variables)

**Shade and Tint Slider**

Specifies the tint (the selected color mixed with white) or shade (the selected color mixed with black) of a color to be used for a gradient fill of one color. ([GFCLRSLUM](#) on page 1518 system variable)

**Gradient Patterns**

Displays fixed patterns for gradient fills. These patterns include linear sweep, spherical, and parabolic.

**Orientation**

Specifies the angle of the gradient and whether it is symmetrical.

**Centered**

Specifies a symmetrical gradient configuration. If this option is not selected, the gradient fill is shifted up and to the left, creating the illusion of a light source to the left of the object. ([GFCSHIFT](#) on page 1519 system variable)

**Angle**

Specifies the angle of the gradient fill. The specified angle is relative to the current UCS. This option is independent of the angle specified for hatch patterns. ([GFANG](#) on page 1516 system variable)

## More Options (Hatch and Gradient Dialog Box)

### Quick Reference

See also:

- Overview of Hatch Patterns and Fills

Controls the operation of islands and boundaries.

### List of Options

The following options are displayed.

#### Islands

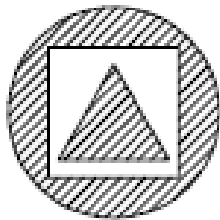
Specifies the method used to hatch or fill boundaries within the outermost boundary.

#### Island Detection

Controls whether internal closed boundaries, called *islands*, are detected. ([HPISLANDDETECTIONMODE](#) on page 1541 system variable)

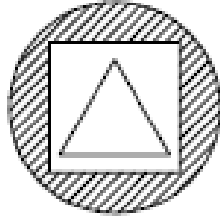
#### Normal

Hatches or fills inward from the outer boundary. If an internal island is encountered, hatching or filling is turned off until another island within the island is encountered. ([HPISLANDDETECTION](#) on page 1541 system variable)



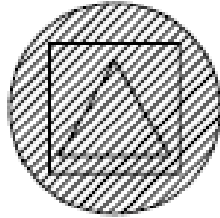
#### Outer (Recommended)

Hatches or fills inward from the outer boundary. This option hatches or fills only the specified area and leaves the internal islands unaffected. ([HPISLANDDETECTION](#) on page 1541 system variable)



### **Ignore**

Ignores all internal objects and hatches or fills through them. ([HPISLANDDETECTION](#) on page 1541 system variable)



The Normal, Outer, and Ignore options are also available from a shortcut menu by right-clicking in the drawing area while you specify points or select objects to define your boundaries.

### **Boundary Retention**

Specifies whether to create an object that encloses the hatch.

#### **Retain Boundaries**

Creates an object that encloses each hatch object. ([HPBOUNDRETAIN](#) on page 1536 system variable)

#### **Object Type**

Controls the type of the new boundary object. The resulting boundary object can be either a polyline or a region object. This option is available only when Retain Boundaries is selected. ([HPBOUND](#) on page 1536 system variable)

For more information about regions, see “Create and Combine Areas (Regions)”.

## **Boundary Set**

Defines the set of objects analyzed when defining a boundary from a specified point. The selected boundary set has no effect when you use Select Objects to define a boundary.

By default, when you use the Add: Pick Point option to define a boundary, HATCH analyzes all objects in the current viewport extents. By redefining the boundary set, you can disregard certain objects when defining boundaries without having to hide or remove those objects. For large drawings, redefining the boundary set can also produce the boundary faster because HATCH examines fewer objects.

**Current Viewport** Defines the boundary set from all objects within the extents of the current viewport.

**Existing Set** Defines the boundary set from the objects selected with the New option.

### **New**

Specifies a limited set of objects for evaluation by the pick point when creating the hatch.

## **Gap Tolerance**

Sets the maximum size of gaps that can be ignored when objects are used as a hatch boundary. The default value, 0, specifies that the objects must enclose the area with no gaps.

Enter a value, in drawing units, from 0 to 5000 to set the maximum size of gaps that can be ignored when the objects serve as a hatch boundary. Any gaps equal to or smaller than the value you specify are ignored, and the boundary is treated as closed. (HPGAPTOL system variable)

## **Inherit Options**

Controls whether to inherit the hatch origin when you create a hatch with the Inherit Properties option. ([HPINHERIT](#) on page 1540 system variable)

**Use Current Origin** Uses the current hatch origin setting.

**Use Source Hatch Origin** Uses the hatch origin of the source hatch.

## Hatch Creation Ribbon Contextual Tab

### Quick Reference

See also:

- Overview of Hatch Patterns and Fills

Defines the boundaries, pattern or fill properties, and other parameters for hatch and fills.

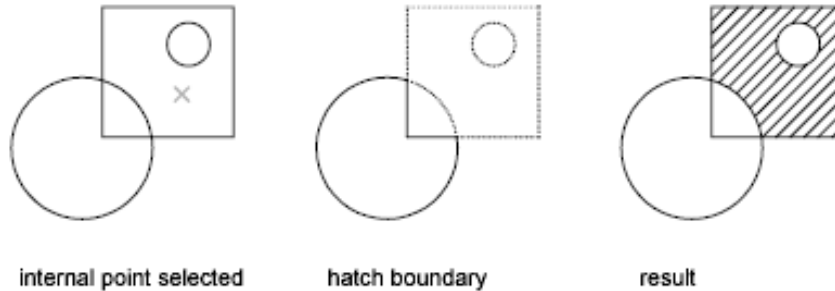
### List of Options

The following options are displayed.

#### Boundaries Panel

**Pick Points** Determines a boundary from existing objects that form an enclosed area around the specified point.

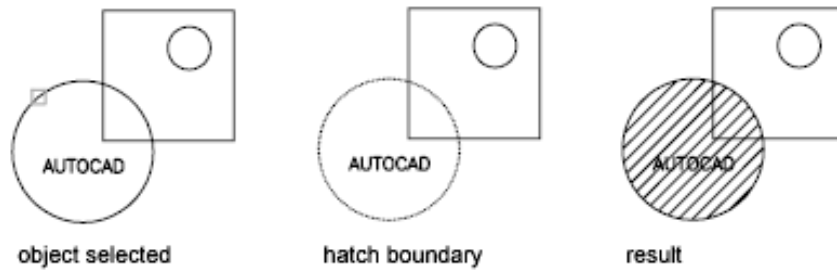
While specifying internal points, you can right-click in the drawing area at any time to display a shortcut menu that contains several options.



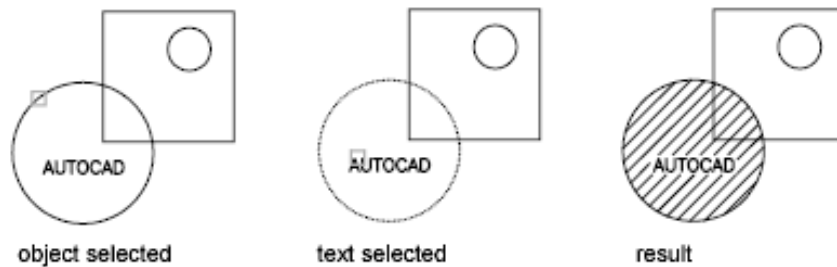
**Select** Determines a boundary from selected objects that form an enclosed area.

When you use the Select Objects option, HATCH does not automatically detect interior objects. You must select the objects within the selected boundary to hatch or fill those objects according to the current island detection style.





Each time you click Select Objects, HATCH clears the previous selection set.



While selecting objects, you can right-click at any time in the drawing area to display a shortcut menu. You can undo the last selection or all selections, change the selection method, change the island detection style, or preview the hatch or fill.

**Remove** Removes from the boundary definition any of the objects that were previously added .

**Recreate** Creates a polyline or region around the selected hatch or fill, and optionally associates the hatch object with it.

**Display Boundary Objects** Selects the objects that form the boundaries of the selected associative hatch object. Use the displayed grips to modify the hatch boundaries.

---

**NOTE** This option is available only when editing a hatch.

---

When you select an *associative* hatch, a single, circular grip called the *control grip* is displayed. No boundary grips are displayed because the boundaries of an associative hatch can be modified only by changing its associated boundary objects. Use the Select Boundary Objects option to select and grip-edit the boundary objects.

To modify the boundaries of a *nonassociative* hatch, you modify the boundaries of the hatch object itself. Thus, when you select a nonassociative hatch, both the control grip and the boundary grips are displayed.

### **Retain Boundary Objects**

Specifies whether to create an object that encloses the hatch.

**Don't Retain Boundaries** Does not create a separate object that encloses the hatch object. ([HPBOUNDRETAIN](#) on page 1536 system variable)

**Retain Boundaries - Polyline** Creates a polyline that encloses the hatch object. ([HPBOUND](#) on page 1536 system variable)

**Retain Boundaries - Region** Creates a region object that encloses the hatch object. ([HPBOUND](#) on page 1536 system variable)

For more information about regions, see “Create and Combine Areas (Regions)”.

**Select New Boundary Set** Specifies a limited set of objects, called a *boundary set*, for evaluation by the pick point when creating the hatch.

### **Specify Boundary Set**

Defines the set of objects analyzed when defining a boundary.

**Use Current Viewport** Defines the boundary set from all objects within the extents of the current viewport.

**Use Boundary Set** Defines the boundary set from the objects that you selected with Select New Boundary Set.

### **Pattern Panel**

Displays preview images for all predefined and custom patterns.

### **Properties Panel**

**Hatch Type** Specifies whether to create a solid fill, a gradient fill, a predefined hatch pattern, or a user-defined hatch pattern.

Predefined patterns are stored in the *aclt.pat* or *actiso.pat* files supplied with the program.

User-defined patterns are based on the current linetype in your drawing. A custom pattern is a pattern that is defined in any custom PAT files that you have added to the search path.

**Hatch Color or Gradient Color 1** Overrides the current color for solid fills and hatch patterns, or specifies the first of two gradient colors. ([HPCOLOR](#) on page 1537 or [GFCLR1](#) on page 1517 system variables)

**Background Color or Gradient Color 2** Specifies the color for hatch pattern backgrounds, or the second gradient color. When Hatch Type is set to Solid,

Gradient Color 2 is not available. ([HPBACKGROUND](#) on page 1535 or [GFCLR2](#) on page 1517 system variables)

**Transparency** Sets the transparency level for new hatches or fills, overriding the current object transparency. Select Use Current to use the current object transparency setting. ([HPTRANSPARENCY](#) on page 1548 system variable)

**Angle** Specifies an angle for the hatch or fill relative to the X axis of the current UCS. Valid values are from 0 to 359. ([HPANG](#) system variable)

**Scale** Expands or contracts a predefined or custom hatch pattern. This option is available only when Hatch Type is set to Pattern. ([HPSCALE](#) system variable)

**Spacing** Specifies the spacing of lines in a user-defined pattern. This option is available only when Hatch Type is set to User Defined. ([HPSPACE](#) system variable)

**Tint Slider** Specifies the tint (the selected color mixed with white) or shade (the selected color mixed with black) of a color to be used for a gradient fill of one color. This option is available only when Hatch Type is set to Gradient. ([GFCLRLUM](#) on page 1518 system variable)

**Layer Name** Assigns new hatch objects to the specified layer, overriding the current layer. Select Use Current to use the current layer. ([HPLAYER](#) on page 1542 system variable)

**Relative to Paper Space** Scales the hatch pattern relative to paper space units. This allows you to display hatch patterns at a scale that is appropriate for your layout. This option is available only from a layout.

**Double** For user-defined patterns, draws a second set of lines at 90 degrees to the original lines, creating a crosshatch. This option is available only when Hatch Type is set to User Defined. ([HPDOUBLE](#) on page 1538 system variable)

**ISO Pen Width** Scales an ISO predefined pattern based on the selected pen width. This option is available only when an ISO pattern has been specified.

### **Origin**

Controls the starting location of hatch pattern generation. Some hatches, such as brick patterns, are meant to be aligned with a point on the hatch boundary. By default, all hatch origins correspond to the current UCS origin.

**Set Origin** Specifies the new hatch origin point directly.

**Bottom Left** Sets the hatch origin at the bottom-left corner of the rectangular extents of the hatch boundary.

**Bottom Right** Sets the hatch origin at the bottom-right corner of the rectangular extents of the hatch boundary.

**Top Left** Sets the hatch origin at the top-left corner of the rectangular extents of the hatch boundary.

**Top Right** Sets the hatch origin at the top-right corner of the rectangular extents of the hatch boundary.

**Center** Sets the hatch origin at the center of the rectangular extents of the hatch boundary.

**Use Current Origin** Sets the hatch origin to the default location stored in the [HPORIGIN](#) on page 1544 system variable.

**Store as Default Origin** Stores the value of the new hatch origin in the [HPORIGIN](#) system variable.

### **Options**

Controls several commonly used hatch or fill options.

#### **Associative**

**Annotative** Specifies that the hatch is . This property automates the process of scaling annotations so that they plot or display at the correct size on the paper. ([HPANNOTATIVE](#) on page 1534 system variable)

#### **Match Properties**

**Use Current Origin** Sets the properties of a hatch with a selected hatch object, except the hatch origin.

**Use Source Hatch Origin** Sets the properties of a hatch with a selected hatch object, including the hatch origin.

**Gap Tolerance** Sets the maximum size of gaps that can be ignored when objects are used as a hatch boundary. The default value, 0, specifies that the objects must enclose the area with no gaps.

Move the slider or enter a value, in drawing units, from 0 to 5000 to set the maximum size of gaps that can be ignored when the objects serve as a hatch boundary. Any gaps equal to or smaller than the value you specify are ignored, and the boundary is treated as closed. ([HPGAPTOL](#) system variable)

**Create Separate Hatches** Controls whether a single hatch object or multiple hatch objects are created when several separate closed boundaries are specified. ([HPSEPARATE](#) system variable)

#### **Islands**

**Normal Island Detection** Hatches or fills inward from the outer boundary. If an internal island is encountered, hatching or filling is turned off until another island within the island is encountered. ([HPISLANDDETECTION](#) on page 1541 system variable)

**Outer Island Detection** Hatches or fills inward from the outer boundary. This option hatches or fills only the specified area and leaves the internal islands unaffected. ([HPISLANDDETECTION](#) on page 1541 system variable)

**Ignore Island Detection** Ignores all internal objects and hatches or fills through them. ([HPISLANDDETECTION](#) on page 1541 system variable)

**No Island Detection** Turns off island detection.

**Draw Order** Assigns a draw order to a hatch or fill. You can place a hatch or fill behind all other objects, in front of all other objects, behind the hatch boundary, or in front of the hatch boundary. ([HPDRAWORDER](#) system variable)

### **Close Panel**

**Close Hatch Creation** Exits HATCH and closes the contextual tab.

You can also press Enter or Esc to exit HATCH.

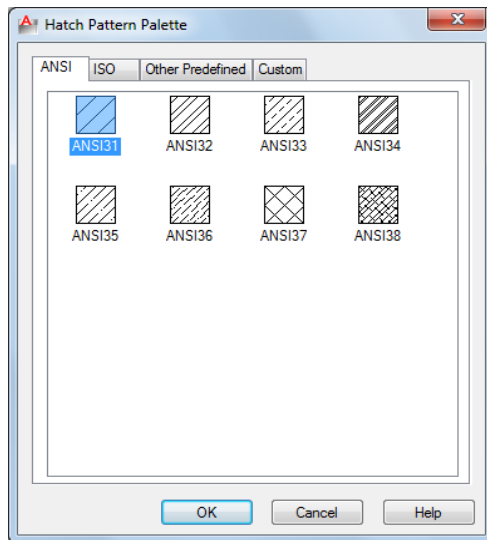
## **Hatch Pattern Palette Dialog Box**

### **Quick Reference**

**See also:**

- Overview of Hatch Patterns and Fills

Displays preview images for all predefined and custom patterns.



### Summary

Organizes patterns on four tabs, with images arranged alphabetically on each tab. Click an image to select a pattern and click OK.

### List of Options

The following options are displayed.

**ANSI** Displays all ANSI patterns shipped with the program.

**ISO** Displays all ISO patterns shipped with the program.

**Other Predefined** Displays all patterns other than ANSI and ISO shipped with the program.

**Custom** Displays a list of custom PAT files that you have added to the Support File Search Path of the program.

### Preview

Displays a preview image of the selected custom pattern.

# -HATCH

## Quick Reference

See also:

- Overview of Hatch Patterns and Fills

Uses command prompts to fill an enclosed area or selected objects with a hatch pattern, solid fill, or gradient fill.

### List of Prompts

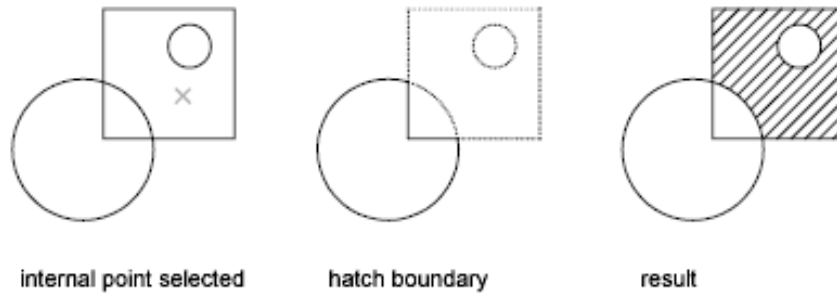
The following prompts are displayed.

Specify [internal point](#) or [[Properties/Select objects/draW boundary/remove Boundaries/Advanced/DraW order/Origin/ANnotative/hatch COlor](#) on page 571/[LAYER](#) on page 571/[Transparency](#) on page 571]: *Specify a point or enter an option*

#### Internal Point

Determines a boundary from existing objects that form an enclosed area around the specified point.

**Pick Internal Point** While specifying internal points, you can right-click in the drawing area at any time to display a shortcut menu that contains several options.



If you turn on Island Detection, objects that enclose areas within the outermost boundary are detected as islands. How HATCH detects objects using this option depends on which island detection method is specified.

---

**NOTE** Red circles are displayed at unconnected endpoints of boundary objects to identify gaps in the hatch boundary. These circles are temporary and can be removed with [REDRAW](#) on page 1070 or [REGEN](#) on page 1079.

---

## Properties

Specifies new hatch pattern properties to apply.

**Pattern Name—Predefined or Custom** Specifies a predefined pattern in the *acadlt.pat* or *acadltiso.pat* file or a custom pattern in its own PAT file.

Enter the pattern name followed by an optional hatch style code. Precede the pattern name with an asterisk (\*) to fill the area with individual lines instead of a hatch object.

?—**List Pattern Names** Lists and describes the hatch patterns defined in the *acadlt.pat* file.

**Solid** Specifies a solid fill and redisplay the first HATCH prompt, where you can define a boundary.

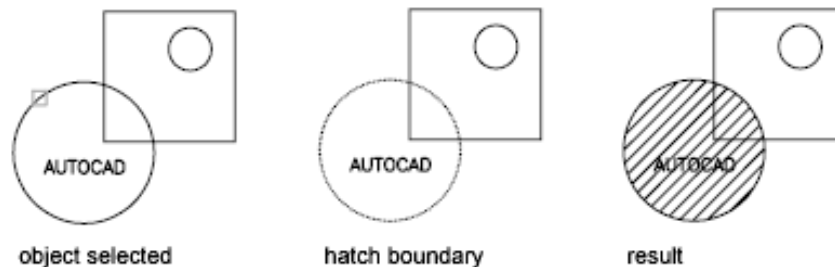
**User Defined** Specifies a user-defined pattern. Enter **u**, followed by an optional hatch style code. Precede the **u** with an asterisk (\*) to fill the area with individual lines instead of a hatch object.

**Double Hatch Area** Specifies a second set of lines to be drawn at 90 degrees to the original lines.

## Select Objects

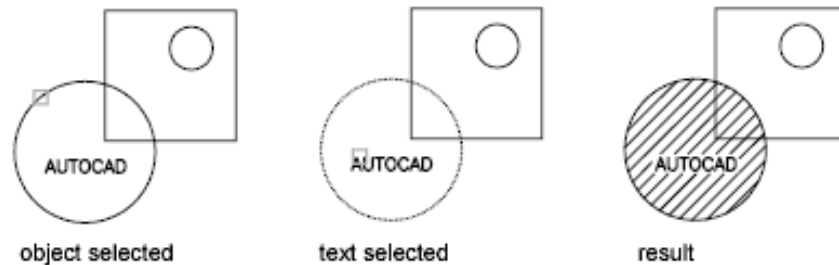
Determines a boundary from selected objects that form an enclosed area.

**Select Objects** Interior objects are not automatically detected. You must select the objects within the selected boundary to hatch or fill those objects according to the current island detection style.



Each time you click Select Objects, HATCH clears the previous selection set.





While selecting objects, you can right-click at any time in the drawing area to display a shortcut menu. You can undo the last selection or all selections, change the selection method, change the island detection style, or preview the hatch or fill.

### **Draw Boundary**

Uses specified points to define the boundary of a hatch or fill.

The options that are available as you specify points are also available in PLINE. When you complete the polyline boundary, press Enter. You can then create additional polyline boundaries, or press Enter to twice to apply the hatch.

---

**NOTE** To enclose an area completely, use the Close option. Do not make the first and last points coincident.

---

### **Remove Boundaries**

Removes from the boundary definition any of the objects that were previously added.

**Select Objects** Removes objects from the boundary definition.

**Add Boundaries** Adds objects to the boundary definition.

### **Advanced**

Sets the method used to create the hatch boundary.

#### **Boundary Set**

Specifies a limited set of objects, called a boundary set, for evaluation by the pick point of the hatch

**New** Creates a boundary set from the selected objects.

**Everything** Creates a boundary set from everything visible in the current viewport. Selecting this option discards any current boundary set and uses everything visible in the drawing or in the current viewport.

#### **Retain Boundary**

Creates an object that encloses each hatch object.

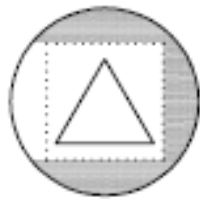
### Island Detection

Specifies whether to use objects within the outermost boundary as boundary objects.

Specifying no island detection prompts for the ray casting method.

**Nearest** Runs a line from the point you specify to the nearest object and then traces the boundary in a counterclockwise direction.

**+X** Runs a line in the positive  $X$  direction from the point you specify to the first object encountered and then traces the boundary in a counterclockwise direction.



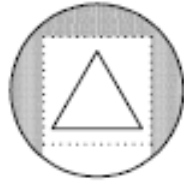
ray casting  
direction (+X)

**-X** Runs a line in the negative  $X$  direction from the point you specify to the first object encountered and then traces the boundary in a counterclockwise direction.



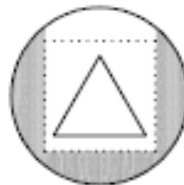
ray casting  
direction (-X)

**+Y** Runs a line in the positive  $Y$  direction from the point you specify to the first object encountered and then traces the boundary in a counterclockwise direction.



ray casting  
direction (+Y)

**-Y** Runs a line in the negative *Y* direction from the point you specify to the first object encountered and then traces the boundary in a counterclockwise direction.



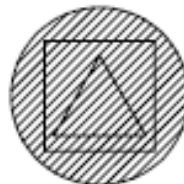
ray casting  
direction (-Y)

**Angle** Runs a line at the specified angle from the point you specify to the first object encountered and then traces the boundary in a counterclockwise direction.

### **Style**

Specifies the method used to hatch or fill objects within the outermost hatch boundary. If you have selected no internal objects, a hatching style has no effect. Because you can define a precise set of boundaries, it's often best to use the Normal style.

**Ignore** Ignores all internal objects and hatches or fills through them.



**Outer (Recommended)** Hatches or fills inward from the outer boundary. HATCH turns hatching or filling off if it encounters an internal island. This

option hatches or fills only the outermost level of the structure and leaves the internal structure blank.



**Normal** Hatches or fills inward from the outer boundary. If HATCH encounters an internal island, it turns off hatching or filling until it encounters another island within the island.



### **Associativity**

Specifies that the new hatch pattern is updated when its boundaries are modified.

A new hatch pattern's associativity is set by the HPASSOC system variable. Changing the associativity setting here also changes the setting in the HPASSOC system variable.

### **Gap Tolerance**

Sets the maximum size of gaps that can be ignored when objects are used as a hatch boundary. The default value, 0, specifies that the objects must enclose the area with no gaps.

Any gaps equal to or smaller than the value you specify in the gap tolerance are ignored, and the boundary is treated as closed.

### **Separate Hatches**

Controls whether the command creates a single hatch object or multiple hatch objects when several separate closed boundaries are specified.

### **Draw Order**

Assigns the draw order to a hatch or fill. You can place a hatch or fill behind all other objects, in front of all other objects, behind the hatch boundary, or in front of the hatch boundary.

### **Origin**

Controls the starting location of hatch pattern generation. Some hatches, such as brick patterns, are meant to be aligned with a point on the hatch boundary. By default, all hatch origins correspond to the current UCS origin.

**Use Current Origin** Sets the value of the [HPORIGINMODE](#) on page 1544 system variable. The last 5 options listed below correspond to the values 1-5.

**Set New Origin** Specifies the new hatch origin point directly.

**Default to Boundary Extents** Calculates a new origin based on the rectangular extents of the hatch. Choices include each of the four corners of the extents and its center. You can also store the value of the new hatch origin in the [HPORIGIN](#) on page 1544 system variable.

### **Annotative**

Specifies that the hatch is . This property automates the process of scaling annotations so that they plot or display at the correct size on the paper.

### **Hatch Color**

Overrides the current color with a specified color for hatch patterns and solid fills. The color value is stored in the [HPCOLOR](#) on page 1537 system variable. When Hatch Type is set to Pattern, you can also specify a new background color. The background color value is stored in the [HPBACKGROUNDCOLOR](#) on page 1535 system variable.

To set the hatch color back to the current color for objects, enter “.” or **Use Current**. To turn off the background color, enter “.” or **none**.

**Default Object Color** Enter the color number (1 through 255) or the color name (the names for the first seven colors). For example, you can specify the color red by entering the ACI (AutoCAD Color Index) number **1** or the ACI name **red**. You can also set the hatch color to ByLayer or ByBlock.

**Truecolor** Specify an RGB color expressed as values from 0 to 255, such as **210,155,95**.

**Colorbook** Specify a custom color from a color book installed on your system.

### **Layer**

Assigns new hatch objects to the specified layer, overriding the current layer. Enter **Use Current** or “.” to use the current layer. ([HPLAYER](#) on page 1542 system variable)

### **Transparency**

Sets the transparency level for new hatches or fills, overriding the current object transparency. Enter **Use Current** or “.” to use the current object transparency setting. ([HPTRANSPARENCY](#) on page 1548 system variable)

# HATCHEDIT

## Quick Reference

See also:

- Modify Hatches and Fills


Modifies an existing hatch or fill.


## Access Methods



Button

 **Ribbon:** Home tab ► Modify panel ► Edit Hatch

 **Menu:** Modify ► Object ► Hatch

 **Toolbar:** Modify II

**Shortcut menu:** Select a hatch object to edit. Right-click in the drawing area and click Hatch Edit.

## Summary

Modifies hatch-specific properties, such as pattern, scale, and angle for an existing hatch or fill.

## List of Options

The following options are displayed.

Select hatch object: *Use an object selection method*

When the ribbon is active, the [Hatch Editor contextual tab](#) on page 573 is displayed. When the ribbon is off, the [Hatch Edit dialog box](#) is displayed.

If you enter **-hatchedit** at the Command prompt, the associated [options are displayed](#) in the command line.

## Hatch Edit Dialog Box

### Quick Reference

**See also:**

- [Modify Hatches and Fills](#)

Modifies hatch-specific properties, such as pattern, scale and angle for an existing hatch or fill.

### Summary

The options in the Hatch Edit dialog box are the same as the options for the [Hatch and Gradient dialog box](#) on page 546. Certain options are available only when creating hatches.

## Hatch Editor Ribbon Contextual Tab

### Quick Reference

**See also:**

- [Overview of Hatch Patterns and Fills](#)

Modifies hatch-specific properties, such as pattern, scale and angle for an existing hatch or fill.

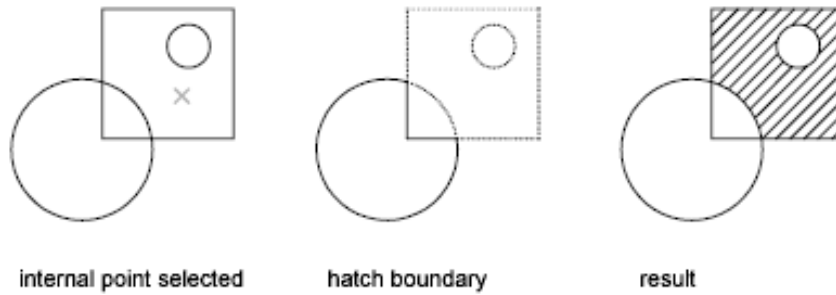
### List of Options

The following options are displayed.

#### **Boundaries Panel**

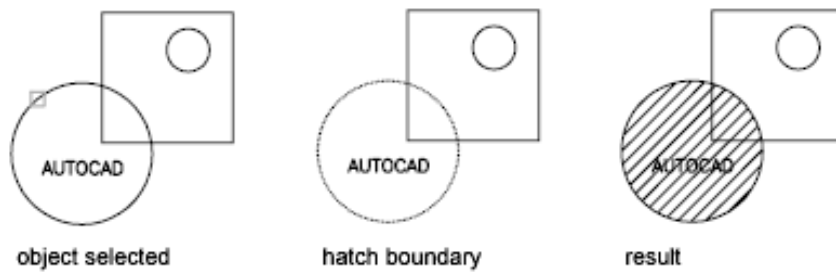
**Pick Points** Determines a boundary from existing objects that form an enclosed area around the specified point.

While picking internal points, you can right-click in the drawing area at any time to display a shortcut menu that contains several options.

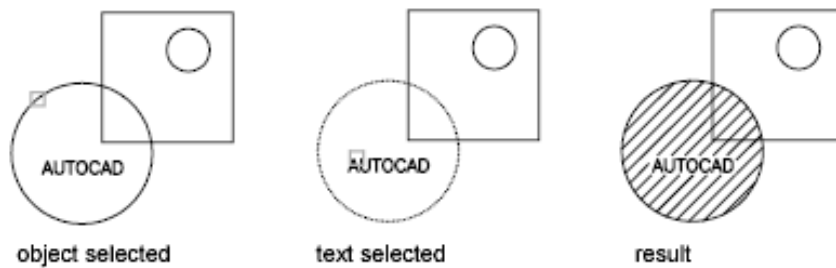


**Select** Determines a boundary from selected objects that form an enclosed area.

When you use the Select Objects option, interior objects are not detected automatically. You must select the objects within the selected boundary to hatch or fill those objects according to the current island detection style.



Each time you click Select Objects, HATCH clears the previous selection set.



While selecting objects, you can right-click at any time in the drawing area to display a shortcut menu. You can undo the last selection or all selections, change the selection method, change the island detection style, or preview the hatch or gradient fill.



**Remove** Removes from the boundary definition any of the objects that were added previously.

**Recreate** Creates a polyline or region around the selected hatch or fill, and optionally associates the hatch object with it.

### **Display Boundary Objects**

Displays the boundary grip controls for the selected hatch that you can use to grip-edit both the boundary and the hatch object.

When you select or use the Display Boundary Objects option to select a non-associative hatch, the hatch boundary grips are displayed.

When you select an associative hatch, it displays only a single grip point of the hatch. To display the boundary grip controls of the objects associated to the hatch, use the Display Boundary Objects option. You can only edit an associative hatch by grip-editing the associated boundary objects.

**Don't Retain Boundaries** Do not create a separate object that encloses the hatch object. This option is available only during hatch creation.

**Retain Boundaries - Polyline** Creates a polyline that encloses the hatch object. This option is available only during hatch creation.

**Retain Boundaries - Region** Creates a region object that encloses the hatch object. This option is available only during hatch creation.

For more information about regions, see “Create and Combine Areas (Regions)” in the *User's Guide*.

**Select New Boundary Set** Specifies a limited set of objects, called a boundary set, for evaluation by the pick point when creating the hatch.

**Use Current Viewport** Defines the boundary set from all objects within the extents of the current viewport. This option is available only during hatch creation.

**Use Boundary Set** Defines the boundary set from the objects that you selected with Define Boundary Set. This option is available only during hatch creation.

### **Pattern Panel**

Displays preview images for all predefined and custom patterns.

### **Properties Panel**

**Hatch Type** Specifies whether to create a solid fill, a gradient fill, a predefined hatch pattern, or a user-defined hatch pattern.

Predefined patterns are stored in the *acl.pat* or *acltiso.pat* files supplied with the product.

User-defined patterns are based on the current linetype in your drawing. A custom pattern is a pattern that is defined in any custom PAT files that you have added to the search path.

**Hatch Color or Gradient Color 1** Specifies the color for solid fills, hatch patterns, or as the first of two gradient colors.

**Background Color or Gradient Color 2** Specifies the color for hatch pattern backgrounds or as a second gradient color. When Hatch Type is set to Solid, Gradient Color 2 is not available.

**Transparency** Sets the level of transparency for new hatch objects, overriding the default object transparency.

**Angle** Specifies an angle for Gradient and Pattern hatch objects relative to the X axis of the current UCS. Set a hatch angle between 0 to 359 degrees using the slider.

**Scale** Expands or contracts a predefined or custom hatch pattern.

**Spacing** When Hatch Type is set to User Defined, this option specifies the spacing of lines in a user-defined pattern.

**Tint Slider** When Hatch Type is set to Gradient, this option specifies the tint (the selected color mixed with white) of a color to be used for a gradient fill of one color.

**Layer Name** Specifies the layer to which hatch objects are added.

**Relative to Paper Space** Scales the hatch pattern relative to paper space units. Using this option, you can easily display hatch patterns at a scale that is appropriate for your layout. This option is available only from a layout.

**Double** For user-defined patterns, draws a second set of lines at 90 degrees to the original lines, creating a crosshatch. This option is available only when Hatch Type is set to User Defined.

**ISO Pen Width** Scales an ISO predefined pattern based on the selected pen width. This option is available only when an ISO pattern has been specified.

### **Origin**

Controls the starting location of hatch pattern generation. Some hatches, such as brick patterns, are meant to be aligned with a point on the hatch boundary. By default, all hatch origins correspond to the current UCS origin.

**Set Origin** Specifies the new hatch origin point directly.

**Bottom Left** Sets the hatch origin at the bottom-left corner of the rectangular extents of the hatch boundary.

**Bottom Right** Sets the hatch origin at the bottom-right corner of the rectangular extents of the hatch boundary.

**Top Left** Sets the hatch origin at the top-left corner of the rectangular extents of the hatch boundary.

**Top Right** Sets the hatch origin at the top-right corner of the rectangular extents of the hatch boundary.

**Center** Sets the hatch origin at the center of the rectangular extents of the hatch boundary.

**Use Current Origin** Sets the hatch origin to the default location stored in the [HPORIGIN](#) on page 1544 system variable.

**Store as Default Origin** Stores the value of the new hatch origin in the HPORIGIN system variable.

### **Options**

Controls several commonly used hatch or fill options.

**Associative** Specifies that the hatch or fill is associative. A hatch or fill that is associative is updated when you modify its boundary objects. (HPASSOC system variable)

**Annotative** Specifies that the hatch is . This property automates the process of scaling annotations so that they plot or display at the correct size on the paper. (HPANNOTATIVE system variable)

### **Match Properties**

**Use Current Origin** Sets the properties of a hatch with a selected hatch object, except the hatch origin.

**Use Source Hatch Origin** Sets the properties of a hatch with a selected hatch object, including the hatch origin.

**Gap Tolerance** Sets the maximum size of gaps that can be ignored when objects are used as a hatch boundary. The default value, 0, specifies that the objects must enclose the area with no gaps.

Move the slider or enter a value, in drawing units, from 0 to 5000 to set the maximum size of gaps that can be ignored when the objects serve as a hatch boundary. Any gaps equal to or smaller than the value you specify are ignored, and the boundary is treated as closed. (HPGAPTOL system variable)

**Create Separate Hatches** Controls whether a single hatch object or multiple hatch objects are created when several separate closed boundaries are specified. (HPSEPARATE system variable)

### **Islands**

**Normal Island Detection** Hatches or fills inward from the outer boundary. If an internal island is encountered, hatching or filling is turned off until another island within the island is encountered. (HPISLANDDETECTION system variable)

**Outer Island Detection** Hatches or fills inward from the outer boundary. This option hatches or fills only the specified area and leaves the internal islands unaffected. (HPISLANDDETECTION system variable)

**Ignore Island Detection** Ignores all internal objects and hatches or fills through them. (HPISLANDDETECTION system variable)

**No Island Detection** Turns off island detection.

**Draw Order** Assigns a draw order to a hatch or fill. You can place a hatch or fill behind all other objects, in front of all other objects, behind the hatch boundary, or in front of the hatch boundary. (HPDRAWORDER system variable)

### **Close Panel**

**Close Hatch Editor** Exits the Hatch Editor and closes the contextual tab.

The ENTER and ESC keys can also be used to exit the Hatch Editor.

## **-HATCHEDIT**

### **Quick Reference**

#### **See also:**

- **Modify Hatches and Fills**

Uses command prompts to modify hatch-specific properties, such as pattern, scale, and angle for an existing hatch or fill.

#### **List of Prompts**

The following prompts are displayed.

Select hatch object:

Enter hatch option [[D](#)isassociate/[S](#)tylE/[P](#)roPerties/[D](#)raw order/[A](#)dd boundaries/[R](#)emove boundaries/[r](#)ecreate Boundary/[A](#)ssociate/[s](#)eparate Hatches/[O](#)riGin on page 580/[A](#)Nnotative/hatch [C](#)OLor/[L](#)Ayer/[T](#)ransparency]  
<Properties>: *Enter an option or press Enter*

**Disassociate**

Removes the associative quality from an associative hatch or fill.

**Style**

Specifies the method used to hatch or fill boundaries within the outermost boundary.

**Ignore** Ignores all internal objects and hatches or fills through them.

**Outer (Recommended)** Hatches or fills inward from the outer boundary. HATCH turns hatching or filling off if it encounters an internal island. This option hatches or fills only the outermost level of the structure and leaves the internal structure blank.

**Normal** Hatches or fills inward from the outer boundary. If HATCH encounters an internal island, it turns off hatching or filling until it encounters another island within the island.

**Properties**

Specifies new hatch properties for the selected hatch. For an explanation of setting pattern and fill properties at the Command prompt, see [-HATCH](#) on page 565.

**Draw Order**

Assigns a draw order to a hatch or fill. You can place a hatch or fill behind all other objects, in front of all other objects, behind the hatch boundary, or in front of the hatch boundary. (HPDRAWORDER system variable)

**Add Boundaries**

Modifies the boundaries of a hatch or fill by adding boundaries.

For more information, see [Add: Pick Points](#) or [Add: Select Objects](#).

**Remove Boundaries**

Modifies the boundaries of a hatch or fill by removing boundaries.

For more information, see [Remove Boundaries](#).

**Recreate Boundary**

Creates a polyline or region around the selected hatch or fill, and optionally associates the hatch object with it.

For more information, see [Recreate Boundary](#).

**Associate**

Specifies that the hatch or fill is associative. A hatch or fill that is associative is updated when you modify its boundary objects.

**Specify Internal Point** Determines a boundary from existing objects that form an enclosed area around the specified point, and associates the selected hatch with the boundary objects.

**Select Objects** Determines a boundary from selected objects that form an enclosed area, and associates the selected hatch with the boundary objects.

### **Separate Hatches**

Controls whether a single hatch object or multiple hatch objects are created when several separate closed boundaries are specified.

### **Origin**

Controls the starting location of hatch pattern generation. Some hatches, such as brick patterns, are meant to be aligned with a point on the hatch boundary. By default, all hatch origins correspond to the current UCS origin.

**Use Current Origin** Sets the value of the [HPORIGINMODE](#) on page 1544 system variable. The last 5 options listed below correspond to the values 1-5.

**Set New Origin** Specifies the new hatch origin point directly.

**Default to Boundary Extents** Calculates a new origin based on the rectangular extents of the hatch. Choices include each of the four corners of the extents and its center. You can also store the value of the new hatch origin in the [HPORIGIN](#) on page 1544 system variable.

### **Annotative**

Specifies that the hatch is `ANNO`. This property automates the process of scaling annotations so that they plot or display at the correct size on the paper.

### **Hatch Color**

Overrides the current color with a specified color for hatch patterns and solid fills. The color value is stored in the [HPCOLOR](#) on page 1537 system variable. When Hatch Type is set to Pattern, you can also specify a new background color. The background color value is stored in the [HPBACKGROUND](#) on page 1535 system variable.

To set the hatch color back to the current color for objects, enter `..` or **Use Current**. To turn off the background color, enter `..` or **none**.

**Default object color** Enter the color number (1 through 255) or the color name (the names for the first seven colors). For example, you can specify the color red by entering the ACI (AutoCAD Color Index) number **1** or the ACI name **red**. You can also set the hatch color to `ByLayer` or `ByBlock`.

**Truecolor** Specify an RGB color expressed as values from 0 to 255, such as **210,155,95**.

**Colorbook** Specify a custom color from a color book installed on your system.

**Layer**

Assigns new hatch objects to the specified layer, overriding the current layer. Enter **Use Current** or “.” to use the current layer.

**Transparency**

Sets the transparency level for new hatches or fills, overriding the current object transparency. Enter **Use Current** or “.” to use the current object transparency setting.

## HATCHGENERATEBOUNDARY

### Quick Reference

See also:

- Set Property Overrides for Hatches and Fills
- Control How Overlapping Objects Are Displayed

Creates a non-associated polyline around a selected hatch.

### Access Methods

**Shortcut menu:** Select a hatch object. Right-click and choose Generate Boundary.

### Summary

Creates a new non-associative polyline boundary around the selected hatch.

### List of Prompts

The following prompts are displayed.

Select hatch objects: *Use an object selection method and press ENTER.*

## HATCHSETBOUNDARY

### Quick Reference

See also:

- Set Property Overrides for Hatches and Fills
- Control How Overlapping Objects Are Displayed

Redefines a selected hatch or fill to conform to a different closed boundary.

### Access Methods

**Shortcut menu:** Select a hatch object. Right-click and choose Set Boundary.

### Summary

Trims a selected hatch to within a selected boundary or geometry.

### List of Prompts

The following prompts are displayed.

Select hatch object: *Select hatch object to be trimmed.*

Select objects to be used for the new boundary: *Select the new boundary or geometry and press ENTER.*

## HATCHSETORIGIN

### Quick Reference

See also:

- Set Property Overrides for Hatches and Fills
- Control How Overlapping Objects Are Displayed

Controls the starting location of hatch pattern generation for a selected hatch.

### Access Methods

**Shortcut menu:** Select a hatch object. Right-click and choose Set Origin.



### Summary

Controls the hatch origin location point for solid and gradient hatches. You can select and change multiple hatch objects and change their hatch origin for multiple hatches at the same time.

### List of Prompts

The following prompts are displayed.

Select hatch object: *Select the hatch object.*

Select new hatch origin: *Click inside the hatch to change the origin point.*

## HATCHTOBACK


### Quick Reference

See also:

- Set Property Overrides for Hatches and Fills
- Control How Overlapping Objects Are Displayed

Sets the draw order for all hatches in the drawing to be behind all other objects.

### Access Methods

 **Ribbon:** Home tab ► Modify panel ► Draw Order ► Send Hatches to Back

 **Menu:** Tools ► Draw Order ► Send Hatches to Back

 **Toolbar:** Draw Order

### Summary

Selects all hatches in the drawing, including hatch patterns, solid fills, and gradient fills, and sets their draw order to be behind all other objects. Hatch objects on locked layers are also modified.

# HELP

## Quick Reference

### See also:

- Find the Information You Need

Displays Help.


### Access Methods



**Button**

 **Menu:** Help ► Help

 **Toolbar:** Standard

 **Command entry:** ? (or 'help for transparent use)

### Summary

Pressing F1 while a tooltip or command is active displays Help for that command. Choosing the Help button in a dialog box displays Help for that dialog box.

# HIDE

## Quick Reference

### See also:

- Hide Lines in 3D Objects

Regenerates a 3D wireframe model with hidden lines suppressed.

### Access Methods



**Button**

 **Ribbon:** View tab ► Visual Styles panel ► Hide

 **Menu:** View ► Hide

### Summary

When you use VPOINT or VIEW to create a 3D view of your drawing, a wireframe is displayed in the current viewport. All lines are present, including those hidden by other objects. HIDE eliminates the hidden lines from the screen.

HIDE considers the following to be opaque surfaces that hide objects: circles, text, regions, wide polyline segments, the extruded edges of objects with nonzero thickness, 2D solids, and (when working with AutoCAD drawings) 3D solids, traces, 3D faces, and polygon meshes.

If they are extruded, circles, solids, traces, and wide polyline segments are treated as solid objects with top and bottom faces. You cannot use HIDE on objects whose layers have been frozen; however, you can use HIDE on objects whose layers have been turned off.

To hide text created with MTEXT or TEXT, the HIDE TEXT system variable must be set to 1 or the text must be assigned a thickness value.



When using the HIDE command, if the INTERSECTIONDISPLAY system variable is on, face-to-face intersections of 3D surfaces are displayed as polylines.

If the DISPSILH system variable is on, HIDE displays 3D solid objects with silhouette edges only. It won't show the internal edges produced by objects that have facets.

If the HIDE TEXT system variable is off, HIDE ignores text objects when producing the hidden view. Text objects are always displayed regardless of whether they are obscured by other objects, and objects obscured by text objects are unaffected.

# HIDEOBJECTS

## Quick Reference

See also:

- Control the Display of Objects

Hides selected objects.

## Access Methods



Button

 **Menu:** Tools ► Isolate ► Hide Objects

**Shortcut menu:** Right-click in the drawing area and click Isolate ► Hide Objects.

## Summary

Temporarily hides selected objects in the current view. All other objects are visible.

## List of Prompts

The following prompt is displayed.

Select objects: *Use an object selection method*

# HIDEPALETTES

## Quick Reference

See also:

- Specify the Behavior of Dockable Windows

Hides all currently displayed palettes, including the command window.

### Access Methods

 **Command entry:** Ctrl+Shift+H

### Summary

Hides all currently displayed palettes such as the Command Line, DesignCenter, and Properties.

## HLSETTINGS

### Quick Reference

See also:

- Hide Lines or Shade 3D Objects

Changes the display properties of hidden lines.

### Summary

The [Hidden Line Settings dialog box](#) on page 587 is displayed.

Sets the display properties of hidden lines. These settings are visible only when HIDE is used and SHADEMODE is set to 2D Wireframe.

## Hidden Line Settings Dialog Box

### Quick Reference

See also:

See also:

- Hide Lines or Shade 3D Objects

### Summary

Sets the display properties of hidden lines. These settings are visible only when HIDE is used and SHADEMODE is set to 2D Wireframe.

### **List of Options**

The following options are displayed.

#### **Obscured Lines**

Specifies the linetype and color of obscured lines. An obscured line is a hidden line that is made visible by changing its color and linetype.

##### **Linetype**

Lists the available linetypes to apply to obscured lines. Unlike regular linetypes, obscured linetypes are not affected by zoom level. (OBSCUREDLTTYPE system variable)

##### **Color**

Lists the available colors to apply to obscured lines. (OBSCUREDCOLOR system variable)

#### **Halo Gap Percentage**

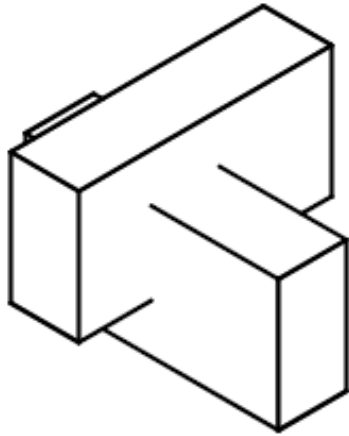
Specifies the distance to shorten a haloed line. A haloed line is shortened at the point where it will be hidden. The distance is specified as a percentage of 1 inch and is not affected by zoom level. (HALOGAP system variable)

#### **Include Text in HIDE Operations**

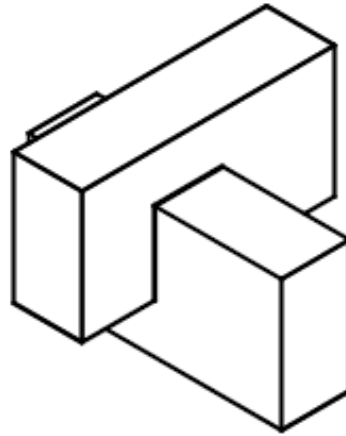
Specifies whether text objects created by TEXT or MTEXT are included during a HIDE command. (HIDETEXT system variable)

#### **Face Intersections**

Specifies the display and color of intersection polylines. An intersection polyline is displayed at the face-to-face intersection of 3D surfaces.



INTERSECTIONDISPLAY set to off



INTERSECTIONDISPLAY set to on

### **Display Intersections**

Specifies the display of intersection polylines. (INTERSECTIONDISPLAY system variable)

### **Color**

Lists the available colors to apply to intersection polylines. (INTERSECTIONCOLOR system variable)

### **Hide Precision**

Controls the accuracy of hides and shades. Hides can be set to either low (single) precision or high (double) precision. (HIDEPRECISION system variable)

#### **Low (single)**

Sets the hide precision to low (single), which uses less memory.

#### **High (double)**

Sets the hide precision to high (double), which produces more precise hides, but also uses more memory and can affect performance.

# HYPERLINK

## Quick Reference

See also:

- Add Hyperlinks to a Drawing


Attaches a hyperlink to an object or modifies an existing hyperlink.

## Access Methods



Button

 **Ribbon:** Insert tab ► Data panel ► Hyperlink

 **Menu:** Insert ► Hyperlink

**Shortcut menu:** To edit a hyperlink, select an object that contains a hyperlink, right-click in the drawing area, and choose Hyperlink ► Edit Hyperlink.

## Summary

Hyperlinks in a drawing provide jumps to associated files. For example, a hyperlink can launch a word processing program and open a specified file, another hyperlink can launch a web browser and display a specified web page.

## List of Prompts

The following prompts are displayed.

Select objects: *Use an object selection method*

One of the following dialog boxes is displayed:

- [Insert Hyperlink dialog box \(for graphical objects that do not already contain hyperlinks\)](#) on page 591
- [Edit Hyperlink dialog box \(for graphical objects that already contain hyperlinks\)](#) on page 594



After you insert a hyperlink, the hyperlink icon is displayed when you move the cursor over the attached object. To open the hyperlink, right-click the selected object and choose Hyperlink. The PICKFIRST system variable must be set to 1 to open files associated with hyperlinks.

If you enter **-hyperlink** at the Command prompt, [options are displayed](#), including an option to define an area to associate with a hyperlink.

## Insert Hyperlink Dialog Box

### Quick Reference

See also:

- Add Hyperlinks to a Drawing

Attaches a specified hyperlink to a selected object.

### Summary

Attaches hyperlinks to graphical objects.

### List of Options

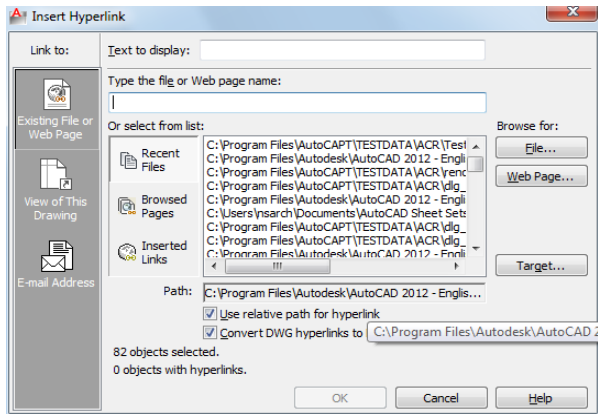
The following options are displayed.

#### Text to Display

Specifies a description for the hyperlink. This is useful when the file name or URL is not helpful in identifying the contents of the linked file.

#### **Existing File or Web Page Tab (Insert Hyperlink Dialog Box)**

Creates a hyperlink to an existing file or web page.



### Type the File or Web Page Name

Specifies the file or web page to associate with the hyperlink. The file can be stored locally, on a network drive, or on an Internet or intranet location.

### Recent Files

Displays a list of recently linked files, from which you can select one to link to.

**Browsed Pages** Displays a list of recently browsed web pages, from which you can select one to link to.

**Inserted Links** Displays a list of recently inserted hyperlinks, from which you can select one to link to.

### File

Opens the Browse the Web - Select Hyperlink dialog box (a standard file selection dialog box), in which you can navigate to the file that you want to associate with the hyperlink.

### Web Page

Opens the browser, in which you can navigate to a web page that you want to associate with the hyperlink.

### Target

Opens the [Select Place in Document dialog box](#), in which you can select a named location in a drawing to link to.

### Path

Displays the path to the file associated with the hyperlink. If Use Relative Path for Hyperlink is selected, only the file name is listed. If Use Relative Path for Hyperlink is cleared, the full path and the file name are listed.

### **Use Relative Path for Hyperlink**

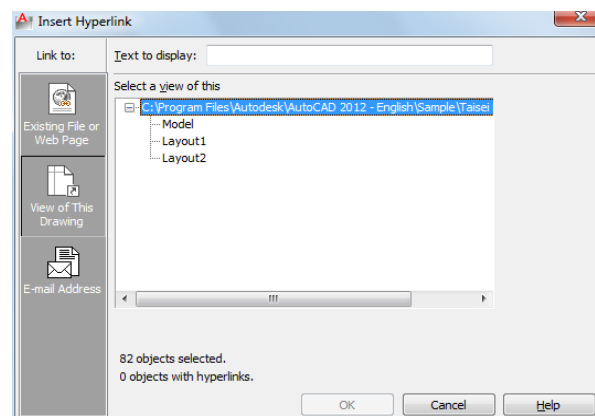
Sets a relative path for hyperlinks. If you select this option, the full path to the linked file is not stored with the hyperlink. The relative path is set to the value specified by the HYPERLINKBASE system variable or, if no value is specified for HYPERLINKBASE, to the current drawing path. If this option is cleared, the full path to the associated file is stored with the hyperlink.

### **Convert DWG Hyperlinks to DWF**

Specifies that the DWG hyperlink will convert to a DWF file hyperlink when you publish or plot the drawing to a DWF file.

### **View of This Drawing Tab (Insert Hyperlink Dialog Box)**

Specifies a named view in the current drawing to link to.

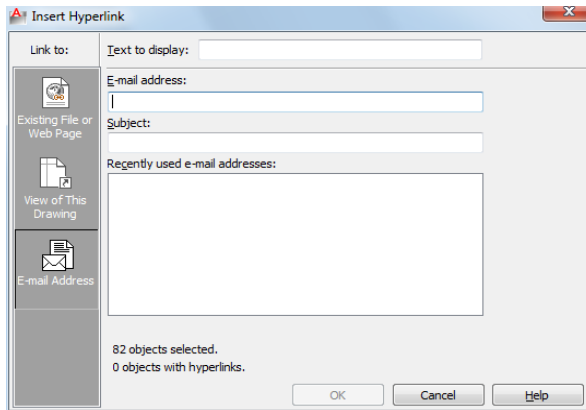


### **Select a View of This**

Displays an expandable tree view of the named views within the current drawing, from which you can select one to link to.

### **E-mail Address Tab (Insert Hyperlink Dialog Box)**

Specifies an email address to link to. When the hyperlink is executed, a new email is created using the default system email program.



### **E-mail Address**

Specifies an email address.

### **Subject**

Specifies a subject for the email.

### **Recently Used E-mail Addresses**

Lists recently used email addresses, from which you can select one to use for the hyperlink.

## **Edit Hyperlink Dialog Box**

### **Quick Reference**

#### **See also:**

- Add Hyperlinks to a Drawing

Edits hyperlinks.

### **Summary**

The Edit Hyperlink dialog box is a modified version of the [Insert Hyperlink dialog box](#), with one additional option.

### **List of Options**

The following options are displayed.

#### **Remove Link**

Deletes the hyperlink from the selected objects.

## **Select Place in Document Dialog Box**

### **Quick Reference**

**See also:**

- Add Hyperlinks to a Drawing

Navigates to a view or layout within a drawing.

### **Summary**

The named location that you select is the initial view that is restored when the hyperlink is executed.

### **List of Options**

The following options are displayed.

#### **Select an Existing Place in the Document**

Provides an expandable tree view of the named locations within the linked drawing, from which you can select a named location to link to.

## **-HYPERLINK**

### **Quick Reference**

**See also:**

- Add Hyperlinks to a Drawing

The Command prompt version of HYPERLINK inserts hyperlinks to areas or to selected objects and also removes hyperlinks.

## List of Prompts

The following prompts are displayed.

Enter an option [**Remove/Insert**] <Insert>: *Enter an option or press ENTER*

### **Remove**

Removes the hyperlink from the selected objects. If a selection set does not exist, you are prompted to create one.

Select objects: *Select graphical objects in the drawing*

If the selection set contains more than one hyperlink, the hyperlinks that were found are listed at the Command prompt.

Enter number, hyperlink, or \* for all: *Enter the number or name of the hyperlink, or enter\* to remove all hyperlinks in the selection set*

The number of removed hyperlinks is displayed at the Command prompt.

### **Insert**

Attaches a hyperlink to an object or an area.

Enter hyperlink insert option [Area/Object] <Object>: *Select a method for attaching a hyperlink*

**Area** Defines a bounding rectangle and places it on a layer called URLLAYER. If this layer doesn't exist in the current drawing, it is created.

---

**NOTE** To turn off the display of hyperlink bounding rectangles in the drawing area or in your drawing plots, you must freeze the URLLAYER layer. See "Use Layers to Manage Complexity" in the *User's Guide*.

---

First corner: *Specify the start point of the rectangle*

Other corner: *Specify the end point of the rectangle*

Enter the path to the file you want associated with the hyperlink.

Enter hyperlink <current drawing>: *Enter the full path to a local file or the complete URL to an Internet file, or press ENTER to create a hyperlink to a named view in the current drawing*

Enter a named location for the hyperlink, such as a view in a drawing or a bookmark in a word processing file.

Enter named location <none>: *Enter the named location, or press ENTER to create the hyperlink without one*

Enter description <none>: *Enter a description, or press ENTER to create the hyperlink without one*

**Object** Specifies graphical objects to attach the hyperlink to.

Select objects: *Select graphical objects in the drawing*

Enter the path to the file you want associated with the hyperlink.

Enter hyperlink <current drawing>: *Enter the full path to a local file or the complete URL to an Internet file, or press ENTER to create a hyperlink to a named view in the current drawing*

Enter a named location for the hyperlink, such as a view in a drawing or a bookmark in a word processing file.

Enter named location <none>: *Enter the named location, or press ENTER to create the hyperlink without one*

Enter description <none>: *Enter a descriptive name for the hyperlink, or press ENTER to create the hyperlink without one*

## HYPERLINKOPTIONS

### Quick Reference

See also:

- Use a Hyperlink to Access a File or a Web Page

Controls the display of the hyperlink cursor, tooltips, and shortcut menu.

### Summary

Controls the display of hyperlink cursor, tooltip, and shortcut menu.

### List of Prompts

The following prompts are displayed.

Display hyperlink cursor, tooltip, and shortcut menu? [Yes/No] <Yes>:





# I Commands

# 10

## ID

### Quick Reference

See also:


- Obtain Distances, Angles, and Point Locations


Displays the UCS coordinate values of a specified location.

### Access Methods




**Button**

 **Ribbon:** Home tab ► Utilities panel ► ID Point.

 **Menu:** Tools ► Inquiry ► ID Point

 **Toolbar:** Inquiry

 **Command entry:** 'id for transparent use

### Summary

ID lists the X, Y, and Z values of the specified point and stores the coordinate of the specified point as the last point. You can reference the last point by entering @ at the next prompt that requests a point.

### List of Prompts

The following prompts are displayed.

Specify Point: *Use the pointing device to specify a point*

The UCS coordinate values of the location are displayed at the Command prompt.

If you snap to an object in 3D space, the Z coordinate value is the same as that of the selected feature of the object.

## IGESEXPRT

### Quick Reference

See also:

- Export IGES files

Saves selected objects in the current drawing to a new IGES (\*.igs, \*.iges) file.

### Summary

Displays the Export File dialog box (a [standard file selection dialog box](#)) to enable you to name the IGES file and specify the path to it. Thereafter you must specify what objects to export.

Once processing is complete, a notification bubble is displayed.

## IGESEXPRT Conversion Table

### Quick Reference

See also:

- Export IGES files

The following table lists the AutoCAD LT entities tabulated against the corresponding IGES entities they are translated to.

**DWG to IGES Conversion Table**

AutoCAD LT Entity	IGES Entity		
	Type	Form	Name
Point			Nothing
Line	110	0	Line
Circle	126	0	Rational B-spline curve
Arc	126	0	Rational B-spline curve
Ellipse	126	0	Rational B-spline curve
Polyline (lightweight)	106	12	Copious data
2d Polyline	106	12	Copious data
3d Polyline	106	12	Copious data
Polyface mesh			Nothing
Polygon mesh			Nothing
SubD mesh	110	0	Line
Trace	110	0	Line
Solid (2D)	110	0	Line
3D Face			Nothing
Dimensions			Nothing
Leader			Nothing
Mleader			Nothing
Text			Nothing

<b>DWG to IGES Conversion Table</b>			
<b>AutoCAD LT Entity</b>	<b>IGES Entity</b>		
	<b>Type</b>	<b>Form</b>	<b>Name</b>
Mtext			Nothing
Hatch	110	0	Line
Block Reference			Treats the block reference as though it was exploded and translates each object within the block separately.
Surface	128/144		Rational B-spline surface, trimmed surface
3D Solid			Treats the 3D solid as though it were exploded to surfaces and translates each surface separately.
Region	128/144		Rational B-spline surface, trimmed surface
Body	128/144		Rational B-spline surface, trimmed surface
Table			Nothing
FCF			Nothing
OLE			Nothing
Image			Nothing
Xref			Nothing
Mline			Nothing
Xline			Nothing
Ray			Nothing

# IGESIMPORT

## Quick Reference

See also:

- Import IGES Files

Imports data from an IGES (\*.igs or \*.iges) file into the current drawing.

## Summary

Displays the Select IGES File dialog box (a [standard file selection dialog box](#)) to enable you to locate and select the IGES file to import.

If import takes longer than 5 seconds, the IGES file is processed in the background and the Import icon is displayed in the status bar. Hence, you can continue to work on the drawing while the IGES file is processed. You can check the status of the import process by placing the cursor over the Import status bar icon and inspecting the tooltip that is displayed.

Once processing is done, a notification bubble is displayed on the Import icon. Click the link in the notification bubble to insert the imported IGES data in the current drawing.

## IGESIMPORT Conversion Table

### Quick Reference

See also:

- Import IGES Files

The following table lists the IGES entities that are supported for import.

IGES to DWG Conversion Table

IGES Entity			AutoCAD LT Entity
Type	Form	Name	
100	0	circular arc	Spline

<b>IGES to DWG Conversion Table</b>			
<b>IGES Entity</b>			<b>AutoCAD LT Entity</b>
<b>Type</b>	<b>Form</b>	<b>Name</b>	
102	0	composite curve	Spline
104	0-3	conic arc, ellipse, parabola, hyperbola	Spline
106	1	copious data	Spline
106	2	copious data	Spline
106	11	copious data	Spline
106	12	copious data	Spline
106	63	closed area	Spline
108	0	plane	Surface
108	+/- 1	bounded plane	Surface
110	0	line	Spline
112	0	parametric curve	Spline
114	0	parametric surface	Surface
116	0	point	Nothing
118	0-1	ruled surface	Surface
120	0	surface of revolution	Surface
122	0	tabulated cylinder	Surface
123	0	direction	Nothing
124	0	transformation matrix	Nothing
126	0-5	rational B-spline curve	Spline

---

**IGES to DWG Conversion Table**


---

IGES Entity			AutoCAD LT Entity
Type	Form	Name	
128	0-9	rational B-spline surface	Surface
130	0	offset curve	Spline
140	0	offset surface	Surface
141	0	boundary entity	Nothing
143	0	boundary surface	Surface (with trimming applied, not associative)
144	0	trimmed surface	Surface (with trimming applied, not associative)
186		Manifold Solid BRep Object (MSBO)	Surface (can be converted to solid with CONVTSOLID)
190	0,1	plane surface	Applied when processing entity type 186.
192		right circular cylindrical surface	Applied when processing entity type 186.
194		right circular conical surface	Applied when processing entity type 186.
198		toroidal surface	Applied when processing entity type 186.
308	0	subfigure definition	Applied when processing entity type 408 (Subfigure)
402	7, 9	associativity instance	Ignored (as though entities weren't related in a group).
408	0	singular subfigure instance	Individual entities (like an exploded block reference).

---

IGES to DWG Conversion Table			
IGES Entity			AutoCAD LT Entity
Type	Form	Name	
502		vertex list	Applied when processing entity type 186.
504		edge list	Applied when processing entity type 186.
508		loop	Applied when processing entity type 186.
510		face	Applied when processing entity type 186.
514		shell	Applied when processing entity type 186.

## IMAGE

### Quick Reference

#### See also:

- Attach Raster Images

Displays the External References palette.

#### Access Methods



#### Button

 **Ribbon:** Insert tab ► Reference panel ► Attach

 **Menu:** File ► Attach

 **Menu:** Insert ► External References

 **Toolbar:** Reference



**Shortcut menu:** Select an image. Right-click in the drawing area and choose Image ► External References.

### Summary

The [External References palette](#) is displayed.

If you enter **-image** at the Command prompt, [options are displayed](#).

## -IMAGE

### Quick Reference

See also:

- Attach Raster Images

Attaches a raster image to the drawing.

### List of Prompts

The following prompts are displayed.

Enter image option [?/Detach/Path/Reload/Unload/Attach] <Attach>: *Enter an option or press Enter*

#### ?—List Images

Lists the images by name in alphabetical order, the number of times each is attached to the drawing, and the path where the image is stored. Images are listed in alphabetical order, regardless of the setting of the MAXSORT system variable.

#### Detach

Detaches the named image from the drawing, marks it for deletion, and erases all occurrences of the image.

#### Path

Updates the path name (including file name) associated with a particular image. This option is useful if you change the location of an image file, rename the file, or replace an old image file with a new file; for instance, you can update *image01.png* and save it as *image02.png*.

If you enter an asterisk (\*), the following prompt is displayed:

Old path: *Lists the current path name for each image*

Enter New path: *Enter the new path name for the specified image*

### **Reload**

Reloads the selected images, making that information available for display and plotting.

### **Unload**

Removes image data from working memory so that the images are not displayed, thus improving performance. All information associated with the image remains stored with the drawing. The image frame of each attached image remains visible.

### **Attach**

Attaches a new image or a copy of an attached image to the current drawing. The Select Image File dialog box (a [standard file selection dialog box](#)) is displayed.

The file name without the extension is assigned as the image name. Image names can include up to 255 characters and contain letters, digits, spaces, and any special characters not used by the operating system or this program. If the file name is not a valid name for a nongraphical object, the Substitute Image Name dialog box is displayed. A valid image name is generated from the file name and an underscore and number are appended to the name.

If a definition with the same name and path exists in the drawing, the following prompts are displayed and the image is inserted as a copy:

Image file name has already been loaded.

Use IMAGE Reload to update its definition.

Specify insertion point <0,0>: *Specify an insertion point*

Base image size: Width: *current width*, Height: *current height, current unit*

Specify scale factor: *Enter a value or press Enter*

Specify rotation angle <0>: *Enter a value or press Enter*

If the FILEDIA system variable is set to 0, the following prompt is displayed instead of the dialog box:

Enter image file name to attach <last>: *Enter an image name*

The last image name attached to the drawing during the current session is the default. To avoid errors when entering an image name, it is recommended that you specify both the image name and the file name as follows:

*imagenname=path name\long file name.bmp*

or

*imagename="path name\long file name.bmp"*

If you enter a valid image name without a file extension, the program searches for the file in this order: first, an existing image definition in the drawing, and second, an image file in the folders in order of the search path. The program searches for all the image files with the specified name, regardless of extension, and uses the first name found. If no image name or image file is found, the message "Image Not Found" is displayed and the prompt is repeated.

To specify a long file name that does not conform to this program's naming rules, enter the name as follows:

*"imagename=filename"*

You can use a dialog box to search for image files but still enter the *imagename=filename* convention at the Command prompt. Enter a tilde (~) at the Enter Image File Name to Attach prompt. If you press Esc after the dialog box opens, the Enter Image Name prompt is displayed.

## IMAGEADJUST

### Quick Reference

See also:


- Change Raster Image Brightness, Contrast, and Fade

Controls the image display of the brightness, contrast, and fade values of images.

### Access Methods



**Button**

 **Menu:** Modify ► Object ► Image ► Adjust

 **Toolbar:** Reference

**Shortcut menu:** Select an image to adjust, right-click in the drawing area, and choose Image ► Adjust.

## Summary

You can change the default values for Brightness, Contrast, and Fade for attached images. To confirm the settings of a selected image, open the Properties palette.

---

**NOTE** You can also use the [ADJUST](#) command to change an image's brightness, contrast, and fade settings.

---

The [Image Adjust dialog box](#) is displayed when you enter the IMAGEADJUST command.

If you enter **-imageadjust** at the Command prompt, [options are displayed](#).

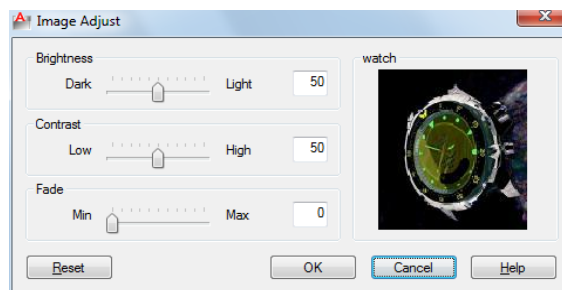
## Image Adjust Dialog Box

### Quick Reference

See also:

- Change Raster Image Brightness, Contrast, and Fade

Controls how the image is displayed by adjusting the brightness, contrast, and fade settings of the selected image.



### Summary

Adjusting these values changes the display of the image but does not change the image file itself.

### List of Options

The following options are displayed.

**Brightness**

Controls the brightness, and indirectly the contrast, of the image. The greater the value, the brighter the image and the more pixels that become white when you increase contrast.

**Contrast**

Controls the contrast, and indirectly the fading effect of the image. The greater the value, the more each pixel is forced to its primary or secondary color.

**Fade**

Controls the fading effect of the image. The greater the value, the more the image blends with the current background color. A value of 100 blends the image completely into the background. Changing the screen background color causes the image to fade to the new color. In plotting, the background color for fade is white.

**Image Preview**

Displays a preview of the selected image. The preview image updates dynamically to reflect changes to the brightness, contrast, and fade settings.

**Reset**

Resets values for brightness, contrast, and fade to default settings (50, 50, and 0, respectively).

## **-IMAGEADJUST**

**Quick Reference****See also:**

- [Change Raster Image Brightness, Contrast, and Fade](#)

Controls the image display of the brightness, contrast, and fade values of images.

**Summary**

With the Command prompt version of IMAGEADJUST, you can select more than one image to adjust.

### List of Prompts

The following prompts are displayed.

If you select a single image, the default values for Brightness, Contrast, and Fade are the current property settings of the image. If you select multiple images, the default values for Brightness, Contrast, and Fade are 50, 50, and 0, respectively.

**Contrast** Controls the contrast, and indirectly, the fading effect of the image. The greater the value, the more each pixel is forced to its primary or secondary color.

**Brightness** Controls the brightness, and indirectly the contrast, of the image. The greater the value, the brighter the image and the more pixels that become white when you increase contrast.

**Fade** Controls the fading effect of the image. The greater the value, the more the image blends with the current background color. A value of 100 blends the image completely into the background. Changing the screen background color causes the image to fade to the new color. In plotting, the background color for fade is white.

## IMAGEATTACH

### Quick Reference

See also:


- Attach Raster Images

Inserts a reference to an image file.

### Access Methods



**Button**

 **Ribbon:** Insert tab ► Reference panel ► Attach

 **Menu:** Insert ► Raster Image Reference

 **Toolbar:** Reference

## Summary

When you attach an image file, you link that referenced file to the current drawing. Any changes to the referenced file are displayed in the current drawing when it is opened or reloaded.

The Select Reference File dialog box (a [standard file selection dialog box](#)) is displayed. Once you select an image file, the [Attach Image Dialog Box](#) on page 613 is displayed.

After the file is attached, you can adjust and clip the underlay through the [Image Ribbon Contextual tab](#).

---

**TIP** Use the generic [CLIP](#) command to clip images, external references, viewports, and underlays.

---

## Attach Image Dialog Box

### Quick Reference

See also:

- [Attach Raster Images](#)

Locates, inserts, names, and defines the parameters and details of attached images.

### List of Options

The following options are displayed.

#### **Name**

Identifies the image you have selected to attach.

#### **Browse**

Opens the Select Reference File dialog (a [standard file selection dialog box](#) on page 826).

#### **Preview**

Displays the image that you have selected to attach.

### **Path Type**

Select the full (absolute) path, the relative path to the image file, or No Path, the name of the image file (the image file must be located in the same folder as the current drawing file).

### **Insertion Point**

Specifies the insertion point for the selected image file. Specify On-Screen is the default. The default insertion point is 0,0,0.

### **Specify On-Screen**

Directs input at the Command prompt or the pointing device. If Specify On-Screen is cleared, enter the insertion point in X, Y, and Z.

**X**

Sets the X coordinate value.

**Y**

Sets the Y coordinate value.

**Z**

Sets the Z coordinate value.

### **Scale**

Specifies the scale factor of the selected image.

If **INSUNITS** is set to “unitless” or if the image does not contain resolution information, the scale factor becomes the image width in AutoCAD units. If **INSUNITS** has a value such as millimeters, centimeters, inches, or feet, and the image has resolution information, the scale factor is applied after the true width of the image in AutoCAD units is determined.

### **Specify On-Screen**

Allows you to input at the Command prompt or the pointing device. If Specify On-Screen is cleared, enter a value for the scale factor. The default scale factor is 1.

### **Scale Factor Field**

Enter a value for the scale factor. The default scale factor is 1.

### **Rotation**

Specifies the rotation angle of the selected image.

### **Specify On-Screen**



If Specify On-Screen is selected, you may wait until you exit the dialog box to rotate the object with your pointing device or enter a rotation angle value at the Command prompt.

#### **Angle**

If Specify On-Screen is cleared, enter the rotation angle value in the dialog box. The default rotation angle is 0.

#### **Show Details**

Displays details about the selected image file.

#### **Resolution**

Displays the number of horizontal and vertical pixels per the current unit measurement in AutoCAD LT.

#### **Unit**

Displays the current AutoCAD LT unit.

#### **Image Size in Pixels**

Displays the width and height of the raster image measured in pixels.

#### **Image Size in Units**

Displays the width and height of the raster image measured in AutoCAD LT units.

#### **Path**

**Found In** Displays the path where the image file is located.

**Saved Path** Displays the path that is saved with the drawing when the image file is attached. The path is dependent upon the Path Type setting.

## **Image Ribbon Contextual tab**

### **Quick Reference**

#### **See also:**

- Modify Raster Images and Image Boundaries

### **Summary**

When you select a raster image that is attached to a drawing, the Image Contextual tab appears on the ribbon.

### List of Options

The following options are displayed.

#### Adjust Panel

Brightness	Controls the brightness and the contrast of the image. The greater the value, the brighter the image.
Contrast	Controls the contrast and the fading effect of the image. The greater the value, the more the image fades.
Fade	Controls the fading of an image. The greater the value, the more the image blends with the current background color.

#### Clipping Panel

Create Clipping Boundary	Deletes the old clipping boundary (if one exists) and creates a new one.
Remove Clipping	Deletes the clipping boundary.

#### Options Panel

Show Image	Hides or displays the image.
Transparency	Turns transparency on so that objects beneath the image are visible.
External References	Displays the External References Palette.

## IMAGECLIP

### Quick Reference

#### See also:


- Clip Raster Images

Crops the display of a selected image to a specified boundary.

## Access Methods



### Button

 **Ribbon:** Image contextual tab ► Clipping panel ► Create Clipping Boundary.

 **Menu:** Modify ► Clip ► Image

 **Toolbar:** Reference

**Shortcut menu:** Select an image to clip. Right-click in the drawing area and choose Image ► Clip.

## Summary

The clipping boundary determines the portion of a raster image that is hidden, either outside or inside the boundary. The visibility of the clipping boundary is controlled by the **IMAGEFRAME** system variable. The boundary you specify must be in a plane parallel to the image object.

When you select an image, the [ribbon Image contextual tab](#) on page 615 displays options for creating and deleting clipping boundaries.

---

**TIP** Use the **CLIP** command to clip any type of referenced file: images, external references, viewports, and DWF, DWFx, PDF, and DGN underlays.

---

## List of Prompts

The following prompts are displayed.

### On

Turns on clipping and displays the image clipped to the previously defined boundary.

### Off

Turns off clipping and displays the entire image and frame.

If you reclip the image while clipping is turned off, clipping is automatically turned back on. You are prompted to delete the old boundary even when clipping is turned off and the clipping boundary is not visible.

### Delete

Removes a predefined clipping boundary and redisplay the full original image.

### **New Boundary**

Defines a rectangular or polygonal clipping boundary, or generates a polygonal clipping boundary from a polyline.

---

**NOTE** You can only create a new clipping boundary for a selected IMAGE underlay after the old boundary is deleted.

---

**Select Polyline** Defines the boundary with the selected polyline. The polyline can be open but must consist of straight line segments and cannot intersect itself.

**Polygonal** Defines a polygonal clipping boundary with three or more points that you specify for the vertices of a polygon.

**Rectangular** Defines a rectangular boundary with the points that you specify for opposite corners.

**Invert Clip** Inverts the mode of the clipping boundary: objects are clipped either outside the boundary or inside the boundary.

## **IMAGEQUALITY**

### **Quick Reference**

**See also:**


- Improve the Display Speed of Raster Images

Controls the display quality of images.

### **Access Methods**



**Button**

 **Menu:** Modify ► Object ► Image ► Quality

 **Toolbar:** Reference

### Summary

The quality setting affects display performance; high-quality images take longer to display. Changing the setting updates the display immediately without causing a regeneration of the drawing.

---

**NOTE** Images are always plotted using a high-quality setting.

---

### List of Prompts

The following prompts are displayed.

**High** Produces a high-quality display of the image.

**Draft** Produces a lower-quality display of the image.

## IMPORT

### Quick Reference

See also:

- Import Other File Formats

Imports files of different formats into the current drawing.

### Access Methods



Button

 **Menu:** File ► Import

 **Toolbar:** Insert

### Summary

You can import data files, other than DWG files, that were created with other applications into the current drawing. The import process translates data into the corresponding DWG file data.

The Import File dialog box (a [standard file selection dialog box](#)) is displayed.

In Files of type, select the file format to import. In File Name, select the file name to import. The file is imported into the drawing. The following formats are available for import:

- *FBX files (\*.fbx)*: Autodesk® FBX files (see [FBXIMPORT](#))
- *Metafile (\*.wmf)*: Microsoft Windows® Metafile (see [WMFIN](#) on page 1335)
- *MicroStation DGN (\*.dgn)*: MicroStation DGN files (see [DGNIMPORT](#) on page 298)
- *All DGN files (\*.\*)*: DGN files with user-specified file extensions such as *.sed* for seed files (see [DGNIMPORT](#) on page 298)

For the WMF file type, selecting Options on the Tools menu in this dialog box displays the [WMF In Options dialog box](#). You can display this dialog box directly by using WMFOPTS.

If FILEDIA = 0, the following prompt is displayed:

Enter import file name: *Enter path and file name*

## INSERT

### Quick Reference

See also:


- Insert Blocks


Inserts a block or drawing into the current drawing.

### Access Methods



Button

 **Ribbon:** Insert tab ► Block panel ► Insert

 **Menu:** Insert ► Block

 **Toolbar:** Insert

## Summary

The [Insert dialog box](#) is displayed.

If you enter **-insert** at the Command prompt, [options are displayed](#).

A good practice is to insert a block from a block library. A block library can be a drawing file that stores related block definitions or it can be a folder that contains related drawing files, each of which can be inserted as a block. With either method, blocks are standardized and accessible to multiple users.

You can insert your own blocks or use the blocks provided in the DesignCenter or tool palettes.

## Select one model

Lists the models found in the \*.exp file. Select the model to import and click OK.

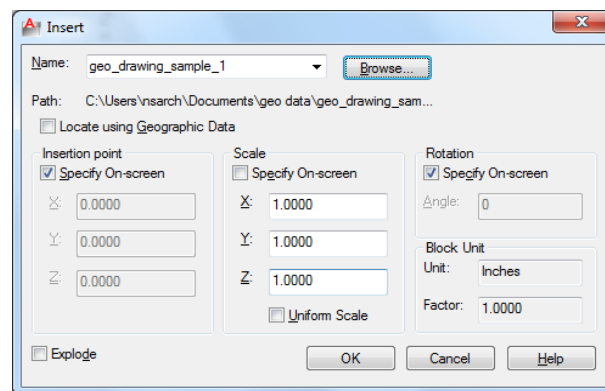
# Insert Dialog Box

## Quick Reference

See also:

- [Insert Blocks](#)

Specifies the name and position of the block or drawing to insert.



**Summary**

The position of the inserted block depends on the orientation of the UCS.

**Name**

Specifies the name of a block to insert, or the name of a file to insert as a block.

**Browse**

Opens the Select Drawing File dialog box (a standard file selection dialog box) where you can select a block or drawing file to insert.

**Path**

Specifies the path to the block.

**Locate Using Geographic Data**

Inserts drawing using geographic data as the reference.

Specifies if the current and attached drawing contain geographic data. This option is available only if both drawings have geographic data.

**Description** Displays the description that was saved with the block.

**Preview**

Displays a preview of the specified block to insert. A lightning bolt icon in the lower-right corner of the preview indicates that the block is dynamic. A



icon indicates that the block is .

**Insertion Point**

Specifies the insertion point for the block.

**Specify On-Screen**

Specifies the insertion point of the block using the pointing device.

**Input Coordinates** Allows you to manually enter the  $X$ ,  $Y$ , and  $Z$  coordinate value for the insertion point of the block.

**X**

Sets the  $X$  coordinate value.

**Y**

Sets the  $Y$  coordinate value.



## Z

Sets the Z coordinate value.

## Scale

Specifies the scale for the inserted block. Specifying negative values for the X, Y, and Z scale factors inserts a mirror image of a block.

### Specify On-Screen

Specifies the scale of the block using the pointing device.

**Input Scale Factor** Allows you to manually enter a scale factor for the block.

## X

Sets the X scale factor.

## Y

Sets the Y scale factor.

## Z

Sets the Z scale factor.

## Uniform Scale

Specifies a single scale value for X, Y, and Z coordinates.

## Rotation

Specifies the rotation angle for the inserted block in the current UCS.

### Specify On-Screen

Specifies the rotation of the block using the pointing device.

**Input Angle** Allows you to manually enter an angle of rotation for the block.

## Angle

Sets a rotation angle for the inserted block.

## Block Unit

Displays information about the block units.

## Unit

Specifies the INSUNITS value for the inserted block.

### Factor

Displays the unit scale factor, which is calculated based on the INSUNITS value of the block and the drawing units.

### Explode

Explodes the block and inserts the individual parts of the block. When Explode is selected, you can specify a uniform scale factor only.

Component objects of a block drawn on layer 0 remain on that layer. Objects having color BYBLOCK are white. Objects with linetype BYBLOCK have the CONTINUOUS linetype.

## -INSERT

### Quick Reference

#### See also:

- Insert Blocks

Inserts a block or drawing into the current drawing.

#### List of Prompts

The following prompts are displayed.

Enter **block name** or [?] *<last>: Enter a name, enter ?, enter ~, or press Enter*

Units: *<INSUNITS specified for inserted block>* Conversion: *<conversion scale>*

Specify **insertion point** or [**Basepoint/Scale/X/Y/Z/Rotate/Geographic**]: *Specify a point or enter an option*

#### **Block Name**

Grouped objects in an inserted drawing are inserted as unnamed groups. You can list unnamed groups by selecting Include Unnamed Groups in the “Group Manager”.

Entering a tilde (~) displays the Select Drawing File dialog box (a [standard file selection dialog box](#)).

You can control block insertion behavior in response to the Enter Block Name prompt by following the listed examples.

- *Inserting Exploded Blocks:* Preceding the name of the block with an asterisk (\*) explodes the block and inserts the individual parts of it. The block definition is not added to the drawing.
- *Updating a Block Path:* If you enter a block name without a path name, INSERT searches the current drawing data for an existing block definition by that name. You can replace an existing block definition with an external file by entering the following at the Enter Block Name prompt:  
**block name=file name**
- *Updating a Block Definition:* If you make changes to a block file that is inserted in your drawing and you want to change the existing block definition without creating a new block insertion, enter the following at the Specify Insertion Point prompt (following the Enter Block Name prompt):  
**block name=**  
If you enter = after the block name, the following prompt is displayed:  
Block "current" already exists. Redefine it? [Yes/No] <No>: *Enter y, enter n, or press Enter*  
If you choose to redefine the block, the existing block definition is replaced with the new block definition. The drawing is regenerated, and the new definition is applied to all existing insertions of the block definition. Press Esc when prompted for the insertion point if you do not want to insert a new block into the drawing.

### **?—List Block Names**

Lists the blocks currently defined in the drawing.

### **Insertion Point**

Specifies a location for the block or drawing.

**Scale Factor** All  $X$  and  $Y$  dimensions of the block or drawing are multiplied by the  $X$  and  $Y$  scale factors. The block or drawing is rotated by the specified angle, using the insertion point as the center of rotation.

**Corner** Defines the  $X$  and  $Y$  scale factors at the same time, using the insertion point and another point as the corners of a box. The  $X$  and  $Y$  dimensions of the box become the  $X$  and  $Y$  scale factors. The insertion point is the first corner.

**XYZ** Sets  $X$ ,  $Y$ , and  $Z$  scale factors.

- *X Scale Factor:* Defines  $X$ ,  $Y$ , and  $Z$  scale factors for the block or drawing.

- *Corner*: Defines the *X* and *Y* scales at the same time, using the insertion point and another point as the corners of a box, and then defines the *Z* scale.

### **Basepoint**

Temporarily drops the block in the drawing where it is currently positioned and allows you to specify a new base point for the block reference as it is dragged into position. This does not affect the actual base point defined for the block reference.

### **Scale**

Sets the scale factor for the *X*, *Y*, and *Z* axes. The scale for the *Z* axis is the absolute value of the specified scale factor.

### **X**

Sets the *X* scale factor.

### **Y**

Sets the *Y* scale factor.

### **Z**

Sets the *Z* scale factor.

### **Rotate**

Sets the angle of insertion for the block.

### **Geographic**

Sets the geographic location of the attached file as reference.

## **INSERTOBJ**

### **Quick Reference**

See also:

- Import OLE Objects


Inserts a linked or embedded object.

### **Access Methods**



**Button**

 **Ribbon:** Insert tab ► Data panel ► OLE Object

 **Menu:** Insert ► OLE Object

 **Toolbar:** Insert

### Summary

The [Insert Object dialog box](#) is displayed.

- Linked information from another document can be updated when it changes in the source document.
- Embedded information from another document is not updated when it changes in the source document.

## Insert Object Dialog Box

### Quick Reference

See also:

- Import OLE Objects

Inserts a linked or embedded object.

### List of Options

The following options are displayed.

#### Create New

Opens the application that's highlighted in the Object Type list so that you can create a new object to insert.

**Object Type** Lists available applications that support linking and embedding. To create an object to embed, double-click an application to open it.

On the application's File menu, the Save option is replaced with a new Update option. Choosing Update inserts the object into the drawing or updates it.

**Display as Icon** Displays the source application's icon in the drawing. Double-clicking the icon displays the embedded information.

#### Create from File

Specifies a file to link or embed.

**File** Specifies the path and name of the file to be embedded or linked.

**Browse** Displays the Browse dialog box (a standard file selection dialog box), in which you select a file to link or embed.

**Link** Creates a link to the selected file rather than embedding it.

**Display as Icon** Displays the source application's icon in the drawing. Double-clicking the icon displays the linked or embedded information.

## INTERSECT

### Quick Reference

See also:

- Create and Combine Areas (Regions)

Creates a 2D region from selected overlapping regions.

### Access Methods



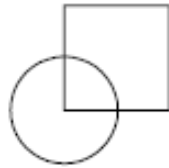
**Button**

 **Menu:** Modify ► Region ► Intersect

### Summary

With INTERSECT, you can create a 2D region object from the overlapping area of two or more existing regions. You can select only regions for use with INTERSECT.

You can intersect regions only with other regions that are on the same plane. However, you can perform simultaneous INTERSECT operations by selecting sets of regions on different planes. Separate, intersected regions are then produced on each plane.



regions before  
INTERSECT



region after INTERSECT

## ISOLATEOBJECTS

### Quick Reference

See also:

- Control the Display of Objects

Displays selected objects across layers; unselected objects are hidden.

### Access Methods



**Menu:** Tools ► Isolate ► Isolate Objects

**Shortcut menu:** Right-click in the drawing area and click Isolate ► Isolate Objects.

### Summary

Displays selected objects in the current view. All other objects are temporarily hidden.

### List of Prompts

The following prompt is displayed.

Select objects: *Use an object selection method*

# ISOPLANE

## Quick Reference

See also:

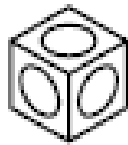
- Set Isometric Grid and Snap

Specifies the current isometric plane.

## Access Methods

 **Command entry:** 'isoplane for transparent use

## Summary



The isometric plane affects the cursor movement keys only when Snap mode is on and the snap style is Isometric. If the snap style is Isometric, Ortho mode uses the appropriate axis pair even if Snap mode is off. The current isometric plane also determines the orientation of isometric circles drawn by ELLIPSE.

You can cycle through the isometric planes by pressing Ctrl+E or F5.

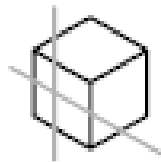
## List of Prompts

The following prompts are displayed.

Enter isometric plane setting [Left/Top/Right] <Top>: *Enter an option or press*

Enter

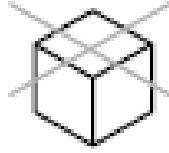
Left



Selects the left-hand plane, defined by the 90-degree and 150-degree axis pair.

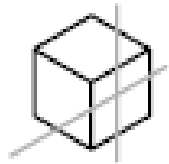


**Top**



Selects the top face of the cube, called the top plane, defined by the 30-degree and 150-degree axis pair.

**Right**



Selects the right-hand plane, defined by the 90-degree and 30-degree axis pair.



# J Commands

# 11

## JOIN

### Quick Reference

See also:


- Break and Join Objects

Joins the endpoints of linear and curved objects to create a single object.

### Access Methods



Button

 **Ribbon:** Surface Modeling tab ► Curves panel ► Join

 **Menu:** Modify ► Join

 **Toolbar:** Modify

### Summary

Combines a series of finite linear and open curved objects at their common endpoints to create a single 2D or 3D object. The type of object that results depends on the types of objects selected, the type of object selected first, and whether the objects are coplanar.



---

**NOTE** Construction lines, rays, and closed objects cannot be joined.

---

### List of Prompts

The following prompts are displayed.

Select source object or multiple objects to join as once: *Select lines, polylines, 3D polylines, arcs, elliptical arcs, or splines.*

### Source Object

Specifies a single source object to which you can join other objects. Press Enter after selecting the source object to begin selecting the objects to join. The following rules apply for each type of source object:

**Line** Only line objects can be joined to the source line. The line objects must all be collinear, but can have gaps between them.

**Polyline** Lines, polylines, and arcs can be joined to the source polyline. All objects must be contiguous and coplanar. The resulting object is a single polyline.

**3D Polyline** Any linear or curved object can be joined to the source 3D polyline. All the objects must be contiguous, but can be noncoplanar. The resulting object is either a single 3D polyline or a single spline, depending on whether you are joining to a linear or a curved object respectively.

**Arc** Only arcs can be joined to the source arc. All the arc objects must have the same radius and center point, but can have gaps between them. The arcs are joined in a counterclockwise direction starting from the source arc.

The Close option converts the source arc into a circle.

**Elliptical Arc** Only elliptical arcs can be joined to the source elliptical arc. The elliptical arcs must be coplanar and have the same major and minor axes, but can have gaps between them. The elliptical arcs are joined counterclockwise starting from the source elliptical arc.

The Close option converts the source elliptical arc into an ellipse.

**Helix** Any linear or curved object can be joined to the source helix. All objects must be contiguous, but can be noncoplanar. The resulting object is a single spline.

**Spline** Any linear or curved object can be joined to the source spline. All objects must be contiguous, but can be noncoplanar. The resulting object is a single spline.

### **Multiple Objects to Join at Once**

Joins multiple objects without specifying a source object. The rules and resulting object types are as follows:

- A line object results from joining collinear lines. The lines can have gaps between their endpoints.
- An arc or circle object results from joining coplanar arcs with the same center point and radius. The arcs can have gaps between their endpoints. Lengthening occurs in a counterclockwise direction. A circle object results if the joined arcs form a complete circle.
- A spline object results from joining splines or elliptical arcs together, or to other objects. The objects can be noncoplanar.
- A polyline object results from joining coplanar lines, arcs, polylines, or 3D polylines.
- A 3D polyline results from joining noncoplanar objects other than curved objects.

## **JPGOUT**

### **Quick Reference**

**See also:**

- [Export Raster Files](#)

Saves selected objects to a file in JPEG file format.

### **Summary**

The Create Raster File dialog box (a [standard file selection dialog box](#)) is displayed. Enter the file name in the dialog box.

### List of Prompts

The following prompts are displayed.

Select objects or <all objects and viewports>: *Press Enter to select all objects and viewports or use an object selection method and press Enter*

A JPEG file is created that contains the objects you select. Shade Plot options are preserved in the file when you use this command. Light glyphs that are displayed in the drawing appear in the new file, even if the Plot Glyph property of the lights is set to No.

---

**NOTE** When the FILEDIA system variable is set to 0 (Off), command prompts are displayed.

---

## JUSTIFYTEXT

### Quick Reference

See also:


- Change Text Scale and Justification


Changes the justification point of selected text objects without changing their locations.

### Access Methods



Button

 **Ribbon:** Annotate tab ► Text panel ► Justify

 **Menu:** Modify ► Object ► Text ► Justify

 **Toolbar:** Text

### Summary

The justification point options shown above are described in the TEXT command. The justification point options for single line text are similar to those for multiline text except that the Align, Fit, and Left text options are equivalent to the bottom left (BL) multiline text attachment point.

### **List of Prompts**

The following prompts are displayed.

Select objects: *Use an object selection method and press ENTER when you finish*

You can choose single line text objects, multiline text objects, leader text objects, and attribute objects.

Enter a justification option

[Left/Align/Fit/Center/Middle/Right/TL/TC/TR/ML/MC/MR/BL/BC/BR]<Existing>:

*Specify a location to serve as the new justification point*





# L Commands

# 12

## LAYCUR

### Quick Reference

See also:


- Use Layers to Manage Complexity

Changes the layer property of selected objects to the current layer.

### Access Methods



Button

 **Ribbon:** Home tab ► Layers panel ► Change to Current Layer

 **Menu:** Format ► Layer Tools ► Change to Current Layer

 **Toolbar:** Layers II

### Summary

If you find objects that were created on the wrong layer, you can quickly change them to be on the current layer.

### List of Prompts

The following prompts are displayed.

Select objects to be changed to the current layer: *Use an object selection method and press Enter when you are finished*  
N object(s) changed to layer X (the current layer).

## LAYDEL

### Quick Reference

#### See also:

- Use Layers to Manage Complexity


Deletes all objects on a layer and purges the layer.

#### Access Methods



#### Button

 **Ribbon:** Home tab ► Layers panel ► Delete

 **Menu:** Format ► Layer Tools ► Layer Delete

#### Summary

This command also changes block definitions that use the layer to be deleted. Objects on that layer are also deleted from all block definitions and the affected blocks are redefined.

#### List of Prompts

The following prompts are displayed.

Select object on layer to delete or [Name]: *Select an object or enter n to display the Delete Layers dialog box*

If you enter **-laydel** at the Command prompt, [options are displayed](#) on page 641.

**Select Object on Layer to Delete** Select an object on the layer you want to delete.

**Name** Displays the [Delete Layers dialog box](#) on page 641.

## Delete Layers Dialog Box

### Quick Reference

#### See also:

- Use Layers to Manage Complexity

Displays layers available for deletion.

### List of Options

The following options are displayed.

**Layers to Delete** Displays a list of layers that you can delete. Press Shift or Ctrl to select more than one layer. Layers that cannot be deleted include the current layer, layer 0, locked layers, and xref-dependent layers.

## -LAYDEL

### Quick Reference

#### See also:

- Use Layers to Manage Complexity

### List of Prompts

The following prompts are displayed.

Select object on layer to delete or [Name]: *Select an object or enter n.*

Select object on layer to delete or [Name/Undo]: *Select an object, enter n, or enter u*

**Select Object on Layer to Delete** Select an object on the layer you want to delete.

**Name** Select a layer to delete.

# LAYER

## Quick Reference

See also:


- Use Layers to Manage Complexity
- [CLASSICLAYER](#) on page 209

Manages layers and layer properties.

## Access Methods




Button

 **Ribbon:** Home tab ► Layers panel ► Layer Properties Manager

 **Menu:** Format ► Layer

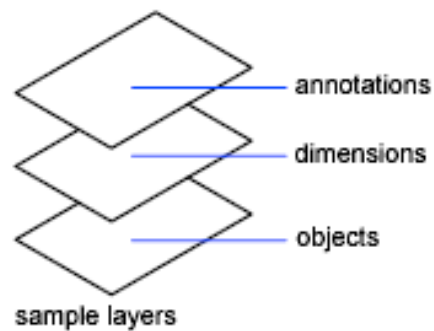
 **Toolbar:** Layer

 **Command entry:** 'layer for transparent use

## Summary

The [Layer Properties Manager](#) is displayed.

If you enter **-layer** at the Command prompt, [options are displayed](#).



Use layers to control the visibility of objects and to assign properties such as color and linetype. Objects on a layer normally assume the properties of that

layer. However, you can override any layer property of an object. For example, if an object's color property is set to BYLAYER, the object displays the color of that layer. If the object's color is set to Red, the object displays as red, regardless of the color assigned to that layer.

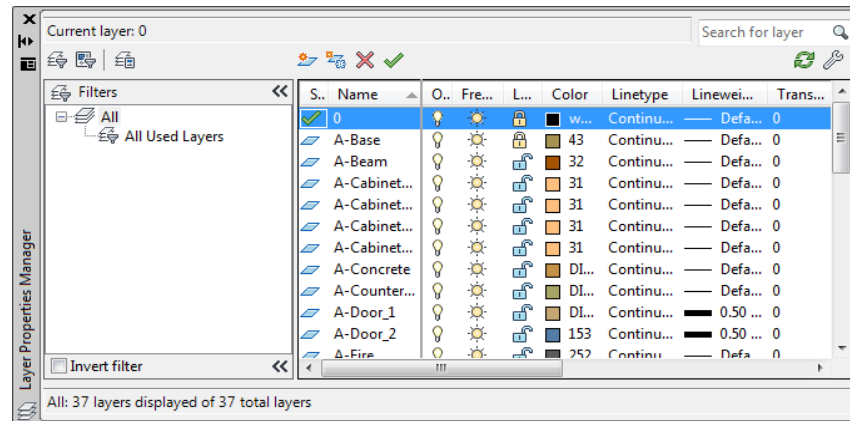
## Layer Properties Manager

### Quick Reference

See also:

- Work with Layers
- [CLASSICLAYER](#) on page 209

Displays a list of the layers in the drawing and their properties.



### Summary

You can add, delete, and rename layers, change their properties, set property overrides for layout viewports, or add layer descriptions and apply changes in realtime. You do not need to click Ok or Apply to view property changes. Layer filters control which layers are displayed in the list and can also be used to make changes to more than one layer at a time.

When switching space (model space to layout space or layout to viewport), the Layer Properties Manager is updated and displays the current state of the layer properties and filter selection in the current space.

### **List of Options**

The following options are displayed.

#### **New Property Filter**

Displays the [Layer Filter Properties dialog box](#), where you can create a layer filter based on one or more properties of the layers.

#### **New Group Filter**

Creates a layer filter that contains layers that you select and add to the filter.

#### **Layer States Manager**

Displays the [Layer States Manager](#) on page 668, in which you can save the current property settings for layers in a named layer state and then restore those settings later.

#### **New Layer**

Creates a new layer. The list displays a layer named LAYER1. The name is selected so that you can enter a new layer name immediately. The new layer inherits the properties of the currently selected layer in the layer list (color, on or off state, and so on).

The new layer is created below the last currently selected layer.

#### **New Layer Frozen VP In All Viewports**

Creates a new layer and freezes it in all existing layout viewports. This button is accessible from the Model tab or layout tabs.

#### **Delete Layer**

Deletes selected layers. You can delete only unreferenced layers. Referenced layers include layers 0 and DEFPOINTS, layers containing objects (including objects in block definitions), the current layer, and xref-dependent layers.

---

**NOTE** Be careful about deleting layers if you are working on a drawing in a shared project or one based on a set of layering standards.

---

#### **Set Current**

Sets the selected layer as the current layer. Objects that you create are drawn on the current layer. (CLAYER system variable)

#### **Current Layer**

Displays the name of the current layer.

### **Search for Layer**

Filters the layer list by name quickly as you enter characters. This filter is not saved when you close the Layer Properties Manager.

### **Status Line**

Shows the name of the current filter, the number of layers displayed in the list view, and the number of layers in the drawing.

### **Invert Filter**

Displays all layers that do not meet the criteria in the selected layer property filter.

### **Indicate Layers in Use**

Displays icons in the list view to indicate whether layers are in use. In a drawing with many layers, clear this option to improve performance. (SHOWLAYERUSAGE system variable)

### **Refresh**

Refreshes the layer usage information by scanning all the entities in the drawing.

### **Settings**

Displays the [Layer Settings dialog box](#) on page 658, in which you can set new layer notification settings, if layer filter changes are applied to the Layer toolbar, and change the background color for layer property overrides.

**Apply** Applies changes that have been made to layers and filters but does not close the dialog box.

The Layer Properties Manager has the following two panes:

- [Tree view](#) on page 645
- [List view](#) on page 648

### **Tree View**

Displays a hierarchical list of layers and filters in the drawing. The top node, All, displays all layers in the drawing. Filters are displayed in alphabetical order. The All Used Layers filter is read-only.

Expand a node to see nested filters. Double-click a property filter to open the [Layer Filter Properties dialog box](#) and view the definition of the filter.

The Hide/Show Layer Filters button controls the display of the Layer Filters pane of the Layer Properties Manager. When the Layer Filter pane is collapsed, the Layer Filter button is displayed adjacent to Layer Filter status text. The Layer Filter button gives you access to the filters when the full Layer Filter pane is closed.

If there are xrefs attached to the drawing, an xref node displays the names of all the xrefs in the drawing and the layers in each xref. Layer filters defined in xref files are not displayed.

If there are layers that contain property overrides, a Viewport Overrides node is automatically created and displays those layers and the properties that contain overrides. The Viewport Overrides filter displays only when the Layer Properties Manager is accessed from a layout tab.

If there are new layers that have been added to the drawing since the layer list was last evaluated (depending on how the LAYERNOTIFY system variable is set), an Unreconciled New Layers filter is automatically created and displays new layers that need to be reconciled.

### **Tree View Shortcut Menu**

Provides commands for items selected in the tree view.

**Visibility** Changes the visibility state of all the layers in the selected filter (or All or All Used Layers, if selected).

- *On*: Objects on the layer are displayed, plotted, and regenerated and hide other objects when you use HIDE.
- *Off*: Objects on the layer are not displayed and not plotted but do hide other objects when you use HIDE. The drawing is not regenerated when you turn the layer on.
- *Thawed*: Objects on the layer are displayed and plotted, and hide other objects when you use HIDE.
- *Frozen*: Objects on the layer are not displayed and not plotted but do hide other objects when you use HIDE. The drawing is regenerated when you thaw the layer.

**Lock** Controls whether the objects on the layers in the selected filter can be modified.

- *Lock*: None of the objects on the layer can be modified. You can still apply object snaps to objects on a locked layer and perform other operations that do not modify those objects.
- *Unlock*: Objects on the layer can be modified.



**Viewport** In the current layout viewport, controls the VP Freeze setting of the layers in the selected layer filter. This option is not available for model space viewports.

- *Freeze*: Sets VP Freeze for layers in the filter. In the current viewport, objects on the layer are not displayed and not plotted but do hide other objects when you use HIDE. The drawing is regenerated when you thaw the layer.
- *Thaw*: Clears VP Freeze for layers in the filter. In the current viewport, objects on the layer are displayed and plotted and hide other objects when you use HIDE. This option does not thaw layers that are set to Off or Frozen in the drawing.

**Isolate Group** Turns off all layers not in the selected filter. The layers that are visible are the layers in the filter.

- *All Viewports*: In all viewports in a layout, sets VP Freeze for all layers that are not in the selected filter. In model space, turns off all layers that are not in the selected filter.
- *Active Viewport Only*: In the current layout viewport, sets VP Freeze for all layers that are not in the selected filter. In model space, turns off all layers that are not in the selected filter.

**New Properties Filter** Displays the [Layer Filter Properties dialog box](#), where you can create a new layer filter based on layer names and settings; for example, on or off, color, or linetype.

**New Group Filter** Creates a new layer group filter named GROUP FILTER1 and adds it to the tree view. Enter a new name. Select the All filter or any other layer filter in the tree view to display layers in the list view, and then drag layers from the list view into the new layer group filter in the tree view.

**Convert to Group Filter** Converts the selected layer property filter to a layer group filter. Changing the properties of the layers in a layer group filter has no effect on the filter.

**Rename** Renames the selected filter. Enter a new name.

**Delete** Deletes the selected layer filter. You cannot delete the All, All Used Layers, or Xref filters. This option deletes the layer filter but not the layers in the filter.

**Properties** Displays the [Layer Filter Properties dialog box](#), where you can modify the definition of the selected layer property filter. This option is available only when a layer property filter is selected.

**Select Layers** Temporarily closes the Layer Filter Properties dialog box so that you can select objects in the drawing. This option is available only when a layer group filter is selected.

- *Add*: Adds the layers of the selected objects to the layer group filter that is selected in the tree view.
- *Replace*: Replaces the layers of the selected layer group filter with the layers of the objects that are selected in the drawing.

### **List View**

Displays layers and layer filters and their properties and descriptions.

If a layer filter is selected in the tree view, the list view displays only the layers in that layer filter. The All filter in the tree view displays all layers and layer filters in the drawing. When a layer property filter is selected and there are no layers that fit its definition, the list view is empty. To modify a property of a selected layer or of all layers in a selected filter, click the icon for that property. When a mixed icon or “Varies” is displayed for a layer filter, the property is not the same for all layers in the filter.

**Status** Indicates the type of item: layer filter, layer in use, empty layer, or current layer.

**Name** Displays the name of the layer or filter. Press F2 to enter a new name.

**On** Turns the selected layers on and off. When a layer is on, it is visible and available for plotting. When a layer is off, it is invisible and not plotted, even if Plot is on.

**Freeze** Freezes the selected layers in all viewports, including the Model tab. You can freeze layers to speed up ZOOM, PAN, and many other operations; improve object selection performance; and reduce regeneration time for complex drawings.

Objects on frozen layers are not displayed, plotted, hidden, or regenerated.

Freeze the layers you want to be invisible for long periods. If you plan to switch visibility settings frequently, use the On/Off setting to avoid regenerating the drawing. You can freeze a layer in all viewports, in the current layout viewport, or in new layout viewports as they are created.

**Lock** Locks and unlocks the selected layers. Objects on a locked layer cannot be modified.

**Color** Changes the color associated with the selected layers. Clicking the color name displays the [Select Color dialog box](#).

**Linetype** Changes the linetype associated with the selected layers. Clicking the linetype name displays the [Select Linetype dialog box](#).

**Lineweight** Changes the lineweight associated with the selected layers. Clicking the lineweight name displays the [Lineweight dialog box](#).

**Transparency** Controls the visibility of all objects on the selected layer. When transparency is applied to individual objects, the objects' transparency property overrides the transparency setting of the layer. Clicking the Transparency value displays the [Layer Transparency dialog box](#) on page 658.

**Plot Style** Changes the plot style associated with the selected layers. If you are working with color-dependent plot styles (the `PSTYLEPOLICY` system variable is set to 1), you cannot change the plot style associated with a layer. Clicking the plot style displays the [Select Plot Style dialog box](#).

**Plot** Controls whether the selected layers are plotted. If you turn off plotting for a layer, the objects on that layer are still displayed. Layers that are off or frozen are not plotted, regardless of the Plot setting.

**VP Freeze (available only from a layout tab)** Freezes selected layers in the current layout viewport. You can freeze or thaw layers in the current viewport without affecting layer visibility in other viewports.

VP Freeze is an override to the Thaw setting in the drawing. That is, you can freeze a layer in the current viewport if it's thawed in the drawing, but you can't thaw a layer in the current viewport if it's frozen or off in the drawing. A layer is not visible when it is set to Off or Frozen in the drawing.

**New VP Freeze** Freezes selected layers in new layout viewports. For example, freezing the DIMENSIONS layer in all new viewports restricts the display of dimensions on that layer in any newly created layout viewports but does not affect the DIMENSIONS layer in existing viewports. If you later create a viewport that requires dimensions, you can override the default setting by changing the current viewport setting.

**VP Color (available only from a layout tab)** Sets an override for the color associated with the selected layer for the active layout viewport.

**VP Linetype (available only from a layout tab)** Sets an override for the linetype associated with the selected layer for the active layout viewport.

**VP Lineweight (available only from a layout tab)** Sets an override for the lineweight associated with the selected layer for the active layout viewport.

**VP Transparency (available only from a layout tab)** Sets an override for transparency associated with the selected layer for the active layout viewport.

**VP Plot Style (available only from a layout tab)** Sets an override for the plot style associated with the selected layer for the active layout viewport. Override settings are not visible in the viewport or plotted when the visual style in the drawing is set to Conceptual or Realistic. If you are working with color-dependent plot styles (the `PSTYLEPOLICY` system variable is set to 1), you cannot set a plot style override.

**Description** (Optional) Describes the layer or the layer filter.

### **List View Shortcut Menu**

Provides options for modifying the list and modifying selected layers and layer filters.

### **Column Label Shortcut Menu**

**Column Names** Lists all columns by name. Columns that are checked indicate they are displayed. Hidden column names are not checked. VP Freeze, VP Color, VP Linetype, VP Lineweight, and VP Plot Style are available only when a layout viewport is active.

**Customize** Displays the [Customize Layer Columns dialog box](#) on page 661, where you can specify which columns are hidden or displayed.

**Maximize All Columns** Maximizes all columns to the width of the column headers and the data content. This option is available on the shortcut menu that is displayed when you right-click a column heading.

**Maximize Column** Changes the width of the column to maximize display of the column content. This option is available on the shortcut menu that is displayed when you right-click a column heading.

**Optimize all columns** Changes the width of all columns to maximize display of the column content. This option is available on the shortcut menu that is displayed when you right-click a column heading.

**Optimize column** Changes the width of a column to maximize display of the column content. This option is available on the shortcut menu that is displayed when you right-click a column heading.

**Freeze column (or Unfreeze column)** Freezes (or unfreezes) the column and any columns to the left. This option is available on the shortcut menu when you right-click a column heading.

**Restore All Columns to Defaults** Restores all columns to their default display and width settings. This option is available on the shortcut menu when you right-click a column heading.

## **Layer Shortcut Menu**

**Show Filter Tree** Displays the tree view. Clear this option to hide the tree view.

**Show Filters in Layer List** Displays filters at the top of the list view. The filters are listed in alphabetical order. Clear the check mark to display only layers in the list view.

**Set Current** Sets the selected layer as the current layer. (CLAYER system variable)

**New Layer** Creates a new layer. The list displays a layer named LAYER1. You can edit this layer name immediately. The new layer inherits the properties of the currently selected layer in the layer list (color, on or off state, and so on).

**Rename Layer** Renames the layer.

**Delete Layer** Deletes selected layers from the drawing file definition. You can delete only unreferenced layers. Referenced layers include layers 0 and DEFPOINTS, layers containing objects (including objects in block definitions), the current layer, and xref-dependent layers.

---

**NOTE** Be careful about deleting layers if you are working on a drawing in a shared project or one based on a set of layering standards.

---

**Change Description** Adds a description or changes the text in the description for the selected layer or filter. The description for a filter is added to the filter and to all layers in the filter.

**Remove from Group Filter** Removes the selected layers from the group layer filter that is selected in the tree view.

**Reconcile Layer** Removes new layers from the Unreconciled New Layers filter. Available only when one or more unreconciled layers is selected.

**Remove Viewport Overrides For** Removes a single override property or all property overrides on selected layers (or all layers) for the current viewport or all viewports. Different options display in a flyout menu depending on where the cursor is located when the shortcut menu is accessed. To remove a single property override, right-click the property override. This option is only available on the layout tab.

**New Layer Frozen in All Viewports** Creates a new layer and freezes it in all existing layout viewports and new viewports.

**VP Freeze Layer in All Viewports** Freezes the selected layer in all existing layout viewports and new viewports.

**VP Thaw Layer in All Viewports** Thaws the selected layer in all existing layout viewports and new viewports.

**Select All** Selects everything displayed in the list view.

**Clear All** Removes selection from all items in the list view except the most recently selected layer or filter.

**Select All but Current** Selects everything displayed in the list view except the current layer.

**Invert Selection** Selects everything displayed in the list view except the items that are currently selected.

**Invert Layer Filter** Displays all layers that do not meet the criteria in the selected layer property filter.

**Layer Filters** Displays a list of layer filters, including All and All Used Layers. Click a filter to apply it to the list view.

**Save Layer States** Displays the [dialog box](#) on page 671, in which you save the layer state and layer property settings of all layers in a drawing.

**Restore Layer State** Displays the [Layer States Manager](#) on page 668, in which you can select a named layer state to restore settings of all layers in the drawing. Restores only those layer state and property settings that were selected when the named layer state was saved.

## Layer Filter Properties Dialog Box

### Quick Reference

See also:

- [Work with Layers](#)

Filters layers based on criteria you select.

### Summary

When a layer filter is selected in the tree view of the [Layer Properties Manager](#), layers that match the filter criteria are displayed in the list view.

### List of Options

The following options are displayed.

#### Filter Name

Provides a space to enter a name for the layer properties filter.

#### Show Example

Displays the examples of layer property filter definitions in “[Layer Filter Examples](#)”.

#### Filter Definition

Displays the properties of layers. You can use one or more properties to define the filter. For example, you can define a filter that displays all layers that are either red or blue and in use. To include more than one color, linetype, or lineweight, duplicate the filter on the next line and select a different setting.

**Status** Click the In Use icon or the Not In Use icon.

**Name** Use wild-card characters to filter layer names. For example, enter **\*mech\*** to include all layers with the letters *mech* in the name.

All the wild-card characters are listed in the table in Filter and Sort the List of Layers in the *User's Guide*.

**On** Click the On or the Off icon.

**Freeze** Click the Freeze or the Thaw icon.

**Lock** Click the Lock or the Unlock icon.

**Color** Click the [...] button to display the [Select Color dialog box](#).

**Linetype** Click the [...] button to display the [Select Linetype dialog box](#).

**Lineweight** Click the [...] button to display the [Lineweight dialog box](#).

**Transparency** Click the field to display the Layer Transparency dialog box.

**Plot Style** Click the [...] button to display the [Select Plot Style dialog box](#).

**Plot** Click the Plot icon or the Do Not Plot icon.

**VP Freeze** Click the Freeze icon or the Thaw icon.

**New VP Freeze** Click the Freeze icon or the Thaw icon.

**VP Color** Click the [...] button to display the [Select Color dialog box](#).

**VP Linetype** Click the [...] button to display the [Select Linetype dialog box](#).

**VP Lineweight** Click the [...] button to display the [Lineweight dialog box](#).

**VP Transparency** Click the field to display the Layer Transparency dialog box.

**VP Plot Style** Click the [...] button to display the [Select Plot Style dialog box](#).

### **Filter Preview**

Displays the results of the filter as you define it. The filter preview shows which layers will be displayed in the layer list in the Layer Properties Manager when you select this filter.

## **Layer Filter Examples**

### **Quick Reference**

**See also:**

- Work with Layers

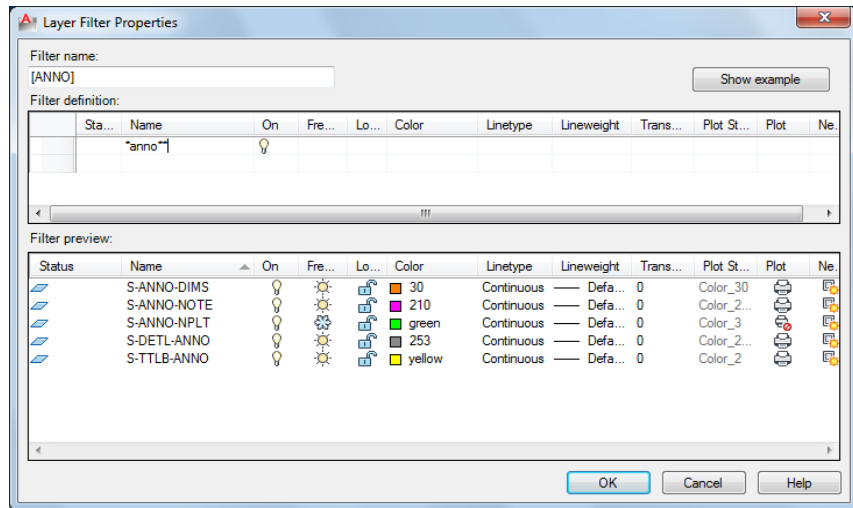
Each example shows a layer filter definition that is set up in the Layer Filter Properties dialog box.

### **Example 1**

The filter named “[ANNO]” displays layers that meet *all* of the following criteria:

- Are in use
- Have a name that contains the letters *anno*
- Are on

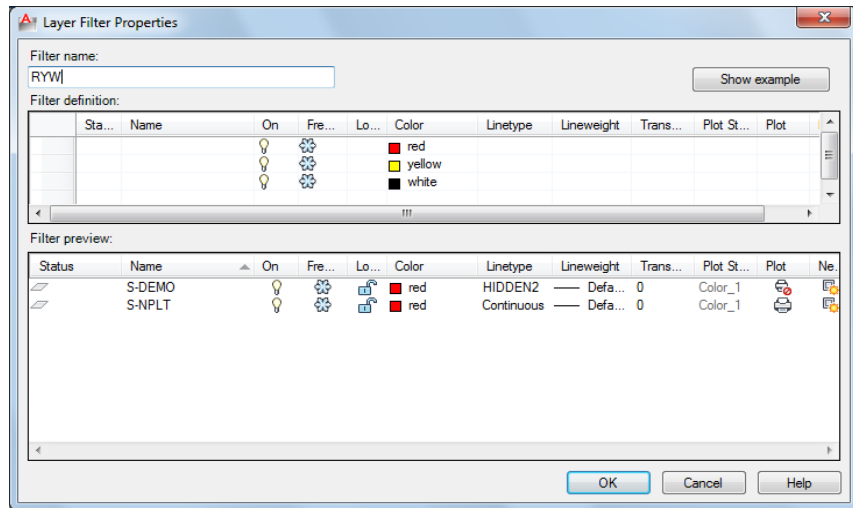




## Example 2

The filter named "RYW" displays layers that meet *all* of the following criteria:

- Are on
- Are frozen
- Are red or yellow or white



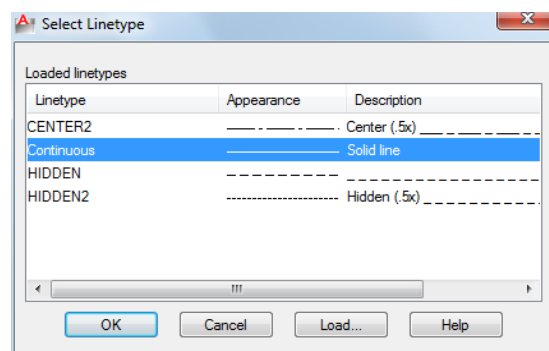
## Select Linetype Dialog Box

### Quick Reference

See also:

- Work with Layers

Displays linetypes available in the current drawing.



### List of Options

The following options are displayed.

#### Loaded Linetypes

Displays the list of linetypes loaded in the current drawing.

#### Load

Displays the [Load or Reload Linetypes dialog box](#), in which you can load selected linetypes into the drawing and add them to the list of linetypes.

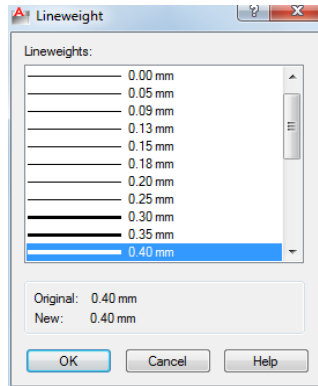
## Lineweight Dialog Box

### Quick Reference

See also:

- Work with Layers

Displays the lineweight values available.



### Summary

You can customize your lineweights to plot at other values by using the Plot Style Table Editor. See “Control Plotted Lineweight and Linetype” in the *User's Guide*.

### List of Options

The following options are displayed.

#### Lineweights

Displays the available lineweights to be applied. Available lineweights consist of fixed values that are most commonly used in drawings. Select a lineweight to apply it.

#### Original

Displays the previous lineweight. The default lineweight assigned when a layer is created is DEFAULT (which plots to a default value of 0.01 inches or 0.25 mm). (LWDEFAULT system variable)

#### New

Displays the new lineweight assigned to the layer.

## Layer Transparency Dialog Box

### Quick Reference

See also:


- Work with Layers


Sets the transparency level for the selected layer(s) in the current drawing.

### Access Methods




Button

 **Ribbon:** Home tab ► Layers panel ► Layer Properties Manager

 **Menu:** Format ► Layer

 **Toolbar:** Layer

 **Command entry:** `layer` (or `'layer` for transparent use)

### Summary

Select or enter a transparency level to apply to selected layers in the current drawing.

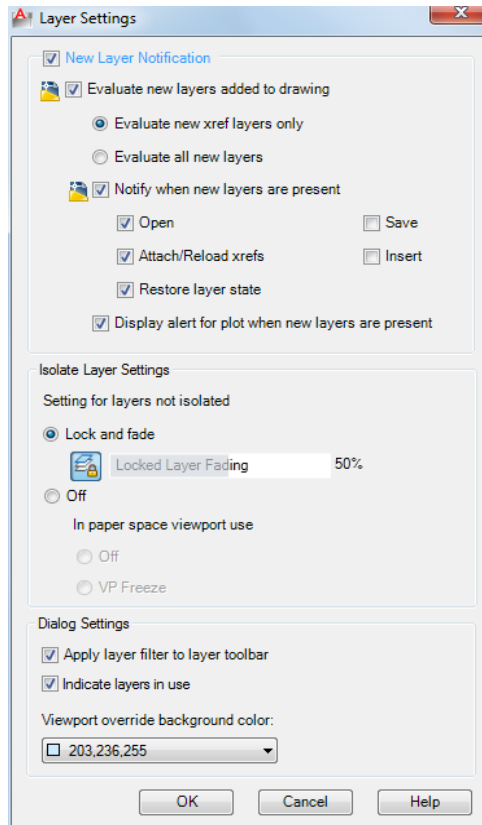
## Layer Settings Dialog Box

### Quick Reference

See also:

- Use New Layer Notification

Displays new layer notification, isolate layer, and dialog settings.



## Summary

Click on the [Layer Properties Manager](#) on page 643.

Controls when notification occurs for new layers and if layer filters are applied to the Layers toolbar; also controls the background color of viewport overrides in the Layer Properties Manager.

## List of Options

The following options are displayed.

### New Layer Notification

Controls the evaluation and notification of new layers based on the LAYEREVAL settings in the DWG file.

---

**NOTE** There should be no filter (Unreconciled Layer filter) displayed when LAYEREVALCTL = 0. If one is currently displayed, it will be turned off. You can set the unreconciled new layers filter active and select the layers in that filter. With the unreconciled layer selected, you can right-click and click Reconcile Layer.

---

### **Evaluate New Layers Added to Drawing**

Checks for new layers that have been added to the drawing. (LAYEREVAL = 0)

### **Evaluate New Xref Layers Only**

Checks for new layers that have been added to attached xrefs. (LAYEREVAL = 1)

### **Evaluate All New Layers**

Checks for new layers that have been added to the drawing, including new layers added to attached xrefs. (LAYEREVAL = 2)

### **Notify when New Layers Are Present**

Turns on new layer notification. (LAYERNOTIFY = 0)

### **Open**

Displays new layer notification when new layers are present when you use the OPEN command. (LAYERNOTIFY = 2)

### **Attach/Reload Xrefs**

Displays new layer notification when new layers are present when you are attaching or reloading xrefs. (LAYERNOTIFY = 4)

### **Restore Layer State**

Displays new layer notification when you are restoring layer states. (LAYERNOTIFY = 8)

### **Save**

Displays new layer notification when new layers are present when you use the SAVE command. (LAYERNOTIFY = 16)

### **Insert**

Displays new layer notification when new layers are present when you use the INSERT command. (LAYERNOTIFY = 32)

### **Display Alert for Plot When New Layers are Present**

Displays new layer notification when new layers are present when you use the PLOT command. (LAYERNOTIFY = 1)

### **Isolate Layer Settings**

Setting for layers not isolated:

#### **Lock and Fade**

Selects Lock and Fade as isolation method.

#### **Off**

Sets non-selected layers to Off.

#### **Off**

Sets non-selected layers to Off (in paper space).

#### **VP Freeze**

Sets non-selected layers to Viewport Freeze (in paper space).

### **Dialog Settings**

#### **Apply Layer Filter to Layer Toolbar**

Controls the display of layers in the list of layers on the Layers toolbar and Layers panel on the ribbon by applying the current layer filter.

#### **Indicate Layers in Use**

Displays icons in the list view to indicate whether layers are in use. In a drawing with many layers, clear this option to improve performance.

**Viewport Override Background Color** Displays a list of colors and the [Select Color dialog box](#) where you can select a background color for viewport overrides.

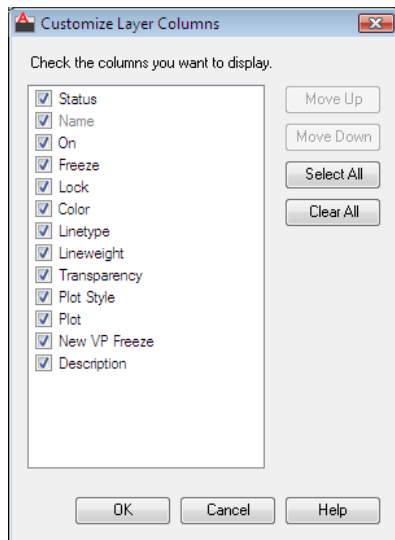
## **Customize Layer Columns Dialog Box**

### **Quick Reference**

**See also:**

- [Work with Layers](#)

Controls the display and order of columns in the Layer Properties Manager.



### **List of Options**

The following options are displayed.

#### **Check the Columns you want to Display**

Lists all columns that display depending on whether the Layer Properties Manager was accessed from Model space or a layout tab. Checked columns are displayed in the Layer Properties Manager.

#### **Move Up**

Moves the checked layer to the left in the Layer Properties Manager.

#### **Move Down**

Moves the checked layer to the right in the Layer Properties Manager.

#### **Select All**

Checks all columns in the list.

#### **Clear All**

Unchecks all columns in the list.



# -LAYER

## Quick Reference

See also:

- Use Layers to Manage Complexity

Manages layers and layer properties.

### List of Prompts

The following prompts are displayed.

Current layer: <"current">

Enter an option

[?/Make/Set/New/Rename/ON/OFF/Color/Ltype/LWeight/TRansparency on  
page

664/MATerial/Plot/PStyle/Freeze/Thaw/LOck/Unlock/stAte/Description/rEconcile]:

---

**NOTE** The Pstyle option is available only when you are using named plot styles.

---

### ?—List Layers

Displays a list of the currently defined layers, showing their names, states, color numbers, linetypes, lineweights, and whether they are externally dependent layers.

### Make

Creates a layer and makes it current. New objects are drawn on the current layer.

If no layer exists for the name you enter, a new layer with that name is created. The new layer is on and assumes the following properties by default: color number 7, the CONTINUOUS linetype, and a lineweight of DEFAULT.

If the layer exists but is turned off, it is turned on.

### Set

Specifies a new current layer but does not create the layer if it does not already exist. If the layer exists but is turned off, it is turned on and made current. A frozen layer cannot be made current.

### New

Creates layers. You can create two or more layers by entering names separated by commas.

**Rename**

Renames an existing layer.

**On**

Makes selected layers visible and available for plotting.

**Off**

Makes selected layers invisible and excludes them from plotting.

**Color**

Changes the color associated with a layer. Enter a color name or a number from 1 through 255.

**True Color** Specifies a true color to be used for the selected object. Enter three integer values from 0 to 255 separated by commas to specify a true color.

**Color Book** Specifies a color from a loaded color book, guide, or set to use for the selected object. Enter the name of a color book that has been installed, such as "DIC COLOR GUIDE(R)\$DIC 43".

The color is assigned to the layer or layers, and the layers are turned on. To assign a color but turn off the layer, precede the color with a minus sign (-).

**Ltype**

Changes the linetype associated with a layer.

**Lweight**

Changes the lineweight associated with a layer.

If you enter a valid lineweight, the current lineweight is set to the new value. If you enter a lineweight that is not valid, the current lineweight is set to the nearest fixed lineweight value. If you would like to plot an object with a custom width not found in the list of fixed lineweight values, you can use the Plot Style Table Editor to customize plotted lineweights.

**Transparency**

Changes the transparency level associated with a layer. Enter a value from 0 to 90.

After specifying a transparency value, the following prompt is displayed:

Enter name list of layer(s) for transparency *specified value% <0>*: Enter the names of the layers to which to apply this transparency level, or press Enter to apply it to the current layer only

**Material**

Attaches a material to a layer. The material must be available in the drawing before it can be assigned to a layer.

**Plot**

Controls whether visible layers are plotted. If a layer is set to plot but is currently frozen or turned off, the layer is not plotted.

**Pstyle**

Sets the plot style assigned to a layer. This option is not available if you are using color-dependent plot styles in the current drawing (the PSTYLEPOLICY system variable is set to 1). See “Use Plot Styles to Control Plotted Objects” in the *User's Guide*.

If you select a plot style other than NORMAL, the following prompt is displayed:

Enter name list of layer(s) for plot style *current* <*current*>: *Enter the names of the layers to use this plot style, or press Enter to apply the style to the current layer only*

**Freeze**

Freezes layers, making them invisible and excluding them from regeneration and plotting.

**Thaw**

Thaws frozen layers, making them visible and available for regeneration and plotting.

**Lock**

Locks layers, preventing editing of objects on those layers.

**Unlock**

Unlocks selected locked layers, permitting editing of objects on those layers.

**State**

Saves and restores the state and property settings of the layers in a drawing.

?—**List Named Layer States** Lists the named layer state (LAS) files in the support path for the drawing.

**Save** Saves the state and properties settings of the layers in a drawing under a specified layer state name. When saving a layer state, you specify which layer settings are affected when the layer state is later restored.

**Restore** Restores the state and property settings of all layers to previously saved settings. Restores only those layer state and property settings that were selected when the layer state was saved.

**Edit** Changes the saved layer settings for a specified layer state. When the layer state is restored, the specified settings are used.

**Name** Changes the name of a saved layer state.

**Delete** Removes a saved layer state.

**Import** Loads a previously exported layer state (LAS) file, or layers states from a file (DWG, DWS, DWT) into the current drawing. Additional layers may be created as a result of importing a layer state file.

**Export** Saves a selected named layer state to a layer state (LAS) file.

**Description**

Sets the description property value of the existing layer.

A warning prompt is displayed when you enter a description to a layer with an existing description.

**Reconcile**

Sets the unreconciled property of an unreconciled layer.

? - **Name List of Layers** Displays a list of all unreconciled layers.

## LAYERCLOSE

**Quick Reference**

**See also:**

- Work with Layers

Closes the Layer Properties Manager.

**Summary**

Closes the Layer Properties Manager if it is open.

## LAYERP

**Quick Reference**

**See also:**


- Change Layer Settings and Layer Properties

Undoes the last change or set of changes made to layer settings.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Layers panel ► Previous

 **Menu:** Format ► Layer Tools ► Layer Previous

#### Summary

When you use Layer Previous, it undoes the most recent change using either the Layer control, Layer Properties Manager, or -LAYER command. Every change you make to layer settings is tracked and can be undone by Layer Previous.

## LAYERPMODE

### Quick Reference

#### See also:

- Change Layer Settings and Layer Properties

Turns on and off the tracking of changes made to layer settings.

#### Summary

When Layer Previous mode is on, changes made to layers are tracked. When Layer Previous mode is off, changes made to layers are no longer tracked.

## LAYERSTATE

### Quick Reference

#### See also:


- Work with Layer States

Saves, restores, and manages named layer states.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Layers panel ► Layer State drop-down ► Manage Layer States

 **Menu:** Format ► Layer States Manager

 **Toolbar:** Layers

### Summary

The [Layer States Manager](#) on page 668 is displayed.

Saves the layer settings in a drawing as a named layer state. Named layer states can then be restored, edited, imported, and exported for use in other drawings.

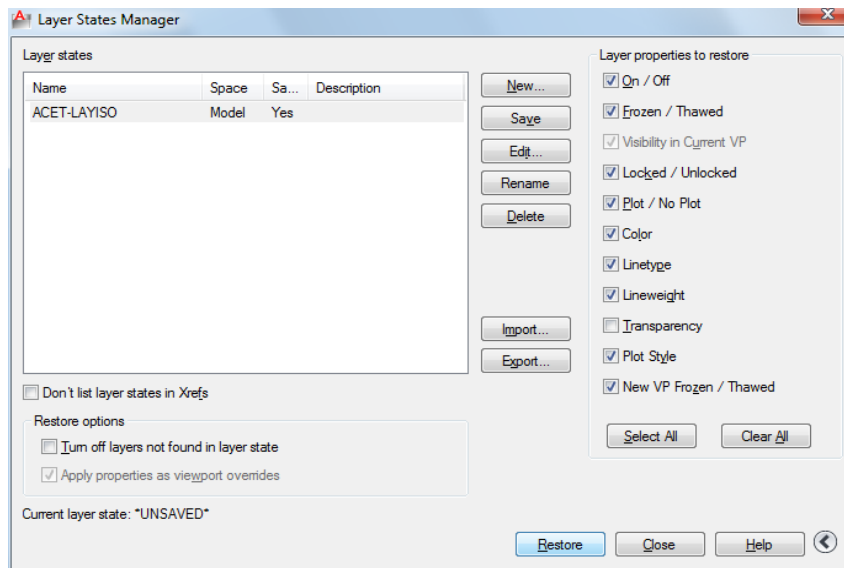
## Layer States Manager

### Quick Reference

#### See also:

- Work with Layer States

Create or edit layer states.



## Summary

Displays a list of saved layer states in the drawing. You can create, rename, edit, and delete layer states.

## List of Options

The following options are displayed.

### Layer States

Lists the named layer states that have been saved in the drawing, the space in which they were saved (model space, layout, or xref), whether the layer list is the same as in the drawing, and an optional description.

### Don't List Layer States in Xrefs

Controls whether layer states in xrefs are displayed.

### New

Displays the [New Layer State to Save dialog box](#) on page 671, where you can provide a name and a description for the new named layer state.

### Save

Saves the selected named layer state.

### Edit

Displays the [Edit Layer State dialog box](#) on page 672, where you can modify a selected named layer state.

#### **Rename**

Allows in-place editing of the layer state name.

#### **Delete**

Removes the selected named layer state.

#### **Import**

Displays a standard file selection dialog box, where you can load a previously exported layer state (LAS) file into the current drawing. Layer states in files (DWG, DWS, or DWT) can be imported. Additional layers may be created as a result of importing a layer state file. When a DWG, DWS, or DWT file is selected, the [Select Layer States dialog box](#) on page 674 is displayed where you can select layer states to import.

#### **Export**

Displays a standard file selection dialog box, where you can save the selected named layer state to a layer state (LAS) file.

#### **Restore**

Restores state and property settings of all layers in a drawing to their previously saved settings. Restores only those layer state and property settings that you specify with the check boxes.

#### **Close**

Closes the Layer States Manager and saves changes.

#### **Restore Options**

##### **Turn Off Layers Not Found in Layer State**

When a layer state is restored, turns off new layers for which settings were not saved so that the drawing looks the same way it did when the named layer state was saved.

##### **Apply Properties as Viewport Overrides**

Applies layer property overrides to the current viewport. This option is available when the Layer States Manager is accessed when a layout viewport is active.





### **More Options**

Controls the display of additional options in the Layer States Manager dialog box.

### **Layer Properties to Restore**

Restores the selected layer settings and properties to their previously saved state.

The Visibility in Current Viewport option is available only for layout viewports, while the On/Off and Frozen/Thawed options are available only for Model space viewports.

### **Select All**

Selects all the settings.

### **Clear All**

Removes selection from all the settings.

### **See also:**

- [Layer Properties Manager](#) on page 643

## **New Layer State to Save Dialog Box**

### **Quick Reference**

#### **See also:**

- [Work with Layer States](#)

Specifies a name and a description for the layer state defined in the Layer States Manager.

### **List of Options**

The following options are displayed.

#### **New Layer State Name**

Specifies a name for the new layer state to be saved.

#### **Description**

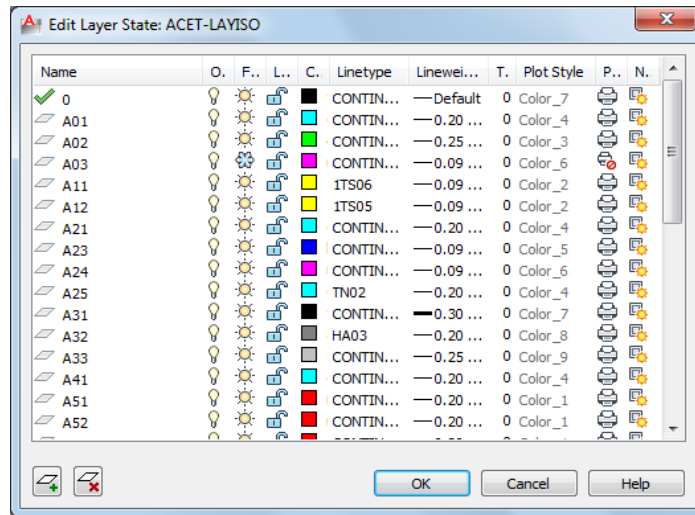
(Optional) Provides a description of the layer state that is displayed in the Layer States Manager.

## Edit Layer State Dialog Box

### Quick Reference

See also:

- Save, Restore, and Edit Layer States



### Summary

Modifies the selected layer state. Displays all the layers and their properties that are saved in the selected layer state except for viewport override properties.

### List of Options

The following options are displayed.

**Layer List** Displays a list of layers in the selected layer state and their properties.

**Delete** Removes the selected layers from the layer state.

**Add**

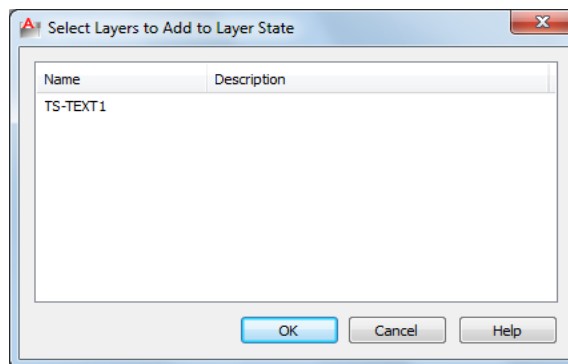
Displays the [Select Layers to Add to Layer States dialog box](#) on page 673, in which you can add layers from the current drawing that are not defined in the layer state.

## Select Layers to Add to Layer State Dialog Box

### Quick Reference

See also:

- [Save, Restore, and Edit Layer States](#)



### Summary

Displays layers by name and includes descriptions that are not defined in the selected named layer state.

Multiple layers can be selected. Clicking OK displays the selected layers in the [Edit Layer State dialog box](#) on page 672.

### List of Option

The following option is available in this dialog box.

#### Layer List

Displays layers by name and description.

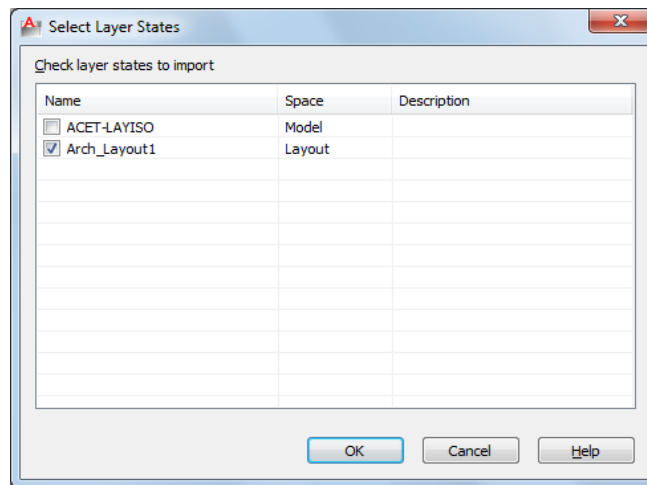
## Select Layer States Dialog Box

### Quick Reference

See also:

- Import and Export Layer States

Displays a list of layer states to be imported from a drawing file into the current drawing.



### List of Option

The following option is available in this dialog box.

#### Check Layer States to Import

Displays a list of layer states, the space (model tab or layout tab) in which the layer state was saved, and a description.

The layer state names in the selected file (DWG, DWS, DWT) are compared to the layer state names in the current drawing. Duplicate layer state names are not checked by default. When a duplicate layer state name is checked, a prompt displays if you want to overwrite the existing layer state.

---

**NOTE** If the layer state to be imported contains linetypes or plot styles that do not exist in the current drawing, they are imported from the DWG, DWS or DWT file.

---

## LAYFRZ

### Quick Reference

See also:


- Use Layers to Manage Complexity

Freezes the layer of selected objects.

### Access Methods



Button

 **Ribbon:** Home tab ► Layers panel ► Freeze

 **Menu:** Format ► Layer Tools ► Layer Freeze

 **Toolbar:** Layers II

### Summary

Objects on frozen layers are invisible. In large drawings, freezing unneeded layers speeds up operations involving display and regeneration. In a layout, you can freeze layers in individual layout viewports.

### List of Prompts

The following prompts are displayed.

Current settings: Viewports=*current*, Block nesting level=*current*

Select an object on a layer to be frozen on page 675 or [Settings/Undo]: Select an object or enter **s** or **u**

Layer <layer name> has been frozen.

### Select an Object on a Layer to be Frozen

Specifies the layer to be frozen.

Layer "<layer name>" has been frozen.

## Settings

Displays settings for viewports and block definitions. The setting you choose persists from session to session.

Enter setting type for [Viewports/Block selection]:

**Viewports** Displays settings for viewports.

In paper space viewport use [Freeze/Vpfreeze] <Vpfreeze>: Enter **f** to freeze objects in all viewports or **v** to freeze an object in the current viewport only

**Block Selection** Displays settings for block definitions.

- **Block.** If a selected object is nested in a block, freezes the layer of that block. If a selected object is nested in an xref, freezes the layer of the object.
- **Entity.** Freezes the layers of selected objects even if they are nested in an xref or a block.
- **None.** If a block or an xref is selected, freezes the layer containing that block or xref.

## Undo

Cancels the previous layer selection.

# LAYISO

## Quick Reference

See also:

- Use Layers to Manage Complexity

Hides or locks all layers except those of the selected objects.

## Access Methods



Button

- ☒ **Ribbon:** Home tab ► Layers panel ► Isolate
- ☒ **Menu:** Format ► Layer Tools ► Layer Isolate
- ☒ **Toolbar:** Layers II

## Summary

All layers except the layers of the selected objects are either turned off, frozen in the current layout viewport, or locked, depending on the current setting. The layers that remain visible and unlocked are called isolated.

## List of Prompts

The following prompts are displayed.

Current setting: <current settings>

Select objects on the layer(s) to be isolated or [Settings]: *Select objects or enter s*

### Select Objects on the Layer(s) to be Isolated

After selecting one or more objects, all layers *except* the layers of the selected objects are either turned off, frozen in the current layout viewport, or locked, depending on the current setting. The layers that remain visible and unlocked are termed *isolated*.

---

**NOTE** Locked layers are faded by default. You can specify the percent of the fading from the Lock option in this command. You can later change the value with the LAYLOCKFADECTL system variable.

---

If you make changes to layers within a session and you want to restore the layers to the state they were in immediately before you entered the LAYISO command, use the LAYUNISO command.

## Settings

Controls whether layers are turned off, frozen in the current layout viewports, or locked.

**Off** Turns off or freezes all layers *except* the layers of the selected objects.

**Vpfreeze** In a layout, freezes all but the selected layers in the current layout viewport only. Other layout viewports in the drawing are unchanged.

If not in a layout, all other layers are turned off instead.

**Off** Turns off all but the selected layers in all viewports.

## Lock and Fade

Locks all layers *except* the layers of the selected objects, and sets the fading for locked layers.

# LAYLCK

## Quick Reference

### See also:

- Prevent Objects from Being Selected

Locks the layer of a selected object.

## Access Methods



### Button

- ☒ **Ribbon:** Home tab ► Layers panel ► Lock
- ☒ **Menu:** Format ► Layer Tools ► Layer Lock
- ☒ **Toolbar:** Layers II

## Summary

Using this command, you can prevent objects on a layer from being accidentally modified. You can also fade the objects on a locked layer using the LAYLOCKFADECTL system variable.

# LAYMCH

## Quick Reference

### See also:

- Use Layers to Manage Complexity

Changes the layer of a selected object to match the destination layer.



## Access Methods



### Button

- ☒ **Ribbon:** Home tab ► Layers panel ► Match
- ☒ **Menu:** Format ► Layer Tools ► Layer Match
- ☒ **Toolbar:** Layers II

## Summary

If you enter `-laymch` at the Command prompt, [options are displayed](#) on page 680.

## List of Prompts

The following prompts are displayed.

Select objects to be changed: *Select an object to change its layer*

[Select object on destination layer](#) on page 679 or [[Name](#) on page 679]: *Select an object or enter n to open the Change to Layer dialog box*

**Select Object on Destination Layer** Select an object on the destination layer.

**Name** Displays the [Change to Layer dialog box](#) on page 679.

If you create an object on the wrong layer, you can change its layer to the one you want using LAYMCH.

# Change to Layer Dialog Box

## Quick Reference

### See also:

- Use Layers to Manage Complexity

Displays a list of layers to choose as the destination layer. You can also create a new destination layer.

## List of Options

The following options are displayed.

**Current Layer** Displays the currently selected layer. Create a new layer name by entering a name.

**Destination Layer list** Displays a list of layers in the drawing.

## -LAYMCH

### Quick Reference

**See also:**

- Use Layers to Manage Complexity

Changes the layer of a selected object to match the destination layer.

### List of Prompts

The following prompts are displayed.

Select objects to be changed:

Select objects: *Select an object to change its layer*

After you select the object(s) to change, the following prompt is displayed:

[Select object on destination layer](#) on page 680 or [\[Name on page 680\]](#): *Select an object or enter n to enter a layer name*

**Select Object on Destination Layer** Select an object on the destination layer.

**Name** Displays the [Change to Layer dialog box](#) on page 679.

If you create an object on the wrong layer, you can change its layer to the one you want using LAYMCH.

## LAYMCUR

### Quick Reference

**See also:**

- Use Layers to Manage Complexity


Sets the current layer to that of a selected object.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Layers panel ► Make Object's Layer Current

 **Menu:** Format ► Layer Tools ► Make Object's Layer Current

 **Toolbar:** Layers

### Summary

You can change the current layer by selecting an object on that layer. This is a convenient alternative to specifying the layer name in the Layer Properties Manager.

## LAYMRG

### Quick Reference

#### See also:


- Use Layers to Manage Complexity


Merges selected layers into a target layer, removing the previous layers from the drawing.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Layers panel ► Merge

 **Menu:** Format ► Layer Tools ► Layer Merge

## Summary

You can reduce the number of layers in a drawing by merging them. Objects on merged layers are moved to the target layer, and the original layers are purged from the drawing.

## List of Prompts

The following prompts are displayed.

[Select object on layer to merge](#) on page 682 or [\[Name on page 682\]](#): *Select an object or enter n to select a layer in the Merge Layers dialog box*

After you selected the layer(s) to merge, the following prompt is displayed:

[Select object on target layer](#) on page 682 or [\[Name on page 682\]](#): *Select an object or enter n to select a layer in the Merge to Layer dialog box*

The layer you selected to merge into the target layer is deleted.

If you enter `-laymrg` at the Command prompt, [options are displayed](#) on page 683.

**Select Object on Layer to Merge** Select an object on the layer you want to merge.

**Name** Displays the [Merge Layers dialog box](#) on page 682.

**Select Object on Target Layer** Select an object on the destination layer.

**Name** Displays the [Merge to Layer dialog box](#) on page 683.

## Merge Layers Dialog Box

### Quick Reference

See also:

- Use Layers to Manage Complexity

### List of Option

The following prompt is displayed in this dialog box.

**Merge Layer list** Displays a list of layers to merge.

## Merge to Layer Dialog Box

### Quick Reference

**See also:**

- Use Layers to Manage Complexity

Displays a list of layers onto which the selected layers or objects can be merged.

### List of Options

The following options are displayed.

**Target Layer** Displays the first layer in an alphabetical list of the layers in the current drawing.

**Target Layer list** Displays an alphabetical list of the layers onto which you can merge the selected layers or objects.

## -LAYMRG

### Quick Reference

**See also:**

- Use Layers to Manage Complexity

### Summary

The layer you selected to merge into the target layer is deleted.

### List of Prompts

The following prompts are displayed.

**Select object on layer to merge** on page 684 or **[Name on page 684]: Select an object or enter n to select a layer from a list of layers**

After you selected the layer(s) to merge, the following prompt is displayed:

**Select object on target layer** on page 684 or **[Name on page 684]: Select an object or enter n to select a target layer from a list of layers**

### Select Object on Layer to Merge

Select an object on the destination layer.

#### Name

Displays a list of layers, where you can select layers to merge.

### Select Object on Target Layer

Select an object on the target layer.

#### Name

Displays a list of layers onto which you can merge the selected object or layer.

## LAYOFF

### Quick Reference

#### See also:


- Use Layers to Manage Complexity


Turns off the layer of a selected object.

#### Access Methods



#### Button

 **Ribbon:** Home tab ► Layers panel ► Off

 **Menu:** Format ► Layer Tools ► Layer Off

 **Toolbar:** Layers II

#### Summary

Turning off the layer of a selected object makes that object invisible. This command is useful if you need an unobstructed view when working in a drawing or if you don't want to plot details such as reference lines.

#### List of Prompts

The following prompts are displayed.

*Current settings:* Viewports=*current*, Block nesting level=*current*

Select an object on the layer to be turned off or [Settings/Undo]: *Select an object, enter s, or enter u*

### **Select an Object on the Layer to be Turned Off**

Selects one or more objects whose layers you want to turn off.

### **Settings**

Displays the Viewports and Block Definition setting types. The setting you choose persists from session to session.

**Viewports** Displays the Viewports setting types.

Returns the following prompt:

- **Vpfreeze: In paper space, freezes the layer selected in the current viewport.**
- **Off:** In paper space, turns off selected layers in all viewports.

**Block Selection** Displays the Block Selection setting types, where you can freeze layers of selected objects.

- **Block:** Turns off the layers of selected objects. If a selected object is nested in a block, the layer containing that block is turned off. If a selected object is nested in an xref, the layer of the object is turned off.
- **Entity:** Turns off layers of selected objects even if they are nested in an xref or a block.
- **None:** Turns off the layers of selected objects. If a block or an xref is selected, the layer containing that block or xref is turned off.

### **Undo**

Cancels the previous layer selection.

## **LAYON**

### **Quick Reference**

**See also:**

- Use Layers to Manage Complexity

Turns on all layers in the drawing.

### Access Methods



#### Button

- ☒ **Ribbon:** Home tab ► Layers panel ► On
- ☒ **Menu:** Format ► Layer Tools ► Turn All Layers On
- ☒ **Toolbar:** Layers II

### Summary

All layers that were previously turned off are turned back on. Objects created on those layers become visible, unless the layers are also frozen.

## LAYOUT

### Quick Reference

#### See also:

- Create Multiple-View Drawing Layouts (Paper Space)

Creates and modifies drawing layouts.

### Access Methods



#### Button

- ☒ **Menu:** Insert ► Layout ► New Layout
- ☒ **Menu:** Insert ► Layout ► Layout from Template
- ☒ **Toolbar:** Layouts

### List of Prompts

The following prompts are displayed.

Enter layout option [[Copy/Delete/New/Template/Rename/Saveas/Set/?](#)] <set>:



---

**NOTE** Many of these options are available by right-clicking a layout tab name.

---

**Copy** Copies a layout. If you do not provide a name, the new layout assumes the name of the copied layout with an incremental number in parentheses. The new tab is inserted before the copied layout tab.

**Delete** Deletes a layout. The most current layout is the default.

The Model tab cannot be deleted. To remove all the geometry from the Model tab, you must select all geometry and use the ERASE command.

**New** Creates a new layout tab. Up to 255 layouts can be created in a single drawing.

Layout names must be unique. Layout names can be up to 255 characters long and are not case sensitive. Only the first 31 characters are displayed on the tab.

**Template** Creates a new layout tab based on an existing layout in a template (DWT), drawing (DWG), or drawing interchange (DXF) file. If the FILEDIA system variable is set to 1, a [standard file selection dialog box](#) is displayed for selecting a DWT, DWG, or DXF file. After you select a file, the Insert Layouts dialog box is displayed, which lists the layouts saved in the selected file. After you select a layout, the layout and all objects from the specified template or drawing file are inserted into the current drawing.

**Rename** Renames a layout. The last current layout is used as the default for the layout to rename.

Layout names must be unique. Layout names can be up to 255 characters long and are not case sensitive.

---

**NOTE** Only the first 31 characters are displayed on the tab.

---

**Saveas** Saves a layout as a drawing template(DWT) file without saving any unreferenced symbol table and block definition information. You can then use the template to create new layouts in your drawings without having to eliminate unnecessary information. See “Reuse Layouts and Layout Settings” in the *User's Guide*.

The last current layout is used as the default for the layout to save as a template. If the FILEDIA system variable is set to 1, a standard file selection dialog box is displayed in which you can specify the template file in which to save the layout.

The default layout template directory is specified in the [Options dialog box](#).

**Set** Makes a layout current.

?—**List Layouts** Lists all the layouts defined in the drawing.

## LAYOUTWIZARD


### Quick Reference

See also:

- Use the Layout Wizard to Specify Page Setups

Creates a new layout tab and specifies page and plot settings.

### Access Methods

 **Menu:** Insert ► Layout ► Create Layout Wizard

### Summary

The [Layout wizard](#) is displayed.

## Layout Wizard

### Quick Reference

See also:

- Use the Layout Wizard to Specify Page Setups

### Summary

The Layout wizard contains a series of pages that step you through the process of creating a new layout. You can choose to create a new layout from scratch or use an existing layout template on which to base your new layout.

Depending on which plotting device is currently configured, you can select a paper size from those available. You can select a predefined title block to apply to your new layout. The Preview area displays a preview image of the title block you select.

When you've finished using the wizard to specify your layout settings, you can modify any of the settings using the PAGESETUP command from within the new layout.

## LAYTHW

### Quick Reference

See also:

- Use Layers to Manage Complexity


Thaws all layers in the drawing.

### Access Methods



Button

 **Ribbon:** Home tab ► Layers panel ► Thaw

 **Menu:** Format ► Layer tools ► Thaw All Layers

### Summary

All layers that were previously frozen are unfrozen. Objects created on those layers become visible, unless the layers are also turned off or have been frozen in individual layout viewports. Layers that are frozen in individual layout viewports must be thawed layer by layer.

---

**NOTE** LAYTHW does not thaw layers in a viewport. Use the [VPLAYER](#) on page 1313 command to thaw layers in a viewport.

---

# LAYULK

## Quick Reference

### See also:

- Prevent Objects from Being Selected


Unlocks the layer of a selected object.

## Access Methods



### Button

 **Ribbon:** Home tab ► Layers panel ► Unlock

 **Menu:** Format ► Layer Tools ► Layer Unlock

 **Toolbar:** Layers II

## Summary

When you move the cursor over objects on locked layers, the locked icon is displayed.

You can select an object on a locked layer and unlock that layer without specifying the name of the layer. Objects on unlocked layers can be selected and modified.

# LAYUNISO

## Quick Reference

### See also:


- Use Layers to Manage Complexity


Restores all layers that were hidden or locked with the LAYISO command.

## Access Methods



### Button

 **Ribbon:** Home tab ► Layers panel ► Unisolate

 **Menu:** Format ► Layer Tools ► Layer Unisolate

 **Toolbar:** Layers II

## Summary

Reverses the effects of the previous LAYISO command. Any additional changes made to layer settings after you use the LAYISO command will be retained.

LAYUNISO restores layers to the state they were in just before you entered the LAYISO command. Changes to layer settings after LAYISO is used are retained when you enter the LAYUNISO command. If LAYISO was not used, LAYUNISO does not restore any layers.

# LAYVPI

## Quick Reference

### See also:


- Use Layers to Manage Complexity

Freezes selected layers in all layout viewports except the current viewport.

## Access Methods



### Button

 **Ribbon:** Home tab ► Layers panel ► VP Freeze in All Viewports Except Current

 **Menu:** Format ► Layer Tools ► VP Freeze in All Viewports Except Current

## Summary

Isolates the layer of a selected object in the current viewport by freezing the layer in all but the current viewport. You can choose to isolate all layouts or only the current layout.

This command automates the process of using VP Freeze in the Layer Properties Manager. You select an object on each layer to be frozen in other layout viewports.

---

**NOTE** LAYVPI works only when TILEMODE is set to 0 and when two or more paper space viewports are defined.

---

## List of Prompts

The following prompts are displayed.

*Current settings:* Layouts= , Block nesting level=

Select objects on the layer to be isolated in viewport on page 692 or [Settings/“Undo”]: Select objects or enter an option

### **Select Objects on the Layer to be Isolated in Viewport**

Selects an object whose layer you want to isolate in a viewport.

## Settings

Displays the Viewports and Block Definition setting types. The setting you choose persists from session to session.

**Layouts** Displays layout options for isolating layers.

- **All Layouts:** In all layouts, isolates layers of selected objects in all but the current viewport
- **Current Layout:** In the current layout, isolates layers of selected objects in all but the current viewport. This option persists from session to session.

**Block Selection** Displays the Block Selection setting types, where you can freeze layers of selected objects.

- **Block:** Isolates the layers of selected objects. If a selected object is nested in a block, the layer containing that block is isolated. If a selected object is nested in an xref, the layer of the object is isolated.
- **Entity:** Isolates layers of selected objects even if they are nested in an xref or a block.
- **None:** Isolates the layers of selected objects. If a block or an xref is selected, the layer containing that block or xref is isolated.

# LAYWALK

## Quick Reference

### See also:

- Use Layers to Manage Complexity

Displays objects on selected layers and hides objects on all other layers.

## Access Methods



### Button

 **Ribbon:** Home tab ► Layers panel ► Walk

 **Menu:** Format ► Layer Tools ► Layer Walk

 **Toolbar:** Layers II

## Summary

The [LayerWalk dialog box](#) is displayed.

Displays a dialog box with a list of all layers in the drawing. For drawings with a large number of layers, you can filter the list of layers that are displayed in the dialog box. Use this command to review the objects on each layer and to purge unreferenced layers.

By default, the effect is temporary and layers are restored when you close the dialog box.

## LayerWalk Dialog Box

## Quick Reference

### See also:

- Use Layers to Manage Complexity

Dynamically displays objects on layers that you select in the Layer list.

### **Summary**

The number of layers in the drawing are displayed in the dialog box title. You can change the current layer state when you exit, save layer states, and purge layers that are not referenced.

You can use the Layer Walk dialog box in a paper space viewport to select layers to turn on and thaw in the layer table and the current viewport. Any layer that is not selected in the Layer list is frozen in the current viewport. You can change the display of one viewport without altering the display of another viewport.

### **List of Options**

The following options are displayed.

#### **Filter**

Turns an active filter on and off. When this check box is selected, the list displays only those layers that match the active filter. When this check box is cleared, the full list of layers is displayed. (This option is available only when there is an active filter.) To turn on an active filter, in the filter list, either enter a wildcard and press Enter, or select a saved filter.

#### **Layer List**

If a filter is active, displays a list of layers defined in that filter. If no filter is active, displays a list of layers in the drawing. Double-click a layer to set it to Always Show (an asterisk to the left of the layer is displayed). Right-click in the layer list to display more options.

In the layer list, you can

- Click a layer name to display the contents of a layer.
- Double-click a layer name to turn the Always Show option on or off.
- Press Ctrl and click layers to select multiple layers.
- Press Shift and click to select layers in a sequence.
- Press either Ctrl or Shift and double-click in the layer list to turn the Always Show option on or off.
- Click and drag in the layer list to select multiple layers.  
For more options in the layer list, right-click to access the Layer List shortcut menu.



### **Layer List Shortcut Menu Options**

Displays a list of options for the layers selected in the Layer list.

**Hold Selection** Turns on the Always Show option for selected layers. An asterisk (\*) is displayed to the left of each layer held.

**Release Selection** Turns off the Always Show option for selected layers.

**Release All** Turns off the Always Show option for all layers.

**Select All** Selects and displays all layers.

**Clear All** Clears all layers.

**Invert Selection** Clears current layers and selects and displays all other layers.

**Select Unreferenced** Selects all unreferenced layers. Use with the Purge button to remove unused layers.

**Save Layer State** Saves the current selection of layers as a layer state that can be used by the Layer States Manager.

**Inspect** Displays the number of layers in the drawing, the number of layers selected, and the number of objects on the selected layers.

**Copy as Filter** Displays the name of the selected layer in the Filter text box. Can be used to create wildcards.

**Save Current Filter** Saves the current filter so that it is available in the Filter list for reuse.

**Delete Current Filter** Removes the current filter from the filter list.

### **Select Objects**

Selects objects and their layers.

### **Filter List**

Filters the layer list. Enter a wildcard and press Enter to display and highlight only those layers whose names match the wildcard. Right-click to save and delete filters. The filter list displays saved filters only.

For more information about wild-card characters, see the Wild-Card Characters section of Filter and Sort the List of Layers.

### **Purge**

When selected layers are not referenced, purges them from the drawing. For a list of layers that can be purged, right-click anywhere in the Layer list and

click Select Unreferenced. In the Layer list, the unreferenced layers are highlighted. You can purge those layers.

### **Restore on Exit**

Returns layers to their previous state when you exit the dialog box. If the check box is cleared, any changes you made are saved.

## **LEADER**

### **Quick Reference**

#### **See also:**

- Create Leaders
- Modify Leaders Using Grips

Creates a line that connects annotation to a feature.

### **Summary**

It is recommended that you use the workflow available through the [MLEADER](#) on page 742 command to create leader objects.

### **List of Prompts**

The following prompts are displayed.

Specify leader start point:

Specify next point:

A leader line segment is drawn and prompts for points and options are displayed.

Specify [next point](#) or [[Annotation/Format/Undo](#)] <Annotation>: *Specify a point, enter an option, or press Enter*

### **Point Specification**

Draws a leader line segment to the point specified and continues to prompt you for points and options.

### **Annotation**

Inserts an annotation at the end of the leader line. The annotation can be single or multiple lines of text, a feature control frame containing geometric tolerances, or a block.

If you press Enter at the Annotation prompt without entering text first, the following options are displayed:

**Tolerance** Creates a feature control frame containing geometric tolerances using the Geometric Tolerance dialog box (see TOLERANCE).

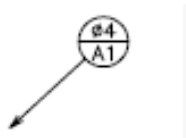
You can create datum indicators and basic dimension notation in these dialog boxes. After you specify the geometric tolerance, LEADER ends.



**Copy** Copies text, a multiline text object, a feature control frame with geometric tolerances, or a block and connects the copy to the end of the leader line. The copy is associated with the leader line, meaning that if the copied object moves, the end of the leader line moves with it. The display of the hook line depends on the object copied.

The value of the current text gap (see DIMSTYLE or the DIMGAP system variable) determines where the text and multiline text objects are inserted. Blocks or feature control frames with geometric tolerances are attached to the end of the leader line.

**Block** Inserts a block at the end of the leader line. The prompts are the same as for [INSERT](#) on page 620. The block reference is inserted at an offset from the end of the leader line and is associated to the leader line, meaning that if the block moves, the end of the leader line moves with it. No hook line is displayed.

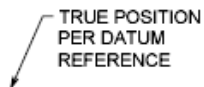


**None** Ends the command without adding any annotation to the leader line.

**Mtext** Creates text using the [In-Place Text Editor](#) when you specify an insertion point and a second point for the text boundary.

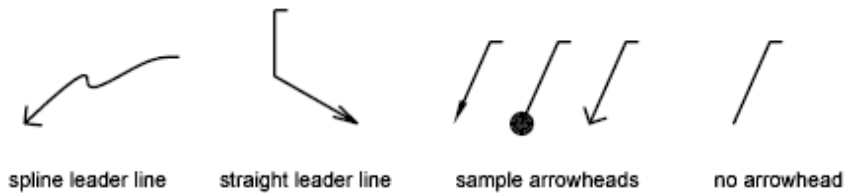
Enter the characters for the text. Enclose format strings for prefixes and suffixes in angle brackets (< >). Enclose format strings for alternate units in square brackets ([ ]). For more information about adding a prefix or suffix, see “Control the Display of Dimension Units” in the *User's Guide*.

The units settings and the current text style determine how the text is displayed. The multiline text is vertically centered and horizontally aligned according to the *X* axis direction of the last two vertices of the leader line. The text is offset from the hook line by the distance specified under Offset from Dim Line on the Text tab of the [New, Modify, or Override Dimension Style dialog box](#). If the offset specified is negative, the multiline text is enclosed in a box as a basic dimension.



### Format

Controls the way the leader is drawn and whether it has an arrowhead.



**Spline** Draws the leader line as a spline. The vertices of the leader line are the control points, each of equal unit weight.

**Straight** Draws the leader line as a set of straight line segments.

**Arrow** Draws an arrowhead at the start point of the leader line.

**None** Draws a leader line with no arrowhead at the start point.

### Undo

Undoes the last vertex point on the leader line. The previous prompt is displayed.

## LENGTHEN

### Quick Reference

See also:

- [Resize or Reshape Objects](#)


Changes the length of objects and the included angle of arcs.

### Access Methods



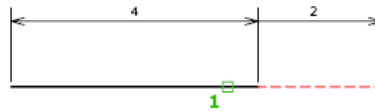
Button

 **Ribbon:** Home tab ► Modify panel ► Lengthen

 **Menu:** Modify ► Lengthen

### Summary

You can specify changes as a percentage, an increment, or as a final length or angle. LENGTHEN is an alternative to using TRIM or EXTEND.



### List of Prompts

The following prompts are displayed.

Select an object or [DElta/Percent/Total/DYnamic]: *Select one object or enter an option*

#### Object Selection

Displays the length and, where applicable, the included angle of the object.

LENGTHEN does not affect closed objects. The extrusion direction of the selected object need not be parallel to the Z axis of the current user coordinate system (UCS).

#### Delta

Changes the length of an object by a specified increment, measured from the endpoint that is closest to the selection point. Delta also changes the angle of an arc by a specified increment, measured from the endpoint that is closest to the selection point. A positive value extends the object; a negative value trims it.

**Delta Length** Changes the length of the object by the specified increment.



**Angle** Changes the included angle of the selected arc by the specified angle.

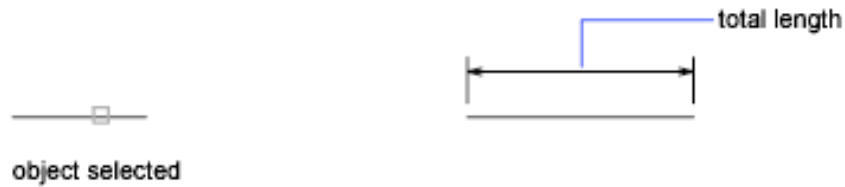


**Percent**

Sets the length of an object by a specified percentage of its total length.

**Total**

Sets the length of a selected object by specifying the total absolute length from the fixed endpoint. Total also sets the included angle of a selected arc by a specified total angle.



**Total Length** Lengthens the object to the specified value from the endpoint that is closest to the selection point.

**Angle** Sets the included angle of the selected arc.



### **Dynamic**

Turns on Dynamic Dragging mode. You change the length of a selected object by dragging one of its endpoints. The other end remains fixed.

## LIMITS


### **Quick Reference**


See also:

- Adjust Grid and Grid Snap

Sets and controls the limits of the grid display in the current Model or named layout.

### **Access Methods**

 **Menu:** Format ► Drawing Limits

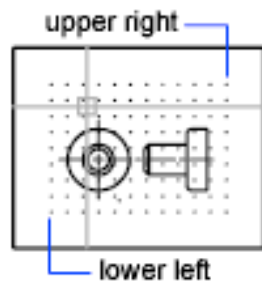
 **Command entry:** 'limits for transparent use

### **List of Prompts**

The following prompts are displayed.

Specify **lower left corner** or [ON/OFF] <current>: Specify a point, enter **on** or **off**, or press Enter

**Lower-Left Corner** Specifies the lower-left corner for the grid limits.



**On** Turns on limits checking. When limits checking is on, you cannot enter points outside the grid limits. Because limits checking tests only points that you enter, portions of objects such as circles can extend outside the grid limits.

**Off** Turns off limits checking but maintains the current values for the next time you turn on limits checking.

## LINE

### Quick Reference

See also:


- Draw Lines

Creates straight line segments.

### Access Methods



Button

 **Ribbon:** Home tab ► Draw panel ► Line

 **Menu:** Draw ► Line

 **Toolbar:** Draw



## Summary

With LINE, you can create a series of contiguous line segments. Each segment is a line object that can be edited separately.



## List of Prompts

The following prompts are displayed.

Specify first point: *Specify a point or press Enter to **continue** from the last drawn line or arc*

Specify next point or [**Close/Undo**]:

**Continue** Continues a line from the endpoint of the most recently drawn line.



before pressing ENTER



after pressing ENTER

If the most recently drawn object is an arc, its endpoint defines the starting point of the line, and the line is drawn tangent to the arc.



before pressing ENTER



after pressing ENTER

**Close** Ends the last line segment at the beginning of the first line segment, which forms a closed loop of line segments. You can use Close after you have drawn a series of two or more segments.



before entering

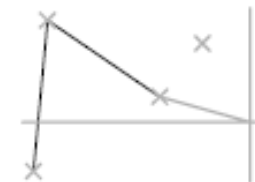


after entering

**Undo** Erases the most recent segment of a line sequence.



before entering



after entering

Entering **u** more than once backtracks through line segments in the order you created them.

## LINETYPE

### Quick Reference

See also:

- Work with Linetypes


Loads, sets, and modifies linetypes.

### Access Methods



Button

 **Ribbon:** Home tab ► Properties panel ► Linetype

 **Menu:** Format ► Linetype

 **Command entry:** 'linetype for transparent use

### Summary

The Linetype Manager is displayed.

If you enter **-linetype** at the Command prompt, [options are displayed](#).

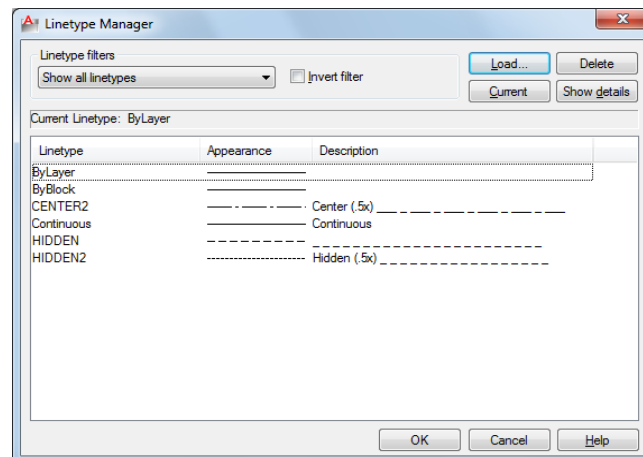
## Linetype Manager

### Quick Reference

See also:

- Work with Linetypes

Loads linetypes and sets the current linetype.



### List of Options

The following options are displayed.

### Linetype Filters

Determines which linetypes to display in the linetype list. You can filter linetypes based on whether they are xref-dependent, or whether they are referenced by objects.

### **Invert Filter**

Displays linetypes based on the opposites of the criteria you select. Lintypes that fit the inverse filter criteria are displayed in the linetype list.

### **Load**

Displays the [Load or Reload Linetypes dialog box](#), in which you can load into the drawing selected linetypes from the *acadlt.lin* file and add them to the linetype list.

### **Current**

Sets the selected linetype to be the current linetype. Setting the current linetype to BYLAYER means that an object assumes the linetype that is assigned to a particular layer. Setting the linetype to BYBLOCK means that an object assumes the CONTINUOUS linetype until it is grouped into a block. Whenever the block is inserted, all objects inherit the block's linetype. The CELTYPE system variable stores the linetype name.

### **Delete**

Deletes selected linetypes from the drawing. You can delete only unused linetypes. The BYLAYER, BYBLOCK, and CONTINUOUS linetypes cannot be deleted.

---

**NOTE** Be careful about deleting linetypes if you are working on a drawing in a shared project or one based on a set of layering standards. The deleted linetype definition remains stored in the *acadlt.lin* or *acadltiso.lin* file and can be reloaded.

---

### **Show Details or Hide Details**

Controls whether the Details section of the Linetype Manager is displayed.

### **Current Linetype**

Displays the current linetype name.

### **List of Linetypes**

Displays the loaded linetypes according to the option specified in Linetype Filters. To quickly select all or clear all linetypes, right-click in the linetype list to display the shortcut menu.

**Linetype** Displays names of loaded linetypes. To rename a linetype, select it and then click it again and enter a new name. BYLAYER, BYBLOCK, CONTINUOUS, and xref-dependent linetypes cannot be renamed.

**Appearance** Displays a sample of selected linetypes.

**Description** Displays descriptions of the linetypes, which can be edited in the Details area.

### **Details**

Provides alternative access to properties and additional settings.

#### **Name**

Displays the selected linetype name, which can be edited.

#### **Description**

Displays the description of the selected linetype, which can be edited.

#### **Use Paper Space Units for Scaling**

Scales linetypes in paper space and model space identically. Useful when working with multiple viewports. (PSLTSCALE system variable)

#### **Global Scale Factor**

Displays the global scale factor for all linetypes. (LTSCALE system variable)

#### **Current Object Scale**

Sets linetype scale for newly created objects. The resulting scale is the global scale factor multiplied by the object's scale factor. (CELTSCALE system variable)

#### **ISO Pen Width**

Sets the linetype scale to one of a list of standard ISO values. The resulting scale is the global scale factor multiplied by the object's scale factor.

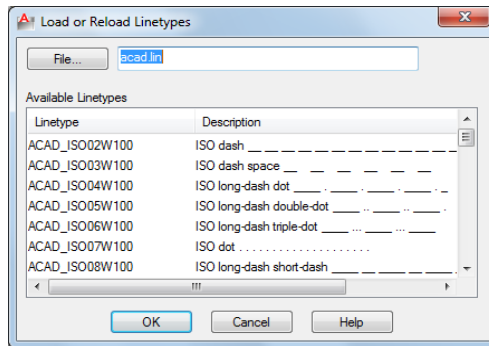
## **Load or Reload Linetypes Dialog Box**

### **Quick Reference**

#### **See also:**

- Work with Linetypes

Loads a linetype whose definition exists in a linetype library (LIN) file.



### Summary

The *acad.lin* file contains the standard linetypes.

### List of Options

The following options are displayed.

#### File Button

Displays the Select Linetype File dialog box, in which you can select a different linetype (LIN) file.

#### File Name

Displays the name of the current LIN file. You can enter the name of another LIN file or click the File button to select a file from the Select Linetype File dialog box.

#### Available Linetypes

Displays the linetypes available to load. To select or clear all of the linetypes on the list, right-click and choose Select All or Clear All.

## -LINETYPE

### Quick Reference

See also:

- Work with Linetypes

Loads, sets, and modifies linetypes.

### List of Prompts

The following prompts are displayed.

Enter an option [?/Create/Load/Set]:

?—**List Linetypes** Displays the Select Linetype File dialog box (a [standard file selection dialog box](#)). After you select an LIN file, the linetypes available in the file are listed.

**Create** Creates a new linetype and stores it in an LIN file.

The Create or Append Linetype File dialog box (a [standard file selection dialog box](#)) is displayed. Specify the file to which you want the linetype added.

**Descriptive Text** Enter a linetype description up to 47 characters long. The description can be a comment or a series of underscores, dots, dashes, and spaces to show a simple representation of the linetype pattern.

**Linetype Pattern** Enter a pattern definition as a series of numbers separated by commas. Enter positive values to specify lengths of dashes, and enter negative values to specify lengths of spaces. Use a zero to represent a dot.

2.5      -.5      .5      -.5      the pattern is  
—————      —————      repeated

The “A” in the pattern definition prompt specifies the pattern alignment used at the ends of individual lines, circles, and arcs. Only A-type alignment is supported. With A-type alignment, lines and arcs are guaranteed to start and end with a dash. The A is automatically included in the definition. If you use a text editor to create a linetype, you must enter **a** at the beginning of the definition.

After creating a linetype, you must load it to make it accessible.

**Load** Loads a linetype whose definition exists in a file. The *acadlt.lin* file contains the standard linetypes.

The Select Linetype File dialog box (a [standard file selection dialog box](#)) is displayed. Enter or select the file in which the linetype you want to load is stored.

**Set** Sets the current linetype for objects that will be drawn subsequently. You can control the linetype of objects individually or by layer.

The linetype you enter becomes the current linetype. All new objects are drawn with this linetype, regardless of the current layer. If the linetype you request is not loaded, the program searches for its definition in the *acadlt.lin* file. If

the linetype is neither loaded nor in *acadlt.lin*, the program displays a message and returns you to the Command prompt.

Enter **?** to list all loaded linetype names. If you enter **bylayer**, new objects inherit the linetype associated with the layer on which the object is drawn. If you enter **byblock**, new objects are drawn using the CONTINUOUS linetype until they are grouped into a block. Whenever you insert that block, the objects inherit the linetype of the block.

## LIST

### Quick Reference

See also:

- Display and Change the Properties of Objects

Displays property data for selected objects.

### Access Methods



Button

 **Ribbon:** Home tab ► Properties panel ► List

 **Menu:** Tools ► Inquiry ► List

 **Toolbar:** Inquiry

### Summary

You can use LIST to display and then copy the properties of selected objects to a text file.

The text window displays the object type, object layer, and the X,Y,Z position relative to the current user coordinate system (UCS) and whether the object is in model space or paper space.

LIST also reports the following information:

- Color, linetype, lineweight, and transparency information, if these properties are not set to BYLAYER.



- The thickness of an object, if it is nonzero.
- Elevation (Z coordinate information).
- Extrusion direction (UCS coordinates), if the extrusion direction differs from the Z axis (0,0,1) of the current UCS.
- Additional information related to the specific object type. For example, for dimensional constraint objects, LIST displays the constraint type (annotation or dynamic), reference type (yes or no), name, expression, and value.

## LOGFILEOFF

### Quick Reference

#### See also:

- [Navigate and Edit Within the Command Window](#)

Closes the command history log file opened by LOGFILEON.

### Summary

The program stops recording the text window contents and closes the log file.

Each drawing saves a log file (with the extension *.log*) that may need periodic deletion as the number of log files continues to grow.

You can also control the log file with the [OPTIONS](#) on page 841 command. Use the Maintain a Log File option on the [Open and Save tab](#) on page 850 in the Options dialog box to turn the log file off and on. Use the [Files tab](#) on page 842 to change the location of the log file.

## LOGFILEON

### Quick Reference

#### See also:

- [Navigate and Edit Within the Command Window](#)

Writes the contents of the command history to a file.

### Summary

The contents of the text window are recorded in the log file until you exit the program or use the LOGFILEOFF command.

Each drawing saves a log file (with the extension *.log*) that may need periodic deletion as the number of log files continues to grow.

You can also control the log file with the [OPTIONS](#) on page 841 command. Use the Maintain a Log File option on the [Open and Save tab](#) on page 850 in the Options dialog box to turn the log file off and on. Use the [Files tab](#) on page 842 to change the location of the log file.

## LTSCALE

### Quick Reference

See also:

- [Control Linetype Scale](#)

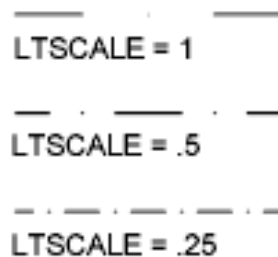
Sets the global linetype scale factor.

### Access Methods

 **Command entry:** 'ltscale for transparent use

### Summary

Use LTSCALE to change the scale factor of linetypes for all objects in a drawing. Changing the linetype scale factor causes the drawing to be regenerated.



—————  
LTSCALE = 1

- . - . - . - .  
LTSCALE = .5

- . - . - . - . - . - .  
LTSCALE = .25

# LWEIGHT

## Quick Reference

### See also:

- Overview of Lineweights


Sets the current lineweight, lineweight display options, and lineweight units.

## Access Methods



### Button

 **Ribbon:** Home tab ► Properties panel ► Lineweight

 **Menu:** Format ► Lineweight

**Shortcut menu:** Right-click Show/Hide Lineweight on the status bar and choose Settings.

 **Command entry:** 'lweight for transparent use

## Summary

The [Lineweight Settings dialog box](#) is displayed.

If you enter **-lweight** at the Command prompt, [options are displayed](#).

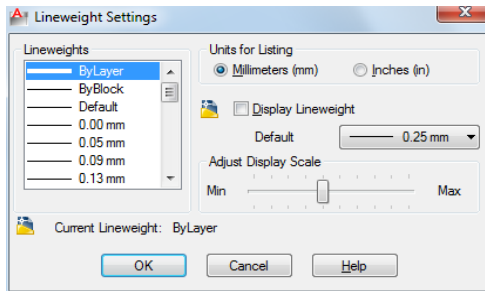
# Lineweight Settings Dialog Box

## Quick Reference

### See also:

- Overview of Lineweights

Sets the current lineweight, sets the lineweight units, controls the display and display scale of lineweights, and sets the DEFAULT lineweight value for layers.



## Summary

For a table of valid lineweights, see “Overview of Lineweights” in the *User's Guide*.

## List of Options

The following options are displayed.

### Lineweights

Displays the available lineweight values. Lineweight values consist of standard settings including BYLAYER, BYBLOCK, and DEFAULT. The DEFAULT value is set by the LWDEFAULT system variable, which has an initial value of 0.01 inches or 0.25 mm. All new layers use the default setting. The lineweight value of 0 plots at the thinnest lineweight available on the specified plotting device and is displayed at one pixel wide in model space.

### Current Lineweight

Displays the current lineweight. To set the current lineweight, select a lineweight from the lineweight list and choose OK.

### Units for Listing

Specifies whether lineweights are displayed in millimeters or inches. You can also set Units for Listing by using the LWUNITS system variable.

#### Millimeters (mm)

Specifies lineweight values in millimeters.

#### Inches (in.)

Specifies lineweight values in inches.

## Display Lineweight

Controls whether lineweights are displayed in the current drawing. If this option is selected, lineweights are displayed in model space and paper space. You can also set Display Lineweight by using the LWDISPLAY system variable. Regeneration time increases with lineweights that are represented by more than one pixel. Clear Display Lineweight if performance slows down when working with lineweights turned on in a drawing. This option does not affect how objects are plotted.

### Default

Controls the DEFAULT lineweight for layers. The initial DEFAULT lineweight is 0.01 inches or 0.25 mm. (LWDEFAULT system variable)

### Adjust Display Scale

Controls the display scale of lineweights on the Model tab. On the Model tab, lineweights are displayed in pixels. Lineweights are displayed using a pixel width in proportion to the real-world unit value at which they plot. If you are using a high-resolution monitor, you can adjust the lineweight display scale to better display different lineweight widths. The Lineweight list reflects the current display scale.

Objects with lineweights that are displayed with a width of more than one pixel may increase regeneration time. If you want to optimize performance when working in the Model tab, set the lineweight display scale to the minimum value or turn off lineweight display altogether.

## -LWEIGHT

### Quick Reference

See also:

- Overview of Lineweights

Sets the current lineweight, lineweight display options, and lineweight units.

### List of Prompts

The following prompts are displayed.

Current lineweight: *current*

Enter **default lineweight** for new objects or **[?]**: *Enter a valid lineweight or enter ?*

The current lineweight value is displayed; if the value is not BYLAYER, BYBLOCK or DEFAULT, the value is displayed in millimeters or inches.

**Default Lineweight** Sets the current default lineweight. Lineweight values consist of fixed settings, including BYLAYER, BYBLOCK, and DEFAULT. Values are calculated in either inches or millimeters; millimeters are the default. If you enter a valid lineweight value, the current default lineweight is set to the new value. If you enter any other value, the default is set to the nearest valid value.

To plot an object with a lineweight that is not found in the list of fixed lineweight values, you can use plot styles to control plotted lineweights. See “Control Plotted Lineweight and Linetype” in the *User's Guide*. The DEFAULT value is set by the LWDEFAULT system variable and has an initial value of 0.01 inches or 0.25 mm. The lineweight value of 0 plots at the thinnest lineweight available on the specified plotting device and is displayed at a value of one pixel in model space.

**?—List Lineweights** Displays a list of valid lineweight values in the current lineweight units.

---

**NOTE** If you save a drawing using the AutoCAD Release 14, or earlier, format, the drawing preview displays lineweights even though the drawing saved in the earlier format does not display lineweights.

---

## MANAGEUPLOADS

### Quick Reference

See also:

- Use AutoCAD WS for Drawing File Collaboration

Manages the uploading of files stored on the AutoCAD WS server.

### Access Methods



 **Ribbon:** Online tab ► Upload panel ► Manage Uploads

 **Menu:** File ► AutoCAD WS ► Manage Uploads

### Summary

The [Manage Uploads dialog box](#) on page 718 is displayed.

---

**NOTE** You may first be prompted to log in to AutoCAD WS. If you do not have an account, click Create an Account and follow the on-screen instructions.

---

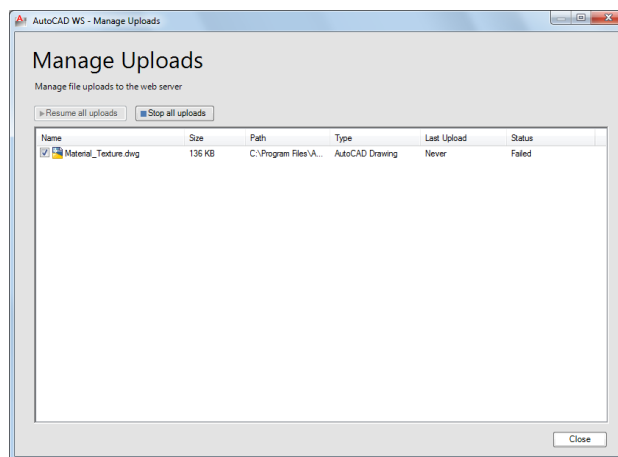
## Manage Uploads Dialog Box

### Quick Reference

See also:

- Use AutoCAD WS for Drawing File Collaboration

Manages the uploading of files stored on the AutoCAD WS server.



### Summary

View the status of your current file uploads and control whether drawings are automatically uploaded each time the local drawing is saved. Use the check boxes to resume or stop the uploading process for a specific drawing. To remove a file from the list, right-click the file and click Remove from This List.

---

**NOTE** Removing a file from the list does not remove the file from the server.

---

### List of Options

The following options are displayed.

**Resume All Uploads** Uploads the latest version of all drawing files in the list and enables automatic uploads.

**Stop All Uploads** Cancels any uploads that are in progress, and disables all automatic uploads.



# MARKUP

## Quick Reference

### See also:

- View Markups

Opens the Markup Set Manager.

## Access Methods



### Button

 **Ribbon:** View tab ► Palettes panel ► Markup Set Manager

 **Menu:** Tools ► Palettes ► Markup Set Manager

 **Toolbar:** Standard

## Summary

When submitting designs for review, you can publish a drawing as a DWF or DWFx file. The reviewer can open the file in Autodesk Design Review, mark it up, and then send the file back to you.

Opens the [Markup Set Manager](#).

# Markup Set Manager

## Quick Reference

### See also:

- View Markups

Displays information about loaded markup sets and their status.

## Summary

You can show or hide markups and their originating drawing files in your drawing area. You can change the status of individual markups and add notes and comments to them.

## List of Options

The following options are displayed.

### Markup Set List Control

The Markup Set List control displays the name of the markup set, or, if no markup sets are open, the Open option.

**Names of Open Markup Sets** Lists all open markup sets, if any. A check is displayed next to the current markup set. The current markup set is the open markup set that is displayed in the Markup Set Manager window.

**Recent** Displays a list of recently opened markup sets.

**Open** Displays the Open Markup DWF dialog box (a standard file selection dialog box), in which you can select a DWF or DWFX file that contains markups. When you click Open, the markups in the selected DWF or DWFX file are loaded into the Markup Set Manager.

---

**NOTE** When opening a digitally signed DWFX file, a message box is displayed that warns you about saving a new version of the file will invalidate the attached digital signature.

---

### Republish Markup DWF

Provides options for republishing the marked-up DWF or DWFX file. If any sheets were added to the DWF or DWFX file in Autodesk® Design Review, those sheets will not be included in the republished DWF or DWFX file.

**Republish All Sheets** Republishes all sheets in the marked-up DWF or DWFX file. Opens the Select DWF File dialog box (a standard file selection dialog box), in which you can select the previously published DWF or DWFX to overwrite it, or you can enter a new name for the DWF or DWFX file. When you click Select, the previously published DWF file is overwritten or a new DWF or DWFX file is created that contains any changes you made to the drawing file geometry and the status of the markups.

**Republish Markup Sheets** Republishes only those sheets in the marked-up DWF or DWFX file that have associated markups. Opens the Select DWF File dialog box (a standard file selection dialog box), in which you can select the previously published DWF or DWFX to overwrite it, or you can enter a new name for the DWF or DWFX file. When you click Select, the previously published DWF or DWFX file is overwritten or a new DWF or DWFX file is

created that contains any changes you made to the drawing file geometry and the status of the markups.

**View Redline Geometry**

Displays or hides redline markup geometry in the drawing area.

**View DWG Geometry**

Displays or hides the originating drawing file in the drawing area.

**View DWF Geometry**

Displays or hides the DWF or DWFX file geometry in the drawing area.

**Markups**

Displays loaded markup sets. Any sheets that were added to the DWF or DWFX file in Autodesk Design Review are listed in italics. The icon associated with each markup represents the status of the markup.

**Markup Set Node** Indicates the currently loaded markup set.

**Drawing Sheet Node** Indicates a drawing sheet that has one or more associated markups.

**<None>** Indicates an individual markup that does not yet have an assigned status. This is the default status for new markups.

**Question** Indicates an individual markup that has an assigned status of Question. When you open and view a markup, you can change the status to Question if you need additional information about the markup.

**For Review** Indicates an individual markup that has an assigned status of For Review. When you implement a markup, you can change the status to For Review to indicate that the markup creator should review the changes to the drawing sheet and the status of the markup.

**Done** Indicates an individual markup that has an assigned status of Done. When a markup has been implemented and reviewed, you can change the status to Done.

**Markup Shortcut Menu Options (Markup Set Node)**

Right-clicking a markup set node in the Markups area displays the following shortcut menu options.

**Open Markup DWF** Opens the Open Markup DWF dialog box (a standard file selection dialog box), in which you can select a DWF or DWFX file that contains markups. When you click Open, the markups in the selected DWF or DWFX file are loaded into the Markup Set Manager.

---

**NOTE** When opening a digitally signed DWFx file, a message box is displayed that warns you about saving a new version of the file will invalidate the attached digital signature.

---

**Close Markup DWF** Closes the selected marked-up DWF or DWFx and removes it from the Markup Set Manager.

**Save Markup History Changes** Saves changes to the status of markups and added comments to the marked-up DWF or DWFx file.

---

**NOTE** Saving a DWFx file that contains a digital signature will invalidate the attached digital signature.

---

### **Markup Shortcut Menu Options (Drawing Sheet Node)**

Right-clicking a drawing sheet node in the Markups area displays the following shortcut menu options.

**Open Sheet** Opens the originating drawing file for that drawing sheet and makes that layout the active layout in the drawing area.

**Republish All Sheets** Opens the Specify DWF File dialog box. Use this dialog box to overwrite the previously published DWF or DWFx files, or create a DWF or DWFx file.

**Republish Markup Sheets** Opens the Specify DWF File dialog box. Use this dialog box to overwrite the previously published DWF or DWFx files, or create a DWF or DWFx file.

The DWF or DWFx file created contains changes you make to the drawing file geometry and the status of the markups.

### **Markup Shortcut Menu Options (Markup Node)**

Right-clicking an individual markup node in the Markups area displays the following shortcut menu options.

**Open Markup** Opens the originating drawing file for the drawing sheet associated with the selected markup and makes that layout the active layout in the drawing area. The associated markup DWF or DWFx file is also opened as a read-only reference in the drawing area.

**Markup Status** Displays a shortcut menu that provides a list of status options. A check mark precedes the currently assigned status for the selected markup.

- *<None>*: Indicates that the markup does not yet have an assigned status. This is the default status for new markups.
- *Question*: After you open and view a markup, you can change its status to Question if you need additional information about the markup.

- *For Review*: After you have implemented a markup, you can change the status to For Review to indicate that the markup creator should review the changes to the drawing sheet and the status of the markup.
- *Done*: After a markup has been implemented and reviewed, you can change its status to Done.

**Restore Initial Markup View** If you panned or zoomed the selected markup, or rotated the view in model space, restores the original view of the selected markup.

**Republish All Sheets** Opens the Specify DWF File dialog box. Use this dialog box to overwrite the previously published DWF or DWFX files, or create a DWF or DWFX file.

**Republish Markup Sheets** Opens the Specify DWF File dialog box. Use this dialog box to overwrite the previously published DWF or DWFX files, or create a DWF or DWFX file.

The DWF or DWFX file created contains changes you make to the drawing file geometry and the status of the markups.

### **Show All Sheets/Hide Non-Markup Sheets**

Displays all sheets in the marked-up DWF or DWFX file in the tree view of the Markup Set Manager, or hides the sheets that do not have associated markups.

### **Markup Details**

Provides information about the currently selected node (markup set, drawing sheet, or individual markup) in the Markups area.

When an individual markup is selected in the Markups area, Markup Details displays the status of the markup.

The Markup History area (in the lower portion of the Markup Details area) provides a noneditable history log of the selected markup in reverse chronological order. In the Notes area, just below the Markup History area, you can add notes and comments that are automatically saved with the markup.

**Preview** Changes the Markup Details area to the Markup Preview area and displays a thumbnail image of the selected drawing sheet or markup. You can click the Details button to change the area back to the Markup Details area.

**Details** Changes the Markup Preview area to the Markup Details area, which provides information about the selected node in the Markups area. You can click the Preview button to change the area back to the Markup Preview area.

### **Markup Preview**

Displays a thumbnail preview of the currently selected drawing sheet or markup.

**Details** Changes the Markup Preview area to the Markup Details area, which provides information about the selected node in the Markups area. You can click the Preview button to change the area back to the Markup Preview area.

**Preview** Changes the Markup Details area to the Markup Preview area and displays a thumbnail image of the selected drawing sheet or markup. You can click the Details button to change the area back to the Markup Details area.

### **Markup Set Manager Settings**

The following shortcut menu options are available when you right-click the title bar.

**Move** Displays a four-headed arrow cursor that you can use to move the dialog box. The dialog box does not dock.

**Size** Displays a four-headed arrow cursor that you can use to drag an edge or a corner to make the smaller or larger.

**Close** Closes the Markup Set Manager.

**Allow Docking** Toggles the ability to dock or anchor Markup Set Manager. If this option is selected, a window can be docked when you drag it over a docking area at the side of a drawing. A docked window adheres to the side of the application window and causes the drawing area to be resized. Selecting this option also makes Anchor Right and Anchor Left available.

**Anchor Right/ Anchor Left** Attaches the Markup Set Manager to an anchor tab base at the right or left side of the drawing area. An anchored palette cannot be set to stay open.

**Auto-hide** Causes a floating palette to roll open and closed as the cursor moves across it.

**Transparency** Displays the Transparency dialog box.

# MARKUPCLOSE

## Quick Reference

### See also:

- Respond to Markups

Closes the Markup Set Manager.

## Access Methods



### Button

 **Ribbon:** View tab ► Palettes panel ► Markup Set Manager

 **Menu:** Tools ► Palettes ► Markup Set Manager

 **Toolbar:** Standard

## Summary

The [Markup Set Manager](#) window closes.

# MASSPROP

## Quick Reference

### See also:


- Obtain Area and Mass Properties Information

Calculates the mass properties of regions or AutoCAD 3D solids.

## Access Methods



### Button

 **Menu:** Tools ► Inquiry ► Region/Mass Properties

 **Toolbar:** Inquiry

### Summary

Refer to the Help system for a complete list of definitions for each of the region or mass properties computed.

### List of Prompts

The following prompts are displayed.

Select objects: *Use an object selection method*

If you select multiple regions, only those that are coplanar with the first selected region are accepted.

MASSPROP displays the mass properties in the text window, and then asks if you want to write the mass properties to a text file (.mpr).

The properties that MASSPROP displays depend on whether the selected objects are regions, and whether the selected regions are coplanar with the *XY* plane of the current user coordinate system (UCS), or 3D solids. For a list of the parameters that control the MASSPROP units, see [Calculations Based on the Current UCS](#).

### Regions

The following table shows the mass properties that are displayed for all regions.

---

#### Mass properties for all regions

---

Mass property	Description
---------------	-------------

---

Area	The surface area of AutoCAD 3D solids or the enclosed area of regions.
------	--

---

Perimeter	The total length of the inside and outside loops of a region. The perimeter of a 3D solid is not calculated.
-----------	--

---

Bounding box	The two coordinates that define the bounding box. For regions that are coplanar with the <i>XY</i> plane of the current user coordinate system, the bounding box is defined by the diagonally opposite corners of a rectangle that encloses the region. For regions that are not coplanar with the <i>XY</i> plane of the current UCS, the bounding box is defined by the diagonally opposite corners of a 3D box that encloses the region.
--------------	---

---



---

**Mass properties for all regions**

---

**Mass property**   **Description**

---

Centroid	A 2D or 3D coordinate that is the center of area for regions. For regions that are coplanar with the <i>XY</i> plane of the current UCS, this coordinate is a 2D point. For regions that are not coplanar with the <i>XY</i> plane of the current UCS, this coordinate is a 3D point.
----------	---

---

If the regions are coplanar with the *XY* plane of the current UCS, the additional properties shown in the following table are displayed.

---

**Additional mass properties for coplanar regions**

---

**Mass property**   **Description**

---

Moments of inertia	A value used when computing the distributed loads, such as fluid pressure on a plate, or when calculating the forces inside a bending or twisting beam. The formula for determining area moments of inertia is $\text{area\_moments\_of\_inertia} = \text{area\_of\_interest} * \text{radius}^2$ The area moments of inertia has units of distance to the fourth power.
--------------------	--

---

Products of inertia	Property used to determine the forces causing the motion of an object. It is always calculated with respect to two orthogonal planes. The formula for product of inertia for the <i>YZ</i> plane and <i>XZ</i> plane is $\text{product\_of\_inertia}_{YZ,XZ} = \text{mass} * \text{dist}_{\text{centroid\_to\_YZ}} * \text{dist}_{\text{centroid\_to\_XZ}}$ This <i>XY</i> value is expressed in mass units times the length squared.
---------------------	--

---

Radii of gyration	Another way of indicating the moments of inertia of a 3D solid. The formula for the radii of gyration is $\text{gyration\_radii} = (\text{moments\_of\_inertia}/\text{body\_mass})^{1/2}$ Radii of gyration are expressed in distance units.
-------------------	---

---

Principal moments and <i>X,Y,Z</i> directions about centroid	Calculations that are derived from the products of inertia and that have the same unit values. The moment of inertia is highest through a certain axis at the centroid of an object. The moment of inertia is lowest through the second axis that is normal to the first axis and that also passes through the centroid. A third value included in the results is somewhere between the high and low values.
--	--

---

### 3D Solids

The following table shows the mass properties that are displayed for solids.

---

#### Mass properties for solids

---

Mass property	Description
---------------	-------------

---

Mass	The measure of inertia of a body. Because a density of one is used, mass and volume have the same value.
Volume	The amount of 3D space that a solid encloses.
Bounding box	The diagonally opposite corners of a 3D box that encloses the solid.
Centroid	A 3D point that is the center of mass for solids. A solid of uniform density is assumed.
Moments of inertia	The mass moments of inertia, which is used when computing the force required to rotate an object about a given axis, such as a wheel rotating about an axle. The formula for mass moments of inertia is $mass\_moments\_of\_inertia = object\_mass * radius_{axis}^2$ Mass moments of inertia unit is mass (grams or slugs) times the distance squared.
Products of inertia	Property used to determine the forces causing the motion of an object. It is always calculated with respect to two orthogonal planes. The formula for product of inertia for the YZ plane and XZ plane is $product\_of\_inertia_{YZ,XZ} = mass * dist_{centroid\_to\_YZ} * dist_{centroid\_to\_XZ}$ This XY value is expressed in mass units times the length squared.
Radii of gyration	Another way of indicating the moments of inertia of a solid. The formula for the radii of gyration is $gyration\_radii = (moments\_of\_inertia/body\_mass)^{1/2}$ Radii of gyration are expressed in distance units.
Principal moments and X, Y, Z directions about centroid	Calculations that are derived from the products of inertia and that have the same unit values. The moment of inertia is highest through a certain axis at the centroid of an object. The moment of inertia is lowest through the second axis that is normal to the first axis and that also passes through the centroid. A third value included in the results is somewhere between the high and low values.

---

### Calculations Based on the Current UCS

The following table shows the parameters that control the units in which mass properties are calculated.

Parameters that control MASSPROP units	
Parameter	Used to calculate
DENSITY	Mass of solids
LENGTH	Volume of solids
LENGTH*LENGTH	Area of regions and surface area of solids
LENGTH*LENGTH*LENGTH	Bounding box, radii of gyration, centroid, and perimeter
DENSITY*LENGTH*LENGTH	Moments of inertia, products of inertia, and principal moments

## MATCHCELL

### Quick Reference

See also:

- Add Text and Blocks to Tables

Applies the properties of a selected table cell to other table cells.

### Access Methods

**Shortcut menu:** With a table selected and a cell selected, right-click and click Match Cell.

### Summary

All the properties of the source cell are copied to the destination cells except for the cell type: text or block.

### List of Prompts

The following prompts are displayed.

Select source cell: *Click inside a cell in a table whose properties you want to copy*  
Select destination cell: *Click inside table cells to copy properties from the source cell, and right-click or press Enter or Esc to exit*

## MATCHPROP

### Quick Reference

See also:

- Copy Properties Between Objects

Applies the properties of a selected object to other objects.

### Access Methods




Button

 **Ribbon:** Home tab ► Properties panel ► Match Properties

 **Menu:** Modify ► Match Properties

 **Toolbar:** Standard

 **Command entry:** painter (or 'matchprop for transparent use)

### Summary

The types of properties that can be applied include color, layer, linetype, linetype scale, lineweight, plot style, transparency, and other specified properties.

### List of Prompts

The following prompts are displayed.

Current active settings: *Currently selected matchprop settings*

Select destination object(s) or [Settings]: *Enter s or select one or more objects to copy properties to*

**Destination Object(s)** Specifies the objects to which you want to copy the properties of the source object.

**Settings** Displays the [Property Settings dialog box](#), in which you can control which object properties to copy to the destination objects. By default, all object properties are selected for copying.

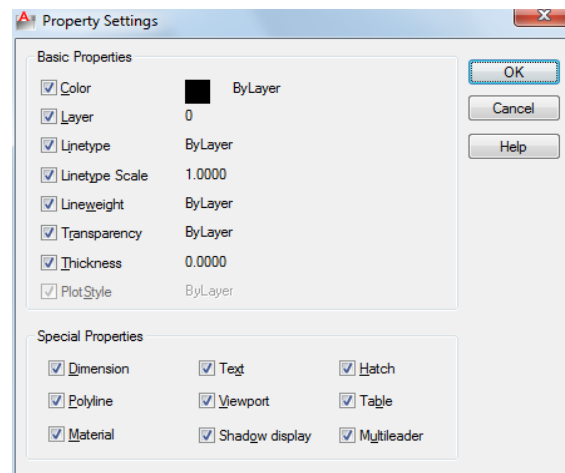
## Property Settings Dialog Box

### Quick Reference

See also:

- Copy Properties Between Objects

Specifies the properties that are copied from the select source object to the destination objects.



### Summary

Specifies which basic properties and special properties to copy from the source object to the destination objects.

### List of Options

The following options are displayed.

#### Basic Properties

Color

Changes the color of the destination object to that of the source object.  
Available for all objects.

#### **Layer**

Changes the layer of the destination object to that of the source object.  
Available for all objects.

#### **Linetype**

Changes the linetype of the destination object to that of the source object.  
Available for all objects except attributes, hatches, multiline text, points, and viewports.

#### **Linetype Scale**

Changes the linetype scale factor of the destination object to that of the source object. Available for all objects except attributes, hatches, multiline text, points, and viewports.

#### **Lineweight**

Changes the lineweight of the destination object to that of the source object.  
Available for all objects.

#### **Transparency**

Changes the transparency of the of the destination object to that of the source object. Available for all objects.

#### **Thickness**

Changes the thickness of the destination object to that of the source object.  
Available only for arcs, attributes, circles, lines, points, 2D polylines, regions, and text.

#### **Plot Style**

Changes the plot style of the destination object to that of the source object. If you are working in color-dependent plot style mode (PSTYLEPOLICY is set to 1), this option is unavailable. Available for all objects, except those with the Jitter edge modifier applied.

### **Special Properties**

#### **Dimension**

In addition to basic object properties, changes the dimension style and properties of the destination object to that of the source object. Available only for dimension, leader, and tolerance objects.

#### **Polyline**

In addition to basic object properties, changes the width and linetype generation properties of the destination polyline to those of the source polyline. The fit/smooth property and the elevation of the source polyline are not transferred to the destination polyline. If the source polyline has variable width, the width property is not transferred to the destination polyline.

#### **Text**

In addition to basic object properties, changes the text style and properties of the destination object to that of the source object. Available only for single-line and multiline text objects.

#### **Viewport**

In addition to basic object properties, changes the following properties of the destination paper space viewport to match those of the source viewport: on/off, display locking, standard or custom scale, shade plot, snap, grid, and UCS icon visibility and location.

The settings for clipping and the freeze/thaw state of the layers are not transferred to the destination object.

#### **Hatch**

In addition to basic object properties, changes the hatch properties (including its properties) of the destination object to that of the source object. To match the hatch origin, use Inherit Properties in HATCH or HATCHEDIT. Available only for hatch objects.

#### **Table**

In addition to basic object properties, changes the table style of the destination object to that of the source object. Available only for table objects.

#### **Multileader**

In addition to basic object properties, changes the multileader style and properties of the destination object to that of the source object. Available only for multileader objects.

# MEASURE

## Quick Reference

### See also:

- Specify Measured Intervals on Objects

Creates point objects or blocks at measured intervals along the length or perimeter of an object.

### Access Methods



#### Button

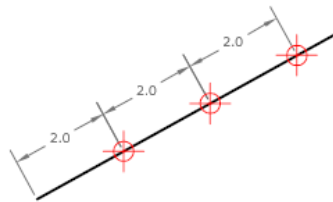
 **Ribbon:** Home tab ► Draw panel ► Measure

 **Menu:** Draw ► Point ► Measure

### Summary

The resulting points or blocks are always located on the selected object and their orientation is parallel to the *XY* plane of the UCS.

Use DDPTYPE to set the style and size of all point objects in a drawing.



The points or blocks are placed in the Previous selection set, so you can select them all by entering **p** at the next Select Objects prompt. You can use the Node object snap to draw an object by snapping to the point objects. You can then remove the points by entering **erase previous**.



## List of Prompts

The following prompts are displayed.

Select object to measure:

Specify **length of segment** or **[Block]**: *Specify a distance or enter b*

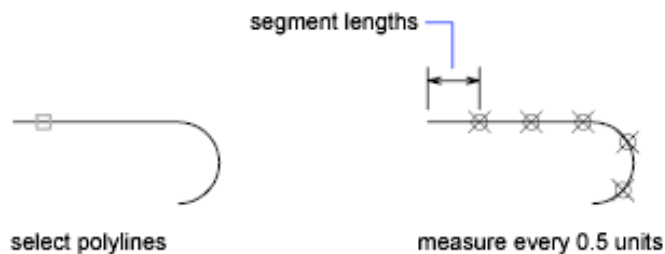
**Length of Segment** Places point objects at the specified interval along the selected object, starting at the endpoint closest to the point you used to select the object.

Measurement of closed polylines starts at their initial vertex (the first one drawn).

Measurement of circles starts at the angle from the center set as the current snap rotation angle. If the snap rotation angle is 0, then the measurement of the circle starts to the right of center, on its circumference.



The illustration shows how MEASURE marks 0.5-unit distances along a polyline, with the **PDMODE** on page 1606 system variable set to 35.



**Block** Places blocks at a specified interval along the selected object.

### Align Block With Object

- **Yes.** The block is rotated about its insertion point so that its horizontal lines are aligned with, and drawn tangent to, the object being measured.
- **No.** The block is always inserted with a 0 rotation angle.

After you specify the segment length, the block is inserted at the specified interval. If the block has variable attributes, these attributes are not included.

## MEASUREGEOM

### Quick Reference

See also:

- Obtain Area and Mass Properties Information


Measures the distance, radius, angle, area, and volume of selected objects or sequence of points.


### Access Methods



Button

 **Ribbon:** Home tab ► Utilities panel ► Measure drop-down ► Distance

 **Menu:** Tools ► Inquiry ► Distance

 **Toolbar:** Inquiry, Measurement Tools

### Summary

The MEASUREGEOM command performs many of the same calculations as the following commands:

- AREA
- DIST
- MASSPROP

### List of Prompts

The following prompts are displayed.

Enter an option [[Distance](#)/[Radius](#)/[Angle](#)/[Area](#)/[Volume](#)] <Distance>: *Specify Distance, Radius, Angle, Area, or Volume*

Information displays at the Command prompt and in the tooltip in the current units format.

### **Distance**

Measures the distance between specified points. The following display at the Command prompt and in the tooltip:

- The current UCS  $X$  axis
- Distance in  $X$  direction (Delta  $X$ )
- Distance in  $Y$  direction (Delta  $Y$ )

**Multiple Points** A running total of distance based on existing line segments and the current rubber-band line is calculated. The total updates as you move the cursor and displays in the tooltip.

If you enter Arc, Length, or Undo Options for Selecting Polylines display.

### **Radius**

Measures the radius and diameter of a specified arc or circle.

### **Angle**

Measures the angle of a specified arc, circle, line, or vertex.

**Arc** Measures the angle of an arc.

**Circle** Measures a specified angle within a circle. The angle updates as you move the cursor.

**Line** Measures the angle between two lines.

**Vertex** Measures the angle of a vertex.

### **Area**

Measures the area and perimeter of an object or defined area.

---

**NOTE** MEASUREGEOM cannot calculate the area of a self-intersecting object.

---

**Specify Corner Points** Calculates the area and perimeter defined by specified points.

If you enter Arc, Length, or Undo, Options for Selecting Polylines display.

**Add Area Turns on Add mode and keeps a running total of area as you define areas.** You can use the Add Area option to calculate the

- Individual areas of defined areas and objects
- Individual perimeters of defined areas and objects

- Total area of all defined areas and objects
- Total perimeter of all defined areas and objects

**Subtract Area** Subtracts a specified area from the total area. The total area and perimeter displays at the Command prompt and in the tooltip.

### **Volume**

Measures the volume of an object or a defined area.

**Object** Measures the volume of an object or defined area.

You can select 2D objects. If you select a 2D object you must specify a height for that object.

If you define an object by specifying points, you must specify at least three points to define a polygon. All must lie on a plane parallel to the *XY* plane of the UCS. If you do not close the polygon, an area will be calculated as if a line existed between the first and last points entered.

If you enter Arc, Length, or Undo Options for Selecting Polylines display.

**Add Volume** Turns on Add mode and keeps a running total of volume as you define areas.

**Subtract Volume** Turns on Subtract mode and subtracts a specified volume from the total volume.

### **Options for Selecting Polylines**

You can select polylines when using the Distance, Area, and Volume options.

**Arc** Adds arc segments to the polyline.

**Endpoint of Arc** Draws an arc segment. The arc segment is tangent to the previous segment of the polyline.

**Angle** Specifies the included angle of the arc segment from the start point. Entering a positive number creates counterclockwise arc segments. Entering a negative number creates clockwise arc segments.

- [Endpoint of Arc](#) on page 955

**Radius** Specifies the radius of the arc segment.

**Center** Specifies the center of the arc segment.

- [Endpoint of Arc](#) on page 955

- [Angle](#) on page 955

**Length** Specifies the chord length of the arc segment. If the previous segment is an arc, the new arc segment is drawn tangent to the previous arc segment.

**Close** Draws an arc segment from the last point specified to the starting point, creating a closed polyline. At least two points must be specified to use this option.

**Direction** Specifies a starting direction for the arc segment.

- [Endpoint of Arc](#) on page 955

**Half width** Specifies the width from the center of a wide polyline segment to one of its edges.

The starting half-width becomes the default ending half-width. The ending half-width becomes the uniform half-width for all subsequent segments until you change the half-width again. The starting and ending points of wide line segments are at the center of the line.

Typically, the intersections of adjacent wide polyline segments are beveled. No beveling is performed for nontangent arc segments or very acute angles or when a dot-dash linetype is used.

**Radius** Specifies the radius of the arc segment.

- [Endpoint of Arc](#) on page 955

- [Angle](#) on page 955

**Second Pt** Specifies the second point and endpoint of a three-point arc.

- [Endpoint of Arc](#) on page 955

**Width** Specifies the width of the next arc segment.

The starting width becomes the default ending width. The ending width becomes the uniform width for all subsequent segments until you change the width again. The starting and ending points of wide line segments are at the center of the line.

Typically, the intersections of adjacent wide polyline segments are beveled. No beveling is performed for nontangent arc segments, very acute angles, or when a dot-dash linetype is used.

**Length** Draws a line segment of a specified length at the same angle as the previous segment. If the previous segment is an arc, the new line segment is drawn tangent to that arc segment.

**Undo** Removes the most recent arc segment added to the polyline.

**Close** Draws an arc segment from the last point specified to the starting point, creating a closed polyline. At least two points must be specified to use this option.

## MESSAGES

### Quick Reference

**See also:**


- Use AutoCAD WS for Drawing File Collaboration

Displays messages from your AutoCAD WS account.

### Access Methods



**Button**

 **Ribbon:** Online tab ► Share panel ► Messages

 **Menu:** File ► AutoCAD WS ► Messages

### Summary

The AutoCAD WS Messages section is displayed, where you can view recent activities, such as new file uploads, meeting transcripts, and product news and announcements. You can also view the recent activities of other users with whom you have shared files.

---

**NOTE** You may first be prompted to log in to AutoCAD WS. If you do not have an account, click Create an Account and follow the on-screen instructions.

---

# MIRROR

## Quick Reference

See also:


- Mirror Objects

Creates a mirrored copy of selected objects.

## Access Methods



Button

 **Ribbon:** Home tab ► Modify panel ► Mirror

 **Menu:** Modify ► Mirror

 **Toolbar:** Modify

## Summary

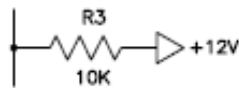
You can create objects that represent half of a drawing, select them, and mirror them across a specified line to create the other half.



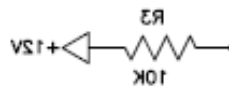
---

**NOTE** By default, when you mirror a text object, the direction of the text is not changed. Set the [MIRRTEXT](#) on page 1581 system variable to 1 if you do want the text to be reversed.

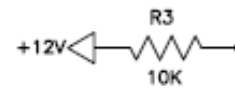
---



before mirroring



after mirroring  
MIRRTEXT=1



after mirroring  
MIRRTEXT=0

## List of Prompts

The following prompts are displayed.

Select objects: *Use an object selection method and press Enter to finish*

Specify first point of mirror line: *Specify a point*  
Specify second point of mirror line: *Specify a point*



The two specified points become the endpoints of a line about which the selected objects are mirrored. For mirroring in 3D, this line defines a mirroring plane perpendicular to the *XY* plane of the user coordinate system (UCS) containing the mirror line.

Erase source objects? [Yes/No] <N>: *Enter y or n, or press Enter*

**Yes** Places the mirrored image into the drawing and erases the original objects.

**No** Places the mirrored image into the drawing and retains the original objects.



## MLEADER

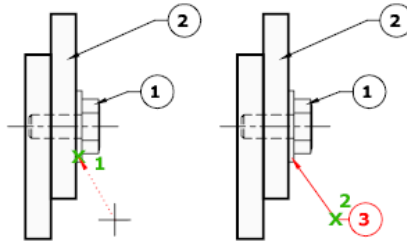
### Quick Reference

See also:

- Modify Leaders Using Grips

Creates a multileader object.





### Access Methods



Button

**Ribbon:** Home tab ► Annotation panel ► Multileader

**Menu:** Dimension ► Multileader

**Toolbar:** Multileader

### Summary

A multileader object typically consists of an arrowhead, a horizontal landing, a leader line or curve, and either a multiline text object or a block.

Multileaders can be created arrowhead first, leader landing first, or content first. If a multileader style has been used, then the multileader can be created from that specified style.

### List of Prompts

The following prompts are displayed.

Specify [leader arrowhead location](#) on page 743 or [[leader Landing first/Content first/Options](#)] <Options>:

#### **Leader Arrowhead First**

Specifies a location for the arrowhead of the multileader object.

#### **Leader Landing First**

Specifies a location for the landing line of the multileader object.

#### **Content First**

Specifies a location for the text or block associated with the multileader object.

#### **Options**

Specifies options for placing the multileader object.

**Leader Type** Specifies a straight, spline, or no leader line.

- **Straight.**
- **Spline.**
- **None.**

**Leader Landing** Changes the distance of the horizontal landing line

- **Yes.**
- **No.**

If you choose No at this point, then no landing line is associated with the multileader object.

**Content Type** Specifies the type of content that will be used for the multileader.

- **Block** on page 744
- **Mtext** on page 744
- **None** on page 744

**Block** Specifies a block within your drawing to associate with the new multileader.

- **Enter block name.**

**Mtext** Specifies that multiline text is included with the multileader.

- **Enter the multiline text.**

**None** Specifies no content type.

**Maxpoints** Specifies a maximum number of points for the new leader line.

- **Enter the maximum points for leader line.**
- **None.**

**First Angle** Constrains the angle of the first point in the new leader line.

- **Enter first angle constraint.**
- **None.**

**Second Angle** Constrains the second angle in the new leader line.

- Enter second angle constraint.
- None.

## MLEADERALIGN

### Quick Reference

See also:

- Modify Leaders Using Grips

Aligns and spaces selected multileader objects.

### Access Methods



Button

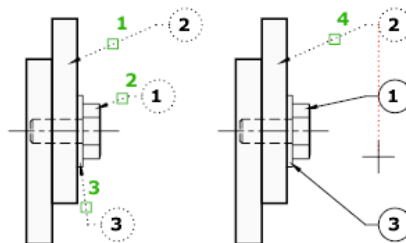
 **Ribbon:** Annotate tab > Multileaders panel > Align

 **Menu:** Modify > Object > Multileader > Align

 **Toolbar:** Multileader

### Summary

After multileaders have been selected, specify the multileader to which all others are aligned.



### List of Prompts

The following prompts are displayed.

Select multileader to align to or [[Options](#) on page 746]:

#### **Options**

Specifies options for aligning and spacing the selected multileaders.

**Distribute** Spaces content evenly between two selected points.

**Make Leader Segments Parallel** Places content so that each of the last leader segments in the selected multileaders are parallel.

**Specify Spacing** Specifies spacing between the extents of the content of selected multileaders.

**Use Current Spacing** Uses the current spacing between multileader content.

## MLEADERCOLLECT

### Quick Reference

See also:

- [Modify Leaders Using Grips](#)

Organizes selected multileaders that contain blocks into rows or columns, and displays the result with a single leader.

### Access Methods



Button

 **Ribbon:** Annotate tab ► Multileaders panel ► Collect

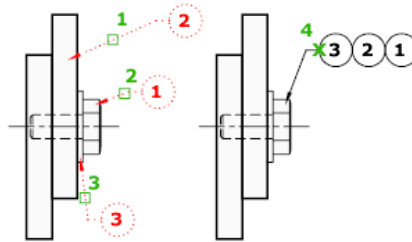
 **Menu:** Modify ► Object ► Multileader ► Collect

 **Toolbar:** Multileader

### Summary

After you select multileaders, you can specify their placement.

For example:



### List of Prompts

The following prompts are displayed.

[Specify collected multileader location](#) on page 747 or [[Vertical](#) on page 747/[Horizontal](#) on page 747/[Wrap](#) on page 747]

**Specify Collected Multileader Location** Specifies the point for placing the multileader collection in the upper-left corner of the collection.

**Vertical** Places the multileader collection in one or more columns.

**Horizontal** Places the multileader collection in one or more rows.

**Wrap** Specifies a width for a wrapped multileader collection.

- **Specify wrap width.**
- **Number.** Specifies a maximum number of blocks per row in the multileader collection.

## MLEADEREDIT

### Quick Reference

See also:

- [Modify Leaders Using Grips](#)

Adds leader lines to, or removes leader lines from, a multileader object.

## Access Methods



### Button

**Ribbon:** Annotate tab ► Multileaders panel ► Add Leader

**Menu:** Modify ► Object ► Multileader ► Add Leader

**Toolbar:** Multileader

**Pointing device:** Hover over Landing grip and choose Add Leader; hover over leader endpoint grip and choose Remove Leader

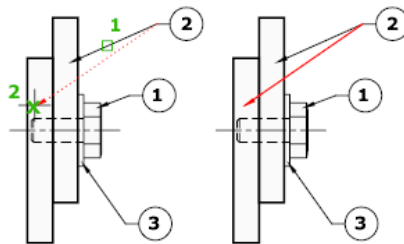
## List of Prompts

The following prompts are displayed.

[Specify leader arrowhead location](#) on page 748 or [[Remove Leader](#) on page 748]

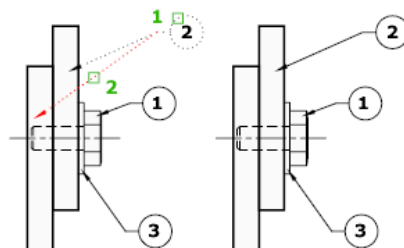
### Add Leader

Adds a leader line to a selected multileader object. The new leader line is added to the left or right of the selected multileader, depending on the location of the cursor.



**Remove Leader** Removes a leader line from a selected multileader object.

For example:



# MLEADERSTYLE

## Quick Reference

### See also:



- Work with Leader Styles

Creates and modifies multileader styles.


## Access Methods



### Button

 **Ribbon:** Annotate tab ► Leaders panel ►  ► Multileader Style

 **Menu:** Format ► Multileader Style

 **Toolbar:** Multileader, Styles

## Summary

The Multileader Style Manager is displayed.

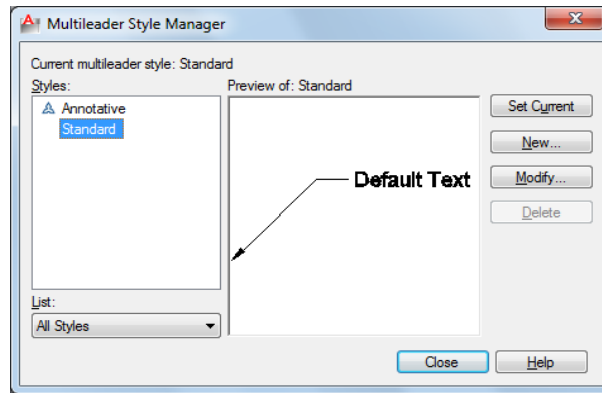
# Multileader Style Manager

## Quick Reference

### See also:

- Work with Leader Styles

Creates and modifies styles that you can use to create multileader objects



## Summary

Sets the current multileader style and creates, modifies, and deletes multileader styles.

The appearance of multileaders is controlled by multileader styles. These styles specify formatting for landing lines, leader lines, arrowheads, and content.

## List of Options

The following options are displayed.

### Current Multileader Style

Displays the name of the multileader style that is applied to multileaders you create. The default multileader style is Standard.

### Styles

Displays a list of multileader styles. The current style is highlighted.

### List

Controls the contents of the Styles list. Click All Styles to display all multileader styles available in the drawing. Click Styles In Use to display only the multileader styles that are referenced by multileaders in the current drawing.

### Preview Of

Displays a preview image of the style that is selected in the Styles list.

### Set Current

Sets the multileader style selected in the Styles list as the current style. All new multileaders are created using this multileader style.



### **New**

Displays the Create New Multileader Style dialog box, in which you can define new multileader styles.

### **Modify**

Displays the Modify Multileader Style dialog box, in which you can modify multileader styles.

### **Delete**

Deletes the multileader style selected in the Styles list. A style that is being used in the drawing cannot be deleted.

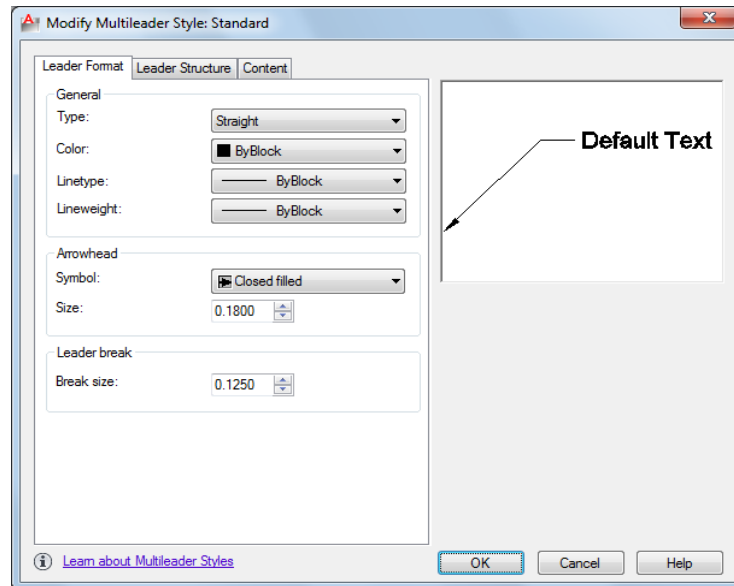
## **Modify Multileader Style Dialog Box**

### **Quick Reference**

#### **See also:**

- Work with Leader Styles

Modifies an existing multileader style.



### **Summary**

Controls the general appearance of the multileader.

### **List of Options**

The following options are displayed.

#### **Preview**

Displays a preview image of the style being modified.

### **List of Tabs**

The following tabs are displayed.

- [Leader Format Tab](#) on page 752
- [Leader Structure Tab](#) on page 753
- [Content Tab](#) on page 754

## **Leader Format Tab**

### **Quick Reference**

**See also:**

- [Work with Leader Styles](#)

Controls the formatting of the leader lines and arrowheads for the multileader.

#### **General**

Controls the general settings of the arrowheads.

#### **Type**

Determines the type of leader line. You can choose a straight leader, a spline, or no leader line.

#### **Color**

Determines the color of the leader line.

#### **Linetype**

Determines the linetype of the leader line.

**Lineweight**

Determines the lineweight of the leader line.

**Arrowhead**

Controls the appearance of the multileader arrowheads.

**Symbol**

Sets the arrowhead symbol for the multileader.

**Size**

Displays and sets the size of arrowheads.

**Leader Break**

Controls the settings used when adding a dimension break to a multileader.

**Break Size**

Displays and sets the break size used for the DIMBREAK command when the multileader is selected.

## Leader Structure Tab

**Quick Reference****See also:**

- Work with Leader Styles

Controls the number of leader points, landing size, and scale for the multileader.

**Constraints**

Controls the constraints of the multileader.

**Maximum Leader Points**

Specifies a maximum number of points for the leader line.

**First Segment Angle**

Specifies the angle of the first point in the leader line.

**Second Segment Angle**

Specifies the angle of the second point in the multileader landing line.

### **Landing Settings**

Controls the landing settings of the multileader.

#### **Automatically Include Landing**

Attaches a horizontal landing line to the multileader content.

#### **Set Landing Distance**

Determines the fixed distance for the multileader landing line.

### **Scale**

Controls the scaling of the multileader.

#### **Annotative**

Specifies that the multileader is annotative.

#### **Scale Multileaders to Layout**

Determines a scaling factor for the multileader based on the scaling in the model space and paper space viewports.

This option is available when the multileader is not annotative.

#### **Specify Scale**

Specifies the scale for the multileader.

This option is available when the multileader is not annotative.

## **Content Tab**

### **Quick Reference**

#### **See also:**

- Work with Leader Styles

Controls the type of content attached to the multileader.

#### **Multileader Type**

Determines whether the multileader contains text or a block.

### **MText: Text Options**

Controls the appearance of the text for the multileader.

#### **Default Text**

Sets default text for the multileader content. The [...] button launches the MTEXT In Place Editor.

#### **Text Style**

Lists the available text styles.

#### **Text Style Button**

Displays the Text Style dialog box where you can create or modify text styles.

#### **Text Angle**

Specifies the rotation angle of the multileader text.

#### **Text Color**

Specifies the color of the multileader text.

#### **Text Height**

Specifies the height of the multileader text.

#### **Always Left Justify**

Specifies that the multileader text is always left justified.

#### **Frame Text**

Frames the multileader text content with a text box.

Control the separation between the text and frame by modifying the Landing Gap setting.

### **Mtext: Leader Connection**

Controls the leader connection settings of the multileader.

Leaders can be connected horizontally or vertically.

#### **Horizontal Attachment**

Horizontal attachment inserts the leader to the left or right of the text content. A horizontal attachment includes a landing line between the text and the leader.

#### **Left Attachment**

Controls the attachment of the landing line to the multileader text when the text is to the right of the leader.

#### **Right Attachment**

Controls the attachment of the landing line to the multileader text when the text is to the left of the leader.

#### **Landing Gap**

Specifies the distance between the landing line and the multileader text.

#### **Extend Leader to Text**

Extends the landing line to end at the edge of the text line where the leader is attached, not at the edge of the multiline text box.

The length of the multiline text box is determined by the length of the longest line of text, not the length of the bounding box.

#### **Vertical Attachment**

Inserts the leader at the top or bottom of the text content. A vertical attachment does not include a landing line between the text and the leader.

#### **Top Attachment**

Attaches the leader to the top center of the text content. Click the drop-down to insert an overline between the leader attachment and the text content.

#### **Bottom Attachment**

Attaches the leader to the bottom of the text content. Click the drop-down to insert an underline between the leader attachment and the text content.

#### **Landing Gap**

Specifies the distance between the landing line and the multileader text.

#### **Block: Block Options**

Controls the properties of block content in a multileader object.

#### **Source block**

Specifies the block used for multileader content.

#### **Attachment**

Specifies the way the block is attached to the multileader object. You can attach the block by specifying the insertion point of the block or the center point of the block.

**Color**

Specifies the color of the multileader block content. The Block color control in the MLEADERSTYLE Content tab only takes effect if the object color included in the block is set to ByBlock.

**Scale**

Specifies the scale of the block upon insertion. For example, if the block is a 1 inch square and the scale specified is 0.5000, then the block is inserted as a 1/2 inch square.

## Create New Multileader Style Dialog Box

**Quick Reference****See also:**

- Work with Leader Styles

Specifies a name for the new multileader style and specifies the existing multileader style on which the new multileader style will be based.

**List of Options**

The following options are displayed.

**New Style Name**

Names the new multileader style.

**Start With**

Specifies an existing multileader style whose settings are the default for the new multileader style.

**Annotative**

Specifies that the multileader object is .

**Continue**

Displays the Multileader Style Manager, in which you define the new multileader style.

# MODEL

## Quick Reference

### See also:

- Work with Model Space and Paper Space

Switches from a named (paper space) layout to the Model layout.

### Access Methods

When viewing a layout, enter **model** at the command prompt or click the Model tab below the drawing window.

### Summary

On the Model layout, you can create drawings in model space. The Model layout automatically sets the **TILEMODE** on page 1684 system variable to 1, and you can create model viewports to display various views of your drawing. Once you have completed your drawing, you can choose a named (paper space) layout to begin designing a layout environment from which to plot.

# MOVE

## Quick Reference

### See also:

- Move Objects

Moves objects a specified distance in a specified direction.


### Access Methods



Button

 **Ribbon:** Home tab ► Modify panel ► Move



 **Menu:** Modify ► Move

 **Toolbar:** Modify

**Shortcut menu:** Select the objects to move. Right-click in the drawing area and click Move.

### Summary

Use coordinates, grid snaps, object snaps, and other tools to move objects with precision.



### List of Prompts

The following prompts are displayed.

Select objects:

Specify base point or [Displacement]:

Specify second point or <use first point as displacement>:

The two points you specify define a vector that indicates how far the selected objects are to be moved and in what direction.

If you press Enter at the Specify Second Point prompt, the first point is interpreted as a relative  $X,Y,Z$  displacement. For example, if you specify **2,3** for the base point and press Enter at the next prompt, the objects move 2 units in the  $X$  direction and 3 units in the  $Y$  direction from their current position.

**Displacement** Enter coordinates to represent a vector

The coordinate values that you enter specify a relative distance and direction.

## MREDO

### Quick Reference

**See also:**

- Correct Mistakes

Reverses the effects of several previous UNDO or U commands.

## Access Methods



**Button**

 **Toolbar:** Standard

## List of Prompts

The following prompts are displayed.

Enter [number of actions](#) or [\[All/Last\]](#):

**Number of Actions** Reverses the specified number of actions.

**All** Reverses all previous actions.

**Last** Reverses only the last action.

# MSLIDE

## Quick Reference

See also:

- Overview of Slides

Creates a slide file of the current model viewport or the current layout.

## Summary

The Create Slide File dialog box (a [standard file selection dialog box](#)) is displayed. Enter a file name or select a slide (SLD) file from the list. A slide file is a raster image of a viewport.

In model space, MSLIDE makes a slide file of the current viewport only. In paper space, MSLIDE makes a slide file of the paper space display, including all viewports and their contents.

Off-screen portions of the drawing, or layers that are off or frozen, are not included in the slide.

Use the VSLIDE command to view slides, or the [SLIDELIB](#) utility to create a slide library.

When you view slides of images shaded with the SHADE command in a larger window or at a higher resolution than was used for creating the slide, black lines may appear interspersed among the lines of the shaded image. To avoid this situation, use a full screen that is set at the highest resolution when creating slides.

## MSPACE

### Quick Reference

See also:

- Work with Model Space and Paper Space

In a layout, switches from paper space to model space in a layout viewport.

### Access Methods

**Pointing device:** Double-click over a viewport on a named layout.  
Double-click outside of a viewport on a named layout to return to paper space.

### Summary

Commands operate in either model space or paper space. You use model space (the Model layout) to do drafting and design work and to create two-dimensional drawings or three-dimensional models. You use paper space (a named layout) to create a finished layout of a drawing for plotting.

When you are in a layout, you can enter **mSPACE** at the Command prompt to make the last viewport in the layout current, and then work in model space in that viewport within the layout.

## MTEDIT

### Quick Reference

See also:

- Change Multiline Text

Edits multiline text.

### Access Methods

**Pointing device:** Double-click a multiline text object.

### Summary

Displays either the multiline text tab on the ribbon or the In-Place Text Editor to modify the formatting or content of the selected mtext object.

The In-Place Text Editor is displayed.

## MTEXT

### Quick Reference

#### See also:


- Overview of Multiline Text

Creates a multiline text object.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Annotation panel ► Multiline Text

 **Menu:** Draw ► Text ► Multiline Text

 **Toolbar:** Draw

### Summary

You can create several paragraphs of text as a single multiline text (mtext) object. With the built-in editor, you can format the text appearance, columns, and boundaries.

After you specify the point for the opposite corner when the ribbon is active, the Text Editor ribbon contextual tab displays. If the ribbon is not active, the [in-place text editor](#) is displayed.

If you specify one of the other options, or if you enter **-mtext** at the Command prompt, MTEXT bypasses the In-Place Text editor and displays additional [Command prompts](#).

**See also:**

- [Symbols and Special Characters](#) on page 791

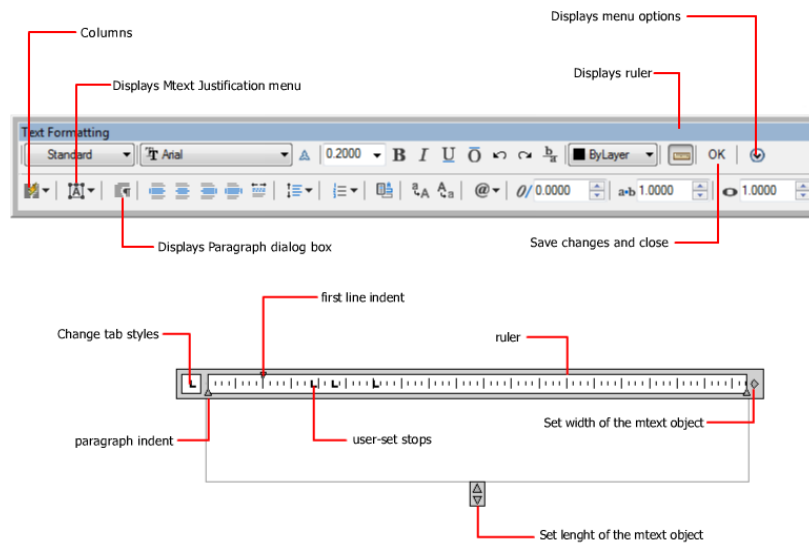
## In-Place Text Editor

### Quick Reference

**See also:**

- [Overview of Multiline Text](#)

Creates or modifies single or multiline text objects.



### Summary

You can import or paste text from other files to use in multiline text, set tabs, adjust paragraph and line spacing and alignment, and create and modify columns.

The In-Place Text Editor includes

- [Text Formatting toolbar](#) on page 768
- [Paragraph dialog box](#) on page 778
- [Column Settings dialog box](#) on page 780
- [Background Mask dialog box](#) on page 781
- [Columns menu](#) on page 779
- Options menu

When a table cell is selected for editing, the In-Place Text Editor displays column letters and row numbers.

---

**NOTE** Not all options available when creating single-line text.

---

### List of Options

The following options are displayed.

#### **Text Editor Shortcut Menu**

**Select All** Selects all the text in the text editor.

**Cut** Copies the selected text and removes it from the text editor to the clipboard.

**Copy** Copies the selected text from the text editor to the clipboard.

**Paste** Pastes the text in the clipboard to the cursor position in the text editor.

**Paste Special** Pastes the text in the clipboard to the cursor position in the text editor while removing character, paragraph, or any formatting from the text in the clipboard. (Not available for single-line text.)

**Insert Field** Displays the [Field dialog box](#).

**Symbol** Displays a list of available symbols. You can also select a Non-breaking space and open the Character Map dialog box for additional symbols.

**Import Text** Displays the Select File dialog box (a [standard file selection dialog box](#)). Select any file that is in ASCII or RTF format. Imported text retains its original character formatting and style properties, but you can edit and format the imported text in the editor. After you select a text file to import, you can replace either selected text or all text, or append the inserted text to text selected within the text boundary. The file size for imported text is limited to 32 KB. (Not available for single-line text.)

The editor automatically sets the text color to BYLAYER. When black characters are inserted and the background color is black, the editor automatically changes to white or the current color.

---

**NOTE** A Microsoft Excel spreadsheet imported into a drawing is truncated at 72 rows unless the spreadsheet was created in Microsoft Office 2002 with Service Pack 2 installed. The same limitation applies when the drawing that contains the OLE object is opened on a system with an earlier version of Microsoft Office installed; the spreadsheet is truncated.

---

**Paragraph Alignment** Sets alignment for the multiline text object. You can choose to align your text to the left, center, or right. You can justify your text, or align the first and last characters of your text with the margins of your mtext box, or center each line of text within the margins of your mtext box. Spaces entered at the end of a line are included as part of the text and affect the justification of the line. (Not available for single-line text.)

**Paragraph** Displays options for paragraph formatting. See the [Paragraph dialog box](#) on page 778. (Not available for single-line text.)

**Bullets and Lists** Displays the options for numbering lists. (Not available for single-line text.)

Displays options for creating lists. (Not available for table cells.) The list is indented to align with the first selected paragraph.

- *Off*: When selected, removes letters, numbers, and bullets from selected text that has list formatting applied. Indentation is not changed.
- *Lettered*: Applies list formatting that uses letters with periods for the items in the list. If the list has more items than the alphabet has letters, the sequence continues by using double letters.
- *Numbered*: Applies list formatting that uses numbers with periods for the items in the list.
- *Bulleted*: Applies list formatting that uses bullets for the items in the list.
- *Restart*: Starts a new letter or number sequence in list formatting. If the selected items are in the middle of a list, unselected items below them also become part of the new list.
- *Continue*: Adds the selected paragraphs to the last list above and continues the sequence. If list items rather than paragraphs are selected, unselected items below the selected items continue the sequence.
- *Allow Auto-list*: Applies list formatting as you type. The following characters can be used as punctuation after letters and numbers and cannot be used

as bullets: period (.), comma (,), close parenthesis ()), close angle bracket (>), close square bracket (]), and close curly bracket (}).

- *Use Tab Delimiter Only*: Limits the Allow Auto-list and Allow Bullets and Lists options. List formatting is applied to text only when the space after the letter, number, or bullet character was created by Tab, not Space.
- *Allow Bullets and Lists*: When this option is selected, list formatting is applied to all plain text in the multiline text object that looks like a list. Text that meets the following criteria is considered to be a list. The line begins with (1) one or more letters or numbers or a symbol, followed by (2) punctuation after a letter or number, (3) a space created by pressing Tab, and (4) some text before the line is ended by Enter or Shift+Enter. When you clear the check mark, any list formatting in the multiline text object is removed and the items are converted to plain text. Allow Auto-list is turned off, and all the Bullets and Lists options are unavailable except Allow Bullets and Lists.

**Columns** Displays options for columns. See the [Columns menu](#) on page 779. (Not available for single-line text.)

**Find and Replace** Displays the [Find and Replace dialog box](#).

**Change Case** Changes the case of selected text. Options are Uppercase and Lowercase.

**AutoCAPS** Converts all new and imported text to uppercase. AutoCAPS does not affect existing text. To change the case of existing text, select the text and right-click. Click Change Case.

**Character Set** Displays a menu of code pages. Select a code page to apply it to the selected text. (Not available for single-line text.)

**Combine Paragraphs** Combines selected paragraphs into a single paragraph and replaces each paragraph return with a space. (Not available for single-line text.)

**Remove Formatting** Removes character formatting for selected characters, paragraph formatting for a selected paragraph, or all formatting from a selected paragraph. (Not available for single-line text.)

**Background Mask** Displays the [Background Mask dialog box](#). (Not available for table cells and single-line text.)

**Stack** Creates stacked text, for example, fractions, if the selected text contains stack characters. Also, unstacks text if stacked text is selected. When the stack



characters, carat (^), forward slash (/), and pound sign (#), are used, the text to the left of the stack character is stacked on top of the text to the right.

By default, text that contains a carat converts to left-justified tolerance values. Text that contains the forward slash converts to center-justified fractional numbers; the slash is converted to a horizontal bar the length of the longer text string. Text that contains the pound sign converts to a fraction separated by a diagonal bar the height of the two text strings. The characters above the diagonal fraction bar are bottom-right aligned; the characters beneath the diagonal bar are top-left aligned.

**Editor Settings** Displays a list of options for the text editor. See [Editor Settings](#) on page 767 for more information.

### **Editor Settings**

Provides options for changing the behavior of the text editor and provides additional editing options. Options are specific to the Editor Settings menu and are not available elsewhere in the text editor.

---

**NOTE** Some options may not be available depending on what you are editing.

---

**Always Display As WYSIWYG (What You See Is What You Get)** Controls display of the In-Place Text Editor and the text within it. When unchecked, text that would otherwise be difficult to read (if it is very small, very large, or is rotated) is displayed at a legible size and is oriented horizontally so that you can easily read and edit it.

When this option is checked, the MTEXTFIXED system variable will be set to 0. Otherwise, MTEXTFIXED will be set to 2.

**Show Toolbar** Controls display of the Text Formatting toolbar. To restore display of the toolbar, right-click in the text area of the editor, and click Editor Settings ► Show Toolbar. This option is controlled by the [MTEXTTOOLBAR](#) on page 1586 system variable

**Show Options** Expands the Text Formatting toolbar to show more options.

**Show Rulers** Controls the display of the ruler.

**Opaque Background** When selected, makes the background of the editor opaque. (Not available for table cells.)

**Check Spelling** Determines whether As-You-Type spell checking is on or off.

**Check Spelling Settings** Displays the Check Spelling Settings dialog box, where you can specify text options that will be checked for spelling errors within your drawing.

**Dictionaries** Displays the Dictionaries dialog box, where you can change the dictionary that is checked against any found misspelled words.

**Text Highlight Color** Specifies the highlight color when text is selected.

## Text Formatting Toolbar

### Quick Reference

See also:

- Overview of Multiline Text

Formats the text of the current multiline text object.

### Summary

Controls the text style for a multiline text object and character and paragraph formatting for selected text.

---

**NOTE** Text that you paste from other word processing applications such as Microsoft Word will retain most of its formatting. With the options in Paste Special, you can strip out paragraph formatting such as paragraph-based alignment or character formatting from the pasted text.

---

### List of Options

**Style** Applies a text style to the multiline text object. The current style is saved in the [TEXTSTYLE](#) on page 1683 system variable.

Character formatting for font, height, and bold or italic attributes is overridden if you apply a new style to an existing multiline text object. Stacking, underlining, and color attributes are retained in characters to which a new style is applied.

Styles that have backward or upside-down effects are not applied. If a style defined with a vertical effect is applied to an SHX font, the text is displayed horizontally in the In-Place Text Editor.

**Font** Specifies a font for new text or changes the font of selected text. TrueType fonts are listed by font family name. AutoCAD LT compiled shape (SHX) fonts are listed by the name of the file in which the fonts are stored. Custom fonts and third-party fonts are displayed in the editor with Autodesk-supplied proxy fonts.

A sample drawing (*TrueType.dwg*) showing each font is provided in the *sample* directory.

**Annotative** Turns Annotative on or off for the current mtext object.

**Text Height** Sets the character height in drawing units for new text or changes the height of selected text. If the current text style has no fixed height, the text height is the value stored in the TEXTSIZE system variable. A multiline text object can contain characters of various heights.

**Bold** Turns bold formatting on and off for new or selected text. This option is available only for characters using TrueType fonts.

**Italic** Turns italic formatting on and off for new or selected text. This option is available only for characters using TrueType fonts.

**Underline** Turns underlining on and off for new or selected text.

**Overline** Turns overline on and off for new or selected text.

**Undo** Undoes actions in the In-Place Text Editor, including changes to either text content or text formatting.

**Redo** Redoes actions in the In-Place Text Editor, including changes to either text content or text formatting.

**Stack** Creates stacked text, for example, fractions, if the selected text contains stack characters. Also, unstacks text if stacked text is selected. When the stack characters, carat (^), forward slash (/), and pound sign (#), are used, the text to the left of the stack character is stacked on top of the text to the right.

By default, text that contains a carat converts to left-justified tolerance values. Text that contains the forward slash converts to center-justified fractional numbers; the slash is converted to a horizontal bar the length of the longer text string. Text that contains the pound sign converts to a fraction separated by a diagonal bar the height of the two text strings. The characters above the diagonal fraction bar are bottom-right aligned; the characters beneath the diagonal bar are top-left aligned.

**Text Color** Specifies a color for new text or changes the color of selected text. You can assign text the color associated with the layer it is on (BYLAYER) or the color of the block it is contained in (BYBLOCK). You can also select one of the colors in the color list or click Other to open the [Select Color dialog box](#).

**Ruler** Displays a ruler at the top of the editor. Drag the arrows at the end of the ruler to change the width of the mtext object. Also displays height and column grips when column mode is active.

You can also select tabs from the ruler. Clicking the Tab Selection button changes tab styles from left, center, right, and decimal. Once you make your selection, you adjust the corresponding tab in the ruler or in the Paragraph dialog box.

**OK** Closes the editor and saves any changes that you made.

**Options** Displays a list of additional text options. See [Text Editor Shortcut Menu](#) on page 764.

**Columns** Displays the column flyout menu, which provides three column options: No Columns, Static Columns, and Dynamic columns. See [Columns menu](#) on page 779.

**MText Justification** Displays the MText Justification menu with nine alignment options available.

**Paragraph** Displays the Paragraph dialog box. See the [Paragraph dialog box](#) on page 778 for a list of the options.

**Left, Center, Right, Justified and Distributed** Sets the justification and alignment for the left, center, or right text boundaries of the current or selected paragraph. Spaces entered at the end of a line are included and affect the justification of a line.

**Line Spacing** Displays suggested line spacing options or the Paragraph dialog box. Line spacing is set in the current or selected paragraph.

---

**NOTE** Line spacing is the distance between the bottom of the upper line and the top of the lower line of text in a multiple line paragraph.

---

The predefined options are:

- *1.0x, 1.5x, 2.0x, or 2.5x*: Sets the line spacing at .5x increments in multiline text.
- *More*: Displays the Paragraph dialog box, which provides additional options.
- *Clear Paragraph Spacing*: Removes line spacing settings from the selected or current paragraph. The paragraph defaults to the mtext space setting.

Additional options in the Paragraph dialog box:

- *Exact*: Defines the space with an arbitrary unit value the user specifies. Changing text height will not affect line spacing.
- *Multiple*: Instead of assigning a value to line spacing, you specify spacing according to text height. When text height is not consistent in one line,

the line space will be determined by the largest text height value in that line.

- *At least*: Takes both the user specified arbitrary value and the text height to determine spacing. If text height is smaller than the arbitrary value the line space is determined by the user specified value. If the text height is larger, the line spacing is equal to the text height value.

---

**NOTE** Not all of the new options for paragraph and paragraph line spacing are supported in releases before AutoCAD LT 2008. See MTEXT Paragraph and Paragraph Line Spacing in Previous Releases.

---

**Numbering** Displays the bullet and numbering menu.

Displays options for creating lists. (Not available for table cells.) The list is indented to align with the first selected paragraph.

- *Off*: When selected, removes letters, numbers, and bullets from selected text that has list formatting applied. Indentation is not changed.
- *Lettered*: Applies list formatting that uses letters with periods for the items in the list. If the list has more items than the alphabet has letters, the sequence continues by using double letters.
- *Numbered*: Applies list formatting that uses numbers with periods for the items in the list.
- *Bulleted*: Applies list formatting that uses bullets for the items in the list.
- *Restart*: Starts a new letter or number sequence in list formatting. If the selected items are in the middle of a list, unselected items below them also become part of the new list.
- *Continue*: Adds the selected paragraphs to the last list above and continues the sequence. If list items rather than paragraphs are selected, unselected items below the selected items continue the sequence.
- *Allow Auto-list*: Applies list formatting as you type. The following characters can be used as punctuation after letters and numbers and cannot be used as bullets: period (.), comma (,), close parenthesis ()), close angle bracket (>), close square bracket (]), and close curly bracket (}).
- *Use Tab Delimiter Only*: Limits the Allow Auto-list and Allow Bullets and Lists options. List formatting is applied to text only when the space after the letter, number, or bullet character was created by Tab, not Space.

- **Allow Bullets and Lists:** When this option is selected, list formatting is applied to all plain text in the multiline text object that looks like a list. Text that meets the following criteria is considered to be a list. The line begins with (1) one or more letters or numbers or a symbol, followed by (2) punctuation after a letter or number, (3) a space created by pressing Tab, and (4) some text before the line is ended by Enter or Shift+Enter.

When you clear the check mark, any list formatting in the multiline text object is removed and the items are converted to plain text. Allow Auto-list is turned off, and all the Bullets and Lists options are unavailable except Allow Bullets and Lists.

**Insert Field** Displays the [Field dialog box](#), where you can select a field to insert in the text.

**Uppercase** Changes the selected text to uppercase.

**Lowercase** Changes the selected text to lowercase.

**Symbol** Inserts a symbol or a nonbreaking space at the cursor position. You can also insert symbols manually. See [Symbols and Special Characters](#) on page 791.

Commonly used symbols are listed on the submenu, along with their control code or Unicode string. Click Other to display the Character Map dialog box, which contains the entire character set for each font available on your system. Select a character and click Select to place it in the Characters to Copy box. When you have selected all the characters that you want to use, click Copy to close the dialog box. In the editor, right-click and click Paste.

Symbols are not supported in vertical text.

**Oblique Angle** Determines the forward or backward slant of the text. The angle represents the offset from 90 degrees. Entering a value between -85 and 85 makes the text oblique. A positive obliquing angle slants text to the right. A negative obliquing angle slants text to the left.

**Tracking** Decreases or increases the space between the selected characters. The 1.0 setting is normal spacing. Set to more than 1.0 to increase spacing, and set to less than 1.0 to decrease spacing.

**Width Factor** Widens or narrows the selected characters. The 1.0 setting represents the normal width of the letter in this font. You can increase the width (for example, use a width factor of 2 to double the width) or decrease the width (for example, use a width factor of 0.5 for half the width).

## Text Editor Ribbon Contextual Tab

### Quick Reference

#### See also:

- Overview of Multiline Text

Creates or modifies multiline text objects.

### List of Options

The following options are displayed.

### Style Panel

Style	Applies a text style to the multiline text object. The Standard text style is active by default
Annotative	Turns Annotative on or off for the current mtext object.
Text Height	Sets the character height in drawing units for new text or changes the height of selected text. If the current text style has no fixed height, the text height is the value stored in the TEXTSIZE system variable. A multiline text object can contain characters of various heights.

### Formatting Panel

Bold	Turns bold formatting on and off for new or selected text. This option is available only for characters using TrueType fonts.
Italic	Turns italic formatting on and off for new or selected text. This option is available only for characters using TrueType fonts.
Underline	Turns underlining on and off for new or selected text.
Overline	Turns overline on and off for new or selected text.
Make Uppercase	Changes the selected text to uppercase.
Make Lowercase	Changes the selected text to lowercase.

Font	Specifies a font for new text or changes the font of selected text. TrueType fonts are listed by font family name. AutoCAD LT compiled shape (SHX) fonts are listed by the name of the file in which the fonts are stored. Custom fonts and third-party fonts are displayed in the editor with Autodesk-supplied proxy fonts.
Color	Specifies a color for new text or changes the color of selected text.
Background Mask	Displays the <a href="#">Background Mask dialog box</a> . (Not available for table cells.)
Oblique Angle	Determines the forward or backward slant of the text. The angle represents the offset from 90 degrees. Entering a value between -85 and 85 makes the text oblique. A positive obliquing angle slants text to the right. A negative obliquing angle slants text to the left.
Tracking	Decreases or increases the space between the selected characters. The 1.0 setting is normal spacing.
Width Factor	Widens or narrows the selected characters. The 1.0 setting represents the normal width of the letter in this font.

### Paragraph Panel

MText Justification	Displays the MText Justification menu with nine alignment options available. Top Left is the default.
Paragraph	Displays the Paragraph dialog box. See the Paragraph dialog box for a list of the options.
Line Spacing	<p>Displays suggested line spacing options or the Paragraph dialog box. Line spacing is set in the current or selected paragraph.</p> <hr/> <p><b>NOTE</b> Line spacing is the distance between the bottom of the upper line and the top of the lower line of text in a multiple line paragraph.</p> <hr/> <p>The predefined options are:</p> <ul style="list-style-type: none"> <li>■ <i>1.0x, 1.5x, 2.0x, or 2.5x</i>: Sets the line spacing at .5x increments in multiline text.</li> <li>■ <i>More</i>: Displays the Paragraph dialog box, which provides additional options.</li> </ul>



- *Clear Paragraph Spacing*: Removes line spacing settings from the selected or current paragraph. The paragraph defaults to the mtext space setting.

Additional options in the Paragraph dialog box:

- *Exact*: Defines the space with an arbitrary unit value the user specifies. Changing text height will not affect line spacing.
- *Multiple*: Instead of assigning a value to line spacing, you specify spacing according to text height. When text height is not consistent in one line, the line space will be determined by the largest text height value in that line.
- *At least*: Takes both the user specified arbitrary value and the text height to determine spacing. If text height is smaller than the arbitrary value the line space is determined by the user specified value. If the text height is larger, the line spacing is equal to the text height value.

---

**NOTE** Not all of the new options for paragraph and paragraph line spacing are supported in AutoCAD 2007 and previous releases. See MTEXT Paragraph and Paragraph Line Spacing in Previous Releases in the *User's Guide*.

---

## Numbering

Displays the bullet and numbering menu.

Displays options for creating lists. (Not available for table cells.)

The list is indented to align with the first selected paragraph.

- *Off*: When selected, removes letters, numbers, and bullets from selected text that has list formatting applied. Indentation is not changed.
- *Lettered*: Applies list formatting that uses letters with periods for the items in the list. If the list has more items than the alphabet has letters, the sequence continues by using double letters.
- *Numbered*: Applies list formatting that uses numbers with periods for the items in the list.
- *Bulleted*: Applies list formatting that uses bullets for the items in the list.
- *Restart*: Starts a new letter or number sequence in list formatting. If the selected items are in the middle of a list, unselected items below them also become part of the new list.

- *Continue*: Adds the selected paragraphs to the last list above and continues the sequence. If list items rather than paragraphs are selected, unselected items below the selected items continue the sequence.
- *Allow Auto-list*: Applies list formatting as you type. The following characters can be used as punctuation after letters and numbers and cannot be used as bullets: period (.), comma (,), close parenthesis ()), close angle bracket (>), close square bracket (]), and close curly bracket (}).
- *Use Tab Delimiter Only*: Limits the Allow Auto-list and Allow Bullets and Lists options. List formatting is applied to text only when the space after the letter, number, or bullet character was created by Tab, not Space.
- *Allow Bullets and Lists*: When this option is selected, list formatting is applied to all plain text in the multiline text object that looks like a list. Text that meets the following criteria is considered to be a list. The line begins with (1) one or more letters or numbers or a symbol, followed by (2) punctuation after a letter or number, (3) a space created by pressing Tab, and (4) some text before the line is ended by Enter or Shift+Enter.

When you clear the check mark, any list formatting in the multiline text object is removed and the items are converted to plain text. Allow Auto-list is turned off, and all the Bullets and Lists options are unavailable except Allow Bullets and Lists.

Left, Center, Right, Justified and Distributed

Sets the justification and alignment for the left, center, or right text boundaries of the current or selected paragraph. Spaces entered at the end of a line are included and affect the justification of a line.

### **Insert Panel**

Symbol

Inserts a symbol or a nonbreaking space at the cursor position. You can also insert symbols manually. See [Symbols and Special Characters](#) on page 791.

Commonly used symbols are listed on the submenu, along with their control code or Unicode string. Click Other to display the Character Map dialog box, which contains the entire character set for each font available on your system. When you have selected all the characters

that you want to use, click Copy to close the dialog box. In the editor, right-click and click Paste.

Symbols are not supported in vertical text.

**Insert Field** Displays the [Field dialog box](#), where you can select a field to insert in the text. When the dialog box closes, the current value of the field is displayed in the text.

**Columns** Displays the column flyout menu, which provides three column options: No Columns, Static Columns, and Dynamic columns. See [Columns menu](#) on page 779.

### Spell Check Panel

**Spell Check** Determines whether As-You-Type spell checking is turned on or off.

**Edit Dictionaries** Displays the [Dictionaries dialog box](#) on page 1166, where you can add or remove custom dictionaries for use during spell check.

### Tools Panel

**Find and Replace** Displays the [Find and Replace dialog box](#).

**Import Text** Displays the Select File dialog box (a [standard file selection dialog box](#)). Select any file that is in ASCII or RTF format. Imported text retains its original character formatting and style properties, but you can edit and format the imported text in the editor. After you select a text file to import, you can replace either selected text or all text, or append the inserted text to text selected within the text boundary. The file size for imported text is limited to 32 KB. The editor automatically sets the text color to BYLAYER. When black characters are inserted and the background color is black, the editor automatically changes to white or the current color.

---

**NOTE** A Microsoft Excel spreadsheet imported into a drawing is truncated at 72 rows unless the spreadsheet was created in Microsoft Office 2002 with Service Pack 2 installed. The same limitation applies when the drawing that contains the OLE object is opened on a system with an earlier version of Microsoft Office installed; the spreadsheet is truncated.

---

**AutoCAPS** Converts all new and imported text to uppercase. AutoCAPS does not affect existing text. To change the case of existing text, select the text and right-click.

## Options Panel

Undo	Undoes actions in the Text Editor ribbon contextual tab, including changes to either text content or text formatting.
Redo	Redoes actions in the Text Editor ribbon contextual tab, including changes to either text content or text formatting.
Ruler	Displays a ruler at the top of the editor. Drag the arrows at the end of the ruler to change the width of the mtext object. Also displays height and column grips when column mode is active. You can also select tabs from the ruler. Clicking the Tab Selection button changes tab styles from left, center, right, and decimal. Once you make your selection, you adjust the corresponding tab in the ruler or in the Paragraph dialog box.
More	Displays a list of additional text options. See <a href="#">Text Editor Shortcut Menu</a> on page 764.

## Close Panel

Close Text Editor	Ends the MTEXT command and closes the Text Editor ribbon contextual tab.
-------------------	--

## Paragraph Dialog Box

### Quick Reference

#### See also:

- Overview of Multiline Text

Sets indentation for paragraphs and the first lines of paragraphs.

### Summary

Specifies tab stops, indents, controls paragraph alignment, paragraph spacing, and paragraph line spacing.

---

**NOTE** Not all of the new options for paragraph and paragraph line spacing are supported in AutoCAD LT 2007 and previous releases. See MTEXT Paragraph and Paragraph Line Spacing in Previous Releases in the *User's Guide*.

---

### **List of Options**

The following options are displayed.

#### **Tab**

Displays tab setting options, including adding and removing tabs. Options include setting left, center, right, and decimal tabs. You can also set tabs from the Tab selection button on the In-Place Editor's ruler.

#### **Decimal style**

Sets the decimal style based on current user locale. Options include setting the decimal style as period, comma, and space. This setting is preserved with the drawing even if the locale setting is changed.

#### **Left Indent**

Sets the indent value for the first line or hanging indent to the selected or current paragraphs.

#### **Right Indent**

Applies the indent to the entire selected or current paragraph.

#### **Paragraph Alignment**

Sets the alignment properties for the current or selected paragraphs.

#### **Paragraph Spacing**

Specifies the spacing before or after the current or selected paragraphs. The distance between two paragraphs is determined by the total of the after paragraph spacing value of the upper paragraph and the before paragraph spacing value of the lower paragraph.

#### **Paragraph Line Spacing**

Sets the spacing between individual lines in the current or selected paragraphs.

## **Columns Menu**

### **Quick Reference**

**See also:**

- Overview of Multiline Text

Allows you to format an mtext object into multiple columns.

### Summary

You can specify column and gutter width, height, and number of columns. You can edit column width and height with grip-editing.

To create multiple columns you always start with a single column. Depending on the column mode you choose, you have two different methods for creating and manipulating columns – static mode or dynamic mode.

### List of Options

The following options are displayed.

**No Columns** Specifies no columns for the current mtext object.

**Dynamic Columns** Sets dynamic columns mode to the current mtext object. Dynamic columns are text driven. Adjusting columns affects text flow and text flow causes columns to be added or removed. Auto height or Manual height options are available.

**Static Columns** Sets static columns mode to the current mtext object. You can specify the total width and height of the mtext object, and the number of columns. All the columns share the same height and are aligned at both sides.

**Insert Column Break Alt+Enter** Inserts a manual column break.

**Column Settings** Displays [Column Settings dialog box](#) on page 780.

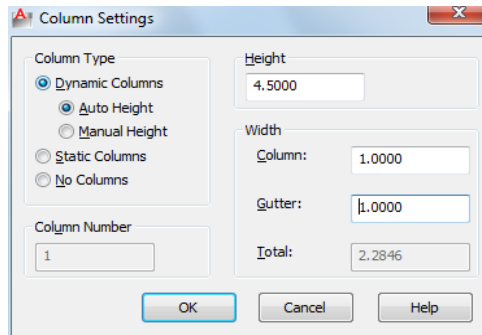
## Column Settings Dialog Box

### Quick Reference

#### See also:

- Overview of Multiline Text

Displays options for setting up columns such as the type, number of columns, height, and width, and gutter size.



### List of Options

The following options are displayed.

#### Column Type

Displays choices for the type of columns you want to create.

#### Column Number

Sets the number of columns. This is only active when you select Static Columns.

#### Height

Displays mtext height when Auto Height with Dynamic or Static Columns is selected.

#### Width

Displays and specifies control column and gutter width values. The gutter value is five times the default mtext text height.

Also displays the total width value of the mtext object.

## Background Mask Dialog Box

### Quick Reference

See also:

- Overview of Multiline Text

Controls using an opaque background behind multiline text.

### **List of Options**

The following options are displayed.

#### **Use Background Mask**

Puts an opaque background behind the text.

---

**NOTE** When you apply a background mask to mtext multiple columns only the column areas will be masked. The space between the columns commonly referred to as gutters will be unmasked.

---

#### **Border Offset Factor**

Specifies the margin around the text for the opaque background. The value is based on the text height. A factor of 1.0 exactly fits the multiline text object. A factor of 1.5 extends the background by 0.5 times the text height.

#### **Fill Color**

Specifies the color for the background.

#### **Use Background Drawing Color**

Provides a background that is the same color as the background of the drawing.

#### **Color**

Specifies a color for the opaque background. You can select one of the colors in the list or click Select Color to open the [Select Color dialog box](#).

## **Find and Replace Dialog Box - MTEXT**

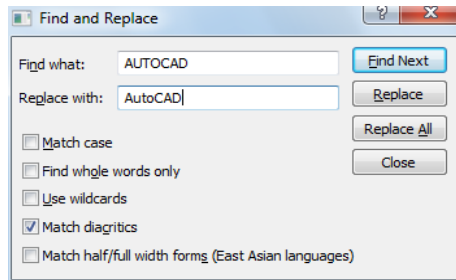
### **Quick Reference**

#### **See also:**

- [Overview of Multiline Text](#)

Searches for specified text strings and replaces them with new text.





### Access Methods

**Shortcut menu:** Select the Find and Replace icon in the text editor or from the MTEXT shortcut menu

### List of Options

The following options are displayed.

**Find What** Provides a space for you to type the text you want to find.

**Replace With** Provides a space for you to type the text you want to replace the text you typed in Find What.

**Find Next** Finds the next instance of the text specified in Find What.

**Replace** Finds the next instance of the text specified in Find What and replaces it with the text in Replace With.

**Replace All** Finds all instances of the text specified in Find What and replaces it with the text in Replace With.

**Match Case** Finds only text with uppercase and lowercase characters as specified in Find What.

The case of all characters in the text string must match the case of the text in Find What. When this option is cleared, a match is found for specified text strings regardless of case.

**Match Whole Word Only** Finds only whole words specified in Find What.

Text that is part of another word is ignored. When this option is cleared, a match is found for text strings, whether they are single words or parts of other words.

**Use Wildcards** Allows the use of wildcard characters in searches.

For more information on wildcard searches, see Find and Replace Text in the *User's Guide*.

**Match Diacritics** Matches diacritical marks, or accents, in search results.

**Match Half/Full Width Forms (East Asian Languages)** Matches half- and full-width characters in search results.

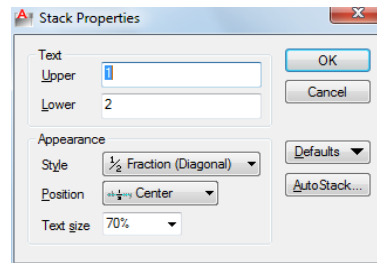
## Stack Properties Dialog Box

### Quick Reference

See also:

- Overview of Multiline Text

Edits the text, stack type, alignment, and size of stacked text.



### Summary

To open the Stack Properties dialog box, select the stacked text, right-click, and click Stack Properties on the shortcut menu.

You can edit the upper and lower text separately. The Appearance options control the stack style, position, and text size of the stacked text.

### List of Options

The following options are displayed.

#### **Text**

Changes the upper and lower numbers of a stacked fraction.

#### **Upper**

Edits the number in the upper part or first half of a stacked fraction.

#### **Lower**

Edits the number in the lower part or second half of a stacked fraction.

### **Appearance**

Edits the style, position, or text size of a stacked fraction.

### **Style**

Specifies a style format for stacked text: horizontal fraction, diagonal fraction, tolerance, and decimal.

**Fraction (Horizontal)** Stacks the selected text with the first number on top of the second number separated by a horizontal line.

**Fraction (Diagonal)** Stacks the selected text with the first number on top of the second number separated by a diagonal line.

**Tolerance** Stacks the selected text with the first number on top of the second number. There is no line between the numbers.

**Decimal** A variation of the Tolerance style that aligns the decimal point of both the upper and lower numbers of selected text.

### **Position**

Specifies how fractions are aligned. Center alignment is the default. All stacked text in an object uses the same alignment.

**Top** Aligns the top of the fraction with the top of the text line.

**Center** Centers the fraction vertically at the center of the text line.

**Bottom** Aligns the bottom of the fraction with the text baseline.

### **Text Size**

Controls the size of the stacked text as a percentage of the size of the current text style (from 25 to 125 percent).

### **Defaults**

Saves the new settings as defaults or restores the previous default values to the current stacked text.

### **AutoStack Button**

Displays the [AutoStack Properties dialog box](#). AutoStack only stacks numeric characters immediately before and after the carat, slash, and pound characters. To stack nonnumeric characters, or text that includes spaces, select the text and choose Stack from the text editor shortcut menu.

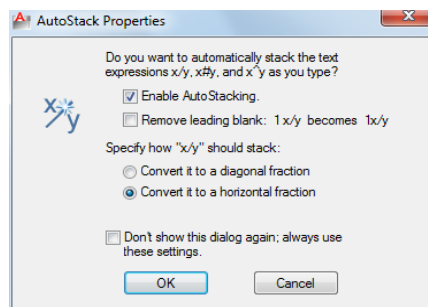
# AutoStack Properties Dialog Box

## Quick Reference

See also:

- Overview of Multiline Text

Sets the defaults for automatically stacking characters.



## Access Methods

**Shortcut menu:** Select stacked text in the text editor. Right-click and click Stack Properties on the shortcut menu. In the Stack Properties dialog box, click AutoStack.

## List of Options

The following options are displayed.

### Enable AutoStacking

Automatically stacks numeric characters entered before and after the caret, slash, or pound character. For example, if you type **1#3** followed by a nonnumeric character or space, the text is automatically stacked as a diagonal fraction.

### Remove Leading Blank

Removes blanks between a whole number and a fraction.

### Convert It to a Diagonal Fraction

Converts the slash character to a diagonal fraction when AutoStack is on.

### Convert It to a Horizontal Fraction

Converts the slash character to a horizontal fraction when AutoStack is on.

---

**NOTE** Whether AutoStack is on or off, the pound character is always converted to a diagonal fraction, and the carat character is always converted to a tolerance format.

---

### **Don't Show This Dialog Again; Always Use These Settings**

Suppresses display of the AutoStack Properties dialog box. The current property settings are used for all stacked text. When this option is cleared, the AutoStack Properties dialog box is automatically displayed if you type two numbers separated by a slash, carat, or pound sign followed by a space or nonnumeric character.

## **-MTEXT**

### **Quick Reference**

**See also:**

- Overview of Multiline Text

Creates a multiline text object.

### **List of Prompts**

The following prompts are displayed.

Specify first corner.

Specify [opposite corner](#) or [[Height/Justify/Line spacing/Rotation/Style/Width/Columns](#)].

#### **Opposite Corner**

As you drag the pointing device to specify the opposite corner, a rectangle is displayed to show the location and size of the multiline text object. Arrows within the rectangle indicate the direction of the paragraph's text flow.

#### **Height**

Specifies the text height to use for multiline text characters.

- **Specify Height.**

The Specify Height prompt is displayed only if the current text style is not .

- **Specify Paper Text Height.**

The Specify Paper Text Height prompt is displayed only if the current text style is annotative.

The default height, if nonzero, is the height of the current style; otherwise, it is the height stored in the [TEXTSIZE](#) on page 1683 system variable. Character height is calculated in drawing units. Changing the height updates the value stored in [TEXTSIZE](#) on page 1683.

### **Justify**

Determines both text justification and text flow, for new or selected text, in relation to the text boundary. The current justification is applied to new text. The text is justified within the specified rectangle based on the justification setting and one of nine justification points on the rectangle. The justification point is based on the first point used to specify the rectangle. Text is center-, left-, or right-justified with respect to the left and right text boundaries. Spaces entered at the end of a line are included as part of the text and affect the justification of the line. Text flow controls whether text is aligned from the middle, the top, or the bottom of the paragraph with respect to the top and bottom text boundaries.

Enter justification [TL/TC/TR/ML/MC/MR/BL/BC/BR] <TL>.

---

#### **Justify Options**

---

<b>Option</b>	<b>Meaning</b>
---------------	----------------

---

TL	Top Left
----	----------

---

TC	Top Center
----	------------

---

TR	Top Right
----	-----------

---

ML	Middle Left
----	-------------

---

MC	Middle Center
----	---------------

---

MR	Middle Right
----	--------------

---

BL	Bottom Left
----	-------------

---

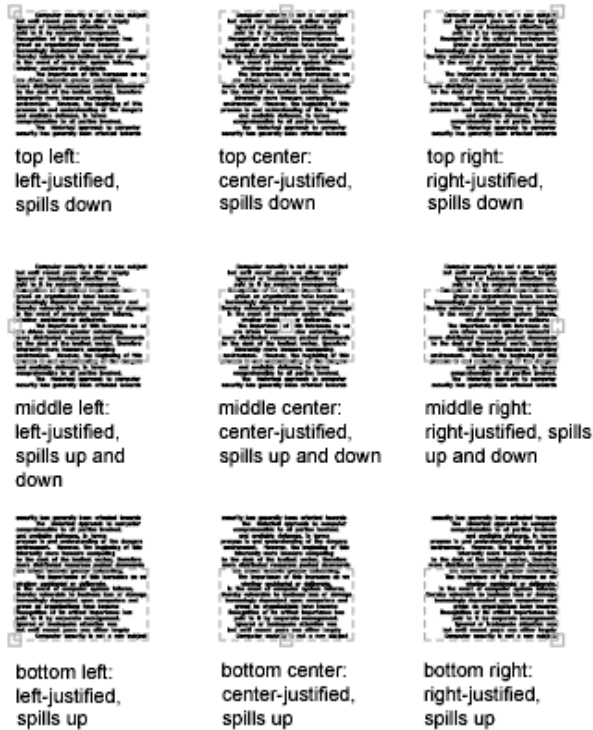
BC	Bottom Center
----	---------------

---

BR	Bottom Right
----	--------------

---

The following illustrations show each justification option.



## Line Spacing

Specifies line spacing for the multiline text object. Line spacing is the vertical distance between the bottom (or baseline) of one line of text and the bottom of the next line of text.

---

**NOTE** Exact spacing is recommended when you use MTEXT to create a table. Use a smaller text height than the specified line spacing to ensure that text does not overlap.

---

**At Least** Adjusts lines of text automatically based on the height of the largest character in the line. When At Least is selected, lines of text with taller characters have added space between lines.

**Distance** Sets the line spacing to an absolute value measured in drawing units. Valid values must be between 0.0833 (0.25x) and 1.3333 (4x).

**Exactly** Forces the line spacing to be the same for all lines of text in the multiline text object. Spacing is based on the text height of the object or text style.

**Spacing Factor** Sets the line spacing to a multiple of single-line spacing.

Single spacing is 1.66 times the height of the text characters. You can enter a spacing factor as a number followed by **x** to indicate a multiple of single spacing. For example, specify single spacing by entering **1x**, or specify double spacing by entering **2x**.

### **Rotation**

Specifies the rotation angle of the text boundary.

#### ■ **Specify rotation angle.**

If you use the pointing device to specify a point, the rotation angle is determined by the angle between the *X* axis and the line defined by the most recently entered point (default 0,0,0) and the specified point.

The previous prompt is redisplayed until you specify the opposite corner of the text boundary.

### **Style**

Specifies the text style to use for multiline text.

**Style Name** Specifies a text style name. Text styles can be defined and saved using the **STYLE** command.

?—**List Styles** Lists text style names and characteristics.

The previous prompt is redisplayed until you specify the opposite corner of the text boundary.

### **Width**

Specifies the width of the text boundary.

If you use the pointing device to specify a point, the width is calculated as the distance between the start point and the specified point. Words within each line of the multiline text object wrap to fit the width of the text boundary. If you specify a width of 0, word wrap is turned off and the width of the multiline text object is as wide as the longest line of text. You can end a line of text at a specific point by typing the text and pressing Enter. To end the command, press Enter at the **MTEXT** prompt.

### **Columns**

Specifies the column options for an **mtext** object.

**Static** Specifies the total column width, the number of columns, the gutter width (the space between the columns), and the height of columns.



**Dynamic** Specifies column width, gutter width and column height. Dynamic columns are text driven. Adjusting columns affect text flow and text flow causes columns to be added or removed.

**No columns** Sets no column mode to current mtext object.

The default column setting is stored in the MTEXTCOLUMN system variable.

## Symbols and Special Characters

### Quick Reference

See also:

- Overview of Multiline Text

You can include special characters and symbols by entering a control code or a Unicode string.

With the [In-Place Text Editor](#) on page 763, you can right-click and click Symbol on the shortcut menu.


---

**NOTE** Symbols are not supported in vertical text.

---

#### Unicode strings and control codes

---

Control Codes	Unicode Strings	Result
%%d	\U+00B0	Degree symbol (°)
%%p	\U+00B1	Tolerance symbol ( )
%%c	\U+2205	Diameter symbol (  )

---

To insert the following text symbols, click Symbol on the expanded Text Formatting toolbar or enter the appropriate Unicode string:

#### Text symbols and Unicode strings

---

Name	Symbol	Unicode String
Almost equal	≈	\U+2248

---

Text symbols and Unicode strings		
Name	Symbol	Unicode String
Angle	$\sphericalangle$	<code>\U+2220</code>
Boundary line	$\text{\textcircled{L}}$	<code>\U+E100</code>
Centerline	$\text{\textcircled{C}}$	<code>\U+2104</code>
Delta	$\Delta$	<code>\U+0394</code>
Electrical phase	$\phi$	<code>\U+0278</code>
Flow line	$\text{\textcircled{L}}$	<code>\U+E101</code>
Identity	$\equiv$	<code>\U+2261</code>
Initial length	$\text{\textcircled{a}}$	<code>\U+E200</code>
Monument line	$\text{\textcircled{M}}$	<code>\U+E102</code>
Not equal	$\neq$	<code>\U+2260</code>
Ohm	$\Omega$	<code>\U+2126</code>
Omega	$\Omega$	<code>\U+03A9</code>
Plate/property line	$\text{\textcircled{P}}$	<code>\U+214A</code>

Text symbols and Unicode strings		
Name	Symbol	Unicode String
Subscript 2	₂	\U+2082
Squared	²	\U+00B2
Cubed	³	\U+00B3

These text symbols are available in the following True Type (TTF) and SHX fonts:

- Simplex\*
- Romans\*
- gdt\*
- amgdt\*
- Isocp
- Isocp2
- Isocp3
- Isoct
- Isoct2
- Isoct3
- Isocpeur (TTF only)\*
- Isocpeur italic (TTF only)
- Isocteur (TTF only)
- Isocteur italic (TTF only)

\* These fonts also include the Initial Length symbol used for arc length dimensions.

## MULTIPLE

### Quick Reference

#### See also:

- Enter Commands on the Command Line

Repeats the next command until canceled.

### Summary

The command that you enter is repeated until you press Esc. Because MULTIPLE repeats only the command name, any parameters must be specified each time.

MULTIPLE does not repeat commands that display dialog boxes.

## MVIEW

### Quick Reference

#### See also:

- Create and Modify Layout Viewports

Creates and controls layout viewports.

### Summary

In a layout, you can create as many viewports as you want, but only up to 64 viewports can be active at one time (see MAXACTVP). Objects in model space are visible only in active viewports. Viewports that are not active are blank. Use the On and Off options to control whether viewports are active.

### List of Prompts

The following prompts are displayed.

Specify [corner of viewport](#)

[ON/OFF/Fit/Shadeplot/Lock/Object/Polygonal/Restore/LAyer/2/3/4].

### **Corner of Viewport**

Specifies the first corner of a rectangular viewport.

### **On**

Makes a selected viewport active. An active viewport displays objects in model space. The MAXACTVP system variable controls the maximum number of viewports that can be active at one time. If your drawing contains more viewports than the number specified in MAXACTVP, you must turn one off to make another one active.

### **Off**

Makes a selected viewport inactive. Objects in model space are not displayed in an inactive viewport.

### **Fit**

Creates one viewport that fills the layout to the edges of the printable area. When the paper background and printable area are turned off, the viewport fills the display.



fit

### **Shadeplot**

Specifies how viewports in named (paper space) layouts are plotted.

**As Displayed** Specifies that a viewport is plotted the same way it is displayed.

**Wireframe** Specifies that a viewport is plotted wireframe regardless of the current display.

**Hidden** Specifies that a viewport is plotted with hidden lines removed regardless of the current display.

### **Lock**

Prevents the zoom scale factor in the selected viewport from being changed when working in model space.

### **Object**

Specifies a closed polyline, ellipse, spline, region, or circle to convert into a viewport. The polyline you specify must be closed and contain at least three vertices. It can be self-intersecting, and it can contain an arc as well as line segments.

## **Polygonal**

Creates an irregularly shaped viewport using specified points.

**Arc** Adds arc segments to the polygonal viewport.

For a description of the options for creating arc segments, see the Arc option in PLINE.

**Close** Closes the boundary. If you press Enter after specifying at least three points, the boundary is closed automatically.

**Length** Draws a line segment of a specified length at the same angle as the previous segment. If the previous segment is an arc, the new line segment is drawn tangent to that arc segment.

**Undo** Removes the most recent line or arc segment added to the polygonal viewport.

## **Restore**

Restores viewport configurations saved with the VPORTS command.

- **Enter Viewport Configuration Name.**

- ?

**First Corner** Positions and sizes new viewports using the window selection method; the viewports are fit into the selected area.

**Fit** Sizes the viewports to fill the drawing area.

## **Layer**

Resets layer property overrides for the selected viewport to their global layer properties.

- **Reset Viewport Layer Property Overrides Back To Global Properties.** Enter Y to remove all layer property overrides.

- **Select Viewports.**

**2**

Divides the specified area horizontally or vertically into two viewports of equal size.

- **Enter Viewport Arrangement.**



**2/vertical**

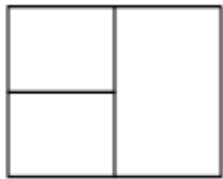
**First Corner** Positions and sizes new viewports using the window selection method; the viewports are fit into the selected area.

**Fit** Sizes the viewports to fill the drawing area.

### **3**

Divides the specified area into three viewports.

The Horizontal and Vertical options split the specified area into thirds. The other options split the area into three viewports: one large viewport and two smaller ones. The Above, Below, Left, and Right options specify where the larger viewport is placed.



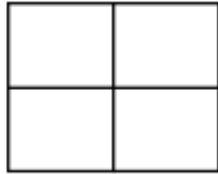
**3/right**

■ [First Corner](#) on page 797

■ [Fit](#) on page 797

### **4**

Divides the specified area horizontally and vertically into four viewports of equal size.



4

- [First Corner](#) on page 797
- [Fit](#) on page 797



## NAVBAR

### Quick Reference


See also:

- Use Navigation Bar

Provides access to navigation and orientation tools from a single interface.

### Access Methods

 **Ribbon:** View Tab ► Windows Panel ► User Interface drop-down ► Navigation Bar

 **Menu:** View ► Display ► Navigation Bar

### Summary

Provides access to the ViewCube tool, SteeringWheels, 3Dconnexion, and product-specific navigation tools. Use these tools to navigate or reorient your model. You can customize which tools are available on the navigation bar to fit the way you work.

### List of Prompts

The following prompts are displayed.

Enter an option [ON/OFF] <ON>:

**On** Displays the navigation bar.

Off Hides the navigation bar.

## 3Dconnexion Settings Dialog Box

### Quick Reference

See also:

- Use 3Dconnexion 3D mouse to Navigate Views

Controls the settings of 3Dconnexion navigation tools.

### Summary

Controls the settings for 3Dconnexion navigation tools which are available from the navigation bar. Customize the speed and movements of the 3Dconnexion 3D mouse to manipulate the current view. These settings (except Keep Scene Upright) are in synchronization with the 3Dconnexion Control Panel settings of the 3Dconnexion 3D mouse driver.

### List of Options

The following options are displayed.

#### Sensitivity

Controls the sensitivity of the 3Dconnexion 3D mouse controller cap.

#### Keep Scene Upright

Specifies whether the viewpoint of the model can be turned upside-down while navigating.

#### Pan/Zoom

Controls pan and zoom navigation. When this option is disabled, you can only rotate the model around the X,Y, and Z axes.

#### Tilt/Spin/Roll

Controls the rotation of the model around the X,Y, and Z axes. When this option is disabled, you can only pan and zoom.

#### Restore Defaults

Restores the default settings of the 3Dconnexion Settings dialog box.

# NAVSWHEEL

## Quick Reference

### See also:

- Overview of SteeringWheel

Provides access to enhanced navigation tools that are quickly accessible from the cursor.

### Access Methods



### Button

 **Menu:** View ► SteeringWheels

 **Toolbar:** Navigation Bar ► SteeringWheels

**Shortcut menu:** SteeringWheels

### Summary

Selecting a tool on the wheel is different from the selection of a typical command. Press on a wedge and drag to use the desired navigation tool. Release the mouse button to return to the wheel and switch navigation tools.

The NAVSWHEEL command displays the 2D Navigation wheel.

# NCOPY

## Quick Reference

### See also:


- Copy Objects

Copies objects that are contained in an xref, block, or DGN underlay.

## Access Methods



### Button

 **Ribbon:** Home tab ► Modify panel ► Copy Nested Objects

### Summary

Instead of exploding or binding an xref, block, or DGN underlay to be able to copy objects nested within them, you can copy the selected objects directly into the current drawing.

### List of Prompts

The following prompts are displayed.

Select nested objects to copy or [Settings]: *Use an object selection method and then press Enter*

Specify base point or [Displacement/Multiple] <Displacement>: *Specify a base point or enter an option*

Specify second point or [Array] <use first point as displacement>: *Specify a second point or enter an option*

Specify second point or [Fit]: *Specify a second point or enter an option*

### Settings

Controls whether named objects that are associated with the selected objects are added to the drawing.

### Insert

Duplicates the selected objects to the current layer without regard to named objects. This option is similar to the COPY command.

### Bind

Includes named objects such as blocks, dimension styles, layers, linetypes, and text styles associated with the copied objects into the drawing.

### Displacement

Specifies a relative distance and direction using coordinates.

The two points you specify define a vector that indicates how far from the original the copied objects are to be placed and in what direction.

If you press Enter at the Specify Second Point prompt, the first point is interpreted as a relative X,Y,Z displacement. For example, if you specify **2,3**

for the base point and press Enter at the next prompt, the objects are copied 2 units in the *X* direction and 3 units in the *Y* direction from their current location.

### **Multiple**

Controls whether multiple copies are created automatically as you specify additional locations.

### **Array**

Arranges a specified number of copies in a linear array using the first and second copy as the spacing distance.

**Number of Items to Array** Specifies the number of sets of the selected objects in the array, including the original selection set.

**Second Point** Determines a distance and direction for the array relative to the base point. By default, the first copy in the array is located at the specified displacement. The remaining copies are located in a linear array beyond that point using the same incremental displacement.

### **Fit**

Arranges a specified number of copies in a linear array using the first and last copy as the total spacing distance.

**Second Point** Positions the last copy in the array at the specified displacement. The other copies are fit in a linear array between the first copy and the last copy.

## **NEW**

### **Quick Reference**

#### **See also:**


- [Overview of Starting a New Drawing](#)

Creates a new drawing.

#### **Access Methods**



**Button**

 **Menu:** File ► New

### Summary

The behavior of the NEW command is determined by the STARTUP system variable.

- 1: NEW displays the [Create New Drawing dialog box](#).
- 0: NEW displays the Select Template dialog box (a [standard file selection dialog box](#)).

If the FILEDIA system variable is set to 0 instead of 1, a [Command prompt is displayed](#). If you set FILEDIA to 0, this prompt is displayed regardless of the Startup setting.

## Create New Drawing Dialog Box

### Quick Reference

See also:

- Overview of Starting a New Drawing

### Summary

Defines the settings for a new drawing. Start from Scratch creates a new drawing using either imperial or metric default settings. Use a Template creates a new drawing using the settings defined in a drawing template you select. Use a Wizard creates a new drawing using the settings you specify in either the Quick or Advanced wizard. (The first option, Open a Drawing, is not available from the NEW command. To open an existing drawing, use OPEN.)

### List of Options

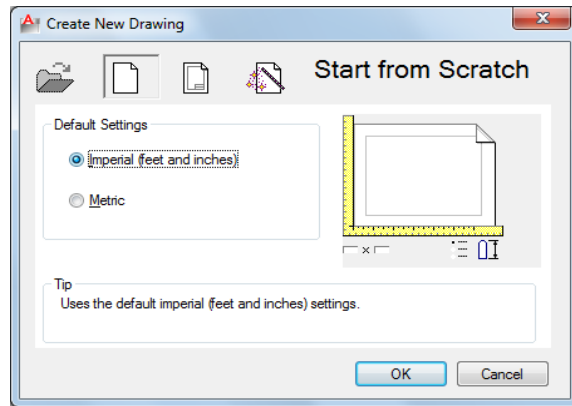
The following options are displayed.

#### Start from Scratch



Starts an empty drawing using default imperial or metric settings (MEASUREINIT system variable). You can change the measurement system for a given drawing by using the MEASUREMENT system variable. The

*Drawing1.dwg* that opens when you start the program is a drawing that is started from scratch.



**Imperial** Starts a new drawing based on the imperial measurement system. The default drawing boundary (the grid limits) is 12 by 9 inches.

**Metric** Starts a new drawing based on the metric measurement system. The default drawing boundary (the grid limits) is 429 by 297 millimeters.

#### Tip

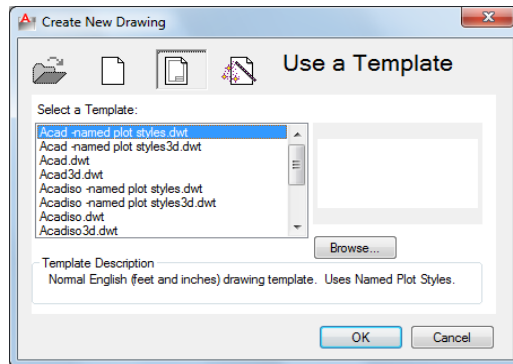
Displays a description of the selected measurement setting.

#### Use a Template



Starts a drawing based on a drawing template file. Template drawings store all the settings for a drawing and may also include predefined layers, dimension styles, and views. Template drawings are distinguished from other drawing files by the *.dwt* file extension. They are normally kept in the *template* directory.

Several template drawings are included with this program. You can make additional template drawings by changing the extensions of drawing file names to *.dwt*. See "Use a Drawing Template File" in the *User's Guide*.



### Select a Template

Lists all DWT files that currently exist in the drawing template file location, which is specified in the [Options dialog box](#). Select a file to use as a starting point for your new drawing.

### Preview

Displays a preview image of the selected file.

### Browse

Displays the Select a Template File dialog box (a [standard file selection dialog box](#)), where you can access template files that are not available in the Select a Template list.

### Template Description

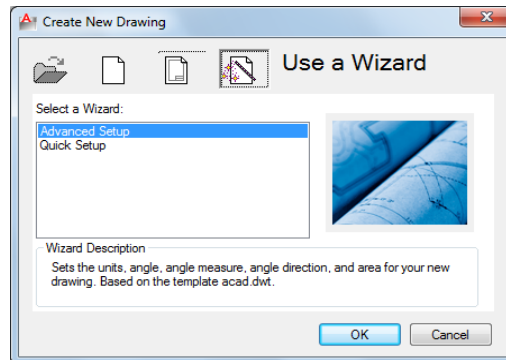
Displays a description of the selected template. If you create your own template, you can use the [Template Options dialog box](#) on page 1092 to specify the text that you want to display here. See the SAVEAS command.

### Use a Wizard



Sets up a drawing using a step-by-step guide. You can choose from two wizards: Quick Setup and Advanced Setup.





**Quick Setup** Displays the [Quick Setup wizard](#), in which you can specify the units and area for your new drawing. The Quick Setup wizard also changes settings, such as text height and snap spacing, to an appropriate scale.

**Advanced Setup** Displays the [Advanced Setup wizard](#), in which you can specify the units, angle, angle measure, angle direction, and area for your new drawing. The Advanced Setup wizard also changes settings, such as text height and snap spacing, to an appropriate scale.

#### **Wizard Description**

Displays a description of the selected wizard.

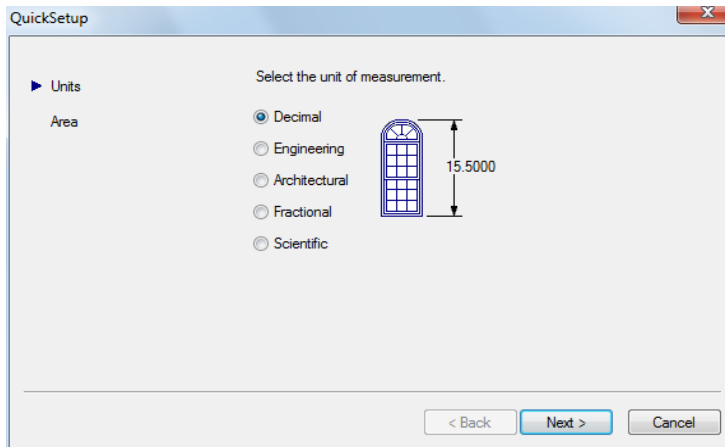
## **Quick Setup Wizard**

### **Quick Reference**

**See also:**

- [Overview of Starting a New Drawing](#)

Defines the units and area of your drawing.



### List of Options

The following options are displayed.

The Quick Setup wizard has two pages: Units and Area. As you work in this wizard, choose Back and Next to switch between pages; choose Finish on the last page to close the wizard and create the new drawing with the settings you specified.

### Units

Indicates the format in which you enter and in which the program displays coordinates and measurements. Several formats are available. Engineering and Architectural have a specific base unit (inches) assigned to them. You can select from other measurement styles that can represent any convenient unit of measurement.

---

**NOTE** You control the precision (the number of decimal places displayed in all measurements) by using the Advanced Setup wizard or the UNITS command. The default precision used by Quick Setup is four (0.0000).

---

**Decimal** Displays measurements in decimal notation.

**Engineering** Displays measurements in feet and decimal inches.

**Architectural** Displays measurements in feet, inches, and fractional inches.

**Fractional** Displays measurements in mixed-number (integer and fractional) notation.

**Scientific** Displays measurements in scientific notation (numbers expressed in the form of the product of a decimal number between 0 and 10 and a power of 10).

**Area**

Indicates the width and length in full-scale units of what you plan to draw. This setting limits the area of the drawing covered by grid dots when the grid is turned on. When limits checking is turned on with the LIMITS command, this setting also restricts the coordinates you can enter to within the rectangular area. You can change the drawing area and turn limits checking on and off with the LIMITS command.

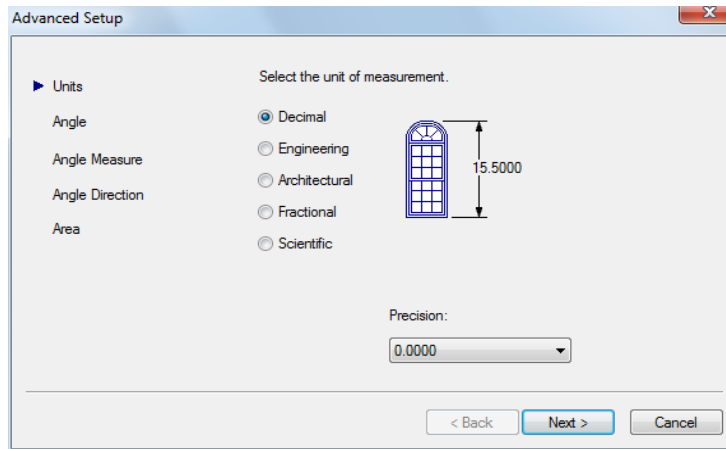
## Advanced Setup Wizard

### Quick Reference

See also:

- Specify Units and Unit Formats

Defines the units, angle, angle measure, angle direction, and area of your new drawing.



## Summary

### List of Options

The following options are displayed.

The Advanced Setup wizard contains five pages: Units, Angle, Angle Measure, Angle Direction, and Area. As you work in this wizard, choose Back and Next to navigate between pages; choose Finish on the last page to close the wizard and create the new drawing with the settings you specified.

You can later change units, angle, angle measure, and angle direction using the UNITS command, and you can change area using the LIMITS command.

### Units

Indicates the unit format and precision. The unit format is the format in which you enter and in which the program displays coordinates and measurements. The Units page of the Quick Setup wizard includes the same formats. See Specify Units and Unit Formats for more information.

The unit precision specifies the number of decimal places or the fractional size for displaying linear measurements.

### Angle

Indicates the format in which you enter angles and in which the program displays angles.

**Decimal Degrees** Displays partial degrees as decimals.

**Deg/Min/Sec** Displays partial degrees as minutes and seconds.

**Grads** Displays angles as grads.

**Radians** Displays angles as radians.

**Surveyor** Displays angles in surveyor's units.

### Angle Measure

Indicates the direction of the 0 angle for the entry of angles. When you enter an angle value, the angle is measured either counter-clockwise or clockwise from the compass direction that you select on this page. You control the counterclockwise/clockwise direction on the Angle Direction page.

**East** Specifies the compass direction east as the 0 angle.

**North** Specifies the compass direction north as the 0 angle.

**West** Specifies the compass direction west as the 0 angle.

**South** Specifies the compass direction south as the 0 angle.

**Other** Specifies a direction other than east, north, west, or south. Enter a specific compass angle to treat as the 0 angle.

### **Angle Direction**

Indicates the direction from the 0 angle in which you enter and in which the program displays positive angle values: counterclockwise or clockwise.

### **Area**

Indicates the width and length in full-scale units of what you plan to draw. This setting limits the area of the drawing covered by grid dots when the grid is turned on. When limits checking is turned on with the LIMITS command, this setting also restricts the coordinates you can enter to within the rectangular area. You can change the drawing area and turn limits checking on and off with the LIMITS command.

## **NEW Command Prompt**

### **Quick Reference**

**See also:**

- Overview of Starting a New Drawing

### **Summary**

Enter a tilde (~) at the prompt to display the Select Template dialog box (a [standard file selection dialog box](#)).

If you turned off the display of the Create New Drawing dialog box, or if FILEDIA is set to 0, NEW displays the following prompt:

### **List of Prompts**

The following prompts are displayed.

Enter template file name or [. (for none)] <current>: *Enter a name, enter a period (.), or press ENTER*

# NEWSHEETSET

## Quick Reference

### See also:

- Create a Sheet Set

Creates a new sheet set data file that manages drawing layouts, file paths, and project data.

## Access Methods



### Button

- ☒ **Menu:** Application menu  ► New ► Sheet Set
- ☒ **Menu:** File ► New Sheet Set

## Summary

The Create Sheet Set wizard contains a series of pages that step you through the process of creating a new sheet set. You can choose to create a new sheet set from existing drawings, or use an existing sheet set as a template on which to base your new sheet set.

## OBJECTSCALE

### Quick Reference

See also:

- Set Annotation Scale


Adds or deletes supported scales for annotative objects.

### Access Methods



Button

 **Ribbon:** Annotate tab ► Annotation Scaling panel ► Add/Delete Scales

 **Menu:** Modify ► Annotative Object Scale ► Add/Delete Scales

**Shortcut menu:** Select an annotative object. Right-click in the drawing area and click Annotative Object Scale ► Add/Delete Scales.

 **Command entry:** 'objectscale for transparent use

### Summary

An annotative object can support several annotation scales for views at different scales. You can add or delete scales from the list of scales assigned to the selected annotative objects.

If you enter **objectscale**, you are prompted to select annotative objects.

The [Annotative Object Scale dialog box](#) on page 814 is displayed.

If you enter **-objectscale** at the Command prompt, [options are displayed](#) on page 816.

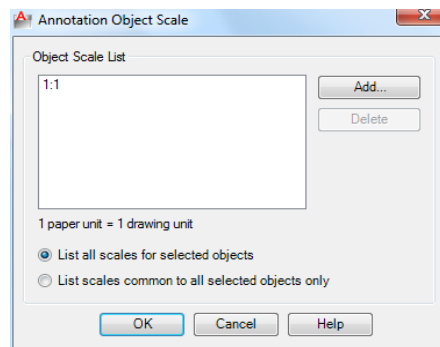
## Annotative Object Scale Dialog Box

### Quick Reference

See also:

- Scale Views in Layout Viewports

Adds or deletes supported scales for the selected object.



### List of Options

The following options are displayed.

#### Object Scale List

Displays the list of scales supported by the selected object.

#### List all scales for selected objects

Specifies that all scales supported by the selected objects are displayed in the Object Scale List.

#### List scales common to all selected objects only



Specifies that only the supported scales that are common to all selected objects are displayed in the Object Scale List.

#### Add

Displays the [Add Scales to Object Dialog Box](#) on page 815.

#### Delete

Removes the selected scale from the scale list.

---

**NOTE** The current scale or scales referenced by objects or views cannot be deleted.

---

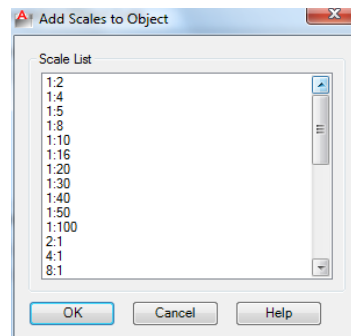
## Add Scales to Object Dialog Box

### Quick Reference

See also:

- [Scale Views in Layout Viewports](#)

Adds a new scale to the selected object.



### List of Options

The following option is displayed.

#### Scale List

Displays the list of scales that can be added to the selected annotative object.

Multiple scales can be selected by holding down the Shift or Ctrl key while selecting the scales.

Use the [SCALELISTEDIT](#) on page 1098 command to add custom scales to this list.

## -OBJECTSCALE

### Quick Reference

See also:

- [Scale Views in Layout Viewports](#)

### List of Prompts

The following prompts are displayed.

Select annotative objects: *Use an object selection method*

Enter an option [[Add](#) on page 816/[Delete](#) on page 816/[?](#) on page 816] <Add>:

*Enter a or d or press Enter*

#### **Add**

Adds an annotation scale to the selected objects.

When created, an annotative object supports one annotation scale: the current annotation scale. However, an annotative object can be updated to support additional annotation scales for views at different scales.

- **Enter named scale to add.**

- [?](#) on page 816

[?](#) Displays the list of scales in the scale list.

#### **Delete**

Removes a specified current annotation scale from the selected objects.

If an annotative object supports a single scale, that scale cannot be deleted from the object.

- **Enter named scale to delete.**

- [?](#) on page 816

[?](#) Displays the union of all scales of the selected objects.

# OFFSET

## Quick Reference

See also:

- Offset an Object

Creates concentric circles, parallel lines, and parallel curves.

## Access Methods



Button

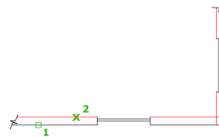
 **Ribbon:** Home tab ► Modify panel ► Offset

 **Menu:** Modify ► Offset

 **Toolbar:** Modify

## Summary

You can offset an object at a specified distance or through a point. After you offset objects, you can trim and extend them as an efficient method to create drawings containing many parallel lines and curves.



The OFFSET command repeats for convenience. To exit the command, press Enter.

### List of Prompts

The following prompts are displayed.

Current settings: Erase source = *current* Layer = *current* OFFSETGAPTYPE = *current*

Specify [Offset Distance](#) on page 818 or [[Through](#) on page 818/[Erase](#) on page 818/[Layer](#) on page 819] <*current*>: *Specify a distance, enter an option, or press Enter*

#### **Offset Distance**

Creates an object at a specified distance from an existing object.



**Exit** Exits the OFFSET command.

**Multiple** Enters the Multiple offset mode, which repeats the offset operation using the current offset distance.

**Undo** Reverses the previous offset.

#### **Through**

Creates an object passing through a specified point.

---

**NOTE** For best results when you offset a polyline with corners, specify the through point near the midpoint of a line segment, not near a corner.

---



- [Exit](#) on page 818
- [Multiple](#) on page 818
- [Undo](#) on page 818

#### **Erase**

Erases the source object after it is offset.

**Layer**

Determines whether offset objects are created on the current layer or on the layer of the source object.

## OLELINKS


**Quick Reference**

See also:

- Link OLE Objects in Drawings

Updates, changes, and cancels existing OLE links.

**Access Methods**

 **Menu:** Edit ► OLE Links

**Summary**

The [Links dialog box](#) is displayed. If there is no existing OLE link in the drawing, OLE Links is not available on the Edit menu and the Links dialog box is not displayed. To specify a different source application for an embedded object, right-click the embedded object and click Convert on the shortcut menu to display the [Convert dialog box](#).

See “Link and Embed Data (OLE)” in the *User's Guide*.

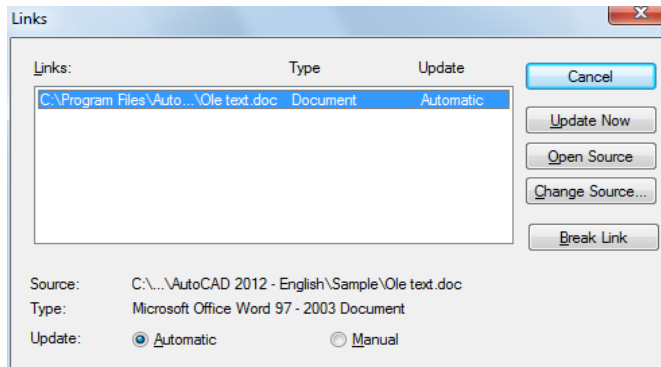
## Links Dialog Box

**Quick Reference**

See also:

- Link OLE Objects in Drawings

Lists and modifies linked files and objects.



### List of Options

The following options are displayed.

**Links** Lists information about linked objects. The information listed depends on the type of link. To change information for a linked object, select the object.

**Source** Displays the path name of the source file and the type of object.

**Type** Displays the format type.

**Update: Automatic** Updates the link automatically whenever the source changes.

**Update: Manual** Prompts you to update a link when you open the document.

**Update Now** Updates the selected links.

**Open Source** Opens the source file and highlights the portion linked to the AutoCAD LT drawing.

**Change Source** Displays the Change Source dialog box (a standard file dialog box), in which you can specify a different source file. If the source is a selection within a file (instead of the entire file), Item Name displays a string representing the selection.

**Break Link** Severs the link between the object and the original file. The object in your drawing is changed to WMF (Windows metafile format), which is not affected by future changes to the original file.

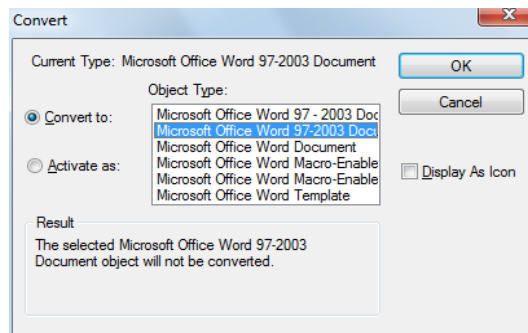
## Convert Dialog Box

### Quick Reference

See also:

- Link OLE Objects in Drawings

Specifies a different source application for an embedded object.



### Access Methods

**Shortcut menu:** Right-click an embedded object and click OLE ► Convert.

### List of Options

The following options are displayed,

**Current Type** Displays the type of object you are converting or activating.

**Object Type** Displays a list of available object types. If you select AutoCAD LT Entities, text is converted to a multiline text (mtext) object, a spreadsheet is converted to a table object, and a bitmap file is converted to an image object.

**Convert To** Converts the embedded object to the type specified under Object Type.

**Activate As** Opens the embedded object as the type selected under Object Type but returns the object to its current type after editing.

**Display as Icon** Displays the source application's icon in the drawing. Double-clicking the icon displays the linked or embedded information.

**Change Icon** Displays the [Change Icon dialog box](#). This option is available only if you select Display as Icon.

**Result** Describes the result of the selected options.

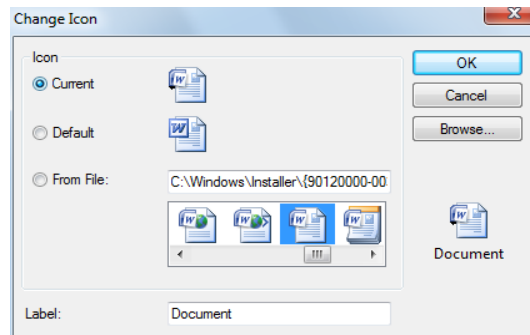
## Change Icon Dialog Box

### Quick Reference

See also:

- Link OLE Objects in Drawings

Changes the icon that represents an embedded or linked object in a drawing.



### List of Options

The following options are displayed.

#### **Icon**

Specifies an icon to represent an embedded or linked object.

**Current** Specifies the currently selected icon.

**Default** Specifies the default icon for the source application.

**From File** Specifies an icon from a file (valid types include EXE, DLL, and ICO).

#### **Label**

Specifies a caption for the icon. The file type is displayed unless you specify otherwise.



**Browse**

Displays the Browse dialog box (a standard file selection dialog box), in which you can select an icon from a file.

## OLESCALE

**Quick Reference**

See also:

- Edit OLE Objects in Drawings

Controls the size, scale, and other properties of a selected OLE object.

**Access Methods**

**Shortcut menu:** With an OLE object selected, right-click and click Text Size.

**Summary**

The [OLE Text Size dialog box](#) is displayed.

---

**NOTE** You must select an OLE object before entering the OLESCALE command.

---

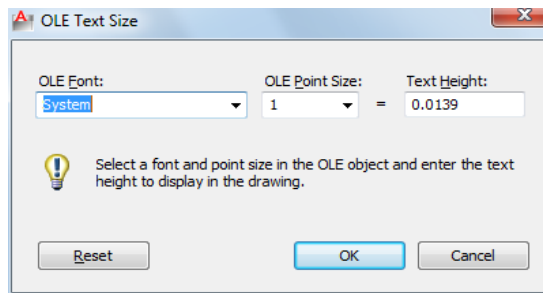
## OLE Text Size Dialog Box

**Quick Reference**

See also:

- Edit OLE Objects in Drawings

Maps the point size of one of the fonts in an OLE object to a text height in the drawing.



### Summary

The OLE object is scaled automatically to accommodate the size of the text.

### List of Options

The following options are displayed.

**OLE Font** Displays a list of the fonts used in the OLE object.

**OLE Point Size** Displays a list of the point sizes available for the selected font.

**Text Height** Sets a text height for the font at the selected point size.

**Reset** Restores the OLE object to its size when it was inserted in the drawing.

## ONLINEDRAWINGS

### Quick Reference

See also:

- Use AutoCAD WS for Drawing File Collaboration

Opens AutoCAD WS in a web browser and lists the available online files.

### Access Methods



**Button**

 **Ribbon:** Online tab ► Content panel ► Online Drawings

 **Menu:** File ► AutoCAD WS ► Online Drawings

### Summary

The Drawings section in AutoCAD WS displays your uploaded files and any files that have been shared with you. Use the Drawings section to manage your files and folders, and to edit, share, and download files.

---

**NOTE** You may first be prompted to log in to AutoCAD WS. If you do not have an account, click Create an Account and follow the on-screen instructions.

---

## OOPS

### Quick Reference

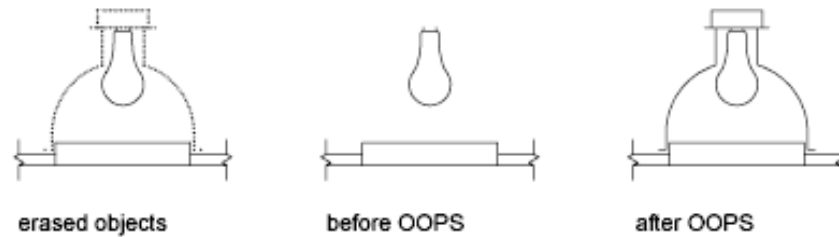
See also:

- Erase Objects

Restores erased objects.

### Summary

OOPS restores objects erased by the last ERASE command.



You can also use OOPS after BLOCK or WBLOCK because these commands can erase the selected objects after creating a block.

You cannot use OOPS to restore objects on a layer that has been removed with the PURGE command.

# OPEN

## Quick Reference

### See also:

- Open a Drawing

Opens an existing drawing file.

## Access Methods



### Button

- ☒ **Menu:** Application menu  > Open > Drawing
- ☒ **Menu:** File > Open
- ☒ **Toolbar:** Standard

## Summary

The Select File dialog box (a [standard file selection dialog box](#)) is displayed.

When FILEDIA is set to 0 (zero), OPEN displays a [Command prompt](#).

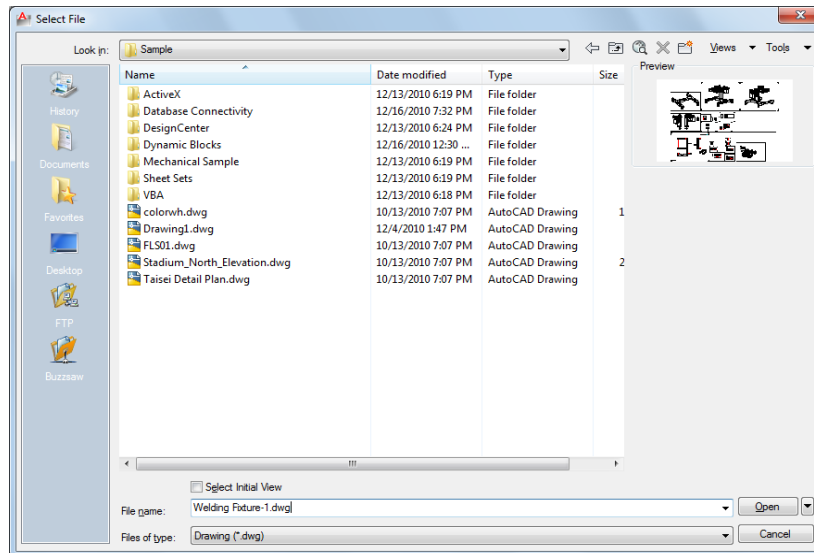
# Standard File Selection Dialog Boxes

## Quick Reference

### See also:

- Save a Drawing

Several commands display standard file selection dialog boxes, in which you can navigate through local and network drives and through FTP sites and Web folders to select files. While each dialog box may vary slightly, following is a list of the possible options.



## List of Options

The following options are displayed.

### Places List

Provides quick access to predefined locations. Reorder the icons in the Places list by dragging them to a new position. To add a new icon to Places, drag a folder from the list. Changes to Places affect all standard file selection dialog boxes.

**History** Displays shortcuts to the files most recently accessed from the dialog box. It is recommended that you periodically remove unwanted shortcuts from the History list. Select History, then select the unwanted shortcuts in the Files list and click Delete. To sort the shortcuts by date, click Views ► Details, and then click the Modified column in the Files list.

**Personal/My Documents** Displays the contents of the *Personal* or *My Documents* folder for the current user profile.

**Favorites** Displays the contents of the *Favorites* folder for the current user profile. This folder consists of shortcuts to files or folders that you added to Favorites using the Tools ► Add to Favorites option in the dialog box.

**FTP** Displays the FTP sites that are available for browsing in the standard file selection dialog box. To add FTP locations to this list, or to modify an existing FTP location, click Tools ► [Add/Modify FTP Locations](#) in the dialog box.

**Desktop** Displays the contents of your desktop.

**Buzzsaw** Provides access to Buzzsaw projects. Buzzsaw is a secure Internet-based collaboration and project management service that connects project teams in different locations. To use Buzzsaw, you must already have a project hosting account on Buzzsaw or be given access to a subscriber's Buzzsaw site. If you do not yet have a project hosting account on Buzzsaw, clicking Buzzsaw displays the Select Template dialog box where you can add a Buzzsaw location shortcut. Double-clicking Add a Buzzsaw Location Shortcut opens the Log In To Buzzsaw dialog box where you can register for a free 30-day trial subscription to the service. Also, the first time you access Buzzsaw, your default web browser opens with the project hosting page displayed. If you already have a project hosting account, clicking Buzzsaw shows all of your project sites in the Site list.

### **Look In/Save In**

Displays the current folder or drive. Click the arrow to view the hierarchy of the folder path and to navigate up the path tree or to other drives, network connections, FTP locations, or web folders (either *Web Folders* or *My Network Places*, depending on the version of your operating system). You can create web folders in Windows Explorer. Consult your system administrator or Windows Explorer Help for more information about web folders. To control whether the last used paths in each particular standard file selection dialog box are stored across sessions, use the REMEMBERFOLDERS system variable.

### **Back**

Returns to the previous file location.

### **Up One Level**

Navigates one level up in the current path tree.

### **Search the Web**

Displays the Browse the Web dialog box, from which you can access and store files on the Internet.

### **Delete**

Deletes the selected file or folder.

### **Create New Folder**

Creates a new folder in the current path using a name that you specify.

## Views

Controls the appearance of the Files list or Folders list and, for a Files list, specifies whether to show a preview image when a file is selected.

**List** Displays a multi-column list.

**Details** Displays a single-column list with file details.

**Thumbnail** Displays each file in a thumbnail view.

**Preview** Displays a bitmap of the selected file. To save a bitmap with a drawing file, use the Save a Thumbnail Preview Image option on the Open and Save tab in the Options dialog box.

## Tools

Provides tools to help with file selection and other actions available in file selection dialog boxes.

**Find** Displays the [Find dialog box](#), in which you can search for files using name, location, and date-modified filters.

### Locate

Uses the AutoCAD LT search path to locate the file specified in File Name. You set the search path on the Files tab in the [Options dialog box](#).

**Add/Modify FTP Locations** Displays the [Add/Modify FTP Locations dialog box](#), in which you can specify the FTP sites to make available for browsing. To browse these sites, select FTP from the Places list.

**Add Current Folder to Places** Adds an icon for the selected folder to the Places list, providing quick access to that folder from all standard file selection dialog boxes. To remove the icon, right-click the icon and choose Remove.

### Add to Favorites

Creates a shortcut to the current Look In location, or to the selected file or folder. The shortcut is placed in the *Favorites* folder for the current user profile, which you can access by choosing Favorites in the Places list.

### Look in Favorites

Sets the Look In path to your system's *Favorites* folder.

**Options** Provides additional options for certain standard file selection dialog boxes.

**Security Options** Provides options for a digital signature and password that are invoked when you save a file.

**Files List**

Displays the files and folders in the current path and of the selected file type. Use the Views menu in the dialog box to switch between List view and Details view.

**Preview**

Displays a bitmap of the selected file when you choose Views ► Preview in the dialog box. To save a bitmap with a drawing file, use the Save a Thumbnail Preview Image option on the Open and Save tab in the [Options dialog box](#).

**File Name**

Displays the name of the file you select in the Files list. If you select multiple files, File Name displays each selected file within quotation marks. You must use quotation marks when entering multiple file names. You can use wild-card characters to filter files displayed in the Files list.

**Files of Type**

When you are saving files, Files of Type specifies the format in which the file is saved.

**Select Initial View**

Displays the specified model space view when you open the drawing if the drawing contains more than one named view.

**Update Sheet and View Thumbnails Now**

Reflects the current setting of the UPDATETHUMBNAIL system variable. This option temporarily overrides that setting. This option does not change the current setting of UPDATETHUMBNAIL.

**Open/Save**

Depending on the purpose of the specific file selection dialog box, opens or saves the selected file or enters the path of the selected folder in the previous dialog box. Certain file selection dialog boxes may include additional options, accessed by clicking the arrow next to the Open button.

**Open Read-Only** Opens a file in read-only mode. You cannot save changes to the file using the original file name.



## Buzzsaw Location Shortcuts Dialog Box

### Quick Reference

**See also:**

- Open a Drawing

Creates, renames, modifies, and deletes Buzzsaw location shortcuts.

### List of Options

The following options are displayed.

**Buzzsaw Location Shortcuts** Lists the location of existing Buzzsaw shortcuts.

**New** Opens the Log In to Buzzsaw Site dialog box.

**Rename** Renames the shortcuts you select.

**Modify** Opens the Log In to Buzzsaw Site dialog box, where you can change settings for the selected shortcut.

**Delete** Removes the selected shortcut.

**Close** Closes the selected shortcut location.

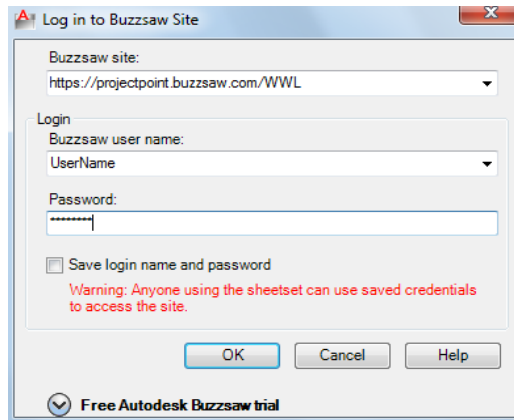
## Log In to Buzzsaw Dialog Box

### Quick Reference

**See also:**

- Open a Drawing

Logs in to the Buzzsaw site in order to browse to a specific location



### List of Options

The following options are displayed.

**Buzzsaw Site** Specifies the location of the most recently used Buzzsaw site. Enter any existing address or site name.

**Buzzsaw User Name** Specifies the user name you use for the Buzzsaw site you want to access.

**Password** Specifies your password for the Buzzsaw site.

**Save Login Name and Password** Saves your user and login name so that you don't need to retype it the next time you access the site.

**Click here to register for a free trial** Registers you for a free trial of the Buzzsaw site.

## Create or Edit a Buzzsaw Location Shortcut Dialog Box

### Quick Reference

See also:

- Open a Drawing

Sets a shortcut to a Buzzsaw location.

### Summary

Provides access to a new Autodesk Buzzsaw location that you specify. You can open drawings or save drawings at this location. If a sheet set is open, the Autodesk Buzzsaw location is associated with your current sheet set. The only Buzzsaw locations displayed are those associated with the current sheet set.

### List of Options

The following options are displayed.

**Buzzsaw Site** Displays the name of the current Buzzsaw site.

**Select a Buzzsaw Site Project or Folder** Lists the most recently opened projects and folders in the site.

**Browse** Displays the Select a Buzzsaw Project or Folder dialog box, which you can use to find and select a project or folder.

**Enter a Name for this Buzzsaw Location Shortcut** Specifies the name of the shortcut.

## Select a Buzzsaw Location Dialog Box

### Quick Reference

See also:

- Open a Drawing

Specifies a Buzzsaw project or folder to save with a Buzzsaw location shortcut.

### List of Options

The following option is displayed.

**List of Buzzsaw Projects and Folders** Specifies Buzzsaw projects or folders that can be linked to the shortcut.

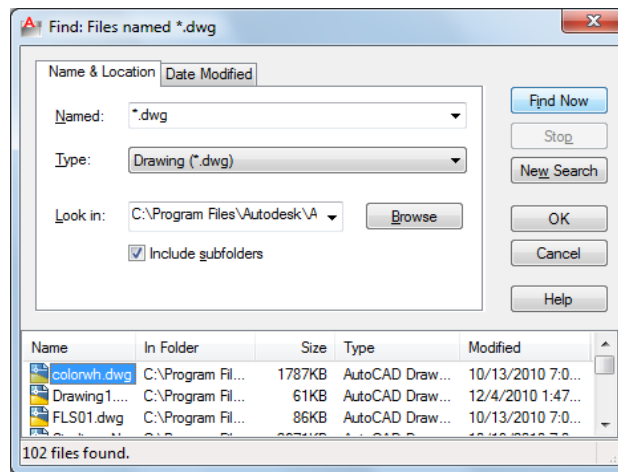
## Find Dialog Box

### Quick Reference

See also:

- Specify Search Paths and File Locations

Searches for files using name, location, and date modified filters.



### Summary

To access the Find dialog box, in a [standard file selection dialog box](#), click Tools menu ► Find.

### List of Options

The following options are displayed.

#### **Name & Location Tab**

Filters the file search based on file type, file name, and location.

#### **Named**

Specifies the full or partial file names to include in the search. When entering multiple file names, enclose each name in quotation marks.

Use the following wild-card characters to broaden your search:

- *\** (*Asterisk*): Matches any string and can be used anywhere in the search string.
- *?* (*Question mark*): Matches any single character; for example, *?BC* matches *ABC*, *3BC*, and so on.

The type of files to include in the search is determined by Type, so you don't need to enter a file extension in Named. For example, to find *house102.dwg*, enter **house\*** and set Type to Drawing (*\*.dwg*).

### Type

Specifies the type of files to include in the search. Available file types are limited to those supported by the specific standard file selection dialog box.

### Look In

Specifies the location to search. Enter a location, choose a location from the list, or choose Browse to navigate to a location. When entering multiple locations, enclose each location in quotation marks.

### Browse

Displays the Browse for Folder dialog box, in which you can navigate to a location for the search.

### Include Subfolders

Searches all subfolders within the Look In location.

### Date Modified Tab

Filters the file search based on the file's creation or modified date.

### All Files

Searches without a date filter.

### Find All Files Created or Modified

Restricts the search to files created or modified within a specified time.

- *Between*: Searches for files created or modified between two dates. Enter the dates or click the arrows to choose dates from a calendar. To navigate the calendar, use the left and right arrows, or click the month and year.
- *During the Previous N Months*: Searches for files created or modified within a specified number of months.

- *During the Previous N Days*: Searches for files created or modified within a specified number of days.

**Find Now**

Searches for files using the criteria specified in both tabs.

**Stop**

Ends the search.

**New Search**

Clears the search results and resets the default values for all search options.

**OK**

When one or more files are selected in the search results, closes the Find dialog box and enters the selected file names in the standard file selection dialog box.

**Search Results**

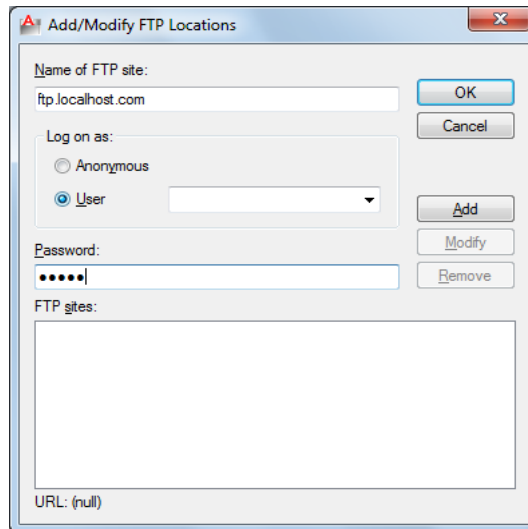
Lists all files found by the search. To pass a file to the standard file selection dialog box, select a file and choose OK. When used with a standard file selection dialog box that allows multiple file selection, you can pass multiple files from the Search Results.

## Add/Modify FTP Locations Dialog Box

**Quick Reference****See also:**

- Open a Drawing

Defines the FTP sites that you can browse within standard file selection dialog boxes.



### Summary

To browse the sites that you add, select FTP from the Places list in the standard file selection dialog box.

### List of Options

The following options are displayed.

#### **Name of FTP Site**

Specifies the site name for the FTP location (for example, *ftp.autodesk.com*).

#### **Log On As**

Specifies whether to log on to the FTP site anonymously or with a specific user name.

#### **Anonymous**

Logs you on to the FTP site as an anonymous user. If the FTP site does not allow anonymous logons, select User and enter a valid user name.

#### **User**

Logs you on to the FTP site using the specified user name.

#### **Password**

Specifies the password to use to log on to the FTP site.

**Add**

Adds a new FTP site to the list of FTP locations available from the standard file selection dialog box.

**Modify**

Modifies the selected FTP site to use the specified site name, logon name, and password.

**Remove**

Removes the selected FTP site from the list of FTP locations available from the standard file selection dialog box.

**FTP Sites**

Lists the FTP sites that are available from the Places list in all standard file selection dialog boxes.

**URL**

Displays the URL for the selected FTP site.

## OPEN Command Prompt

**Quick Reference****See also:**

- Open a Drawing

Opens an existing drawing file.

When FILEDIA is set to 0 (zero), OPEN displays the following Command prompt.

Enter name of drawing to open:

Enter ~ (tilde) at the prompt to ignore FILEDIA and display the [Select File dialog box](#), a standard file selection dialog box.



# OPENDWFMARKUP

## Quick Reference

See also:

- Respond to Markups

Opens a DWF or DWFX file that contains markups.

## Access Methods

 **Menu:** File ► Load Markup Set

## Summary

Displays the Open Markup DWF dialog box (a standard file selection dialog box), in which you can select a DWF or DWFX file that contains markups to load into the [Markup Set Manager](#).

---

**NOTE** When opening a digitally signed DWFX file, a message box is displayed that warns you about saving a new version of the file will invalidate the attached digital signature.

---

# OPENONLINE

## Quick Reference

See also:

- Use AutoCAD WS for Drawing File Collaboration

Opens the AutoCAD WS Editor in a web browser and displays an online copy of the current drawing for online editing and sharing.

## Access Methods



**Button**

 **Ribbon:** Online tab ► Content panel ► Open Online

 **Menu:** File ► AutoCAD WS ► Open Online

 **Toolbar:** Online

### Summary

If the drawing has never been uploaded to AutoCAD WS, or if the latest version is not available in your online storage, the drawing and any supporting files are automatically uploaded.

You must save the drawing before you can continue with this command.

---

**NOTE** You may first be prompted to log in to AutoCAD WS. If you do not have an account, click Create an Account and follow the on-screen instructions.

---

## OPENSHEETSET

### Quick Reference

See also:

- Create and Manage a Sheet Set

Opens a selected sheet set.

### Access Methods



Button

 **Menu:** File ► Open Sheet Set

### Summary

The Open Sheet Set dialog box (a [standard file selection dialog box](#)) is displayed.

In this dialog box, you can select a sheet set data (DST) file to load sheet set information into the Sheet Set Manager.

# OPTIONS



## Quick Reference


See also:

- Set Up the Drawing Area

Customizes the program settings.

## Access Methods

 **Menu:** Application menu  ► Options

 **Menu:** Tools ► Options

**Shortcut menu:** With no commands active and no objects selected, right-click in the drawing area. Click Options.

**Shortcut menu:** Right-click in the command window, and click Options.

## Summary

The [Options dialog box](#) is displayed.

# Options Dialog Box

## Quick Reference

See also:

- Set Up the Drawing Area

Customizes the program settings.

## List of Options

The following options are displayed.

## Drawing Icon

Signifies that an option is saved with the drawing, and affects only the current drawing. An option saved in the registry is not displayed with a drawing file

icon, and affects all drawings in a work session. Options that are saved in the registry are saved in the current profile.

### **Current Drawing**

Displays the name of the current drawing above the tabs. (DWGNAME system variable)

### **List of Tabs**

The Options dialog box includes the following tabs:

- [Files](#) on page 842
- [Display](#) on page 847
- [Open and Save](#) on page 850
- [Plot and Publish](#) on page 854
- [System](#) on page 859
- [User Preferences](#) on page 862
- [Drafting](#) on page 866
- [Selection](#) on page 869

## **Files Tab (Options Dialog Box)**

### **Quick Reference**

**See also:**

- [Set Up the Drawing Area](#)

Lists the folders in which the program searches for support, driver, menu, and other files. Also lists optional, user-defined settings such as which dictionary to use for checking spelling.

Paths are searched in the order that they are listed in the Options dialog box. If the same file exists in different folders, then the first instance found is used.

### **List of Options**

The following options are displayed.

## **Browse**

Displays the Browse for Folder or Select a File dialog box (a [standard file selection dialog box](#)), in which you can specify a new location for the folder or file selected in the list.

### **Support File Search Path**

Specifies the folders in which the program should look for text fonts, customization files, plug-ins, drawings to insert, linetypes, and hatch patterns that are not in the current folder.

### **Device Driver File Search Path**

Specifies the search path for device drivers for the video display, pointing devices, printers, and plotters.

---

**WARNING** Do NOT remove DRV path and always add paths as secondary paths.

---

### **Customization Files**

Specifies the names and locations of various types of files.

**Main Customization File** Specifies the default location of the main customization file (*acadlt.cuix*).

**Enterprise Customization File** Specifies the location of an enterprise customization file.

**Custom Icon Location** Specifies the location for custom icons used in customization files.

### **Help and Miscellaneous File Names**

Specifies the names and locations of various types of files.

**Help File** Specifies the location of the local Help file.  
([HELPPREFIX](#) on page 1532 system variable)

**Default Internet Location** Specifies the default Internet location used by both the BROWSER command and the Browse the Web button on the Web toolbar.

### **Text Editor, Dictionary, and Font File Names**

Specifies a number of optional settings.

**Text Editor Application** Sets the application for editing multiline text objects.  
(MTEXTED system variable)

**Main Dictionary** Displays the three letter keyword for the current main spelling dictionary.  
(DCTMAIN system variable)

**Custom Dictionary File** Displays the path and file name of the current custom spelling dictionary.

(DTCUST system variable)

**Alternate Font File** Specifies the alternate font to be used when the specified font file cannot be located.

(FONTALT system variable)

If you click Browse, the [Alternate Font dialog box](#) is displayed, from which you can choose an available font.

**Font Mapping File** Specifies the font mapping file to be used.

(FONTMAP system variable)

### **Print File, Spooler, and Prolog Section Names**

Specifies settings related to plotting.

**Plot File Name for Legacy Plotting Scripts** Specifies a default name for the temporary plot files used with plotting scripts created with AutoCAD Release 14 or earlier. The default name is the *drawing name* plus the *.plt* file extension. The default name used with AutoCAD 2000 and later drawings is the *drawing name-layout name* plus the *.plt* file name extension. Some plotting device drivers, however, use a different plot file extension.

**Print Spool Executable** Specifies the application to use for print spooling. You can enter the executable file name as well as any command line arguments you want to use. For example, you can enter **mypool.bat %s** to spool plot files to *mypool.bat* and have a unique plot file name automatically generated. See “Use AutoSpool” in the *Driver and Peripheral Guide*.

**PostScript Prolog Section Name** Present for legacy reasons only. Autodesk has dropped active support of PostScript and the PSIN, PSOUT, and PSPROLOG commands.

### **Printer Support File Path**

Specifies search path settings for printer support files. Settings with multiple paths are searched in the specified order.

**Print Spooler File Location** Specifies the path for print spool files.

**Printer Configuration Search Path** Specifies the path for printer configuration files (PC3 files).

**Printer Description File Search Path** Specifies the path for files with a *.pmp* file extension, or printer description files.

**Plot Style Table Search Path** Specifies the path for files with an *.stb* or *.ctb* extension, or plot style table files (both named plot style tables and color-dependent plot style tables).

**Automatic Save File Location**

Specifies the path for the file created when you select Automatic Save on the Open and Save tab.

(SAVEFILEPATH system variable)

**Color Book Locations**

Specifies the path for color book files that can be used when specifying colors in the Select Color dialog box. You can define multiple folders for each path specified. This option is saved with the user profile.

**Template Settings**

Specifies the drawing template settings.

**Drawing Template File Location** Specifies the path to locate drawing template files used by the Start Up wizard and New dialog box.

**Sheet Set Template File Location** Specifies the path to locate sheet set template files used by the Create Sheet Set wizard.

**Default Template File Name for QNEW** Specifies the drawing template file used by the QNEW command.

**Default Template for Sheet Creation and Page Setup Overrides** Specifies the default template file that is used for creating new sheets and to store page setup overrides that can be applied to Publish operations from the Sheet Set Manager.

**Tool Palettes File Locations**

Specifies the path for tool palette support files.

**Authoring Palette File Locations**

Specifies the path for the Block Authoring Palettes support files. Block Authoring Palettes are used in the Block Editor and provide tools for creating dynamic blocks.

**Log File Location**

Specifies the path for the log file created when you select Maintain a Log File on the Open and Save tab. (LOGFILEPATH system variable)

**Action Recorder Settings**

Specifies the locations used to store recorded action macros or where additional action macros are located for playback.

**Actions Recording File Location** Specifies the path used to store new action macros.

(ACTRECPATH system variable)

**Additional Actions Reading File Locations** Specifies the additional paths to use when locating available action macros for playback.

(ACTPATH system variable)

### **Plot and Publish Log File Location**

Specifies the path for the log file that is created if you select the Automatically Save Plot and Publish Log option on the [Plot and Publish tab](#).

### **Temporary Drawing File Location**

Specifies the location to store temporary files. This program creates temporary files and then deletes them when you exit the program. If you plan to run the program from a write-protected folder (for example, if you are working on a network or opening files from a CD), specify an alternate location for your temporary files. The folder you specify must not be write-protected.

Windows has a character limit of 255 for the combined file name and path length of temporary files. You can modify this limit from the Options dialog box, Files tab, under Temporary Drawing File Location.

### **Temporary External Reference File Location**

Creates a path for storing temporary copies of demand-loaded xref files.

(XLOADPATH system variable)

### **DGN Mapping Setups Location**

Specifies the location of the dgnsetups.ini file where DGN mapping setups are stored. This location must exist and have read/write permissions for DGN commands to function normally.

### **Browse**

Displays the Browse for Folder or Select a File dialog box, depending on what you selected in the List of Folders and Files.

### **Add**

Adds a search path for the selected folder.

### **Remove**

Removes the selected search path or file.

### **Move Up**

Moves the selected search path above the preceding search path.



## Move Down

Moves the selected search path below the following search path.

## Set Current

Makes the selected project or spelling dictionary current.

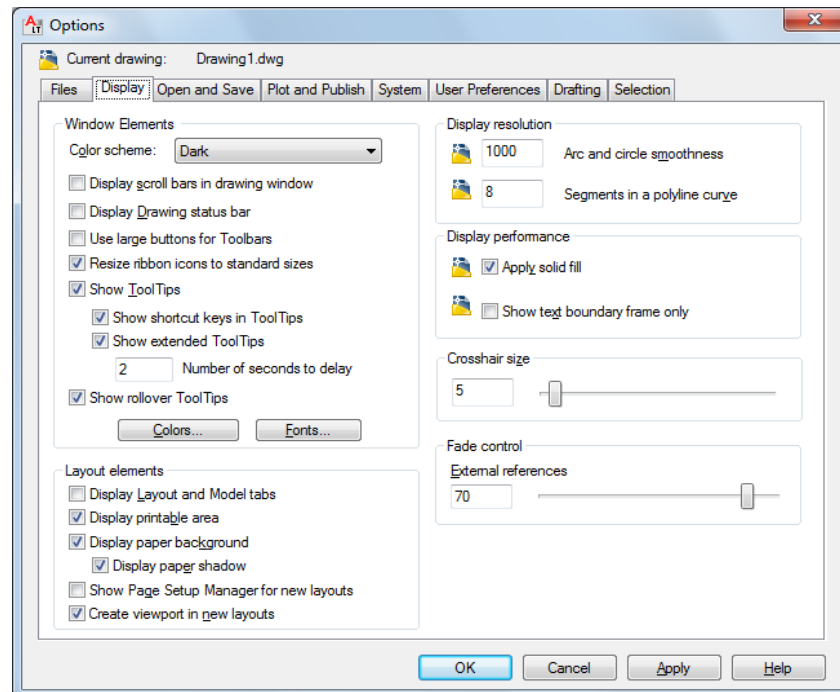
# Display Tab (Options Dialog Box)

## Quick Reference

See also:

- Set Up the Drawing Area

Customizes the display.



## **List of Options**

The following options are displayed.

### **Window Elements**

Controls display settings specific to the drawing environment.

#### **Color scheme**

Controls color settings in a dark or light color for elements such as the status bar, title bar, ribbon bar, and the application menu frame.

#### **Display Scroll Bars in Drawing Window**

Displays scroll bars at the bottom and right sides of the drawing area.

#### **Display Drawing Status Bar**

Displays the drawing status bar, which displays several tools for scaling annotations.

When the drawing status bar is turned on it displays at the bottom of the drawing area. When the drawing status bar is turned off, the tools found on the drawing status bar are moved to the application status bar.

#### **Use Large Buttons for Toolbars**

Displays buttons in a larger format at 32 by 32 pixels.

#### **Resize Ribbon Icons to Standard Sizes**

Scales the small ribbon icons to 16 x 16 pixels and the large ribbon icons to 32 x 32 pixels when they do not match the standard icon sizes.

([RIBBONICONRESIZE](#) on page 1643 system variable)

#### **Show Tooltips**

Controls the display of tooltips on the ribbon, toolbars, and other user interface elements.

([TOOLTIPS](#) on page 1689 system variable)

#### **Show shortcut keys in Tooltips**

Displays shortcut keys in the tooltip (Alt + Key) (Ctrl + Key).

#### **Show extended Tooltips**

Controls the display of extended tooltips.

#### **Number of seconds to delay**

Sets the delay time between the display of basic tooltips and extended tooltips.

**Show rollover Tooltips**

Controls the display of rollover tooltips when the cursor hovers over an object.

([ROLLOVERTIPS](#) on page 1646 system variable)

**Colors**

Displays the [Color Options dialog box](#). Use this dialog box to specify colors of elements in the main application window.

**Fonts**

Displays the [Command Line Window Font dialog box](#). Use this dialog box to specify the font for the command window text.

**Layout Elements**

Controls options for existing and new layouts. A layout is a paper space environment in which you can set up drawings for plotting.

**Display Layout and Model Tabs**

Displays the layout and Model tabs at the bottom of the drawing area. When this option is cleared, the tabs are replaced by buttons on the status bar.

**Display Printable Area**

Displays the printable area in a layout. The printable area is represented by the area within the dashed line and is determined by the selected output device.

**Display Paper Background**

Displays a representation of the specified paper size in a layout. The paper size and plot scale determine the size of the paper background.

**Display Paper Shadow**

Displays a shadow around the paper background in layout. This option is not available if the Display Paper Background option is cleared.

**Show Page Setup Manager for New Layouts**

Displays the [Page Setup Manager](#) the first time you click a layout tab. Use this dialog box to set options related to paper and plot settings.

**Create Viewport in New Layouts**

Creates a single viewport automatically when you create a new layout.

**Crosshair Size**

Determines the size of the crosshairs as a percentage of the screen size.

(CURSOR\_SIZE system variable)

### **Display Resolution**

Controls the quality of the display of objects. If you set high values to improve display quality, the impact on performance is significant.

### **Arc and Circle Smoothness**

Sets the resolution for objects in the current viewport.

(VIEWRES command)

### **Segments in a Polyline Curve**

Sets the number of line segments to be generated for each spline-fit polyline generated by the Spline option of the PEDIT command.

(SPLINESEGS system variable)

### **Display Performance**

Controls display settings that affect performance.

### **Apply Solid Fill**

Specifies whether hatches and fills, 2D solids, and wide polylines are filled in.

(FILLMODE system variable)

### **Show Text Boundary Frame Only**

Controls how text is displayed.

(QTEXTMODE system variable)

### **Fade Control**

Controls the fading intensity value of DWG xrefs.

### **Xref Display**

Controls the dimming for all DWG xref objects.

([XDWGFADECTL](#) on page 1728 system variable)

This option only affects the display on the screen. It does not affect plotting or plot preview.

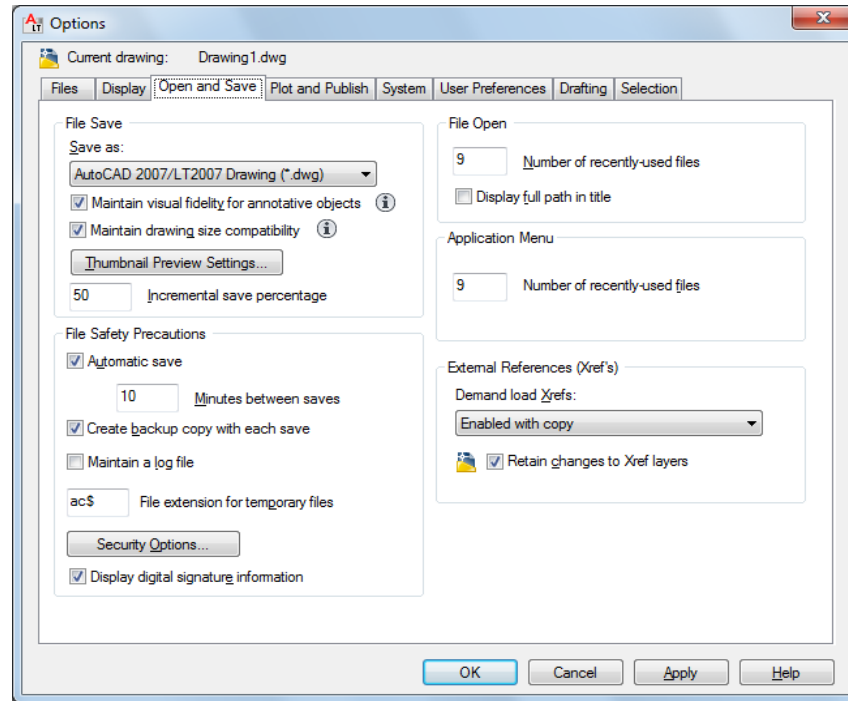
## **Open and Save Tab (Options Dialog Box)**

### **Quick Reference**

**See also:**

- Set Up the Drawing Area

Controls options that relate to opening and saving files.



### List of Options

The following options are displayed.

#### File Save

Controls settings related to saving a file.

#### Save As

Displays the valid file formats used when saving a file with SAVE, SAVEAS, QSAVE, [SHAREWITHSEEK](#) on page 1118 and WBLOCK. The file format selected for this option becomes the default format for saving drawings.

---

**NOTE** AutoCAD LT 2004 is the drawing file format used by the AutoCAD LT 2004, AutoCAD LT 2005, and AutoCAD LT 2006 releases. AutoCAD LT 2007 is used by AutoCAD LT 2007, AutoCAD LT 2008, and AutoCAD LT 2009 releases.

---

#### Maintain Visual Fidelity for Annotative Objects

Controls whether the drawing is saved with visual fidelity.

([SAVEFIDELITY](#) on page 1647 system variable)

Annotative objects may have multiple . Annotative objects are decomposed and scale representations are saved to separate layers, which are named based on their original layer and appended with a number.

---

**NOTE** Enabling Maintain Visual Fidelity for Annotative Objects only impacts drawings saved to a legacy drawing file format (AutoCAD LT 2007 and earlier).

---

### **Maintain Drawing Size Compatibility**

Controls large object size limit support when you open and save drawings.

([LARGEOBJECTSUPPORT](#) on page 1561 system variable)

### **Thumbnail Preview Settings**

Displays the [Thumbnail Preview Settings dialog box](#), which controls whether thumbnail previews are updated when the drawing is saved.

### **Incremental Save Percentage**

Sets the percentage of potentially wasted space in a drawing file. Full saves eliminate wasted space. Incremental saves are faster, but they increase the size of the drawing.

(ISAVEPERCENT system variable)

If you set Incremental Save Percentage to 0, every save is a full save. For optimum performance, set the value to 50. If hard disk space becomes an issue, set the value to 25. If you set the value to 20 or less, performance of the SAVE and SAVEAS commands slows significantly.

### **File Safety Precautions**

Assists in avoiding data loss and in detecting errors.

#### **Automatic Save**

Saves your drawing automatically at the intervals you specify. You can specify the location of all Autosave files by using the SAVEFILEPATH system variable. SAVEFILE (read-only) stores the name of the Autosave file.

*Minutes Between Saves:* When Automatic Save is on, specifies how often the drawing is saved.

(SAVETIME system variable)

#### **Create Backup Copy with Each Save**

Improves the speed of incremental saves, especially for large drawings.

(ISAVEBAK system variable)

For information about using backup files, see Create and Restore Backup Files in the *User's Guide*.

### **Maintain a Log File**

Writes the contents of the text window to a log file. ([LOGFILEMODE](#) on page 1571 system variable, see also LOGFILEPATH and LOGFILENAME)

### **File Extension for Temporary Files**

Specifies a unique extension for temporary save files. The default extension is *.ac\$*.

### **Security Options**

Provides options for a digital signature and password that are invoked when you save a file.

### **Display Digital Signature Information**

Presents digital signature information when a file with a valid digital signature is opened. ([SIGWARN](#) on page 1658 system variable)

### **File Open**

Controls settings that relate to recently used files and open files.

#### **Number of Recently Used Files**

Controls the number of recently used files that are listed in the File menu for quick access. Valid values are 0 to 9.

#### **Display Full Path In Title**

Displays the full path of the active drawing in the drawing's title bar, or in the application window title bar if the drawing is maximized.

### **Application Menu**

#### **Number of Recently Used Files**

Controls the number of recently used files listed in the application menu's Recent Documents quick menu. Valid values are 0 to 50.

### **External References (Xrefs)**

Controls the settings that relate to editing and loading external references.

#### **Demand Load Xrefs**

Turns xref demand-loading on and off, and controls whether it opens the referenced drawing or a copy.

(XLOADCTL system variable)

- *Disabled*: Turns off demand loading.

- *Enabled*: Turns on demand loading and improves performance. Select the Enabled setting to enhance the loading process when working with clipped xrefs that contain a spatial or layer index. When this option is selected, other users cannot edit the file while it is being referenced.
- *Enabled with Copy*: Turns on demand loading but uses a copy of the referenced drawing. Other users can edit the original drawing.

**Retain Changes to Xref Layers**

Controls the properties of xref-dependent layers.

(VISRETAIN system variable)

## Plot and Publish Tab (Options Dialog Box)

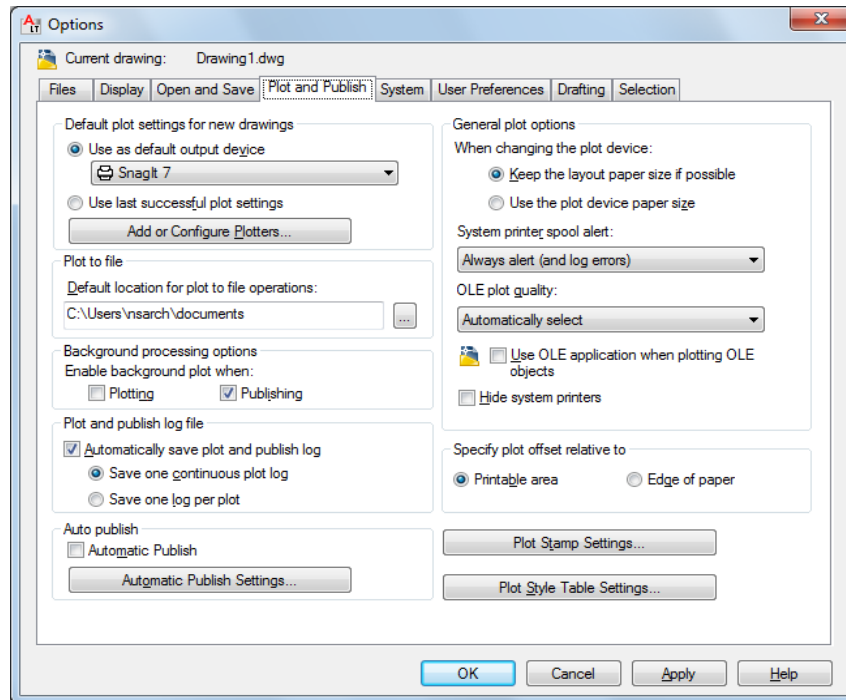
### Quick Reference

See also:

- Set Up the Drawing Area

Controls options related to plotting and publishing.





## List of Options

The following options are displayed.

### Default Plot Settings For New Drawings

Controls default plotting settings for new drawings or drawings created in AutoCAD Release 14 or earlier that have never been saved in AutoCAD 2000 or later format.

#### Use As Default Output Device

Sets the default output device for new drawings and for drawings created in AutoCAD Release 14 or earlier that have never been saved in AutoCAD 2000 or later format.

The list displays any plotter configuration files (PC3) found in the plotter configuration search path and any system printers that are configured in the system.

#### Use Last Successful Plot Settings

Sets the plotting settings to match those of the last successful plot.

### Add or Configure Plotters

Displays the [Plotter Manager](#) (a Windows system window). You can add or configure a plotter with the Plotter Manager.

### Plot To File

Specifies the default location for plot to file operations.

### Background Processing Options

Controls whether background plotting is turned on or off for plotting and publishing.

You can use background plotting to start a job you are plotting or publishing and immediately return to work on your drawing while your job is plotted or published as you work. (BACKGROUNDPLOT system variable)

Background plot and publish details are available through the [Plot and Publish status bar icon shortcut menu](#).

### Enable Background Plotting When

*Plotting:* Specifies that plot jobs are processed in the background. This setting is also affected by the BACKGROUNDPLOT system variable.

*Publishing:* Specifies that published jobs are processed in the background. This setting is also affected by the BACKGROUNDPLOT system variable.

---

**NOTE** When -PLOT, PLOT, -PUBLISH, and PUBLISH are used in a script (SCR file), the BACKGROUNDPLOT system variable value is ignored, and -PLOT, PLOT, -PUBLISH, and PUBLISH are processed in the foreground.

---

### Plot and Publish Log File

Controls options for saving a plot and publish log file as a comma-separated value (CSV) file that can be viewed in a spreadsheet program. To view or change the location of the log file, see [the Files tab in the Options dialog box](#) on page 842.

This log file contains information about plot and publish jobs such as:

- Job ID
- Job name
- Sheet set name
- Category name
- Date and time started and completed
- Sheet name

- Full file path
- Selected layout name
- Page setup name
- Named page setup path
- Device name
- Paper size name
- Final status

#### **Automatically Save Plot and Publish Log**

Specifies that a log file that contains information about all plot and publish jobs is automatically saved.

#### **Save One Continuous Plot Log**

Specifies that a single log file that contains information about all plot and publish jobs is automatically saved.

#### **Save One Log File Per Plot**

Specifies that a separate log file is created for each plot and publish job.

#### **Auto Publish**

Specifies whether drawings are published automatically to DWF, DWFx, or PDF files. You can also control options for automatic publishing.

#### **Automatic Publish**

When this options is selected, drawings are published to DWF, DWFx, or PDF files automatically when you save or close a drawing file. ([AUTOMATICPUB](#) on page 1393, [AUTODWFPUBLISH](#) system variables)

#### **Automatic Publish Settings**

Displays the [Auto Publish Settings palette](#) on page 89 where you can customize the settings for publishing including when it occurs and the location to store the published files.

#### **General Plot Options**

##### **Keep the Layout Paper Size If Possible**

Uses the paper size specified in the [Page Setup dialog box](#) as long as the selected output device can plot to this paper size. ([PAPERUPDATE](#) system variable = 0)

If the selected output device cannot plot to this paper size, the program displays a warning message and uses the paper size specified either in the plotter configuration file (PC3) or in the default system settings if the output device is a system printer.

#### **Use the Plot Device Paper Size**

Uses the paper size specified either in the plotter configuration file (PC3) or in the default system settings if the output device is a system printer.  
(PAPERUPDATE system variable = 1)

#### **System Printer Spool Alert**

Controls whether you are alerted when the plotted drawing is spooled through a system printer because of an input or output port conflict.

- *Always Alert (And Log Errors)*: Alerts you and always logs an error when the plotted drawing spools through a system printer.
- *Alert First Time Only (And Log Errors)*: Alerts you once and always logs an error when the plotted drawing spools through a system printer.
- *Never Alert (And Log First Error)*: Never alerts you and logs only the first error when the plotted drawing spools through a system printer.
- *Never Alert (Do Not Log Errors)*: Never alerts you or logs an error when the plotted drawing spools through a system printer.

#### **OLE Plot Quality**

Sets the default plot quality for OLE objects.

(OLEQUALITY system variable)

#### **Use OLE Application When Plotting OLE Objects**

Controls whether the source application of an embedded OLE object loads when plotting.

(OLESTARTUP system variable)

#### **Hide System Printer**

Controls whether Windows system printers are displayed in the Plot and Page Setup dialog boxes. This option hides standard Windows system printers only. It does not hide Windows system printers that have been configured using the Add-a-Plotter wizard.

You can control the size of the list of devices in the Plot and Page Setup dialog boxes by moving a device's PC3 file out of the Plotters folder and its subfolders.

**Specify Plot Offset Relative To**

Controls whether the plot offset is relative to the printable area or to the edge of the paper.

(PLOTOFFSET system variable).

**Printable Area**

Specifies that the plot offset is relative to the printable area.

**Edge of Paper**

Specifies that the plot offset is relative to the edge of the paper.

**Plot Stamp Settings**

Opens the [Plot Stamp dialog box](#).

**Plot Style Table Settings**

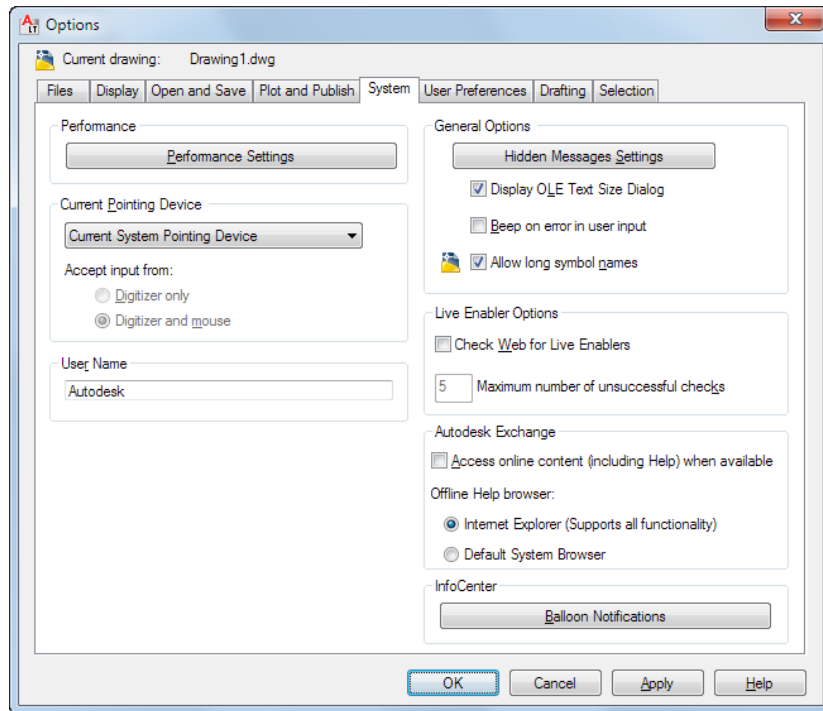
Opens the [Plot Style Table Settings dialog box](#).

## System Tab (Options Dialog Box)

**Quick Reference****See also:**

- [Set Up the Drawing Area](#)

Controls system settings.



### List of Options

The following options are displayed.

Controls settings that relate to configuration of the graphics display system.

#### Performance Settings

#### Current Pointing Device

Controls options that relate to the pointing device.

#### Current Pointing Device

Displays a list of the available pointing device drivers.

- *Current System Pointing Device*: Sets the system pointing device as current.
- *Wintab Compatible Digitizer*: Sets the Wintab-compatible digitizer as current.

#### Accept Input From

Specifies whether the program accepts input from both a mouse and a digitizer or ignores mouse input when a digitizer is set.

### **User Name**

Changes the user name with the Windows login information.

This name is inserted when you use the time and date stamp (REVDATE) and is useful if different people work on the same drawing.

Specifies how the display list is updated in the Model tab and layout tabs.

### **General Options**

#### **Hidden Messages Settings**

Controls the display of previously hidden messages.

Displays the [Hidden Message Settings dialog box](#) on page 889.

#### **Display OLE Text Size Dialog**

Displays the OLE Text Size dialog box when OLE objects are inserted into drawings.

#### **Beep on Error in User Input**

Sounds an alarm beep when an invalid entry is detected.

#### **Allow Long Symbol Names**

Sets the parameters for named object names (such as linetypes and layers) stored in definition tables.

(EXTNAMES system variable)

### **Live Enabler Options**

Specifies whether the program checks for object enablers.

Using object enablers, you can display and use custom objects in AutoCAD drawings.

#### **Check Web for Live Enablers**

Specifies how the program checks for object enablers.

(PROXYWEBSEARCH system variable)

#### **Maximum Number of Unsuccessful Checks**

Specifies the number of times to check for object enablers if unsuccessful.

For more information, see “Work with Custom and Proxy Objects”.

### **Autodesk Exchange**

Controls whether the source for Autodesk Exchange is online or local.

#### **Access Online Content (including Help) When Available**

Specifies whether information is accessed from the Autodesk website, or from locally installed files.

When online, the latest Help information and other online resources are accessible.

#### **Offline Help Browser**

Specifies whether to use Microsoft® Internet Explorer® or your default Web browser for viewing Help.

#### **InfoCenter**

##### **Balloon Notifications**

Controls the content, frequency, and duration of balloon notifications in the upper-right corner of the application window.

Displays the [InfoCenter Settings dialog box](#) on page 890.

## **User Preferences Tab (Options Dialog Box)**

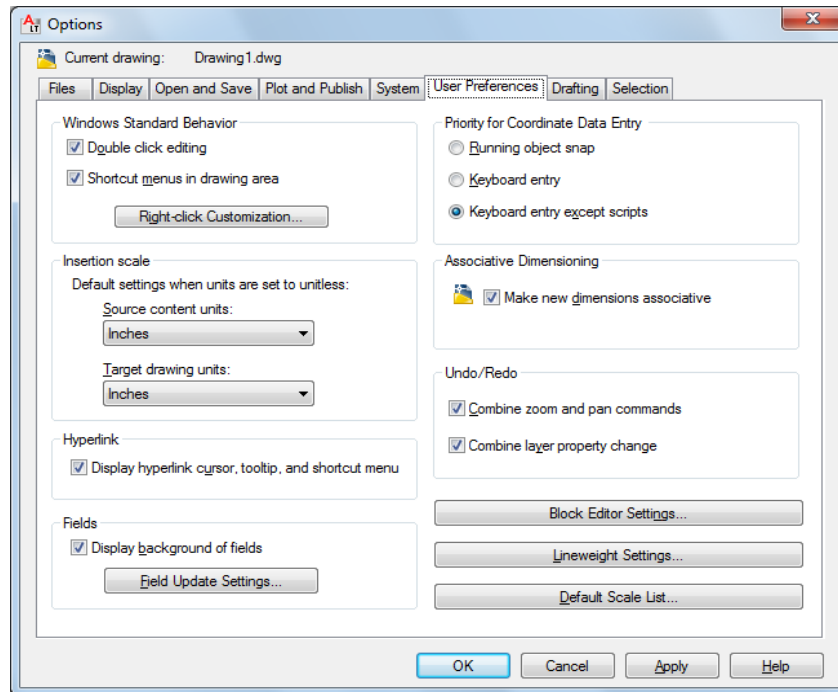
### **Quick Reference**

#### **See also:**

- [Set Up the Drawing Area](#)

Controls options that optimize the way you work.





## List of Options

The following options are displayed.

### Windows Standard Behavior

Controls keystroke and right-click behavior.

#### Double-click Editing

Controls the double click editing behavior in the drawing area.

(DBLCLKEDIT system variable)

#### Shortcut Menus in Drawing Area

Controls whether Default, Edit, and Command mode shortcut menus are available in the drawing area.

(SHORTCUTMENU system variable)

If this option is cleared, right-click is interpreted as Enter.

#### Right-Click Customization

Displays the [Right-Click Customization dialog box](#). This dialog box provides further definition for the Shortcut Menus in Drawing Area option.  
(SHORTCUTMENU system variable)

### **Insertion Scale**

Controls the default scale for inserting blocks and drawings into a drawing.

### **Source Content Units**

Sets source content units value when INSUNITS is set to 0.

(INSUNITSDEFSOURCE system variable)

If Unspecified-Unitless is selected, the object is not scaled when inserted.

### **Target Drawing Units**

Sets target drawing units value when INSUNITS is set to 0.

(INSUNITSDEFTARGET system variable)

### **Fields**

Sets preferences related to fields.

### **Display Background of Fields**

Controls whether fields are displayed with a gray background.

(FIELDDISPLAY system variable)

When this option is cleared, fields are displayed with the same background as any text.

### **Field Update Settings**

Displays the [Field Update Settings dialog box](#). (FIELDEVAL system variable)

### **Priority for Coordinate Data Entry**

Controls whether coordinates entered on the command line will override running object snaps.

(OSNAPCOORD system variable)

### **Running Object Snap**

Specifies that running object snaps override coordinate entry at all times.

(OSNAPCOORD system variable = 0)

### **Keyboard Entry**

Specifies that coordinate entry overrides running object snaps at all times.

(OSNAPCOORD system variable = 1)

### **Keyboard Entry Except Scripts**

Specifies that coordinate entry overrides running object snaps, except in scripts.  
(OSNAPCOORD system variable = 2)

### **Associative Dimensioning**

Controls whether associative dimension objects or legacy-style, nonassociative dimension objects are created.

#### **Make New Dimensions Associative**

Creates associative dimensions, which automatically adjust their locations, orientations, and measurement values when the geometric objects associated with them are modified. ([DIMASSOC](#) system variable)

### **Hyperlink**

Controls settings that relate to the display properties of hyperlinks.

#### **Display Hyperlink Cursor, Tooltip, and Shortcut Menu**

Controls the display of the hyperlink cursor, tooltips, and shortcut menu.

([HYPERLINKOPTIONS](#) on page 597 command)

The shortcut menu provides additional hyperlink options when you select an object that contains a hyperlink and then right-click in the drawing area.

### **Undo/Redo**

Controls Undo and Redo for Zoom and Pan.

#### **Combine Zoom and Pan Commands**

Groups multiple and consecutive zoom and pan commands as a single action for undo and redo operations.

---

**NOTE** Pan and zoom commands that are started from the menu are not combined, and always remain separate actions.

---

#### **Combine Layer Property Changes**

Groups layer property changes made from the Layer Properties Manager.

### **Block Editor Settings**

Displays the [Block Editor Settings dialog box](#) on page 135. Use this dialog box to control the environment settings of the Block Editor.

### **Lineweight Settings**

Displays the [Lineweight Settings dialog box](#). Use this dialog box to set lineweight options, such as display properties and defaults, and also to set the current lineweight.

## Default Scale List

Displays the [Default Scale List dialog box](#) to manage the default list of scales displayed in several dialog boxes associated with layout viewports and plotting. You can delete all custom scales and restore the default list of scales.

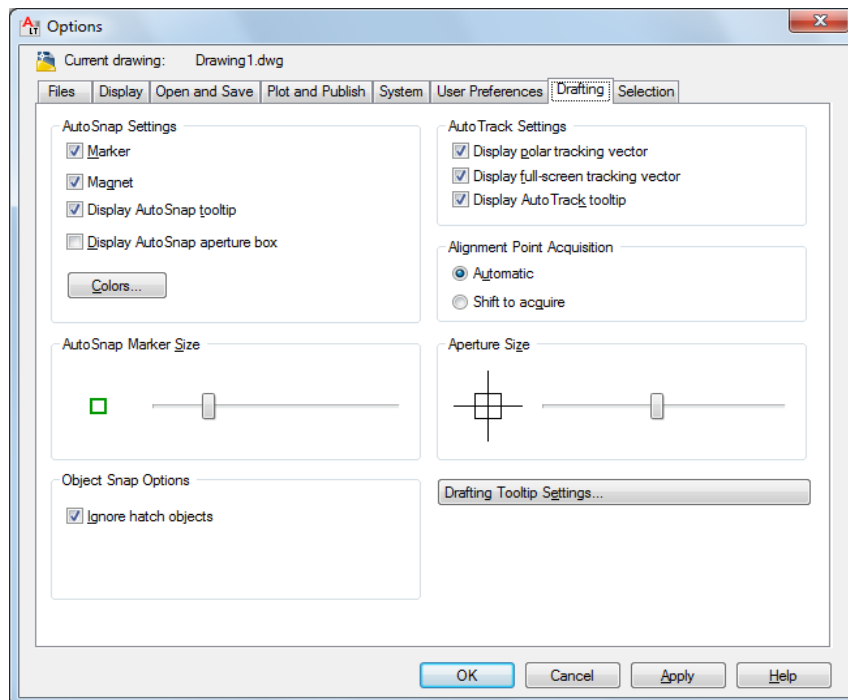
## Drafting Tab (Options Dialog Box)

### Quick Reference

See also:

- Set Up the Drawing Area

Sets options for several editing features, including AutoSnap and AutoTrack.



### List of Options

The following options are displayed.

### **AutoSnap Settings**

Controls the display of the AutoSnap marker, tooltip, and magnet.

When the cursor, or aperture box, is on an object, you can press Tab to cycle through all the snap points available for that object.

#### **Marker**

Controls the display of the AutoSnap marker. The marker is a geometric symbol that is displayed when the crosshairs move over a snap point. (AUTOSNAP system variable)

#### **Magnet**

Turns the AutoSnap magnet on or off. The magnet is an automatic movement of the crosshairs that locks the crosshairs onto the nearest snap point. (AUTOSNAP system variable)

#### **Display AutoSnap Tooltip**

Controls the display of the AutoSnap tooltip. The tooltip is a label that describes which part of the object you are snapping to. (AUTOSNAP system variable)

#### **Display AutoSnap Aperture Box**

Turns the display of the AutoSnap aperture box on or off.

(APBOX system variable)

The aperture box is a box that appears inside the crosshairs when you snap to an object.

#### **Colors**

Displays the [Drawing Window Colors dialog box](#).

#### **AutoSnap Marker Size**

Sets the display size for the AutoSnap marker.

#### **Object Snap Options**

Sets running object snap modes.

(OSNAP command)

#### **Ignore Hatch Objects**

Specifies options for object snaps. (OSOPTIONS system variable)

## **AutoTrack Settings**

Controls the settings that relate to AutoTrack™ behavior, which is available when polar tracking or object snap tracking is turned on (see DSETTINGS).

### **Display Polar Tracking Vector**

Displays a vector along specified angles when polar tracking is on. With polar tracking, you can draw lines along angles. Polar angles are 90-degree divisors, such as 45, 30, and 15 degrees. (TRACKPATH system variable = 2)

### **Display Full-Screen Tracking Vector**

Tracking vectors are lines from which you can draw objects at specific angles or in specific relationships to other objects. If this option is selected, alignment vectors are displayed as infinite lines. (TRACKPATH system variable = 1)

### **Display AutoTrack Tooltip**

Controls the display of the AutoSnap marker, tooltip, and magnet.

(AUTOSNAP system variable)

## **Alignment Point Acquisition**

### **Automatic**

Displays tracking vectors automatically when the aperture moves over an object snap.

### **Shift to Acquire**

Displays tracking vectors when you press Shift and move the aperture over an object snap.

## **Aperture Size**

Sets the display size for the object snap target box, in pixels.

(APERTURE system variable)

When Display AutoSnap Aperture Box is selected (or when APBOX is set to 1), the aperture box is displayed in the center of the crosshairs when you snap to an object. The aperture size determines how close to a snap point you can be before the magnet locks the aperture box to the snap point. Values range from 1 to 50 pixels.

## **Drafting Tooltip Appearance**

Controls the color, size, and transparency of drafting tooltips.

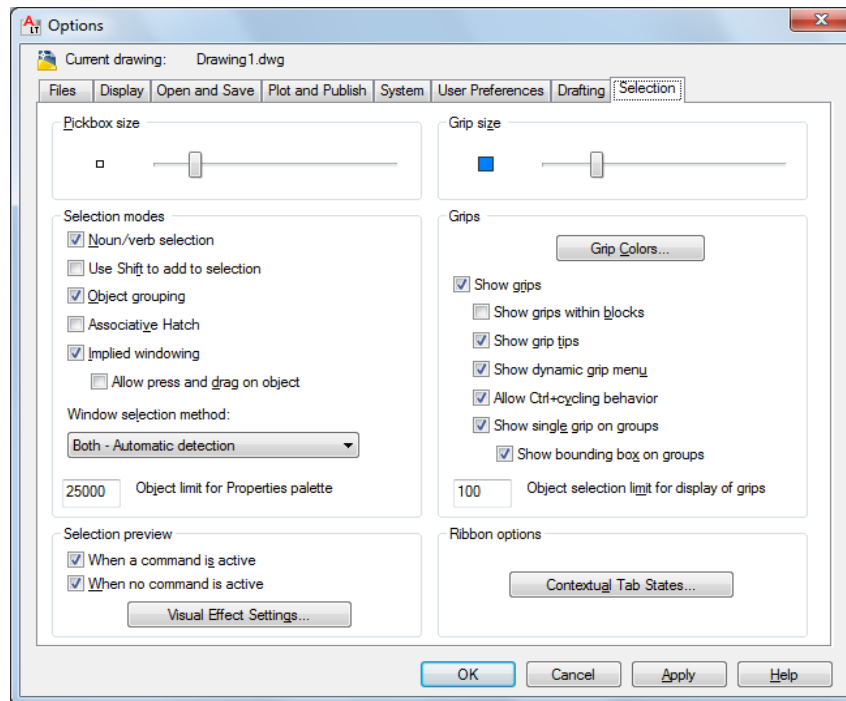
### **Settings**

Displays the [Tooltip Appearance dialog box](#).

## Selection Tab (Options Dialog Box)

### Quick Reference

Sets options for selecting objects.



### List of Options

The following options are displayed.

#### Pickbox Size

Sets the object selection target height, in pixels. (PICKBOX system variable)

The pickbox is the object selection tool that appears in editing commands.

#### Selection Modes

Controls settings that relate to object selection methods.

#### Noun/Verb Selection

Controls whether you select objects before (noun-verb selection) or after you issue a command. (PICKFIRST system variable)

Many but not all editing and inquiry commands support noun/verb selection.

#### **Use Shift to Add to Selection**

Controls whether subsequent selections replace the current selection set or add to it. (PICKADD system variable)

To clear a selection set quickly, draw a selection window in a blank area of the drawing.

#### **Object Grouping**

Selects all objects in a group when you select one object in that group. With [GROUP](#) on page 541 you can create and name a set of objects for selection. (PICKSTYLE system variable)

#### **Associative Hatch**

Determines which objects are selected when you select an associative hatch. If this option is selected, boundary objects are also selected when you select an associative hatch. (PICKSTYLE system variable)

#### **Implied Windowing**

Initiates the drawing of a selection window when you select a point outside an object. (PICKAUTO system variable)

Drawing the selection window from left to right selects objects that are entirely inside the window's boundaries. Drawing from right to left selects objects within and crossing the window's boundaries.

#### **Allow Press Drag on Object**

Controls the window selection method. ([PICKAUTO](#) on page 1610 system variable)

If this option is cleared, you can draw a selection window by clicking two separate points with the pointing device.

#### **Window Selection Method**

Use the dropdown list to change the [PICKDRAG](#) on page 1611 system variable setting.

#### **Object Limit for Properties Palette**



Determines the limit of the number of objects that can be changed at one time with the Properties and Quick Properties palettes. (PROPOBJLIMIT system variable)

### **Selection Preview**

Highlights objects as the pickbox cursor rolls over them. (PREVIEWEFFECT system variable)

### **When a Command Is Active**

Displays selection previewing only when a command is active and the Select Objects prompt is displayed. (SELECTIONPREVIEW system variable)

### **When No Command Is Active**

Displays selection previewing when no commands are active. (SELECTIONPREVIEW system variable)

### **Visual Effect Settings**

Displays the [Visual Effect Settings dialog box](#).

### **Grip Size**

(GRIPSIZE system variable)



### **Grips**

Grips are small squares displayed on an object after it has been selected.

### **Grip Colors**

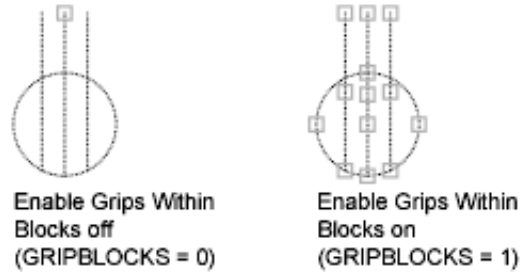
Displays the [Grip Colors dialog box](#) on page 873 where you can specify the colors for different grip status and elements.

### **Show Grips**

Controls the display of grips on selected objects. Displaying grips in a drawing significantly affects performance. Clear this option to optimize performance. (GRIPS system variable)

### **Show Grips within Blocks**

Controls the display of grips in blocks. (GRIPBLOCK system variable)



### Show Grip Tips

Displays grip-specific tips when the cursor hovers over a grip on a custom object that supports grip tips. This option has no effect on standard objects. (GRIPTIPS system variable)

### Show Dynamic Grip Menu

Controls the display of dynamic menu when pausing over a multi-functional grip. ([GRIPMULTIFUNCTIONAL](#) on page 1526 system variable)

### Allow Ctrl-cycling Behavior

Allows the Ctrl-cycling behavior for multi-functional grips. ([GRIPMULTIFUNCTIONAL](#) on page 1526 system variable)

### Show Single Grip on Groups

Displays a single grip for an object group. ([GROUPDISPLAYMODE](#) on page 1529 system variable)

### Show Bounding Box on Groups

Displays a bounding box around the extents of grouped objects. ([GROUPDISPLAYMODE](#) on page 1529 system variable)

### Object Selection Limit for Display of Grips

Suppresses the display of grips when the selection set includes more than the specified number of objects. (GRIPOBJLIMIT system variable)

The valid range is 1 to 32,767. The default setting is 100.

## Ribbon Options

### Contextual Tab States Button

The [Ribbon Contextual Tab State Options dialog box](#) on page 885 is displayed, where you can set object selection settings for the display of ribbon contextual tabs.

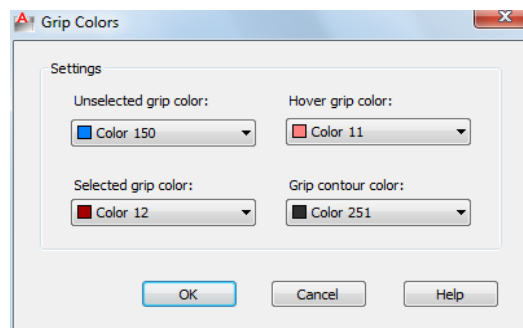
# Grip Colors Dialog Box

## Quick Reference

See also:

- Set Up the Drawing Area

Sets the color properties of the grip.



## List of Options

The following options are displayed.

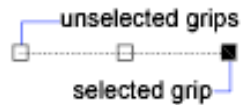
### Settings

Controls the color settings of the grip.

### Unselected Grip Color

Controls the color of unselected grips.

([GRIPCOLOR](#) on page 1524 system variable)



### Selected Grip Color

Controls the color of selected grips.

([GRIPHOT](#) on page 1525 system variable)

### Hover Grip Color

Controls the fill color of an unselected grip when the cursor pauses over it.

(GRIPHOVER on page 1525 system variable)

### Grip Contour Color

Controls the color of the grip contour.

(GRIPCONTOUR on page 1524 system variable)

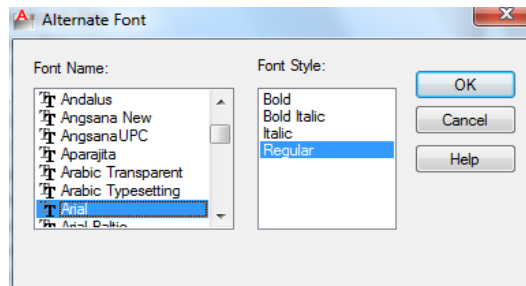
## Alternate Font Dialog Box

### Quick Reference

See also:

- Specify Application Fonts

Specifies the location of the font file to use if the original font cannot be located and an alternate font is not specified in the font mapping file.



### Access Methods

**Pointing device:** Options dialog box, Files tab

### Summary

You can also set the location of Alternate Font File by using the FONTALT system variable.

If you do not specify an alternate font, when you open a drawing containing fonts that cannot be located, a dialog box is displayed in which you specify a font to use for each missing font.

### List of Options

The following options are displayed.

### Font Name

Lists the font family name for all registered TrueType fonts and all SHX fonts in the *Fonts* folder.

### Font Style

Specifies font character formatting, such as italic, bold, or regular. If the missing font is a Big Font, this option changes to Big Font and lists all available Asian-language Big Font files.

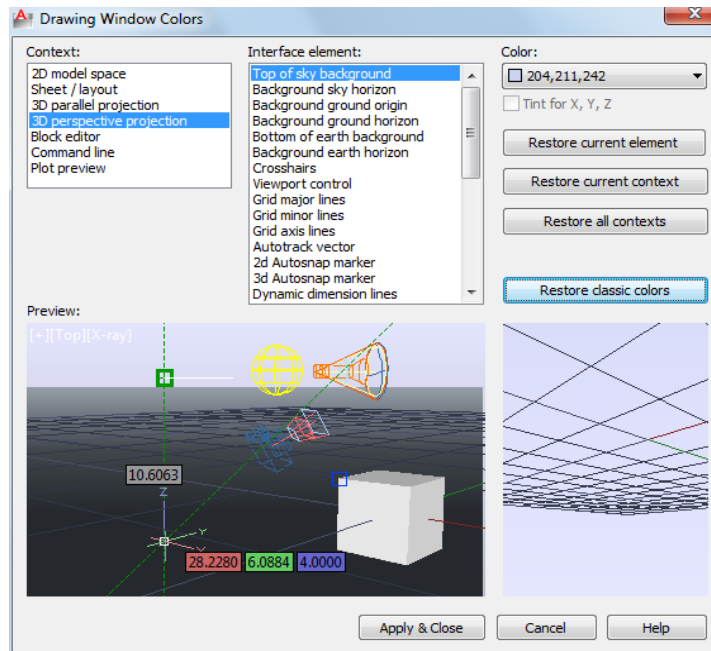
## Drawing Window Colors Dialog Box

### Quick Reference

See also:

- Set Up the Drawing Area

Sets the display colors of the interface elements for each context in the application.



**Access Methods**

**Pointing device:** Options dialog box, Display tab

**Summary**

A context is an operating environment such as model space. An *interface element* is an item that is visible in that context such as the crosshairs pointer or the background color.

**List of Options**

The following options are displayed.

**Context**

A context is an environment such as model space. Interface elements can have different colors assigned depending on the context. The context you select displays a list of associated elements. Select a context, an interface element, and then a color.

**Interface Element**

Lists the interface elements in a selected context. An interface element is an item that is visible in a context such as the background color. Select an interface element, and then a color.

**Color**

Lists the available color settings to apply to the selected interface element. You can choose one of the colors in the color list or choose Select Color to open the [Select Color dialog box](#).

Color tinting applies pure red, blue and green hues using the luminance (lightness) of the color you specify while increasing the color saturation by 50%.

**Tint for X, Y** Controls whether X- and Y-axis color tinting is applied to the following interface elements: crosshairs pointer, Autotrack vectors, and drafting tooltips.

**Restore Current Element**

Restores the currently selected interface element to its default color.

**Restore Current Context**

Restores all interface elements in the currently selected context to their default colors.

**Restore All Contexts**

Restores all interface elements back to their default color settings.

#### **Restore Classic Colors**

Restores only the interface elements of 2D model space back to the AutoCAD 2008 classic color settings.

#### **Preview**

Displays a preview of the drawing based on defined settings.

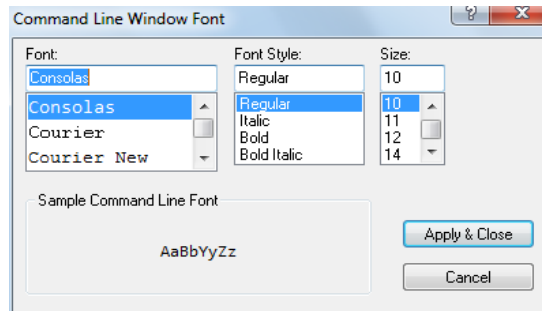
## **Command Line Window Font Dialog Box**

### **Quick Reference**

See also:

- Specify Application Fonts

Sets the font displayed in the Command window.



### **Access Methods**

**Pointing device:** Options dialog box, Display tab

### **Summary**

The text font used in the Command window can be changed to suit your preferences.

### **List of Options**

The following options are displayed.

**Font** Lists the system fonts available for selection.

**Font Style** Lists the styles available to apply to the current font.

**Size** Lists the font sizes available for the current font.

## Thumbnail Preview Settings Dialog Box

### Quick Reference

See also:

- Set Up the Drawing Area

Controls whether thumbnail previews are updated when the drawing is saved.

### Access Methods

**Pointing device:** Options dialog box, Open and Save tab

### List of Options

The following options are displayed.

#### **Drawing**

##### **Save a Thumbnail Preview Image**

Controls whether BMP preview images are saved with the drawing.

(RASTERPREVIEW system variable)

##### **Use the View when Drawing Last Saved**

Uses the last saved view to generate the thumbnail preview for the drawing.

##### **Use the Home View**

Uses the Home view saved with the drawing to generate the thumbnail preview for the drawing.

#### **Home View**

##### **Set current View as Home**

Defines the current view of the drawing as the Home view.

##### **Reset Home to Default**

Restores the default Home view.



## **Sheets and Views**

### **Generate Sheet, Sheet View and Model View Thumbnails**

Controls updating of the thumbnail previews for views and layouts.

(UPDATETHUMBNAIL system variable)

Sheet thumbnails are displayed on the Sheet List tab, sheet view thumbnails on the View List tab, and model space view thumbnails on the Resource Drawings tab.

### **Performance-Accuracy Slider**

Specifies when thumbnails are updated and which thumbnails are updated.

(UPDATETHUMBNAIL system variable)

**Information Panel** Displays information about the current position of the slider.

### **Named Views**

Sets the size for thumbnails created for named views.

#### **Named views**

Sets the maximum size of the named views.

## **Plot Style Table Settings Dialog Box**

### **Quick Reference**

See also:

- Set Up the Drawing Area

Specifies settings for plot style tables.

### **Access Methods**

**Pointing device:** Options dialog box, Plot and Publish tab

### **List of Options**

The following options are displayed.

### **Default Plot Style Behavior for New Drawings**

Controls the plot style mode, Color-Dependent or Named, that is used when opening a drawing that was created in a release prior to AutoCAD 2000 or when creating a new drawing from scratch without using a drawing template.

A plot style is a collection of property settings defined in a plot style table and applied when the drawing is plotted. Changing the default plot style setting by using the Options dialog box does not affect the current drawing.

The default plot style setting is Use Color Dependent Plot Styles. The Plot Style Control on the Properties toolbar is unavailable by default. The Plot Style Control is available when you select the Use Named Plot Styles option and open a new drawing. (PSTYLEPOLICY system variable)

#### **Use Color Dependent Plot Styles**

Uses color-dependent plot styles in both new drawings and drawings created in AutoCAD Release 14 or earlier. (PSTYLEPOLICY system variable = 1)

Color-dependent plot styles use the numbers from the AutoCAD Color Index to create a plot style table with a *.ctb* file extension. Each color is defined by a name or number ranging from 1 to 255. You can assign each color number to a different pen on a pen plotter to achieve different property settings in the plotted drawing. If this option is selected, a plot style is created for each color setting.

Once a drawing is saved with Use Color Dependent Plot Styles as the default, you can convert it to Use Named Plot Styles using the CONVERTCTB and CONVERTPSTYLES commands.

#### **Use Named Plot Styles**

Uses named plot styles in both new drawings and drawings created in earlier versions of AutoCAD LT. The plot style is defined in the plot style table attached to the layout. Named plot style tables are files with the file extension *.stb*. (PSTYLEPOLICY system variable = 0)

Once a drawing is saved with Use Named Plot Styles as the default, you can convert it to Use Color Dependent Plot Styles using the CONVERTCTB and CONVERTPSTYLES commands. However, once you use CONVERTPSTYLES to convert a drawing from using a named plot style table to a color plot style table, you cannot use CONVERTPSTYLES to convert it back to using a named plot style table.

### **Current Plot Style Table Settings**

Specifies the current plot style table settings that are applied to new drawings.

#### **Default Plot Style Table**

Specifies the default plot style table to attach to new drawings. A plot style table is a file with a *.ctb* or an *.stb* extension that includes and defines plot styles.

If you are using color-dependent plot styles, this option lists all color dependent plot style tables found in the search path as well as the value of None. If you are using named plot styles, this option lists all named plot styles tables.

#### **Default Plot Style for Layer 0**

Specifies the default plot style for all layers in a drawing when opening a drawing that was created in a release prior to AutoCAD 2000, or for Layer 0 when creating a new drawing from scratch without using a drawing template.

(DEFPLSTYLE system variable)

#### **Default Plot Style for Objects**

Specifies the default plot style for new objects in a drawing when opening a drawing that was created in a release prior to AutoCAD 2000, or when creating a new drawing from scratch without using a drawing template.

(DEFPLSTYLE system variable)

#### **Add or Edit Plot Style Tables**

Displays the [Plot Style Manager](#) (a Windows Explorer window), where you can create or edit plot style tables.

## **Right-Click Customization Dialog Box**

### **Quick Reference**

See also:

- Set Up the Drawing Area

Controls whether right-clicking in the drawing area displays a shortcut menu or has the same effect as pressing Enter.

### **Access Methods**

**Pointing device:** Options dialog box, User Preferences tab

## Summary

If you are accustomed to using the right-click method for Enter while a command is active, you might prefer to disable Command shortcut menus from this dialog box. You can also control shortcut menus by using the SHORTCUTMENU system variable.

## List of Options

The following options are displayed.

### **Turn on Time-Sensitive Right-Click**

Controls right-click behavior. A quick click is the same as pressing Enter. A longer click displays a shortcut menu. You can set the duration of the longer click in milliseconds.

### **Default Mode**

Determines what happens when you right-click in the drawing area when no objects are selected and no commands are in progress.

### **Repeat Last Command**

Disables the Default shortcut menu. As a result, right-clicking in the drawing area when no objects are selected and no commands are in progress is the same as pressing Enter, which repeats the last issued command.

### **Shortcut Menu**

Enables the Default shortcut menu.

### **Edit Mode**

Determines what happens when you right-click in the drawing area when one or more objects are selected and no commands are in progress.

### **Repeat Last Command**

Disables the Edit shortcut menu. As a result, right-clicking in the drawing area when one or more objects are selected and no commands are in progress is the same as pressing Enter, which repeats the last issued command.

### **Shortcut Menu**

Enables the Edit shortcut menu.

### **Command Mode**

Determines what happens when you right-click in the drawing area when a command is in progress.

### **Enter**

Disables the Command shortcut menu. As a result, right-clicking in the drawing area when a command is in progress is the same as pressing Enter.

**Shortcut Menu: Always Enabled**

Enables the Command shortcut menu.

**Shortcut Menu: Enabled When Command Options Are Present**

Enables the Command shortcut menu only when command options are available at the Command prompt. If no options are available, a right-click is the same as pressing Enter.

## Field Update Settings Dialog Box

### Quick Reference

**See also:**

- Set Up the Drawing Area

### Access Methods

 **Menu:** Options dialog box, User Preferences tab

### Summary

Controls how fields are updated. (FIELDEVAL system variable)

### List of Options

The following options are displayed

**Open**

Automatically updates fields when the file is opened.

**Save**

Automatically updates fields when the file is saved.

**Plot**

Automatically updates fields when the file is plotted.

**eTransmit**

Automatically updates fields when the file is sent using ETRANSMIT.

## Regen

Automatically updates fields when the file is regenerated.

# Visual Effect Settings Dialog Box

## Quick Reference

See also:

- Set Up the Drawing Area

Controls the appearance of selection previewing.

## Access Methods

**Pointing device:** Options dialog box, Selection tab

## List of Options

The following options are displayed.

### Selection Preview Effect

Specifies the visual effect used for previewing selection of objects.  
(PREVIEWEFFECT system variable)

#### Preview Area

Displays the effect of the current settings.

**Face Highlighting** Controls the face highlighting setting.

- **Texture Fill.** Highlights the face with texture fill effect.

**Line Highlighting** Controls the line highlighting settings.

- **Dash.** Displays dashed lines when the pickbox cursor rolls over an object. This selection previewing indicates that the object would be selected if you clicked. Dashed lines are the default display for selected objects. (PREVIEWEFFECT system variable = 0)
- **Thicken.** Displays thickened lines when the pickbox cursor rolls over an object. This selection previewing indicates that the object would be selected if you clicked. (PREVIEWEFFECT system variable = 1)

- **Both.** Displays thickened, dashed lines when the pickbox cursor rolls over an object. This selection previewing indicates that the object would be selected if you clicked. (PREVIEWEFFECT system variable = 2)

#### **Advanced Options**

Displays the [Advanced Preview Options dialog box](#).

#### **Selection Area Effect**

Controls the appearance of selection areas during selection preview.

#### **Preview Area**

Displays the effect of the current settings.

#### **Indicate Selection Area**

Controls the display of effects for selection areas.

(SELECTIONAREA system variable)

#### **Window Selection Color**

Controls the color of the transparent selection area during window selection.

(WINDOWAREACOLOR system variable)

#### **Crossing Selection Color**

Controls the color of the selection area during crossing selection.

(CROSSINGAREACOLOR system variable)

#### **Selection Area Opacity**

Controls the transparency of the selection area during window and crossing selection.

(SELECTIONAREAOPACITY system variable)

## **Ribbon Contextual Tab State Options Dialog Box**

### **Quick Reference**

**See also:**

- [Set Up the Drawing Area](#)

Sets object selection settings for the display of ribbon contextual tabs

### **Access Methods**

**Pointing device:** Options dialog box, Selection tab

### **List of Options**

The following options are available in this dialog box.

#### **Contextual Tab Display**

Controls how ribbon contextual tabs are displayed when you single- or double-click an object.

([RIBBONCONTEXTSELECT](#) on page 1641 system variable)

#### **Do Not Switch To Contextual Tab on Selection**

When an object or selection set is single- or double-clicked, focus is not automatically switched to ribbon contextual tabs. ([RIBBONSELECTMODE](#) on page 1643 system variable = 0)

#### **Show On Single-click**

When an object or selection set is single-clicked, focus is switched to the first ribbon contextual tab. ([RIBBONSELECTMODE](#) on page 1643 system variable = 1)

#### **Show On Double-click**

When an object or selection set is double-clicked, focus is switched to the first ribbon contextual tab. ([RIBBONSELECTMODE](#) on page 1643 system variable = 2)

### **Object Selection Options**

#### **Retain Pickfirst Selections When Commands Are Invoked From a Contextual Tab**

When checked, the pickfirst selection set remains selected after a command is started from a ribbon contextual tab. ([RIBBONSELECTMODE](#) on page 1643 system variable = 1)

When cleared, the pickfirst selection set does not remain selected after a command is started from a ribbon contextual tab.

#### **Object Selection Maximum for Contextual Tab Display**

Limits the number of objects that can be changed at one time with the ribbon property controls or a contextual tab.

([RIBBONCONTEXTSELLIM](#) on page 1642 system variable)



# Advanced Preview Options Dialog Box

## Quick Reference

### See also:

- Set Up the Drawing Area

Allows you to turn selection cycling on and off and configure selection cycling display options.

### Access Methods

**Pointing device:** Options dialog box, Selection tab

### Summary

Excludes specified object types from selection previewing.  
(PREVIEWFILTER system variable)

### List of Options

The following options are displayed.

#### **Exclude Objects on Locked Layers**

Excludes specified object types from selection previewing.  
( PREVIEWFILTER system variable)

#### **Exclude**

Turns off selection previewing for the selected object types. ( PREVIEWFILTER system variable)

#### **Xrefs**

Excludes objects in xrefs from selection previewing. This option is on by default. ( PREVIEWFILTER system variable)

#### **Tables**

Excludes tables from selection previewing. This option is on by default. ( PREVIEWFILTER system variable)

#### **Groups**

Excludes objects in groups from selection previewing. This option is off by default. ( PREVIEWFILTER system variable)

### Multiline Text

Excludes multiline text objects from selection previewing. This option is off by default. (PREVIEWFILTER system variable)

### Hatches

Excludes hatch objects from selection previewing. This option is off by default. (PREVIEWFILTER system variable)

## Transparency Dialog Box

### Quick Reference

#### See also:

- Set Up the Drawing Area

Controls transparency for dockable windows.

### Access Methods

**Shortcut menu:** Right-click the title bar on the dockable window and click Transparency.

### List of Options

The following options are displayed.

**How transparent should the palette be?** Sets the degree of transparency for the palette. The palette has maximum transparency when the slider is at Clear. With the slider at Solid, the palette is opaque.

([PALETTEOPAQUE](#) on page 1603 system variable)

**How transparent should the palette be on mouse-over?** Sets the degree of transparency for the palette on mouse-over. The palette has maximum transparency when the slider is at Clear. When the palette is at Solid, it is opaque on mouse-over.

([ROLLOVEROPACITY](#) on page 1645 system variable)

---

**NOTE** The degree of transparency on mouse-over cannot be more than the degree of transparency of the palette.

---

**Click to Preview** Preview the palette mouse-over transparency value when the button is held down. The palette returns to the default transparency set when the button is released.

**Apply these settings to all palettes** Sets the degree of transparency for the palette and mouse-over for all palettes.

([APPLYGLOBALOPACITIES](#) on page 1384 system variable)

**Disable all window transparency (global)** Disables transparency for all palettes.

([GLOBALOPACITY](#) on page 1520 system variable)

## Hidden Message Settings Dialog Box

### Quick Reference

**See also:**

- Set Up the Drawing Area

Displays all dialog boxes that you marked to not display again or to always use a specified option in them.

### Access Methods

**Pointing device:** Options dialog box, System tab

### List of Options

The following options are displayed.

**Search** Finds messages by using one or more keywords.

**Check messages to show** Displays the list of hidden messages.

**Message preview** Displays the currently checked message.

The tree view displays the dialog information in the form below.

- Application Name
  - Category
    - Dialog title

## InfoCenter Settings Dialog Box

### Quick Reference

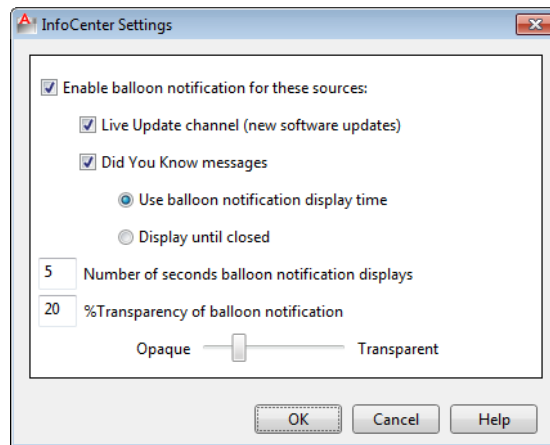
See also:

- Overview of InfoCenter and Autodesk Exchange

Provides options for controlling the content and duration of balloon notifications that display in the upper-right corner of the application window.

### Access Methods

**Pointing device:** Options dialog box, System tab



### List of Options

The following options are displayed.

**Enable Balloon Notification for These Sources** Controls whether the balloon notification feature is turned on or off.

**Live Update Channel (New Software Updates)** Controls whether notices regarding product software updates are displayed.

**Did You Know Messages** Controls whether helpful messages and tips are displayed.

Did You Know messages provide Knowledge Base information and general instructional messages. Click the text or the Expand icon to view the detailed information.

**Use Balloon Notification Display Time** Displays the balloon message for the number of seconds that you specify below.

**Number of Seconds Balloon Notification Displays** Specify the length of time that the balloon displays before automatically closing.

**% Transparency of Balloon Notification** Controls the display transparency of the balloons from 0 (opaque) to 80 (nearly transparent).

## Default Scale List Dialog Box

### Quick Reference

See also:

- Scale Views in Layout Viewports

Controls the default list of scales stored in the registry.

### Access Methods

**Pointing device:** Options dialog box, User Preferences tab

### Summary

When the scale list in a drawing is reset, the list is restored to the default list of scales defined in the Default Scale List dialog box.

---

**NOTE** To control the list of scales for the current drawing, use the [SCALELISTEDIT](#) on page 1098 command. After you add a new scale to the default scale list in the registry, you can use the Reset button in the Edit Drawing Scales dialog box to add the new scale to your drawing.

---

### List of Options

The following options are displayed.

#### **Scale List**

**Metric** Displays the default list of metric scales.

**Imperial** Displays the default list of imperial scales.

If a scale name is duplicated, but has a different value, a number is appended to the name.

**Add**

Displays the [Add Scale dialog box](#).

**Edit**

Displays the [Edit Scale dialog box](#).

---

**NOTE** You cannot edit temporary scales.

---

**Move Up**

Moves the currently selected scale in the scale list up one position.

**Move Down**

Moves the currently selected scale in the scale list down one position.

**Delete**

Removes all unreferenced scales from the scale list and leaves the referenced scale when multiple scales are selected.

**Reset**

Deletes all scales and restores the default list of scales defined in AutoCAD LT. You must press Reset separately for imperial scales and for metric scales.

**Edit** Edits the selected scale in-place in the scale list.

Press Tab to move between the fields of the scale being edited.

**Reset** Deletes all custom scales and restores the default list of scales defined in AutoCAD LT.

## ORTHO

### Quick Reference


See also:

- Use Orthogonal Locking (Ortho Mode)

Constrains cursor movement to the horizontal or vertical direction.


### Access Methods

 **Menu:** Tools ► Drafting Settings

 **Toolbar:** Status bar ► Ortho

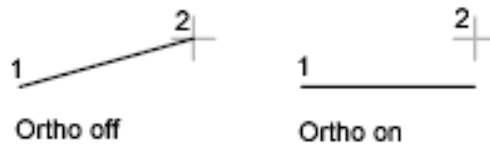


 **Command entry:** F8

 **Command entry:** 'ortho for transparent use

### Summary

In the illustration, a line is drawn using Ortho mode. Point 1 is the first point specified, and point 2 is the position of the cursor when the second point is specified.



Ortho mode is used when you specify an angle or distance by means of two points using a pointing device. In Ortho mode, cursor movement is constrained to the horizontal or vertical direction relative to the UCS.

Horizontal is defined as being parallel to the *X* axis of the UCS and vertical as being parallel to the *Y* axis.

In a 3D view, ORTHO is additionally defined as being parallel to the *Z* axis of the UCS, and the tooltip displays +*Z* or -*Z* for the angle depending on the direction along the *Z* axis.

## OSNAP

### Quick Reference


See also:

- Use Object Snaps

Sets running object snap modes.


### Access Methods

 **Menu:** Tools ► Drafting Settings

 **Toolbar:** Status bar ► Osnap

**Shortcut menu:** Press Shift while right-clicking in the drawing area and choose Osnap Settings.

 **Command entry:** F3

 **Command entry:** 'osnap for transparent use

### Summary

The Object Snap tab of the [Drafting Settings dialog box](#) is displayed.

If you enter **-osnap** at the Command prompt, the following prompts are displayed.

### List of Prompts

The following prompts are displayed.

Current osnap modes: *current*

Enter list of [object snap modes](#) on page 894: *Enter names of object snap modes separated with commas, or enter none or off*

### Object Snap Modes

Specify one or more object snap modes by entering the first three characters of the name. If you enter more than one name, separate the names with commas.

ENDpoint	CENter	TANgent
MIDpoint	NODE	NEArest
INTersection	QUAdrant	PARallel
EXTension	INSertion	
APParent Intersection	PERpendicular	

For a description of each of these object snap modes, see the Object Snaps tab of the [Drafting Settings dialog box](#).

**QUICK** Snaps to the first snap point found. Quick must be used in conjunction with other object snap modes.

**NONE** Turns off object snap modes.



# OVERKILL

## Quick Reference

### See also:


- Erase Objects

Removes duplicate or overlapping lines, arcs, and polylines. Also, combines partially overlapping or contiguous ones.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Modify panel ► Delete Duplicate Objects

 **Menu:** Modify ► Delete Duplicate Objects

 **Toolbar:** Modify II ► Delete Duplicate Objects

### Summary

Displays the [Delete Duplicate Objects dialog box](#) on page 896.

Removes redundant geometry.

- Duplicate copies of objects are deleted
- Arcs drawn over portions of circles are deleted
- Lines, partially overlapping, drawn at the same angle are combined into a single line
- Duplicate line or arc segments overlapping polyline segments are deleted

If you enter **-overkill** at the Command prompt, options are displayed.

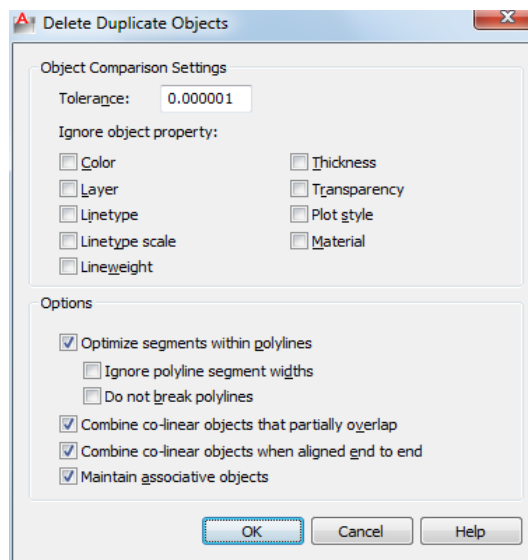
## Delete Duplicate Objects Dialog Box

### Quick Reference

See also:

- Erase Objects

Removes duplicate geometry as well as overlapping lines, arcs, and polylines. Also, combines partially overlapping or contiguous ones.



### List of Prompts

#### Object Comparison Settings

**Tolerance** Controls the precision with which OVERKILL makes numeric comparisons. If this value is 0, the two objects being compared must match before OVERKILL modifies or deletes one of them.

#### Ignore Object Property:

Use these settings to determine which object properties are ignored during comparison.

**Color** Object color is ignored.

**Layer** Object layers are ignored.

**Linetype** Object linetypes are ignored.

**Linetype Scale** Object linetype scale is ignored.

**Lineweight** Object lineweight is ignored.

**Thickness** Object thickness is ignored.

**Transparency** Object transparency is ignored.

**Plot style** Object plot style is ignored.

**Material** Object material is ignored.

### **Options**

Use these settings to control how OVERKILL deals with lines, arcs, and polylines.

**Optimize segments within polylines** When selected, individual line and arc segments within selected polylines are examined. Duplicate vertices and segments are removed.

Also, OVERKILL compares individual polyline segments with completely separate line and arc segments. If a polyline segment duplicates a line or arc object, one of them is deleted.

If this option is not selected, polylines are compared as discreet objects and two sub-options are not selectable.

**Ignore polyline segment width** Ignores segment width, while optimizing polyline segments.

**Do not break polylines** Polyline objects are unchanged.

**Combine colinear objects that partially overlap** Overlapping objects are combined into single objects.

**Combine colinear objects when aligned end to end** Objects that have common endpoints are combined into single objects.

**Maintain associative objects** Associative objects are not deleted or modified.

## -OVERKILL

### Quick Reference

#### See also:

- Erase Objects

Removes duplicate or overlapping lines, arcs, and polylines. Also, combines partially overlapping or contiguous ones.

#### List of Prompts

The following prompts are displayed.

Select objects: *Use an object selection method*

Enter an option to change [[Ignore](#) on page 898/[tOlerance](#) on page 899/[optimize Plines](#) on page 899/[combine parTial overlap](#) on page 899/[combine Endtoend](#) on page 899/[Associativity](#) on page 899] <done>:

#### List of Options

##### Ignore

**Ignores one or more of the following properties during object comparison**

- None
- All
- Color
- LAyer
- Ltype
- LtScale
- LWeight
- Thickness
- TRansparency
- plotStyle
- Material

**Tolerance** Defines the value within which OVERKILL makes numeric comparisons for determining object duplication.

**Optimize Polyline** Optimize segments within plines [segment width/Break polyline/Yes/No] <Yes>:

- *Segment Width*: ignore polyline segment width
- *Break Polyline*: maintains polylines when optimizing polyline segments
- *Yes*: Enabled by default. Honors polylines as discrete objects and deletes non-polyline objects that overlap polylines.
- *No*: Forces OVERKILL to examine polyline segments individually. Polyline segments may be deleted as duplicates of non-polyline objects.

**Combine Partial Overlap** Overlapping objects area combined into single objects.

**Combine End to End** Objects that have common endpoints are combined into single objects.

**Associativity** Associative objects are not deleted or modified.



## PAGESETUP

### Quick Reference

See also:

- Specify Page Setup Settings

Controls the page layout, plotting device, paper size, and other settings for each new layout.


### Access Methods



**Button**

 **Ribbon:** Output tab > Plot panel > Page Setup

 **Menu:** Application menu  > Print > Page Setup

 **Menu:** File > Page Setup Manager

**Shortcut menu:** Right-click the Model layout or a named (paper space) layout and click Page Setup Manager.

### Summary

The [Page Setup Manager](#) is displayed.

A page setup is a collection of plot device and other settings that determine the appearance and format of your final output. These settings are stored in the drawing file and can be modified and applied to other layouts.

## Page Setup Manager

### Quick Reference

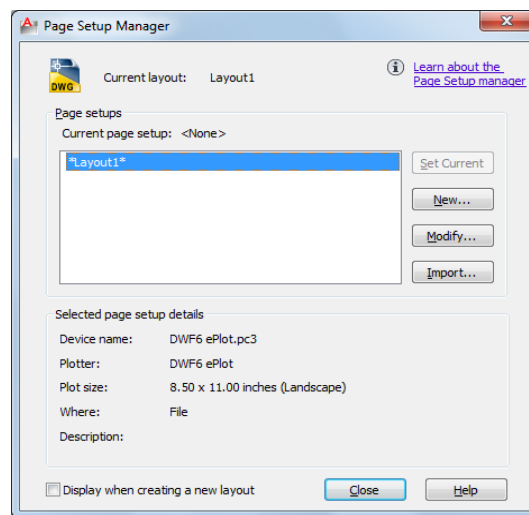
See also:

- Specify Page Setup Settings

Specifies the page setup for the current layout.

### Summary

You can also create named page setups, modify existing ones, or import page setups from other drawings.



### List of Options

The following options are displayed.

#### **Current Layout**

Lists the current layout to which the page setup will be applied.



## **Page Setups**

Displays the current page setup, sets a different page setup as current, creates a new page setup, modifies an existing page setup, and imports page setups from other drawings.

### **Current Page Setup**

Displays the page setup that is applied to the current layout.

### **Page Setup List**

Lists the page setups that are available to apply to the current layout.

The list includes the named page setups and layouts that are available in the drawing. Layouts that have a named page setup applied to them are enclosed in asterisks, with the named page setup in parentheses; for example, \*Layout 1 (System Scale-to-fit)\*. The current page setup is selected by default. You can double-click a page setup in this list to set it as the current page setup for the current layout.

The shortcut menu also provides options for removing and renaming page setups.

### **Set Current**

Sets the selected page setup as the current page setup for the current layout. You cannot set the current layout as the current page setup.

### **New**

Displays the [New Page Setup dialog box](#), in which you can enter a name for the new page setup and specify the page setup to use as a starting point.

### **Modify**

Displays the [Page Setup dialog box](#), in which you can edit the settings for the selected page setup.

## **Selected Page Setup Details**

Displays information about the selected page setup.

### **Device Name**

Displays the name of the output device specified in the currently selected page setup.

### **Plotter**

Displays the type of output device specified in the currently selected page setup.

### **Plot Size**

Displays the paper size and orientation specified in the currently selected page setup.

**Where** Displays the physical location of the output device specified in the currently selected page setup.

### Description

Displays descriptive text about the output device specified in the currently selected page setup.

### Display When Creating a New Layout

Specifies that the Page Setup dialog box is displayed when a new layout tab is selected or a new layout is created.

You can reset this function by turning on the Show Page Setup Dialog for New Layouts option on the [Display tab](#) of the Options dialog box.

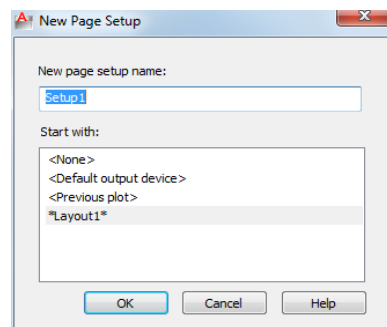
## New Page Setup Dialog Box

### Quick Reference

See also:

- Specify Page Setup Settings

Specifies a name for the new page setup, as well as the page setup to use as a starting point.



### List of Options

The following options are displayed.

## New Page Setup Name

Specifies the name for the new page setup.

## Start With

Specifies a page setup to use as a starting point for the new page setup. When you click OK, the [Page Setup dialog box](#) is displayed with the settings of the selected page setup, which you can modify as necessary.

<None> Specifies that no page setup is used as a starting point. The default settings that are displayed in the [Page Setup dialog box](#) can be modified.

<Default Output Device> Specifies that the default output device specified in the [Options dialog box, Plot and Publish tab](#), is set as the printer in the new page setup.

<Previous Plot> Specifies that the new page setup uses the settings specified in the last plot job.

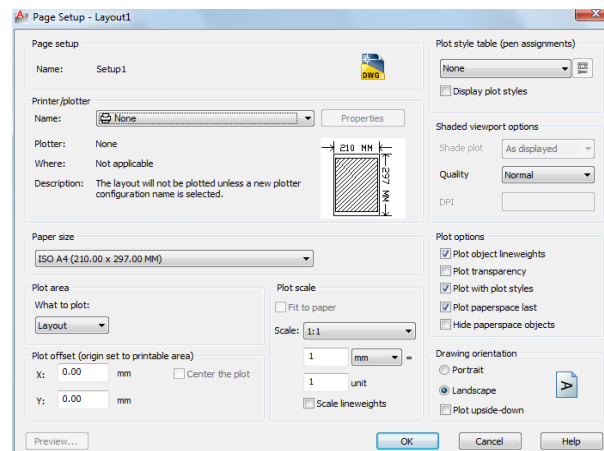
## Page Setup Dialog Box

### Quick Reference

See also:

- Specify Page Setup Settings

Specifies page layout and plotting device settings.



## Summary

The Page Setup dialog box is displayed in the following cases:

- When you create a new page setup through the [Page Setup Manager](#)
- When you modify an existing page setup through the [Page Setup Manager](#)

The page setup settings that you specify are stored with the layout and can be applied to other layouts or imported into other drawings.

## List of Options

The following options are displayed.

### Page Setup

**Name** Displays the name of the current page setup.

### Icon

Indicates that the Page Setup dialog box was opened from a layout.

### Printer/Plotter

Specifies a configured plotting device to use when plotting or publishing layouts.

### Name

Lists the available PC3 files or system printers from which you can select to plot or publish the current layout. An icon in front of the device name identifies it as a PC3 file or a system printer.

### Properties

Displays the [Plotter Configuration Editor](#) (PC3 editor), in which you can view or modify the current plotter configuration, ports, device, and media settings.

If you make changes to the PC3 file using the Plotter Configuration Editor, the [Changes to a Printer Configuration File dialog box](#) is displayed.

### Plotter

Displays the plot device specified in the currently selected page setup.

### Where

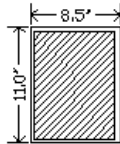
Displays the physical location of the output device specified in the currently selected page setup.

### Description

Displays descriptive text about the output device specified in the currently selected page setup. You can edit this text in the [Plotter Configuration Editor](#).

#### **Partial Preview**

Shows an accurate representation of the effective plot area relative to the paper size and printable area. The tooltip displays the paper size and printable area.



#### **Paper Size**

Displays standard paper sizes that are available for the selected plotting device.

If the selected plotter does not support the layout's selected paper size, a warning is displayed, and you can select the plotter's default paper size or a custom paper size.

A default paper size is set for the plotting device when you create a PC3 file with the Add-a-Plotter wizard. For information about this wizard, see "Set Up Plotters and Printers" in the *Driver and Peripheral Guide*. The paper size that you select in the Page Setup dialog box is saved with the layout and overrides the PC3 file settings.

The actual printable area of the page, which is determined by the selected plotting device and paper size, is indicated in the layout by a dashed line.

If you are plotting a raster image, such as a BMP or TIFF file, the size of the plot is specified in pixels, not in inches or millimeters.

#### **Plot Area**

Specifies the area of the drawing to be plotted.

**Layout/Limits** When plotting a layout, plots everything within the printable area of the specified paper size, with the origin calculated from 0,0 in the layout.

When plotting from the Model layout, plots the entire drawing area that is defined by the grid limits. If the current viewport does not display a plan view, this option has the same effect as the Extents option.

**Extents** Plots the portion of the current space of the drawing that contains objects. All geometry in the current layout is plotted. The drawing may be regenerated to recalculate the extents before plotting.

**Display** Plots the view in the current viewport in the current layout.

**View** Plots a view that was previously saved with the VIEW command.

### **Window**

Plots any portion of the drawing that you specify. When you specify the two corners of the area to plot, the Window button becomes available.

Click the Window button to use the pointing device to specify the two corners of the area to be plotted, or enter coordinate values.

### **Plot Offset**

Specifies an offset of the plot area relative to the lower-left corner of the printable area or to the edge of the paper, depending on the setting made in the Specify Plot Offset Relative To option (Options dialog box, [Plot and Publish tab](#)). The Plot Offset area of the Page Setup dialog box displays the specified plot offset option in parentheses.

The printable area of a drawing sheet is defined by the selected output device and is represented by a dashed line in a layout. When you change to another output device, the printable area may change.

You can offset the geometry on the paper by entering a positive or negative value in the X and Y offset boxes. The plotter unit values are in inches or millimeters on the paper.

### **Center the Plot**

Automatically calculates the X and Y offset values to center the plot on the paper.

#### **X**

Specifies the plot origin in the X direction relative to the setting of the Plot Offset Definition option.

#### **Y**

Specifies the plot origin in the Y direction relative to the setting of the Plot Offset Definition option.

### **Plot ScaleScale**

Controls the relative size of drawing units to plotted units.

---

**NOTE** If the Layout option is specified in Plot Area, the layout is plotted at 1:1 regardless of the setting specified in Scale.

---

### **Fit to Paper**

Scales the plot to fit within the selected paper size and displays the custom scale factor in the Scale, Inch =, and Units boxes.

### Scale

Defines the exact scale for the output. *Custom* defines a user-defined scale. You can create a custom scale by entering the number of inches (or millimeters) equal to the number of drawing units.

---

**NOTE** You can modify the list of scales with SCALELISTEDIT.

---

### Inch(es) =/mm =/Pixel(s) =

Specifies the number of inches, millimeters, or pixels equal to the specified number of units.

### Inch/mm/pixel

Specifies inches or mm for display of units. The default is based on the paper size and changes each time a new paper size is selected.

Pixel is available only when a raster output is selected.

### Unit

Specifies the number of units equal to the specified number of inches, millimeters, or pixels.

### Scale Lineweights

Scales lineweights in proportion to the plot scale. Lineweights normally specify the linewidth of output objects and are output with the linewidth size regardless of the scale.

### Plot Style Table (Pen Assignments)

Sets the plot style table, edits the plot style table, or creates a new plot style table.

### Name (Unlabeled)

Displays the plot style table that is assigned to the current Model tab or layout tab and provides a list of the currently available plot style tables.

If you select New, the Add Plot Style Table wizard is displayed, which you can use to create a new plot style table. The wizard that is displayed is determined by whether the current drawing is in color-dependent or named mode.

### Edit

Displays the [Plot Style Table Editor](#), in which you can view or modify plot styles for the currently assigned plot style table.

### Display Plot Styles

Controls whether the properties of plot styles assigned to objects are displayed on the screen.

### **Shaded Viewport Options**

Specifies how shaded viewports are plotted and determines their resolution levels and dots per inch (dpi).

#### **Shade Plot**

Specifies how views are plotted. To specify this setting for a viewport on a layout tab, select the viewport and then, on the Tools menu, click Properties.

From the Model tab, you can select from the following options:

- **As Displayed:** Plots objects the way they are displayed on the screen.
- **Wireframe:** Plots objects in wireframe regardless of the way they are displayed on the screen.
- **Hidden:** Plots objects with hidden lines removed regardless of the way they are displayed on the screen.

#### **Quality**

Specifies the resolution at which shaded viewports are plotted.

You can select from the following options:

- **Draft:** Sets shaded model space views to be plotted as wireframe.
- **Preview:** Sets shaded model space views to be plotted at one quarter of the current device resolution, to a maximum of 150 dpi.
- **Normal:** Sets shaded model space views to be plotted at one half of the current device resolution, to a maximum of 300 dpi.
- **Presentation:** Sets shaded model space views to be plotted at the current device resolution, to a maximum of 600 dpi.
- **Maximum:** Sets shaded model space views to be plotted at the current device resolution with no maximum.
- **Custom:** Sets shaded model space views to be plotted at the resolution setting that you specify in the DPI box, up to the current device resolution.

#### **DPI**

Specifies the dots per inch for shaded views, up to the maximum resolution of the current plotting device.



---

**NOTE** Shaded viewport plotting of rendered views is not supported.

---

### **Plot Options**

Specifies options for lineweights, transparency, plot styles, shaded plots, and the order in which objects are plotted.

#### **Plot Object Lineweights**

Specifies whether lineweights assigned to objects and layers are plotted.

#### **Plot Transparency**

Specifies whether object transparency is plotted. This option should only be used when plotting drawings with transparent objects.

---

**IMPORTANT** For performance reasons, plotting transparency is disabled by default. To plot transparent objects, check the Plot Transparency option. This setting can be overridden by the [PLOTTRANSPARENCYOVERRIDE](#) on page 1617 system variable. By default, the system variable honors the setting in the Page Setup and the Plot dialog boxes.

---

#### **Plot with Plot Styles**

Specifies whether plot styles applied to objects and layers are plotted.

#### **Plot Paper Space Last**

Plots model space geometry first. Paper space geometry is usually plotted before model space geometry.

#### **Hide Paper Space Objects**

Specifies whether the HIDE operation applies to objects in a paper space viewport. This option is available only from a layout tab. This setting is reflected in the plot preview, but not in the layout.

### **Drawing Orientation**

Specifies the orientation of the drawing on the paper for plotters that support landscape or portrait orientation.

#### **Portrait**

Orients and plots the drawing so that the short edge of the paper represents the top of the page.

#### **Landscape**

Orients and plots the drawing so that the long edge of the paper represents the top of the page.

### Plot Upside-Down

Orients and plots the drawing upside-down.

### Icon

Indicates the media orientation of the selected paper and represents the orientation of the drawing on the page as a letter on the paper.

---

**NOTE** The orientation of plots is also affected by the PLOTROTMODE system variable.

---

### Preview

Displays the drawing as it will appear when plotted on paper by executing the PREVIEW command.

## Changes to a Printer Configuration File Dialog Box (Page Setup)

### Quick Reference

#### See also:


- Specify Page Setup Settings

Notifies you that you have made changes to an existing plotter configuration (PC3) file.

### Access Methods




#### Button

 **Ribbon:** Output tab ► Plot panel ► Page Setup

 **Menu:** Application menu  ► Print ► Page Setup

**Shortcut menu:** Right-click the Model tab or a layout tab and click Page Setup Manager.

 **Command entry:** pagesetup

### **Summary**

You can cancel your changes, click OK to overwrite the PC3 file, or specify a new file name for the modified PC3 file.

### **List of Options**

The following options are displayed.

**Save Changes to the Following File** Specifies the path of the PC3 file that you have changed. To preserve the original PC3 file, specify a new file name.

## **Import Page Setups Dialog Box**

### **Quick Reference**

**See also:**

- Specify Page Setup Settings

Displays the page setups in the selected drawing that are available to import.

### **Summary**

#### **List of Options**

The following options are displayed.

#### **Source Drawing**

Displays the source drawing that contains the listed page setups that are available to import.

#### **Page Setups**

Lists the page setups that are available to import and their location in the source drawing. Selected page setups are imported into the current drawing when you click OK.

**Name** Specifies the name of the page setup available to import.

**Location** Specifies the location (Model or named layout) of the page setup in the drawing from which you are importing the page setup.

#### **Details**

Displays information about the selected page setup.

**Device Name**

Displays the name of the plot device specified in the currently selected page setup.

#### **Plotter**

Displays the type of output device specified in the currently selected page setup.

#### **Plot Size**

Displays the paper size and orientation specified in the currently selected page setup.

#### **Where**

Displays the physical location of the output device specified in the currently selected page setup.

#### **Description**

Displays descriptive text about the output device specified in the currently selected page setup.

## **PAN**

### **Quick Reference**

#### **See also:**

- Pan or Zoom a View

Moves the view planar to the screen.

#### **Access Methods**



#### **Button**

 **Ribbon:** View tab ► Navigate panel ► Pan

 **Menu:** View ► Pan ► Realtime

 **Toolbar:** Standard

**Shortcut menu:** With no objects selected, right-click in the drawing area and click Pan.

### Summary

You can [pan the drawing display in real time](#).

### List of Prompts

The following prompts are displayed.

Press Esc or Enter to exit, or right-click to display a [shortcut menu](#).

If you enter **-pan** at the Command prompt, PAN displays [command prompts](#), and you can specify a displacement to pan the drawing display.

Position the cursor at the start location and press the mouse button down. Drag the cursor to the new location. You can also press the mouse scroll wheel or middle button down and drag the cursor to pan.

## Panning in Real Time

### Quick Reference

#### See also:

- Pan or Zoom a View

As a view is being panned, the cursor updates to let you know when you have reached the extents of the drawing.

### Summary

The cursor changes to a hand cursor. By holding down the pick button on the pointing device, you lock the cursor to its current location relative to the viewport coordinate system. The drawing display is moved in the same direction as the cursor.



When you reach a logical extent (edge of the drawing space), a bar is displayed on the hand cursor on that edge. Depending on whether the logical extent is at the top, bottom, or side of the drawing, the bar is either horizontal (top or bottom) or vertical (left or right side).



When you release the pick button, panning stops. You can release the pick button, move the cursor to another location in the drawing, and then press the pick button again to pan the display from that location.

To stop panning at any time, press Enter or Esc.

## -PAN

### Quick Reference

See also:

- Pan or Zoom a View

Moves the view planar to the screen by specifying a distance and direction the view should be moved in.

### List of Prompts

The following prompts are displayed.

Specify base point or displacement: *Specify a point*

You can specify a single point, indicating the relative displacement of the drawing with respect to the current location, or (more commonly) you can specify two points, in which case the displacement is computed from the first point to the second point.



before PAN



after PAN

If you press Enter, the drawing is moved by the amount you specified in the Specify Base Point or Displacement prompt. For example, if you specify **2,2** at the first prompt and press Enter at the second prompt, the drawing is moved 2 units in the *X* direction and 2 units in the *Y* direction. If you specify a point at the Specify Second Point prompt, the location of the first point is moved to the location of the second point.

You cannot use PAN transparently during VPOINT or while another ZOOM, PAN, or VIEW command is in progress.

## Pan Shortcut Menu

### Quick Reference

See also:

- Pan or Zoom a View

Pan and Zoom shortcut menu allows for switching between navigation tools and cancelling the current navigation tool.

To access the Pan shortcut menu, right-click in the drawing area while PAN is active.

### List of Options

The following options are displayed.

**Exit** Cancels PAN or ZOOM.

**Pan** Switches to PAN.

**Zoom** Switches to ZOOM in real time.

**Zoom Window** Zooms to display an area specified by a rectangular window.

**Zoom Original** Restores the original view.

**Zoom Extents** Zooms to display the drawing extents.

## PARAMETERS

### Quick Reference

See also:


- Add Constraints to Geometry
- Work With Constraint Parameters in Blocks


Opens the Parameters Manager palette that includes all dimensional constraint parameters, reference parameters, and user variables in the current drawing.


### Access Methods



#### Button

 **Ribbon:** Parametric tab ► Manage panel ► Parameters Manager

 **Menu:** Parametric ► Parameters Manager

 **Toolbar:** Parametric

### Summary

The Parameters Manager palette displays relevant parametric information based on whether you access it from within the drawing or from within the Block Editor.

■ [Parameters Manager - Drawing Editor](#) on page 918

■ [Parameters Manager - Block Editor](#) on page 921

## Parameters Manager - Drawing Editor

### Quick Reference

#### See also:

■ [Work With Constraint Parameters in Blocks](#)

Controls the associative parameters used in the drawing.

### Summary

The Parameters Manager palette displays all associative variables (dimensional constraint variables and user-defined variables) available in the drawing.

You can edit, rename, and delete associative variables.



The Parameters Manager palette includes a grid control with three columns, by default. You can also add two columns (Description, Type) using the shortcut menu.

### List of Options

The following options are displayed.

Column	Description
Name	Displays the variable name
Expression	Displays the real number or the equation for the expression, for example, $d1+d2$
Value	Displays the value of the expression
Additional Columns	
Type	Displays the dimensional constraint type or variable value
Description	Displays the comments or notes associated with the user variable

### Edit a Dimensional Variable

You can edit the dimensional variable name and expression. To do so:

- Double-click the name or expression box.
- Select the row and press F2. Press the Tab key to edit the contiguous columns.  
You cannot edit the Value column.

When you rename a dimensional variable, all instances of the variable are updated in the drawing and in the Parameters Manager palette.

**TIP** Use the shortcut menu for the Name and Expression cells when copying and pasting values. The Expressions shortcut menu contains commonly used mathematical functions.

Invalid expressions are displayed in red text.

### **Delete a Dimensional Variable**

When you delete a dimension variable:

- The associated dimensional constraint in the drawing is removed.
- The variables retain the value calculated by the expression as a constant. This action is for variables referenced by other variables, and ensures that the geometry does not change.

### **Filtering the Display of Variables**

You can filter the display of variables to do the following:

- Display All Parameters- Displays all associative variables. No filter is applied.
- Display Parameters Used in Expressions - Displays all variables that contain expressions to evaluate a value, and variables contained in expressions.

### **Sorting a Column**

Click a column heading to sort the variables in the table in ascending or descending order of the column property. When you sort by variable type, the name column is second in order to be sorted. The sort order is persistent.

The sort order is not affected when you change a name or expression.

### **Defining a Parameter Group**

The Parameters Manager allows you to define parameter groups in the drawing editor. A *parameter group* is a collection of named parameters. It contains a subset of all parameters defined for the current space, but the group can also be empty.

Click the Filter icon to create a group, which displays a filter tree on the left vertical panel of the palette where you can show, hide, or expand the group filters. Drag and drop the parameters from the grid control into a parameter group.

The Invert Filter check box displays all the parameters which do not belong in the group.

You can filter the display of variables to do the following:

- All - Displays all associative variables. No filter is applied.
- All Used in Expressions - Displays all variables that contain expressions to evaluate a value, and variables contained in expressions.
- Custom group filter - Displays all parameters added in the defined parameter group.

### Searching a Parameter

An edit box allows you to search for parameters by name.

### Highlighting Dimensional Constraints

When you select a dimensional constraint in the Parameters Manager palette, the associated object is highlighted in the drawing.

If the parameter is a dynamic constraint that is hidden, the dynamic constraint will be temporarily displayed and highlighted when you select the cell.

---

**NOTE** The object is not selected when highlighted; the highlighting is to visually identify the dimensionally constrained object.

---

## Parameters Manager - Block Editor

### Quick Reference

See also:

- Work With Constraint Parameters in Blocks

Controls the associative parameters used in the Block Editor.

### Summary

In the Block Editor, the Parameters Manager displays a consolidated view of all parameters and user-defined properties for the block definition.

The Parameters Manager palette includes a grid control with three columns (Name, Expression, Value) by default. You can add one or more additional columns (Type, Order, Show, or Description) using the shortcut menu.

Column	Description
Name	Displays the variable name
Expression	Displays the real number or equation, for example, $d1+d2$
Value	Displays the value of the expression
Additional Columns	

Column	Description
Type	Displays the dimensional constraint type or variable value
Order	Controls the order properties are displayed in the Properties palette
Show	Displays the parameter as a property of the block reference
Description	Displays the comments or notes associated with the user variable

The Type column affects the formatting of the parameter in the Parameters Manager and Properties palette. It also affects the value of the parameter when the block is scaled.

Type	Units	Precision	Block Scale Factor
Distance	LUNITS	LUPREC	Scaled by scale factor
Angle	AUNITS	AUPREC	No scale
Real	Decimal	LUPREC	No scale
Area	Decimal	LUPREC	Multiplied by square of scale
Volume	Decimal	LUPREC	Multiplied by cube of scale
String	Not applicable	Not applicable	Not applicable

The Type cell for User parameters displays a drop-down list of the value types. The parameter can be sorted and can be set to Show or Hide in the Properties palette. The value of the parameter resets to 1 when you change the type from String to another type.

Parameters can be renamed; equations and values can be entered or modified. Changes to a parameter name are immediately updated throughout the table and in the Block Editor.

The parameters for the block definition are organized in the following categories:

- Action Parameters
- Dimensional Constraint Parameters
- Reference Parameters
- User Parameters
- Attributes

You can only add user parameters to the table. When you delete any item from the table, the item is automatically deleted from the block definition.

### **Edit a Dimensional Variable**

You can edit the dimensional variable name and expression. To do so:

- Double-click the name or expression box.
- Select the row and press F2. Press the Tab key to edit the contiguous columns.  
You cannot edit the Value column.

When you rename a dimensional variable, all instances of the variable are updated in the drawing and in the Parameters Manager palette.

Invalid expressions are displayed in red text.

### **Delete a Dimensional Variable**

The following are the current behavioral changes in the drawing when you delete a dimension variable:

- The associated dimensional constraint in the drawing is removed.
- The variables retain the value calculated by the expression as a constant. This action is for variables referenced by other variables, and ensures that the geometry does not change.

### **Filtering the Display of Variables**

You can filter the display of variables to do the following:

- Display All Parameters — Displays all associative variables. No filter is applied.

- **Display Parameters Used in Expressions** - Displays all variables that contain expressions to evaluate a value, and variables contained in expressions.

### **Sorting a Column**

The sort order is not affected when you change a cell value.

### **Searching a Parameter**

An edit box in the upper-right corner of the Parameters Manager allows you to search for parameters by name.

## **-PARAMETERS**

### **Quick Reference**

**See also:**

- **Work With Constraint Parameters in Blocks**

Opens the Parameters Manager palette that includes all dimensional constraint parameters, reference parameters, and user variables in the current drawing.

### **List of Prompts**

The following prompts are displayed.

Enter a parameter option [[Edit](#) on page 924/[Rename](#) on page 924/[Delete](#) on page 924/[?](#) on page 924]:

---

**NOTE** You cannot use the -PARAMETERS command in the [Block Editor](#) on page 127.

---

**Edit** Edits the expression of the specified user variable.

**Rename** Renames the user variable.

**Delete** Removes the user variable from the list.

**? — List Parameters** Lists available user variables in the drawing.

## PARAMETERSCLOSE

### Quick Reference

See also:

- Work With Constraint Parameters in Blocks

Closes the Parameters Manager palette.

## PASTEASHYPERLINK

### Quick Reference

See also:


- Add Hyperlinks to a Drawing

Creates a hyperlink to a file, and associates it with a selected object.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Clipboard panel ► Paste as Hyperlink

 **Menu:** Edit ► Paste as Hyperlink

### Summary

First, select a document, such as a text, spreadsheet, drawing, or image file, and copy it to the Clipboard. Then, use this command to associate a hyperlink to that document with any selected object.

# PASTEBLOCK

## Quick Reference

See also:

- Cut, Copy, and Paste with the Clipboard

Pastes objects from the Clipboard into the current drawing as a block.

## Access Methods



Button

 **Ribbon:** Home tab ► Clipboard panel ► Paste as Block

 **Menu:** Edit ► Paste as Block

**Shortcut menu:** With no command active, right-click in the drawing area and click Clipboard ► Paste as Block

## Summary

The objects copied to the Clipboard are pasted into the drawing as a block at the specified insertion point. The block is given a random name.

# PASTECLIP

## Quick Reference

See also:

- Cut, Copy, and Paste with the Clipboard


Pastes objects from the Clipboard into the current drawing.



## Access Methods




### Button

 **Ribbon:** Home tab ► Clipboard panel ► Paste

 **Menu:** Edit ► Paste

 **Toolbar:** Standard

**Shortcut menu:** With no command active, right-click in the drawing area, and click Clipboard ► Paste

 **Command entry:** Ctrl+V

### Summary

If the Clipboard contains ASCII text, the text is inserted as a multiline text (mtext) object using the MTEXT defaults. A spreadsheet is inserted as a table object.

All other objects, except AutoCAD LT objects, are inserted as embedded or linked (OLE) objects. You can edit these OLE objects by double-clicking them in the drawing to open the application in which they were created.

When you copy objects to the Clipboard, information is stored in all available formats. When you paste the Clipboard contents into a drawing, the format that retains the most information is used. You can also use Copy and Paste to transfer objects between drawings.

---

**NOTE** If the cursor is in the drawing area, PASTECLIP behaves as described. If the cursor is at the Command prompt, text from the Clipboard is pasted at the current prompt.

---

## PASTEORIG

### Quick Reference

See also:


- Cut, Copy, and Paste with the Clipboard


Pastes objects from the Clipboard into the current drawing using the original coordinates.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Clipboard panel ► Paste to Original Coordinates

 **Menu:** Edit ► Paste to Original Coordinates

**Shortcut menu:** With no command active, right-click in the drawing area, and click Clipboard ► Paste to Original Coordinates

### Summary

The objects copied to the Clipboard are pasted into the current drawing at the same coordinates used in the original drawing. This command functions only when the Clipboard contains AutoCAD LT data from a drawing other than the current drawing.

## PASTESPEC

### Quick Reference

#### See also:

- Cut, Copy, and Paste with the Clipboard

Pastes objects from the Clipboard into the current drawing and controls the format of the data.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Clipboard panel ► Paste Special

 **Menu:** Edit ► Paste Special

## Summary

The [Paste Special dialog box](#) is displayed.

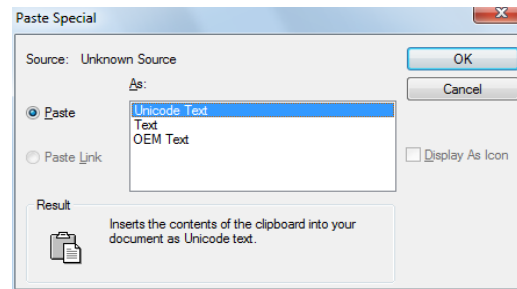
# Paste Special Dialog Box

## Quick Reference

See also:

- [Cut, Copy, and Paste with the Clipboard](#)

Sets file formats and linking options for data pasted from the Clipboard.



## Summary

You can either embed file data or link file data. Linked data is updated when you open the drawing.

When you copy objects to the Clipboard, information is stored in all available formats. When you paste the Clipboard contents into a drawing, you can choose from the available formats.

## List of Options

The following options are displayed.

**Source** Displays the name of the document that contains the information you copied. It may also show the specific section of the document you copied.

**Paste** Pastes the contents of the Clipboard into the current drawing as an embedded object.

**Paste Link** Pastes the contents of the Clipboard into the current drawing. If the source application supports an OLE or data link, a link is created to the original file.

**As Displays** applicable formats in which you can paste the contents of the Clipboard into the current drawing.

**Display as Icon** Inserts a picture of the application icon instead of the data. To view or edit the data, double-click the icon.

## PCINWIZARD


### Quick Reference

See also:

- Import PCP or PC2 Settings into a Layout

Displays a wizard to import PCP and PC2 configuration file plot settings into the Model or current named (paper space) layout.

### Access Methods

 **Menu:** Tools ► Wizards ► Import Plot Settings

### Summary

PCINWIZARD displays the Import PCP or PC2 Plot Settings wizard. Information that can be imported from PCP or PC2 files includes plot area, rotation, plot offset, plot optimization, plot to file, paper size, plot scale, and pen mapping.

The wizard prompts you for the name of the PCP or PC2 configuration file from which you want to import settings. You can view and modify the plot settings prior to importing them. The imported settings can be applied to the Model or named (paper space) layout whichever is current.

# PDFADJUST

## Quick Reference

### See also:

- Adjust Underlay Contrast, Fade, Monochrome, and Colors for the Background

Adjust the fade, contrast, and monochrome settings of a PDF underlay.

## Access Methods



### Button

 **Ribbon:** PDF Underlay contextual tab ► Adjust panel

## Summary

If you select a single PDF underlay, the default values for Fade, Contrast, and Monochrome are the current property settings of the selected underlay. If you select multiple underlays, the default values for Fade, Contrast, and Monochrome remain as they were set the last time the command was used.

You can also use the [ADJUST](#) on page 20 command to change an underlay's fade, contrast, and monochrome settings.

To adjust the colors for the background, open the underlay's Properties Palette.

## List of Prompts

The following prompts are displayed.

**Fade** Controls the fade effect of the underlay. Values range from 0 through 100. The greater the value, the lighter the linework in the underlay appears. Works indirectly with the contrast effect; a higher contrast value blends the underlay in the background when fade is set to a higher value.

**Contrast** Controls the contrast, and indirectly the fading effect, of the underlay. Values range from 0 through 100. The greater the value, the more each pixel is forced to its primary or secondary color. Default=75.

**Monochrome** Controls the color saturation of all linework while maintaining the luminance. When turned on, the linework appears in varying shades of gray starting at black if the background color luminance is 50 percent or more. If the background color luminance is less than 50 percent, then the colors are inverted, with the darkest linework displaying in white, and the lightest linework displaying in black.

## PDFATTACH

### Quick Reference

See also:


- Attach Files as Underlays

Insert a PDF file as an underlay into the current drawing.

### Access Methods



Button

 **Ribbon:** Insert tab ► Reference panel ► Attach

 **Menu:** Insert ► PDF Underlay

 **Toolbar:** Insert

### Summary

When you attach a PDF file as an underlay, you link that referenced file to the current drawing. Any changes to the referenced file are displayed in the current drawing when it is opened or reloaded.

The Select Reference File dialog box (a [standard file selection dialog box](#)) is displayed. Once you select a PDF file, the [Attach PDF Underlay dialog box](#) on page 934 is displayed. After the file is attached, you can adjust and clip the underlay through the [PDF Underlay Ribbon Contextual tab](#) on page 936.

# -PDFATTACH

## Quick Reference

### See also:

- Attach Files as Underlays

Attach a PDF underlay from the command line.

### Summary

When you attach a PDF file as an underlay, you link that referenced file to the current drawing. Any changes to the referenced file are displayed in the current drawing when it is opened or reloaded.

---

**TIP** You can drag a PDF file onto the drawing window to start the PDFATTACH command.

---

### List of Prompts

The following prompts are displayed.

**Path to PDF File to Attach** Enters the full path name to the PDF underlay file.

Entering a tilde (~) displays the Select PDF File dialog box (a [standard file selection dialog box](#)).

To avoid errors when entering a file name, it is recommended that you specify both the PDF file and path as follows:

*path name\filename.dgn*

or

*"path name\filename.dgn"*

If you enter a valid PDF file name without a file extension, the program adds the extension and searches for the file.

**Enter Page Number** Enter a page number. For a list of pages, enter ?.

**Enter Page(s) to list <\*>** Lists the pages available in the PDF file in a separate text window.

**Insertion Point** Specifies the insertion point for the selected PDF file.

**Scale Factor** Specifies the scale factor of the selected PDF underlay and the scale factor units.

If **INSUNITS** is set to “unitless” or if the underlay does not contain resolution information, the scale factor becomes the underlay width in AutoCAD units. If **INSUNITS** has a value such as millimeters, centimeters, inches, or feet, and the underlay has resolution information, the scale factor is applied after the true width of the underlay in AutoCAD units is determined.

**Rotation** Specifies the rotation angle of the selected PDF underlay.

## Attach PDF Underlay Dialog Box

### Quick Reference

See also:

- Attach Files as Underlays

Names, locates, and defines the insertion point, scale, and rotation of attached PDF underlays.

### List of Options

The following options are displayed.

#### **Name**

Identifies the PDF file you have selected to attach.

#### **Browse**

Opens the Select Reference File dialog (a [standard file selection dialog box](#) on page 826).

#### **Select one of more pages from the PDF file**

Displays all of the pages that are found in the PDF file. If the PDF file only contains a single page, that page is listed. You can select multiple pages by holding Shift or Ctrl and selecting the pages to attach.

#### **Path Type**

Select the full (absolute) path, the relative path to the PDF file, or No Path, and the name of the PDF file. For the No Path option, the PDF file must be located in the same folder as the current drawing file.



**Insertion Point**

Specifies the insertion point for the selected PDF file.

**Specify On-Screen**

Directs input at the Command prompt or the pointing device.

X

Sets the X coordinate value.

Y

Sets the Y coordinate value.

Z

Sets the Z coordinate value.

**Scale**

Specifies the scale factor of the selected PDF underlay.

If **INSUNITS** is set to “unitless” or if the underlay does not contain resolution information, the scale factor becomes the underlay width in AutoCAD units. If **INSUNITS** has a value such as millimeters, centimeters, inches, or feet, and the underlay has resolution information, the scale factor is applied after the true width of the underlay in AutoCAD units is determined.

**Specify On-screen**

Inputs information at the Command prompt or with the pointing device. If Specify On-Screen is cleared, enter a value for the scale factor.

**Scale Factor Field**

Enter a value for the scale factor.

**Rotation**

Specifies the rotation angle of the selected DWF underlay.

**Specify on-screen**

If Specify On-Screen is selected, you may wait until you exit the dialog box to rotate the object with your pointing device or enter a rotation angle value at the Command prompt.

**Angle**

If Specify On-Screen is cleared, enter the rotation angle value in the dialog box. The default rotation angle is 0.

### Show Details

**Found In** Displays the path to the PDF file.

**Saved Path** Displays the path that is saved with the drawing when the PDF file is attached. The path is dependent upon the Path Type setting.

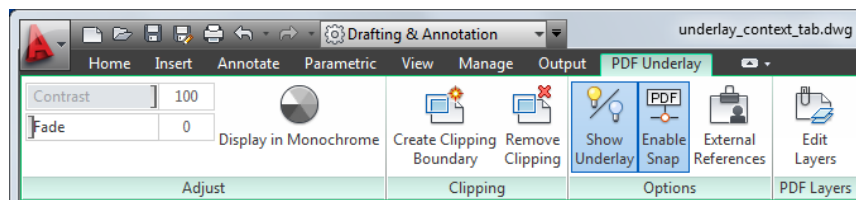
## PDF Underlay Ribbon Contextual tab

### Quick Reference

See also:

- Work with Underlays

Displays options for editing PDF underlays.



### List of Options

The following options are displayed.

#### Summary

When you select a PDF underlay, the PDF Contextual tab is displayed on the ribbon.

#### Adjust Panel

**Contrast** Controls the contrast and the fading effect of the underlay.

**Fade** Controls the appearance of the linework. The greater the value, the lighter the linework in the underlay is displayed.

**Display in Monochrome** Displays the underlay in black and white.

#### Clipping Panel

**Create Clipping Boundary** Deletes the old clipping boundary (if one exists) and create a new one.

**Remove Clipping** Deletes the clipping boundary.

### Options Panel

**Show Underlay** Hides or displays the underlay.

**Enable Snap** Determines whether object snapping is active for geometry in the underlay.

**External References** ([EXTERNALREFERENCES](#) on page 504) Opens the External References palette.

### PDF Layers Panel

**Edit Layers** ([ULAYERS](#) on page 1281) Controls the display of layers in a DWF, DWFX, PDF, or DGN underlay.

## PDFCLIP

### Quick Reference

See also:

- Clip Underlays

Crops the display of a selected PDF underlay to a specified boundary.

### Access Methods



Button

**Ribbon:** PDF Underlay contextual tab ► Clipping panel ► Create Clipping Boundary

**Shortcut menu:** Select a PDF underlay to clip, right-click and click PDF Clip

### Summary

The clipping boundary determines the portion of an image outside the boundary that is hidden. The visibility of the clipping boundary is controlled by the FRAME system variable.

The boundary you specify must be in a plane parallel to the PDF underlay.

---

**TIP** Use the generic [CLIP](#) on page 211 command to clip images, external references, viewports, and underlays.

---

### List of Prompts

The following prompts are displayed.

#### **On**

Turns on clipping and displays the PDF underlay clipped to the previously defined boundary.

#### **Off**

Turns off clipping and displays the entire PDF underlay and frame.

If you re-clip the PDF underlay while clipping is turned off, clipping is automatically turned back on. You are prompted to delete the old boundary even when clipping is turned off and the clipping boundary is not visible.

#### **Delete**

Removes a predefined clipping boundary and displays the full original underlay.

#### **New Boundary**

Defines a rectangular or polygonal clipping boundary, or generates a polygonal clipping boundary from a polyline.

**Select Polyline** Defines the boundary with the selected polyline. The polyline can be open but must consist of straight line segments and cannot intersect itself.

**Polygonal** Defines a polygonal clipping boundary with three or more points that you specify for the vertices of a polygon.

**Rectangular** Defines a rectangular boundary with the points that you specify for opposite corners.

**Invert Clip** Inverts the mode of the clipping boundary: objects are clipped either outside the boundary or inside the boundary.

---

**NOTE** You can only create a new clipping boundary for a selected PDF underlay when the old boundary is deleted.

---

# PDFLAYERS

## Quick Reference

### See also:

- Control the Display of Layers in an Underlay

Controls the display of layers in a PDF underlay.

### Access Methods



#### Button

 **Ribbon:** Insert tab ► Reference panel ► Underlay Layers

**Shortcut menu:** Select a PDF underlay. Right-click in the drawing area and click PDF Layers.

### Summary

When you select a PDF underlay, the [PDF Underlay ribbon contextual tab](#) on page 936 displays. From the contextual tab, you can click **Edit Layers** or enter PDFLAYERS. The [Underlay Layers dialog box](#) on page 1282 displays.

The [ULAYERS](#) on page 1281 command manages the layers of all underlays in the current document regardless of type: DWF, DWFX, PDF, and DGN.

# PEDIT

## Quick Reference

### See also:

- Modify Polylines

Edits polylines.

## Access Methods



### Button

**Ribbon:** Home tab ► Modify panel ► Edit Polyline

**Menu:** Modify ► Object ► Polyline

**Toolbar:** Modify II

**Shortcut menu:** Select a polyline to edit. Right-click in the drawing area and click Polyline Edit.

### Summary

Common uses for PEDIT include joining 2D polylines, converting lines and arcs into 2D polylines, and converting polylines into curves that approximate B-splines (spline-fit polylines).

### List of Prompts

The following prompts are displayed.

Select polyline or [MULTIPLE]: *Use an object selection method or enter m*

The remaining prompts depend on whether you have selected a [2D polyline](#) or a [3D polyline](#).

If the selected object is a line, arc, or a spline, the following prompt is displayed:

Object selected is not a polyline.

Do you want it to turn into one? <Y>: *Enter y or n, or press Enter*

If you enter **y**, the object is converted into a single-segment 2D polyline that you can edit. You can use this operation to join lines and arcs into a polyline.

Before the selected spline is converted to a polyline, the following prompt is displayed:

Specify a precision <10>: *Enter a new precision value or press Enter*

The precision value determines how accurately the resulting polyline is to fit to the source spline. Valid value is an integer between 0 and 99.

---

**NOTE** A high precision value may cause performance problems.

---

The [PLINECONVERTMODE](#) on page 1613 system variable determines whether the polylines are created with linear or arc segments. When the [PEDITACCEPT](#) on page 1607 system variable is set to 1, this prompt is suppressed, and the selected object is automatically converted to a polyline.

The conversion in both PEDIT and SPLINEDIT will obey the [DELOBJ](#) on page 1433 system variable.

## Multiple Selection (PEDIT)

### Quick Reference

Enables selection for more than one object.

If the selection set includes lines, arcs, or splines, the following prompt is displayed:

### List of Prompts

The following prompts are displayed.

Convert Lines, Arcs and Splines to polylines [Yes/No]? <Y>: *Enter y or n or press Enter*

Specify a precision for spline conversion <10>: *Enter a new precision value or press Enter*

The entered precision value affects all splines in the selection set. The precision value is an integer between 0 and 99.

## 2D Polyline Selection (PEDIT)

### Quick Reference

If you select a 2D polyline, the following prompt is displayed:

### List of Prompts

The following prompts are displayed.

Enter an option [Close/Join/Width/Edit vertex/Fit/Spline/Decurve/Ltype gen/Reverse/Undo]: *Enter an option or press Enter to end the command*

If the polyline you select is a closed polyline, Open replaces the Close option in the prompt. You can edit a 2D polyline if its normal is parallel to and in the same direction as the Z axis of the current UCS.

### Close

Creates the closing segment of the polyline, connecting the last segment with the first. The polyline is considered open unless you close it using the Close option.



### Open

Removes the closing segment of the polyline. The polyline is considered closed unless you open it using the Open option.

### Join

Adds lines, arcs, or polylines to the end of an open polyline and removes the curve fitting from a curve-fit polyline. For objects to join the polyline, their endpoints must touch unless you use the Multiple option at the first PEDIT prompt. In this case, you can join polylines that do not touch if the fuzz distance is set to a value large enough to include the endpoints.

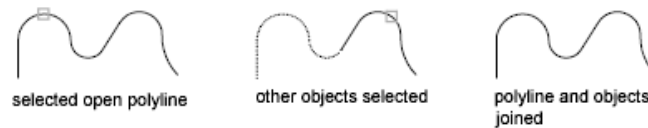
### Jointype

Sets the method of joining selected polylines.

**Extend** Joins the selected polylines by extending or trimming the segments to the nearest endpoints.

**Add** Joins the selected polylines by adding a straight segment between the nearest endpoints.

**Both** Joins the selected polylines by extending or trimming if possible. Otherwise joins the selected polylines by adding a straight segment between the nearest endpoints.



### Width

Specifies a new uniform width for the entire polyline.

You can use the Width option of the Edit Vertex option to change the starting and ending widths of a segment.





### **Edit Vertex**

Marks the first vertex of the polyline by drawing an X on the screen. If you have specified a tangent direction for this vertex, an arrow is also drawn in that direction.



### **Next**

Moves the X marker to the next vertex. The marker does not wrap around from the end to the start of the polyline even if the polyline is closed.

### **Previous**

Moves the X marker to the previous vertex. The marker does not wrap around from the start to the end of the polyline even if the polyline is closed.

### **Break**

Saves the location of the marked vertex while you move the X marker to any other vertex.

If one of the specified vertices is at an end of the polyline, the result is one truncated polyline. If both specified vertices are at endpoints of the polyline, or if just one vertex is specified and it is at an endpoint, you cannot use Break.

■ [Next](#) on page 943

■ [Previous](#) on page 943

**Go** Deletes any segments and vertices between the two vertices you specify and returns to Edit Vertex mode.



**Exit** Exits Break and returns to Edit Vertex mode.

### Insert

Adds a new vertex to the polyline after the marked vertex.



### Move

Moves the marked vertex.



### Regen

Regenerates the polyline.



### Straighten

Saves the location of the marked vertex while you move the X marker to any other vertex.

If you want to remove an arc segment that connects two straight segments of a polyline and then extend the straight segments until they intersect, use the FILLET command with a fillet radius of 0.



**Next** Moves the X marker to the next vertex.

**Previous** Moves the X marker to the previous vertex.

**Go** Deletes any segments and vertices between the two vertices you select, replaces them with single straight line segments, and returns to Edit Vertex mode. If you specify only one vertex by entering **go** without moving the X marker, the segment following that vertex is straightened if it is an arc.

**Exit** Exits Straighten and returns to Edit Vertex mode.

### **Tangent**

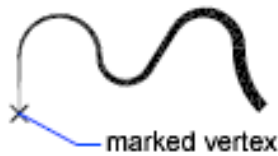


Attaches a tangent direction to the marked vertex for use later in curve fitting.

### **Width**

Changes the starting and ending widths for the segment that immediately follows the marked vertex.

You must regenerate the polyline to display the new width.



### **Exit**

Exits Edit Vertex mode.

### **Fit**

Creates an arc-fit polyline, a smooth curve consisting of arcs joining each pair of vertices. The curve passes through all vertices of the polyline and uses any tangent direction you specify.



## Spline

Uses the vertices of the selected polyline as the control points, or frame, of a curve approximating a B-spline. This curve, called a spline-fit polyline, passes through the first and last control points unless the original polyline was closed. The curve is pulled toward the other points but does not necessarily pass through them. The more control points you specify in a particular part of the frame, the more pull they exert on the curve. Quadratic and cubic spline-fit polylines can be generated.



Spline-fit polylines are very different from the curves produced by the Fit option. Fit constructs pairs of arcs that pass through every control point. Both of these curves are different from true B-splines produced with the SPLINE command.

If the original polyline included arc segments, they are straightened when the spline's frame is formed. If the frame has width, the resulting spline tapers smoothly from the width of the first vertex to the width of the last vertex. All intermediate width information is ignored. Once spline-fit, the frame, if displayed, is shown with zero width and CONTINUOUS linetype. Tangent specifications on control point vertices have no effect on spline-fitting.

When a spline-fit curve is fit to a polyline, the spline-fit curve's frame is stored so that it can be recalled by a subsequent decurving. You can turn a spline-fit curve back into its frame polyline by using the PEDIT Decurve option. This option works on fit curves in the same manner as it does on splines.

Most editing commands act the same when applied to spline-fit polylines or fit curves.

- MOVE, ERASE, COPY, MIRROR, ROTATE, and SCALE operate on both the spline curve and its frame, whether the frame is visible or not.
- EXTEND changes the frame by adding a new vertex where the initial or final line of the frame intersects the boundary geometry.
- BREAK and TRIM generate a polyline with only the fit spline, which is consistent with fit curves, where the curve fitting is permanent.
- EXPLODE deletes the frame and generates lines and arcs to approximate the spline-fit polyline.
- OFFSET generates a polyline with only the fit spline, which is consistent with its behavior with fit curves.

- DIVIDE, MEASURE, and the Object option of AREA and HATCH see only the fit spline, not the frame.
- STRETCH refits the spline to the stretched frame after a spline is stretched.

The Join option of PEDIT decurves the spline and discards the spline information of the original and any added polylines. Once the Join operation is complete, you can fit a new spline to the resulting polyline.

The Edit Vertex options of PEDIT have the following effect:

- The Next and Previous options move the X marker only to points on the frame of the spline, whether visible or not.
- The Break option discards the spline.
- The Insert, Move, Straighten, and Width options automatically refit the spline.
- The Tangent option has no effect on splines.

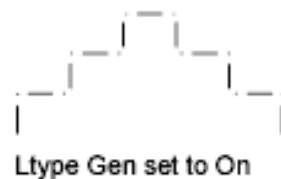
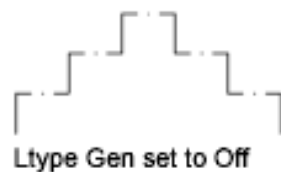
Object snap uses only the spline-fit curve itself, not the frame. If you want to snap to the frame control points, use PEDIT to recall the polyline frame first.

### **Decurve**

Removes extra vertices inserted by a fit or spline curve and straightens all segments of the polyline. Retains tangent information assigned to the polyline vertices for use in subsequent fit curve requests. If you edit a spline-fit polyline with a command such as BREAK or TRIM, you cannot use the Decurve option.

### **Ltype Gen**

Generates the linetype in a continuous pattern through the vertices of the polyline. When turned off, this option generates the linetype starting and ending with a dash at each vertex. Ltype Gen does not apply to polylines with tapered segments.



### **Reverse**

Reverses the order of vertices of the polyline. Use this option to reverse the direction of objects that use linetypes with included text. For example,

depending on the direction in which a polyline was created, the text in the linetype might be displayed upside down.

**Undo**

Reverses operations as far back as the beginning of the PEDIT session.

## 3D Polyline Selection (PEDIT)

**Quick Reference**

If you select a 3D polyline, the following prompt is displayed:

**List of Prompts**

The following prompts are displayed.

Enter an option [Close/Join/Edit vertex/Spline curve/Decurve/Reverse/Undo]:  
*Enter an option or press Enter*

If the polyline you select is closed, Open replaces the Close option in the prompt.

**Close**

Creates the closing segment of the polyline, connecting the last segment with the first. The polyline is considered open unless you close it with Close.

**Open**

Removes the closing segment of the polyline. The polyline is considered closed unless you open it with Open.

**Join**

Joins an open curve to the 3D polyline. The curve can be on a different plane, but must be contiguous with the 3D polyline.

**Edit Vertex**

Performs various editing tasks on one vertex of the polyline and segments that follow it.

**Next**

Moves the X marker to the next vertex. The marker does not wrap around from the end to the start of the polyline, even if the polyline is closed.

**Previous**

Moves the X marker to the previous vertex. The marker does not wrap around from the start to the end of the polyline, even if the polyline is closed.

**Break**

Saves the location of the marked vertex while you move the X marker to any other vertex.

■ [Previous](#) on page 948

■ [Previous](#) on page 943

**Go** Deletes any segments and vertices between the two vertices you specify and returns to Edit Vertex mode.

**Exit** Exits Break and returns to Edit Vertex mode.

If one of the specified vertices is at an end of the polyline, the polyline is truncated. If both specified vertices are at endpoints of the polyline, or if just one vertex is specified and it is at an endpoint, you cannot use Break mode.

**Insert**

Adds a new vertex to the polyline after the marked vertex.

**Move**

Moves the marked vertex.

**Regen**

Regenerates the polyline.

**Straighten**

Saves the location of the marked vertex while you move the X marker to any other vertex.

**Next** Moves the X marker to the next vertex.

**Previous** Moves the X marker to the previous vertex.

**Go** Deletes any segments and vertices between the two vertices you select, replaces them with single straight line segments, and returns to Edit Vertex mode. If you specify only one vertex by entering **go** without moving the X marker, the segment following that vertex is made straight if it is an arc.

**Exit** Exits Straighten and returns to Edit Vertex mode.

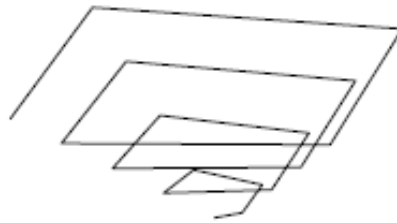
To remove an arc segment that connects two straight segments of a polyline and then to extend the straight segments until they intersect, use the **FILLET** command with a fillet radius of 0.

**Exit**

Exits Edit Vertex mode.

### **Spline Curve**

Fits a 3D B-spline curve to its control points. The SPLFRAME system variable controls the accuracy and display of the control points for the 3D B-spline, whose curves can be approximated only by line segments. Negative values for spline segments are ignored.



original 3D polyline



3D polyline after curve-fitting

### **Decurve**

Removes extra vertices inserted by a fit or spline curve and straightens all segments of the polyline. Retains tangent information assigned to the polyline vertices for use in subsequent fit curve requests. If you edit a spline-fit polyline with a command such as BREAK or TRIM, you cannot use the Decurve option.

### **Reverse**

Reverses the order of vertices of the polyline. Use this option to reverse the direction of objects that use linetypes with included text. For example, depending on the direction in which a polyline was created, the text in the linetype might be displayed upside down.

### **Undo**

Reverses operations as far back as the beginning of the PEDIT session.

## **PKFSTGROUP**

### **Quick Reference**

See also:

- Group Objects

Opens the legacy Group Manager.



### Access Methods

 **Ribbon:** Home tab ► Groups panel ► Named Groups

 **Menu:** Tools ► Group Manager

 **Toolbar:** Group

### Summary

Groups provide an easy way to combine drawing elements that you need to manipulate as a unit.

### List of Options

The following options are displayed.

**Group** Displays the names of existing groups. Group names can be up to 31 characters long and can include letters, numbers, and the special characters dollar sign (\$), hyphen (-), and underscore (\_), but not spaces. The name is converted to uppercase characters.

When Include Unnamed Groups is selected, this list includes default names assigned to unnamed groups (\*A1, \*A2, and so on).

**Selectable** Specifies whether a group is selectable. When a group is selectable, selecting one object in the group selects the whole group. Objects on locked or frozen layers are not selected.

When a group is not selectable, the light bulb icon is unavailable and selecting a single group member selects only that object. When the PICKSTYLE system variable is set to 0, no groups are selectable.

**Description** Describes the selected group. You can enter descriptions at any time. Select the group name, and then click in the Description column.

**Include Unnamed Groups** Specifies whether unnamed groups are listed. When this option is cleared, only named groups are displayed.

**Create Group** Creates a new group composed of objects you have selected. When you click Create Group, the cursor moves to the Group column, and you can enter a group name.

**Ungroup** Removes the selected group from the list in the Group Manager and removes the association of objects in the group.

**Add to Group** Adds selected objects to the group selected under Group.

**Remove from Group** Removes selected objects from the group selected under Group. To use this option, selectability must be off.

**Details** Displays the Group Manager—Details dialog box. This dialog box lists any group names you have created under Group. Select a name to display the number of objects in the group and the group description.

**Select Group** Selects all objects in the specified group. To select objects in a group, select the group name under Group and click Select Group.

---

**NOTE** When the PICKADD system variable is set to 1, you can add and remove objects from the current group selection set. When PICKADD is set to 0, the current selection set is replaced with a new selection set.

---

**Deselect Group** Removes a specified group from a selection set. If multiple groups are selected, you can remove a specific group from the selection set by selecting the group name under Group.

## PLAN

### Quick Reference

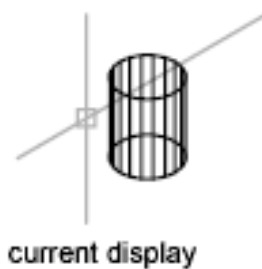
See also:

- Change to a View of the XY Plane

Displays an orthographic view of the XY plane of a specified user coordinate system.

### Access Methods

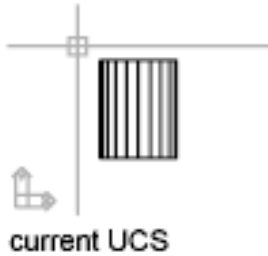
 **Menu:** View ► 3D Views ► Plan View ► World UCS



### List of Options

The following options are displayed.

**Current UCS** Regenerates a plan view of the display so that the drawing extents fit in the current viewport of the current UCS.

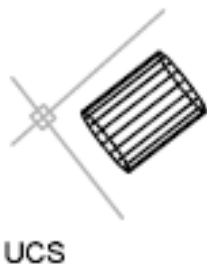


**UCS** Changes to a plan view of a previously saved UCS and regenerates the display.

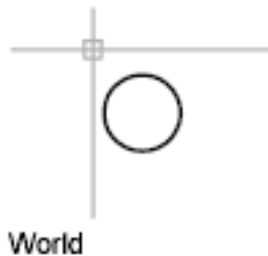
Enter name of UCS or [?]: *Enter a name or enter ? to list all UCSs in the drawing*

If you enter ? at the prompt, the following prompt is displayed:

Enter UCS name(s) to list <\*>: *Enter a name or enter \* to list all UCSs in the drawing*



**World** Regenerates a plan view of the display so that the drawing extents fit on the screen of the world coordinate system.



# PLINE

## Quick Reference

See also:

- Draw Polylines


Creates a 2D polyline, a single object that is composed of line and arc segments.

## Access Methods



Button

 **Ribbon:** Home tab ► Draw panel ► Polyline

 **Menu:** Draw ► Polyline

 **Toolbar:** Draw

## Summary

A 2D polyline is a connected sequence of segments created as a single planar object. You can create straight line segments, arc segments, or a combination of the two.



---

**NOTE** A temporary plus-shaped marker displays at the first point. This marker can be useful when you create long and complicated polylines. It is removed when you complete the polyline.

---

The PLINEGEN system variable controls the linetype pattern display around and the smoothness of the vertices of a 2D polyline. Setting PLINEGEN to 1 generates new polylines in a continuous pattern around the vertices of the completed polyline. Setting PLINEGEN to 0 starts and ends the polyline with a dash at each vertex. PLINEGEN does not apply to polylines with tapered segments.



PLINEGEN set to 0



PLINEGEN set to 1

### List of Prompts

The following prompts are displayed.

Specify start point: *Specify a point*

Current line-width is <current>

Specify [next point](#) on page 954 or [[Arc](#) on page 955/[Close](#) on page 959/[Halfwidth](#) on page 959/[Length](#) on page 960/[Undo](#) on page 960/[Width](#) on page 960]: *Specify a point or enter an option*

#### Next Point

Draws a line segment. The previous prompt is repeated.

#### Arc

Adds arc segments to the polyline.

Specify endpoint of arc or

[Angle/CEnter/Close/Direction/Halfwidth/Line/Radius/Second pt/Undo/Width]: *Specify a point (2) or enter an option*

---

**NOTE** For the Center option of the PLINE command, enter **ce**; for the Center object snap, enter **cen** or **center**.

---



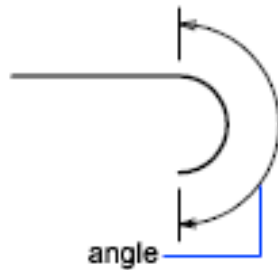
#### Endpoint of Arc

Draws an arc segment. The arc segment is tangent to the previous segment of the polyline. The previous prompt is repeated.

#### Angle

Specifies the included angle of the arc segment from the start point.

Specify included angle:



Entering a positive number creates counterclockwise arc segments. Entering a negative number creates clockwise arc segments.

Specify endpoint of arc or [Center/Radius]: *Specify a point or enter an option*

**Endpoint of Arc** Specifies the endpoint and draws the arc segment.

**Center** Specifies the center of the arc segment.

Specify center point of arc:

**Radius** Specifies the radius of the arc segment.

Specify radius of arc: *Specify a distance*

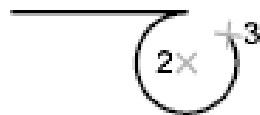
Specify direction of chord for arc <current>: *Specify a point or press ENTER*

**Center**

Specifies the center of the arc segment.

Specify center point of arc: *Specify a point (2)*

Specify endpoint of arc or [Angle/Length]: *Specify a point (3) or enter an option*



**Endpoint of Arc** Specifies the endpoint and draws the arc segment.

**Angle** Specifies the included angle of the arc segment from the start point.

Specify included angle:

**Length** Specifies the chord length of the arc segment. If the previous segment is an arc, the new arc segment is drawn tangent to the previous arc segment.

Specify length of chord:

**Close**

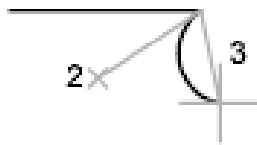
Draws an arc segment from the last point specified to the starting point, creating a closed polyline. At least two points must be specified to use this option.

**Direction**

Specifies a starting direction for the arc segment.

Specify the tangent direction from the start point of arc: *Specify a point (2)*

Specify endpoint of arc: *Specify a point (3)*

**Halfwidth**

Specifies the width from the center of a wide polyline segment to one of its edges.

Specify starting half-width *<current>*: *Enter a value or press ENTER*

Specify ending half-width *<starting width>*: *Enter a value or press ENTER*

The starting half-width becomes the default ending half-width. The ending half-width becomes the uniform half-width for all subsequent segments until you change the half-width again. The starting and ending points of wide line segments are at the center of the line.

half-width



Typically, the intersections of adjacent wide polyline segments are beveled. No beveling is performed for nontangent arc segments or very acute angles or when a dot-dash linetype is used.

### **Line**

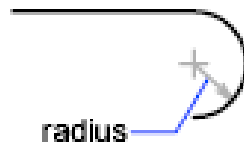
Exits the Arc option and returns to the initial PLINE command prompts.

### **Radius**

Specifies the radius of the arc segment.

Specify radius of arc: *Specify a distance*

Specify endpoint of arc or [Angle]: *Specify a point or enter a*



**Endpoint of Arc** Specifies the endpoint and draws the arc segment.

**Angle** Specifies the included angle for the arc segment.

Specify included angle:

Specify direction of chord for arc <current>: *Specify an angle or press ENTER*

### **Second Pt**

Specifies the second point and endpoint of a three-point arc.

Specify second point on arc: *Specify a point (2)*

Specify end point of arc: *Specify a point (3)*



### **Undo**

Removes the most recent arc segment added to the polyline.

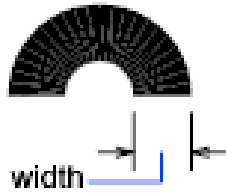
### **Width**

Specifies the width of the next arc segment.

Specify starting width <current>: *Enter a value or press ENTER*

Specify ending width <starting width>: *Enter a value or press ENTER*





The starting width becomes the default ending width. The ending width becomes the uniform width for all subsequent segments until you change the width again. The starting and ending points of wide line segments are at the center of the line.

Typically, the intersections of adjacent wide polyline segments are beveled. No beveling is performed for nontangent arc segments, very acute angles, or when a dot-dash linetype is used.

### Close

Draws a line segment from the last point specified to the starting point, creating a closed polyline. At least two points must be specified to use this option.



### Halfwidth

Specifies the width from the center of a wide polyline line segment to one of its edges.

Specify starting half-width *<current>*: Enter a value or press ENTER

Specify ending half-width *<current>*: Enter a value or press ENTER

The starting half-width becomes the default ending half-width. The ending half-width becomes the uniform half-width for all subsequent segments until you change the half-width again. The starting and ending points of wide line segments are at the center of the line.

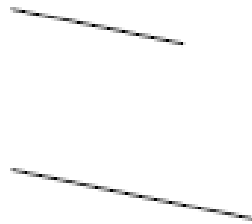


Typically, the intersections of adjacent wide polyline segments are beveled. No beveling is performed for nontangent arc segments or very acute angles or when a dot-dash linetype is used.

### **Length**

Draws a line segment of a specified length at the same angle as the previous segment. If the previous segment is an arc, the new line segment is drawn tangent to that arc segment.

Specify length of line: *Specify a distance*



### **Undo**

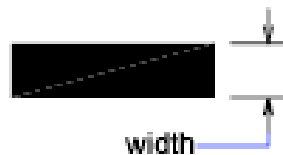
Removes the most recent line segment added to the polyline.

### **Width**

Specifies the width of the next line segment.

Specify starting width <current>: *Enter a value or press ENTER*

Specify ending width <starting width>: *Enter a value or press ENTER*



The starting width becomes the default ending width. The ending width becomes the uniform width for all subsequent segments until you change the width again. The starting and ending points of wide line segments are at the center of the line.

Typically, the intersections of adjacent wide polyline segments are beveled. No beveling is performed for nontangent arc segments or very acute angles or when a dot-dash linetype is used.

# PLOT

## Quick Reference

See also:


- Overview of Plotting

Plots a drawing to a plotter, printer, or file.


## Access Methods




**Button**

 **Ribbon:** Output tab > Plot panel > Plot

 **Menu:** Application menu  > Print > Plot

 **Menu:** File > Plot

 **Toolbar:** Standard

**Shortcut menu:** Right-click the Model tab or a layout tab and click Plot

## Summary

The [Plot dialog box](#) is displayed. Click OK to begin plotting with the current settings.

If you enter **-plot** at the Command prompt, [options are displayed](#).

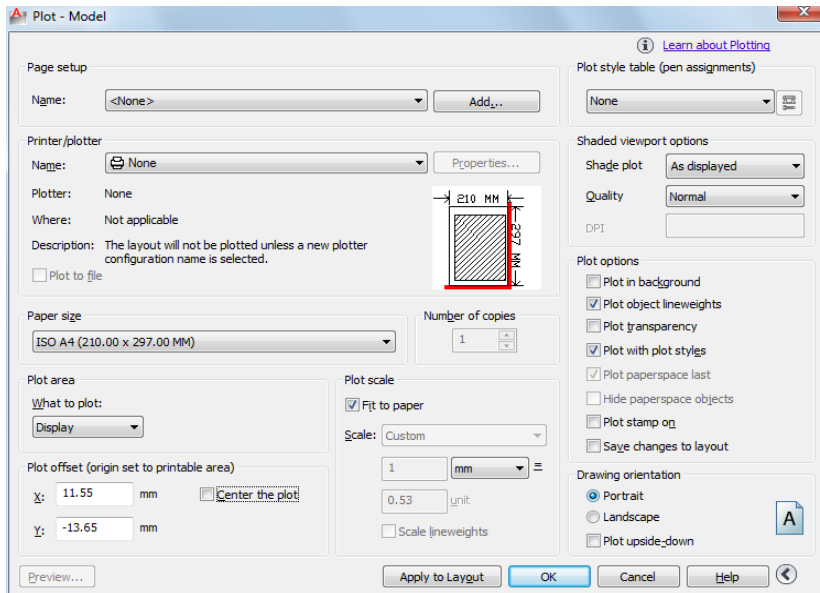
# Plot Dialog Box

## Quick Reference


See also:

- Overview of Plotting

Specifies device and media settings, and plots your drawing.



## Summary

You can display more options by clicking the More Options button. 

## List of Options

The following options are displayed.

### Page Setup

Displays a list of any named and saved page setups in the drawing. You can base the current page setup on a named page setup saved in the drawing, or you can create a new named page setup based on the current settings in the Plot dialog box by clicking Add.

### Name

Displays the name of the current page setup.

### Add

Displays the [Add Page Setup dialog box](#), in which you can save the current settings in the Plot dialog box to a named page setup. You can modify this page setup through the Page Setup Manager.

### Printer/Plotter

Specifies a configured plotting device to use when plotting layouts.

If the selected plotter doesn't support the layout's selected paper size, a warning is displayed and you can select the plotter's default paper size or a custom paper size.

### Name

Lists the available PC3 files or system printers from which you can select to plot the current layout. An icon in front of the device name identifies it as a PC3 file or a system printer.

- *PC3 file icon*: Indicates a PC3 file.



- *System printer icon*: Indicates a system printer.



### Properties

Displays the [Plotter Configuration Editor](#) (PC3 editor), in which you can view or modify the current plotter configuration, ports, device, and media settings.

If you make changes to the PC3 file using the Plotter Configuration Editor, the [Changes to a Printer Configuration File dialog box](#) is displayed.

### Plotter

Displays the plot device specified in the currently selected page setup.

### Where

Displays the physical location of the output device specified in the currently selected page setup.

### Description

Displays descriptive text about the output device specified in the currently selected page setup. You can edit this text in the [Plotter Configuration Editor](#).

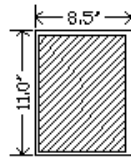
### Plot to File

Plots output to a file rather than to a plotter or printer. The default location for plot files is specified in the [Options dialog box, Plot and Publish tab](#), under Default Location for Plot-to-File Operations.

If the Plot to File option is turned on, when you click OK in the Plot dialog box, the Plot to File dialog box (a standard file navigation dialog box) is displayed.

### **Partial Preview**

Shows an accurate representation of the effective plot area relative to the paper size and printable area. The tooltip displays the paper size and printable area.



### **Paper Size**

Displays standard paper sizes that are available for the selected plotting device. If no plotter is selected, the full standard paper size list is displayed and available for selection.

If the selected plotter doesn't support the layout's selected paper size, a warning is displayed, and you can select the plotter's default paper size or a custom paper size.

A default paper size is set for the plotting device when you create a PC3 file with the Add-a-Plotter wizard. For information about this wizard, see "Set Up Plotters and Printers" in the *Driver and Peripheral Guide*. The paper size that you select in the Page Setup dialog box is saved with the layout and overrides the PC3 file settings.

The actual printable area of the page, which is determined by the selected plotting device and paper size, is indicated in the layout by a dashed line.

If you are plotting a raster image, such as a BMP or TIFF file, the size of the plot is specified in pixels, not in inches or millimeters.

### **Number of Copies**

Specifies the number of copies to plot. This option is not available when you plot to file.

### **Plot Area**

Specifies the portion of the drawing to be plotted. Under What to Plot, you can select an area of the drawing to be plotted.

**Layout/Limits** When plotting a layout, plots everything within the printable area of the specified paper size, with the origin calculated from 0,0 in the layout.

When plotting from the Model tab, plots the entire drawing area that is defined by the grid limits. If the current viewport does not display a plan view, this option has the same effect as the Extents option.

**Extents** Plots the portion of the current space of the drawing that contains objects. All geometry in the current space is plotted. The drawing may be regenerated to recalculate the extents before plotting.

**Display** Plots the view in the current viewport in the selected Model tab or the current paper space view in the layout.

**View** Plots a view that was previously saved with the VIEW command. You can select a named view from the list. If there are no saved views in the drawing, this option is unavailable.

When the View option is selected, a View list is displayed that lists the named views that are saved in the current drawing. You can select a view from this list to plot.

### **Window**

Plots any portion of the drawing that you specify. When you select Window, the Window button becomes available. Click the Window button to use the pointing device to specify the two corners of the area to be plotted, or enter coordinate values.

Specify first corner: *Specify a point*

Specify other corner: *Specify a point*

### **Plot Offset**

Specifies an offset of the plot area relative to the lower-left corner of the printable area or to the edge of the paper, depending on the setting made in the Specify Plot Offset Relative To option (Options dialog box, [Plot and Publish tab](#)). The Plot Offset area of the Plot dialog box displays the specified plot offset option in parentheses.

The printable area of a drawing sheet is defined by the selected output device and is represented by a dashed line in a layout. When you change to another output device, the printable area may change.

You can offset the geometry on the paper by entering a positive or negative value in the X and Y offset boxes. The plotter unit values are in inches or millimeters on the paper.

### **Center the Plot**

Automatically calculates the *X* and *Y* offset values to center the plot on the paper. This option is not available when Plot Area is set to Layout.

#### **X**

Specifies the plot origin in the *X* direction relative to the setting of the Plot Offset Definition option.

#### **Y**

Specifies the plot origin in the *Y* direction relative to the setting of the Plot Offset Definition option.

### **Plot Scale**

Controls the relative size of drawing units to plotted units. The default scale setting is 1:1 when plotting a layout. The default setting is Fit to Paper when plotting from the Model tab.

#### **Fit to Paper**

Scales the plot to fit within the selected paper size and displays the custom scale factor in the Scale, Inch =, and Units boxes.

#### **Scale**

Defines the exact scale for the plot. *Custom* defines a user-defined scale. You can create a custom scale by entering the number of inches (or millimeters) equal to the number of drawing units.

---

**NOTE** You can modify the list of scales with SCALELISTEDIT.

---

#### **Inch(es) =/mm =/Pixel(s) =**

Specifies the number of inches, millimeters, or pixels equal to the specified number of units.

#### **Inch/mm/pixel**

Specifies inches or mm for display of units in the Plot dialog box. The default is based on the paper size and changes each time a new paper size is selected. Pixel is available only when a raster output is selected.

#### **Units**

Specifies the number of units equal to the specified number of inches, millimeters, or pixels.

#### **Scale Lineweights**



Scales lineweights in proportion to the plot scale. Lineweights normally specify the linewidth of plotted objects and are plotted with the linewidth size regardless of the plot scale.

### **Preview**

Displays the drawing as it will appear when plotted by starting the PREVIEW command. To exit the preview and return to the Plot dialog box, press ESC, press ENTER, or right-click and then click Exit on the shortcut menu.

### **Apply to Layout**

Saves the current Plot dialog box settings to the current layout.

### **More Options**

Controls display of additional options in the Plot dialog box.



- Plot Style Table (Pen Assignments)
- Shaded Viewport Options
- Plot Options
- Drawing Orientation

### **Plot Style Table (Pen Assignments)**

Sets the plot style table, edits the plot style table, or creates a new plot style table.

#### **Name (Unlabeled)**

Displays the plot style table that is assigned to the current Model tab or layout tab and provides a list of the currently available plot style tables.

If you select New, the Add Plot Style Table wizard is displayed, which you can use to create a new plot style table. The wizard that is displayed is determined by whether the current drawing is in color-dependent or named mode.

#### **Edit**

Displays the [Plot Style Table Editor](#), in which you can view or modify plot styles for the currently assigned plot style table.



## Shaded Viewport Options

Specifies how shaded viewports are plotted and determines their resolution level and dots per inch (dpi).

### Shade Plot

Specifies how views are plotted. To specify this setting for a viewport on a layout tab, select the viewport and then, on the Tools menu, click Properties.

From the Model tab, you can select from the following options:

- **As Displayed.** Plots objects the way they are displayed on the screen.
- **Legacy Wireframe.** Objects in wireframe regardless of the way they are displayed on the screen, using the legacy [SHADEMODE](#) on page 1116 command.
- **Legacy Hidden.** Objects with hidden lines removed regardless of the way the objects are displayed on the screen, using the legacy [SHADEMODE](#) on page 1116 command.
- **Wireframe.** Plots objects in wireframe regardless of the way they are displayed on the screen.
- **Hidden.** Plots objects with hidden lines removed regardless of the way the objects are displayed on the screen.
- **Shades of Gray.** Plots objects with Shades of Gray visual style applied regardless of the way the objects are displayed on the screen.
- **Sketchy.** Plots objects with Sketchy visual style applied regardless of the way the objects are displayed on the screen.
- **X-ray.** Plots objects with x-ray visual style applied regardless of the way the objects are displayed on the screen
- **Shaded with Edges.** Plots objects with Shded with Edges visual style applied regardless of the way the objects are displayed on the screen
- **Shaded.** Plots objects with Shaded visual style applied regardless of the way the objects are displayed on the screen

### Quality

Specifies the resolution at which shaded viewports are plotted.

You can select from the following options:

- *Draft:* Sets shaded model space views to be plotted as wireframe.

- *Preview*: Sets shaded model space views to be plotted at one quarter of the current device resolution, to a maximum of 150 dpi.
- *Normal*: Sets shaded model space views to be plotted at one half of the current device resolution, to a maximum of 300 dpi.
- *Presentation*: Sets shaded model space views to be plotted at the current device resolution, to a maximum of 600 dpi.
- *Maximum*: Sets shaded model space views to be plotted at the current device resolution with no maximum.
- *Custom*: Sets shaded model space views to be plotted at the resolution setting that you specify in the DPI box, up to the current device resolution.

### DPI

Specifies the dots per inch for shaded views, up to the maximum resolution of the current plotting device. This option is available if you select Custom in the Quality box.

---

**NOTE** Shaded viewport plotting of rendered views is not supported.

---

### Plot Options

Specifies options for lineweights, transparency, plot styles, shaded plots, and the order in which objects are plotted.

#### Plot in Background

Specifies that the plot is processed in the background. (BACKGROUNDPLOT system variable)

#### Plot Object Lineweights

Specifies whether lineweights assigned to objects and layers are plotted. This option is unavailable if Plot with Plot Styles is selected.

#### Plot Transparency

Specifies whether object transparency is plotted. This option should only be used when plotting drawings with transparent objects.

---

**IMPORTANT** For performance reasons, plotting transparency is disabled by default. To plot transparent objects, check the Plot Transparency option. This setting can be overridden by the [PLOTTRANSPARENCYOVERRIDE](#) on page 1617 system variable. By default, the system variable honors the setting in the Page Setup and the Plot dialog boxes.

---

### **Plot with Plot Styles**

Specifies whether plot styles applied to objects and layers are plotted. When you select this option, Plot Object Lineweights is automatically selected also.

### **Plot Paperspace Last**

Plots model space geometry first. Paper space geometry is usually plotted before model space geometry.

### **Hide Paperspace Objects**

Specifies whether the HIDE operation applies to objects in the paper space viewport. This option is available only from a layout tab. The effect of this setting is reflected in the plot preview, but not in the layout.

### **Plot Stamp On**

Turns on plot stamping. Places a plot stamp on a specified corner of each drawing and/or logs it to a file.

Plot stamp settings are specified in the [Plot Stamp dialog box](#), in which you can specify the information that you want applied to the plot stamp, such as drawing name, date and time, plot scale, and so on. To open the Plot Stamp dialog box, select the Plot Stamp On option, and then click the Plot Stamp Settings button that is displayed to the right of the option.

You can also open the Plot Stamp dialog box by clicking the Plot Stamp Settings button on the [Plot and Publish tab](#) of the [Options dialog box](#).

### **Plot Stamp Settings button**

Displays the [Plot Stamp dialog box](#) when the Plot Stamp On option is selected in the Plot dialog box.



### **Save Changes to Layout**

Saves changes that you make in the Plot dialog box to the layout.

### **Drawing Orientation**

Specifies the orientation of the drawing on the paper for plotters that support landscape or portrait orientation. The paper icon represents the media orientation of the selected paper. The letter icon represents the orientation of the drawing on the page.

#### **Portrait**

Orients and plots the drawing so that the short edge of the paper represents the top of the page.

#### **Landscape**

Orients and plots the drawing so that the long edge of the paper represents the top of the page.

#### **Plot Upside-Down**

Orients and plots the drawing upside down.

#### **Icon**

Indicates the media orientation of the selected paper and represents the orientation of the drawing on the page as a letter on the paper.

---

**NOTE** Drawing orientation is also affected by the PLOTROTMODE system variable.

---

#### **Less Options**

Hides the following options in the Plot dialog box:



- Plot Style Table (Pen Assignments)
- Shaded Viewport Options
- Plot Options
- Drawing Orientation

## **Add Page Setup Dialog Box**

### **Quick Reference**

#### **See also:**

- Overview of Plotting

Saves the current settings in the Plot dialog box to a named page setup.

#### **Summary**

You can modify this page setup through the Page Setup Manager.

### **List of Options**

The following options are displayed.

#### **New Page Setup Name**

Specifies a name for the new page setup. You can modify the new named page setup later through the Page Setup Manager.

## **Changes to a Printer Configuration File Dialog Box**

### **Quick Reference**

**See also:**

- Overview of Plotting

Notifies you that you have made changes to an existing plotter configuration (PC3) file.

### **List of Options**

The following options are displayed.

#### **Apply Changes for the Current Plot Only**

Uses the changes you've made to the PC3 file in the current plot but does not save them in the PC3 file.

#### **Save Changes to the Following File**

Specifies the path of the PC3 file that you have changed. To preserve the original PC3 file, specify a new file name.

## **Plot Job Progress Dialog Box**

### **Quick Reference**

**See also:**

- Overview of Plotting

Provides information about the status and progress of your plot job.

### **List of Options**

The following options are displayed.

**Cancel Sheet** Cancels the plot of the sheet currently being processed.

**Cancel Job** Cancels the plot job.

## **Update PC3 File with New Printer Dialog Box**

### **Quick Reference**

**See also:**

- Overview of Plotting

Displays the device driver name that is stored in the PC3 file.

### **Summary**

A device can be a plotter or printer. With this dialog box, you can select a valid plotter or printer and update the existing PC3 file; you can also save a modified copy as a new PC3 file.

The dialog box is displayed in the PLOT or PAGESETUP command in a layout configured for a PC3 file that contains an invalid or missing plotter or printer name.

### **List of Options**

The following options are displayed.

#### **Device Needed**

Displays the device specified in the PC3 file that is configured for the current layout.

#### **Printer Name**

Lists the available plotters, printers, and PC3 files. Select a plotter, printer, or PC3 file to be substituted for the missing printer specified in your PC3 file. Select None if you don't want to make any substitution.

If you select None, the other settings for the current layout remain unchanged. If you select a plotter or printer that uses a different driver than the one

specified in the original PC3 file, the following configuration information may change when the PC3 file is saved:

- Plot quality
- Color depth
- Resolution
- Media source
- Media destination
- Media finishing options (such as folding or binding)
- Any custom settings of the previous device or driver

If the plotter or printer you select can't support the paper size specified in the layout, the default paper size is used. A warning is displayed that allows you to cancel this operation and return to the Plot or Page Setup dialog box with the None device selected.

**Device** For each selection you make under Printer Name, the corresponding device driver name is displayed in this column, as follows:

- For a selected plotter or printer, this column displays the device driver name stored in the plotter or printer's PC3 file.
- For a selected PC3 file, this column displays the device driver name stored in the PC3 file.
- For a selection of None, this column displays no device name. No device will be substituted for the missing printer specified in the PC3 file.

#### **Status Area**

Displays information about the selected plotter, printer, or PC3 file.

#### **Update and Save PC3 File**

Displays the name of the PC3 file for the current layout. If you click OK without changing the name of the PC3 file, the existing PC3 file is updated with the new printer name. If you change the name of the PC3 file and click OK, a copy of the PC3 file is saved with the new printer information.



# -PLOT

## Quick Reference

### See also:

- Overview of Plotting

Plots a drawing to a plotter, printer, or file in the command line.

If you enter **-plot** at the Command prompt, the following prompts are displayed.

### List of Prompts

The following prompts are displayed.

Detailed plot configuration [[Yes](#) on page 975/[No](#) on page 975] <No>: *Enter y or n or press ENTER*

#### **No**

Indicates that you do not want a detailed plot configuration for this plot.

Enter a layout name or [?] <current>:

Enter a page setup name < >:

Enter an output device name or [?] <current>:

Write the plot to a file [Yes/No] <current>:

Enter file name: <dwgname-layoutname.plt>:

Save changes to layout [Yes/No] <No>:

Proceed with Plot [Yes/No] <Y>:

For information about these prompts, see the description for Yes.

#### **Yes**

Specifies detailed page settings for the Model tab or layout tab you are plotting.

Enter a layout name or [?] <current>: *Specify the name of the layout tab you want to plot*

Enter an output device name or [?] <current>: *Specify the name of the output device to which you want to plot the Model tab or layout tab you selected*

If you enter a new device name without an extension, the program assumes that the device is a PC3 file (Autodesk® HDI plotter configuration file). If no

PC3 file is found, the program searches for a Windows system printer with that device name.

Enter paper size or [?] <current>: *Specify the paper size to use for the plot or enter ? to view the actual list of paper sizes defined for the plotter driver*

You must specify a paper size exactly as it is defined by the plotter driver.

Enter paper units [Inches/Millimeters] <current>:

The Enter Paper Units prompt is not displayed if you are plotting a raster image, such as a BMP or TIFF file, because the size of the plot is assumed to be in pixels.

Enter drawing orientation [Portrait/Landscape] <current>:

**Portrait** Orients and plots the drawing so that the short edge of the paper represents the top of the page.

**Landscape** Orients and plots the drawing so that the long edge of the paper represents the top of the page.

Plot upside down [Yes/No] <No>:

Orients and plots the drawing upside down.

Enter plot area [Display/Extents/Limits/Layout/View/Window] <current>:

**Display** Plots the view in the current viewport on the Model tab or the current view in the layout, depending on which tab you select to plot.

**Extents** Plots all of the objects in the current viewport, except objects on frozen layers. From a layout tab, plots all the geometry in paper space. The drawing may be regenerated to recalculate the extents before plotting.

**Limits** Plots the drawing area defined by the grid limits. Available only when the Model tab is selected.

**Layout** Plots everything within the printable area of the specified paper size, with the origin calculated from 0,0 in the layout. Available only when a layout tab is selected.

**View** Plots a view saved previously with the VIEW command. You can select a named view from the list provided. If there are no saved views in the drawing, this option is unavailable.

**Window** Plots any portion of the drawing you specify. This option prompts you to specify the corners of the window.

Enter lower left corner of window: *Specify a point*

Enter upper right corner of window: *Specify a point*

Enter plot scale (Plotted Inches = Drawing Units) or [Fit] <current>: *Specify the scale of the plot*

**Plotted Inches = Drawing Units** Calculates the plot scale based on the inches or millimeters to drawing units that you specify. You can also enter a real number as a fraction (for example, you can enter **1=2** or **.5**).

**Fit** Calculates the scale to fit the area on the sheet of paper.

The default scale setting is 1:1 when you are plotting a layout, unless you modified and saved the setting. The default setting is Fit when plotting a Model tab.

Enter plot offset (x, y) or [Center] <current>: *Specify the plot offset in either the X or Y direction, or enter c to center the plot on the paper*

Plot with plot styles [Yes/No] <current>: *Specify whether to plot using the plot styles applied to objects and defined in the plot style table*

If you specify Yes to plot with plot styles, the following prompt is displayed:

Enter plot style table name or [?] (enter . for none) <current>: *Enter a plot style table name, ? to view plot style tables, or . (period) for none*

All style definitions with different property characteristics are stored in the current plot style table and can be attached to the geometry. This setting replaces pen mapping in earlier versions of the program.

Plot with lineweights [Yes/No] <current>:

Scale lineweights with plot scale [Yes/No] <current>:

---

**NOTE** The Scale Lineweights with Plot Scale prompt is displayed only when you plot from a layout tab. Settings for the shaded plotting type are available only when you plot from the Model tab. To control shaded plotting settings of viewports in a layout tab, use the Shadeplot option of the **-vports** command when you create a viewport.

---

Enter shade plot setting [As displayed/Wireframe/Hidden] <As displayed>: *Enter a shade plot option*

Specifies how model space views are plotted.

**As Displayed** Specifies that a model space view is plotted the same way it is displayed.

**Wireframe** Specifies that a model space view is plotted in wireframe regardless of display.

**Hidden** Specifies that a model space view is plotted with hidden lines removed regardless of display.

Write the plot to a file [Yes/No] <current>: Enter **y** if you want to write the plotted drawing to a file, or press Enter to plot to an output device

If you specify Yes, the following prompt is displayed:

Enter file name: <dwgname-layoutname.plt>: Enter a file name

Save changes to page setup? Or set shade plot quality? [Yes/No/Quality] <No>:

If you enter **y**, the current settings in the Page Setup dialog box are saved. If you enter **q**, you are prompted for the shaded plotting quality and are given the option of providing a custom dpi. Then you are prompted to save the page setup with the added quality settings.

Enter shade plot quality

[Draft/Preview/Normal/presentation/Maximum/Custom] <Normal>: Enter **c** if you want to specify a dpi, or to use a preset dpi, specify a different quality option

Enter custom dpi <150>:

Save changes to page setup [Yes/No]? <No>:

Plot paper space first [Yes/No] <current>:

Paper space geometry is usually plotted before model space geometry. If you enter **n**, the model space geometry is plotted first, and paper space geometry is plotted last. This option is available only if you are plotting from a layout tab.

Hide paperspace objects? [Yes/No] <No>:

Specifies whether the Hide operation applies to objects in the paper space viewport. This option is available only from a layout tab.

Proceed with plot [Yes/No] <Y>:

## PLOTSTAMP

### Quick Reference

See also:

- Set Options for Plotted Objects

Places a plot stamp on a specified corner of each drawing and logs it to a file.

### Summary

The [Plot Stamp dialog box](#) is displayed.

---

**NOTE** Plot stamp will always be drawn with pen number 7, or the highest numbered available pen if the plotter does not hold seven pens. You must install a suitable pen in that position. If you are using a non-pen (raster) device, color 7 is always used for plot stamping.

---

If you enter **-plotstamp** at the Command prompt, [options are displayed](#).

## Plot Stamp Dialog Box

### Quick Reference

See also:

- [Set Options for Plotted Objects](#)

Specifies the information for the plot stamp.

### List of Options

The following options are displayed.

#### Plot Stamp Fields

Specifies the drawing information you want applied to the plot stamp. The selected fields are separated by commas and a space.

#### Drawing Name

Includes the drawing name and path in the plot stamp information.

#### Layout Name

Includes the name of the layout in the plot stamp information.

#### Date and Time

Includes the date and time in the plot stamp information.

---

**NOTE** A plot stamp uses the current date and time format setting of the operating system. Plot stamp specifically uses the short date style for dates.

---

**Login Name**

Includes the user login name in the plot stamp information.

**Device Name**

Includes the current plotting device name in the plot stamp information.

**Paper Size**

Includes the paper size for the currently configured plotting device in the plot stamp information.

**Plot Scale**

Includes the plot scale in the plot stamp information.

**Preview**

Provides a visual display of the plot stamp location based on the location and rotation values you have specified in the Advanced Options dialog box. You cannot preview the plot stamp any other way. This is not a preview of the plot stamp contents.

**User Defined Fields**

Provides text that can optionally be plotted, logged, or both plotted and logged at plot time. The selected value in each user-defined list will be plotted.

For example, you might populate one list with media types or prices and the other with job names. If the user-defined value is set to <none>, then no user-defined information is plotted

**Add/Edit**

Displays the [User Defined Fields dialog box](#), where you can add, edit, or delete user-defined fields.

**Plot Stamp Parameter File**

Stores plot stamp information in a file with a .pss extension. Multiple users can access the same file and stamp their plots based on company standard settings.

Two PSS files are provided, *Mm.pss* and *Inches.pss*, which are located in the *Support* folder. The initial default plot stamp parameter file name is determined by the regional settings of the operating system when the program is installed.

**Path**

Specifies the location of the plot stamp parameter file.

**Load**

Displays the Plotstamp Parameter File Name dialog box (a standard file selection dialog box) in which you can specify the location of the parameter file you want to use.

**Save As**

Saves the current plot stamp settings in a new parameter file.

**Advanced**

Displays the [Advanced Options dialog box](#), in which you can set the location, text properties, and units of the plot stamp. You can also create a log file, and set its location.

## User Defined Fields Dialog Box

### Quick Reference

**See also:**

- Set Options for Plotted Objects

Create and manage user-defined fields.

### Summary

User-defined fields are created and edited using the User Defined Fields dialog box, which is displayed when you choose the Add/Edit button in the Plot Stamp dialog box.

### List of Options

The following options are displayed.

**Name**

Lists the available user-defined fields.

**Add**

Adds an editable user-defined field.

**Edit**

Allows editing of the selected user-defined field.

**Delete**

Deletes the selected user-defined field.

## Advanced Options Dialog Box


### Quick Reference

See also:

- Set Options for Plotted Objects

Determines the location, text properties, and units of the plot stamp.

### Access Methods

 **Command entry:** plotstamp

### Summary

You can also create a log file and set its location. The dialog box is displayed when you choose the Advanced button in the Plot Stamp dialog box.

### List of Options

The following options are displayed.

#### Location and Offset

Determines the plot stamp location, the orientation of the plot stamp, and the offset you want to apply relative to either the printable area or the paper border.

#### Location

Indicates the area where you want to place the plot stamp. Selections include Top Left, Bottom Left (default), Bottom Right, and Top Right. The location is relative to the image orientation of the drawing on the page.

#### Orientation

Indicates the rotation of the plot stamp in relation to the specified page. The options are Horizontal and Vertical for each of the locations (for example, Top Left Horizontal and Top Left Vertical).

#### Stamp Upside Down

Rotates the plot stamp upside down.



**X Offset**

Determines the *X* offset value that is calculated from either the corner of the paper or the corner of the printable area, depending on which setting you specify. If you specify Offset Relative to Paper Border, the offset value is calculated so that the plot stamp information fits within the designated paper size. If the offset value positions the plot stamp information beyond the printable area, the plot stamp text is cut off.

**Y Offset**

Determines the *Y* offset value that is calculated from either the corner of the paper or the corner of the printable area, depending on which setting you specify. If you specify Offset Relative to Paper Border, the offset value is calculated so that the plot stamp information fits within the paper size.

**Offset Relative to Printable Area**

Calculates the offset values that you specify from the corner of the printable area of the paper (not the corner of the paper).

**Offset Relative to Paper Border**

Calculates the offset values that you specify from the corner of the paper (not the corner of the printable area of the paper).

**Text Properties**

Determines the font, height, and number of lines you want to apply to the plot stamp text.

**Font**

Specifies the TrueType font you want to apply to the text used for the plot stamp information.

**Height**

Specifies the text height you want to apply to the plot stamp information.

**Single Line Plot Stamp**

Places the plot stamp information in a single line of text. The plot stamp information can consist of up to two lines of text, but the placement and offset values you specify must accommodate text wrapping and text height. If this option is cleared, plot stamp text is wrapped after the third field.

**Plot Stamp Units**

Specifies the units used to measure *X* offset, *Y* offset, and height. You can define units using inches, millimeters, or pixels.

Two sets of values for the plot stamp size and location are saved in the PSS file: one for the dimensionless file formats and the other for dimensional file formats. If the units you select in the dialog box are dimensional, then the dimensional values are displayed and modified. To access the dimensionless values, you need to select pixels as the unit of measurement. Regardless of the units selected in the dialog box, the correct set of values is applied at plot time. In other words, changing the unit of measurement does not cause the values to be recalculated.

### **Log File Location**

Writes the plot stamp information to a log file instead of, or in addition to, stamping the current plot. If plot stamping is turned off, the log file can still be created.

### **Create a Log File**

Writes the plot stamp information to a log file. The default log file is *plot.log*, and it is located in the main application folder.

You can specify a different file name and path. After the initial *plot.log* file is created, the plot stamp information in each succeeding plotted drawing is added to this file. Each drawing's plot stamp information is a single line of text. The plot stamp log file can be placed on a network drive and shared by multiple users. Plot stamp information from each user is appended to the *plot.log* file.

### **Log File Name**

Specifies the file name for the log file you are creating. Enter a new file name if you do not want to use the default file name, *plot.log*.

### **Browse**

Lists the currently saved plot stamp log files. You can choose to overwrite an existing plot stamp log file with the currently specified plot stamp information, and then to save this file.

## **-PLOTSTAMP**

### **Quick Reference**

#### **See also:**

- Set Options for Plotted Objects

Places a plot stamp on a specified corner of each drawing and logs it to a file.

If you enter **-plotstamp** at the Command prompt, the following prompts are displayed. The settings in the PSS file are displayed as defaults for each prompt.

You can use **-PLOTSTAMP** as part of a plotting script to modify plot stamp information for a drawing.

### List of Prompts

The following prompts are displayed.

Enter an option [[On/OFF/Fields/User fields/Log file/LOCation/Text properties/UNits](#)]:

**On** Turns on the plot stamp for the current drawing.

**OFF** Turns off the plot stamp for the current drawing.

**Fields** Specifies the plot stamp field information you want to apply to the current plot stamp.

Stamp drawing name? [Yes/No] <Yes>:

Stamp layout name? [Yes/No] <Yes>:

Stamp date and time? [Yes/No] <Yes>:

Stamp login name? [Yes/No] <Yes>:

Stamp plot device name? [Yes/No] <Yes>:

Stamp paper size? [Yes/No] <Yes>:

Stamp plot scale? [Yes/No] <Yes>:

**User Fields** Specifies the user-defined fields you want to apply to the current plot stamp.

Enter User field 1 <>: *Enter any user-defined field*

Enter User field 2 <>: *Enter any user-defined field*

**Log File** Specifies writing the current plot stamp information to a log file rather than applying this information to the current plotted drawing. The default log file is *plot.log*, unless you specify another file path.

Write plot stamp to log file? [Yes/No] <Yes>:

Enter log file path <plot.log>:

**Location** Determines the location of the plot stamp on the page based on offset, orientation, and relationship to either the printable area or the border of the paper.

Location selections include and are relative to the printable area or the border of the paper, depending on what you specify at the prompt.

Enter stamp location [TL/TR/BL/BR] <BL>:

- *TL*: Top Left
- *TR*: Top Right
- *BL*: Bottom Left
- *BR*: Bottom Right

Text orientation indicates the rotation angle of the plot stamp in relation to the page.

Enter text orientation [Horizontal/Vertical] <Horizontal>:

- *Horizontal*: Plot stamp will be horizontal relative to the page.
- *Vertical*: Plot stamp will be vertical relative to the page.

Stamp upside-down [Yes/No] <No>:

Specify plot stamp offset <0.1000,0.1000>:

Specifying an offset relative to the paper border calculates the offset values that you specify from the corner of the paper. Specifying an offset relative to the printable area calculates the offset values that you specify from the corner of the printable area.

Specify offset relative to [paper Border/printable Area] <printable Area>:

**Text Properties** Determines the font name and text height for the current plot stamp text. You can also specify to place the text on one line or to wrap the text to two lines. The placement and offset values you specify for this plot stamp must accommodate the text wrapping and the text height.

Enter font name <>: *Enter a font name*

Enter text height <0.1500>: *Enter a value*

Place plot stamp on single line? [Yes/No] <No >:

**Units** Specifies the units used to measure *X* offset, *Y* offset, and height. You can define units using inches, millimeters, or pixels.

Enter measurement units [Inches/Millimeters/Pixels] <Inches>:

# PLOTSTYLE

## Quick Reference

### See also:

- Use Plot Styles to Control Plotted Objects


Controls the named plot styles that are attached to the current layout and can be assigned to objects.

### Access Methods



#### Button

 **Menu:** Application menu  ▶ Print ▶ Edit Plot Style Tables

 **Menu:** Format ▶ Plot Style

### Summary

To use the PLOTSTYLE command, the drawing must be configured to use named plot styles.

- If a drawing is in Color-Dependent mode, you can convert it to use named plot styles using the CONVERTPSTYLES command.
- To configure a new drawing to use named plot styles, set PSTYLEPOLICY to 0 before creating the new drawing.

If no selection set exists, the [Current Plot Style dialog box](#) is displayed. If a selection set exists, the [Select Plot Style dialog box](#) is displayed.

If you enter **-plotstyle** at the Command prompt, [options are displayed](#) on page 990.

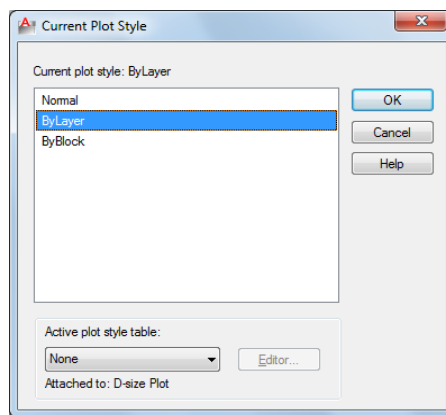
## Current Plot Style Dialog Box

### Quick Reference

See also:

- Use Plot Styles to Control Plotted Objects

Specifies the plot style for new objects.



### List of Options

The following options are displayed.

#### Current Plot Style

Displays the current plot style.

#### Plot Style List

Displays the available plot styles that can be assigned to an object, including the default plot style, NORMAL. A plot style is a collection of overrides for color, dithering, gray scale, pen assignments, screening, linetype, lineweight, end styles, join styles, and fill styles.

#### Active Plot Style Table

Sets the plot style table attached to the current layout. A plot style table is a collection of plot style definitions.

#### Editor

Displays the [Plot Style Table Editor](#), in which you modify the plot styles in the plot style table.

**Attached To**

Displays the tab (Model tab or layout tab) that the plot style table is attached to.

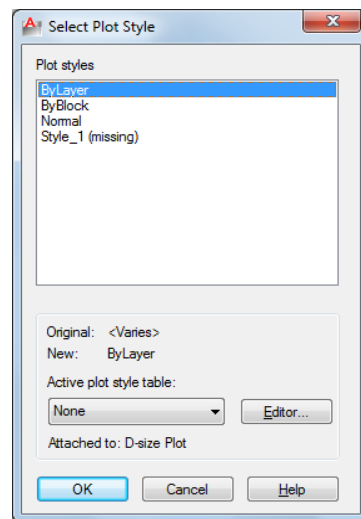
## Select Plot Style Dialog Box

### Quick Reference

**See also:**

- Use Plot Styles to Control Plotted Objects

Specifies the plot style to be assigned.



### List of Options

The following options are displayed.

#### Plot Styles

Displays the available plot styles, including the default plot style, NORMAL. A plot style is a collection of property settings used in plotting.

**Original**

Displays the originally assigned plot style.

**New**

Displays the new plot style to be assigned.

**Active Plot Style Table**

Sets the plot style table attached to the current drawing. A plot style table defines plot styles.

**Editor**

Displays the [Plot Style Table Editor](#).

**Attached To**

Displays the tab (Model tab or layout tab) that the plot style table is attached to.

## -PLOTSTYLE

**Quick Reference****See also:**

- Use Plot Styles to Control Plotted Objects

Lists all available plotstyles in the current drawing and to set a plotstyle current.

**List of Prompts**

The following prompts are displayed.

Current plot style is "*current*"

Enter an option [?/Current]:

?—**List Plot Styles** Lists the plot styles in the attached plot style table.

**Current** Specifies the plot style to use for new objects.



# PLOTTERMANAGER

## Quick Reference

See also:

- Overview of Plotting

Displays the Plotter Manager, where you can add or edit a plotter configuration.

## Access Methods



Button

 **Ribbon:** Output tab ► Plot panel ► Manage Plotters

 **Menu:** Application menu  ► Print ► Manage Plotters

 **Menu:** File ► Plotter Manager

## Summary

In the folder, you can start the Add-a-Plotter wizard, or double-click a PC3 file to open the Plotter Configuration Editor.

- Double-click the [Add-a-Plotter wizard](#) to add and configure plotters and printers.
- Double-click a plotter configuration (PC3 file) to start the [Plotter Configuration Editor](#).

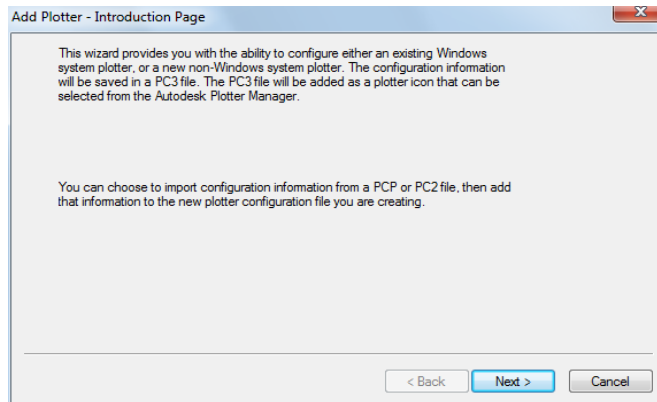
# Add-a-Plotter Wizard

## Quick Reference

See also:

- Overview of Plotting

Adds new plotters and printers. The wizard produces a PC3 file that you can edit in the [Plotter Configuration Editor](#). Your configurations are stored in the *Plotters* folder.



## Plotter Configuration Editor

### Quick Reference

#### See also:

- Overview of Plotting

Modifies a PC3 file's plotter port connections and output settings, including media, graphics, physical pen configuration, custom properties, initialization strings, calibration, and user-defined paper sizes. You can drag these configuration options from one PC3 file to another.

### Summary

You can start the Plotter Configuration Editor with any of the following methods:

- Double-click a PC3 file in Microsoft® Windows® Explorer or right-click the PC3 file and click Open. (By default, PC3 files are stored in the *Plotters* folder. To find the location of your plotter files, on the Tools menu, click Options. In the Options dialog box, Files tab, click the plus sign to the left of Printer Support File Path. Click the plus sign to the left of the Printer

Configuration Search Path file. Under Printer Configuration Search Path, click the path name to view the location of your plotter files.)

- Choose Edit Plotter Configuration from within the Add-a-Plotter wizard.
- Choose Properties in the Page Setup dialog box.
- Choose Properties in the Plot dialog box.

Depending on your configured plotting device, additional options may be available on the Device and Document Settings tab. For example, when you configure a nonsystem plotter, you can modify the pen characteristics.

- [General](#)
- [Ports](#) on page 995
- [Device and Document Settings](#) on page 996

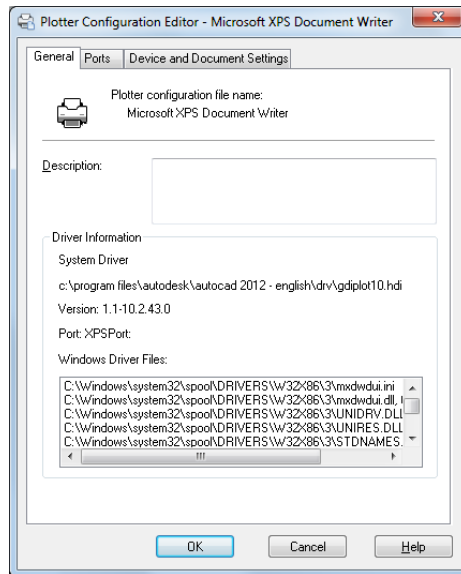
## General Tab (Plotter Configuration Editor)

### Quick Reference

See also:

- [Overview of Plotting](#)

Contains basic information about the plotter configuration (PC3) file. You can add or modify the information in the Description area. The remainder of the tab is read-only.



### List of Options

The following options are displayed.

**Plotter Configuration File Name** Displays the file name you assigned in the Add-a-Plotter wizard.

#### Description

Displays information you want to include about the plotter.

**Driver Information** Displays the following information:

- Plotter driver type (system or nonsystem), name, model, and location
- HDI driver file version number (AutoCAD LT specialized driver files)
- UNC name of the network server (if the plotter is connected to a network server)
- I/O port (if the plotter is connected locally)
- Name of the system printer (if the configured plotter is the system printer)
- PMP (Plot Model Parameters) file name and location (if a PMP file is attached to the PC3 file)

## Ports Tab (Plotter Configuration Editor)

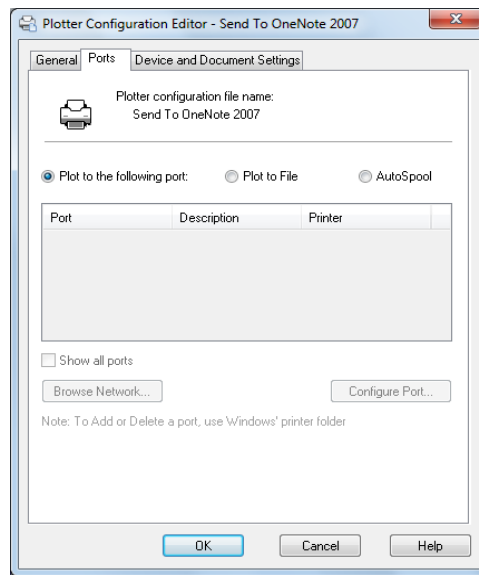
### Quick Reference

See also:

- Overview of Plotting

Changes communication settings between the configured plotter and your computer or network system. You can specify whether you want to plot through a port, plot to a file, or use AutoSpool. See “Use AutoSpool” in the *Driver and Peripheral Guide*.

If you plot through a parallel port, you can specify the timeout value. If you plot through a serial port, you can change the baud rate, protocol, flow control, and input and output timeout values.



### List of Options

The following options are displayed.

#### Plot to the Following Port

Sends the drawing to the plotter through the selected port.

**Plot to File**

Sends the drawing to the file specified in the Plot dialog box.

**AutoSpool**

Uses the AutoSpool utility to plot the drawing. AutoSpool is specified on the Files tab in the Options dialog box.

**Port List**

Displays a list and description of available ports, both local and network. If the port is a network port, the name of the network printer is also displayed.

**Show All Ports**

Shows all available ports on the computer regardless of the ports available on the plotter.

**Browse Network**

Displays the network choices so you can connect to another instance of a nonsystem plotter.

**Configure Port**

Displays either the [Configure LPT Port dialog box](#) or the [Settings for COM Port dialog box](#).

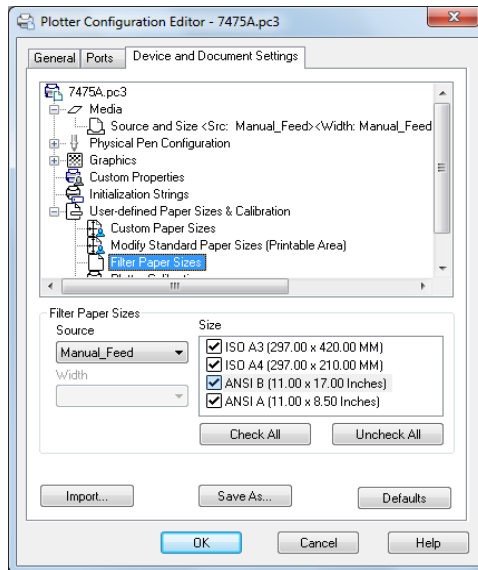
## Device and Document Settings Tab (Plotter Configuration Editor)

### Quick Reference

**See also:**

- Overview of Plotting

Controls many of the settings in the PC3 file. Click the icon for any of the nodes to view and change the specific settings. When you change a setting, your changes appear in angle brackets (<>) next to the setting name. A check mark is also displayed over the icon of the node with a changed value.



---

**NOTE** Only the settings available for the configured device are displayed in the tree view. In addition, you might not be able to edit some settings if the device handles the setting through Custom Properties or doesn't support the capability.

---

### List of Options

The following options are displayed.

#### Media Node

Specifies a paper source, size, type, and destination. Available settings depend on the supported features of your configured plotter. For Windows system printers, you must configure the media settings using the Custom Properties node.

#### Source and Size

Specifies the paper source and size.

- **Source:** Specifies the paper source; for example, sheet-fed or roll-fed. If you specify a tray, you can select the type of tray.
- **Width:** Specifies the width of the paper roll for a roll-fed source.
- **Automatic:** Enables the printer to specify the appropriate paper source.
- **Size:** Displays a list of available paper sources and both standard and custom paper sizes.

- *Printable Bounds*: Displays the print boundaries.

### Media Type

Displays a list of the media types supported by the plotter configuration.

### Duplex Printing

Determines double-sided printing and binding margin. Binding margin options are available only for plotters that support duplex printing.

- *None*: Indicates no double-sided printing.
- *Short Side*: Places the binding margin on the short side of the paper.
- *Long Side*: Places the binding margin on the long side of the paper.

### Media Destination

Displays a list of available media destinations for the configured plotter, such as collating, cutting, and stapling. These options are available only for plotters that support this function.

### Physical Pen Configuration Node (for Pen Plotters Only)

Controls the specific pens in the pen plotter. The lower pane of the Device and Document Settings tab displays a table used to describe the color, width, and speed of each pen in the plotter.

---

**NOTE** The physical pen information cannot be detected automatically; you must provide this information for your pen plotter under Physical Pen Characteristics.

---

**Pen Configuration** Specifies settings for pen plotters.

- *Prompt for Pen Swapping*: Use more than one pen while plotting on a single-pen plotter. Under Physical Pen Characteristics, you can specify settings for as many pens as you want. You are prompted when you need to change pens.
- *Area Fill Correction*: Enables the program to compensate for pen widths when plotting filled areas and wide polylines. Each polygon is shrunk by half of the width of the pen used to draw it. This option prevents the plotter from oversizing the filled area when using a wide pen and ensures precision. Use this option if the plot must be accurate to half the pen width, such as in printed circuit artwork.
- *Pen Optimization Level*: Reduces plot time and increases the efficiency of the pens by optimizing the pen motion. For example, you can prevent pens from retracing duplicate lines. If your drawing uses many colors or widths,



you can reduce the time needed to change pens by selecting Adds Pen Sorting. Every object that uses a particular pen will be plotted before switching to another pen. Each method in the list includes the optimization methods preceding it in the list (except for No Optimization).

**Physical Pen Characteristics** To plot your drawing correctly on a pen plotter, you need to provide information about the pens in your plotter. For each pen in your plotter, specify a color and width. To optimize pen performance, you can specify a speed.

---

**NOTE** This information is required; the physical pen information cannot be detected automatically.

---

- **Color:** Specifies the colors of the pens in your plotter. The pen color that closely matches the object's color is selected. You can assign colors to your pens that correspond to each object's color. Use the Color list to select one of the following settings: No Pen, Red, Yellow, Green, Cyan, Blue, Magenta, Black, or Other. If you choose Other, the Select Color dialog box is displayed, providing access to the full color palette. Use No Pen to indicate that there is no pen in a particular position.
- **Speed:** Adjusts pen speed on a pen-by-pen basis. This feature is useful, for example, for slowing down pens that are skipping. Each pen manufacturer recommends a pen speed for each type of media. For best results, use those values. You can specify a pen speed in millimeters or inches per second.
- **Width:** Specifies the width of your pens so the program can determine if multiple pen strokes are needed to draw wide lines. You can specify the pen width in inches or millimeters. Be sure to select the pen width to match the actual width of the pen. The list provides a set of common pen widths.

Specifying pen characteristics here doesn't replace the pen tables you might have imported from PCP, PC2, or CFG files from AutoCAD Release 14, AutoCAD LT<sup>®</sup> 98, or earlier releases. For more information about importing these settings, see "Change Plot Style Settings" in the *User's Guide*.

### **Graphics Node**

Specifies settings for printing vector graphics, raster graphics, and TrueType text. Depending on the capabilities of the plotter, you can modify color depth, resolution, and dithering. You can select either color or monochrome output for vector drawings. When printing raster images on a plotter with limited memory, you can improve performance by making some changes to the quality of the printed output. If you use a nonsystem plotter that supports varying

amounts of installed RAM, you can provide that information to improve performance.

### **Installed Memory**

Provides the program with the amount of total memory (RAM) installed on a nonsystem plotter. This option is only available for nonWindows system printers that accept optional memory. If your plotter has extra memory, specify the total amount of memory.

- *Total Installed Memory*: Specifies the total installed memory in megabytes. The plotter driver uses the memory information to determine whether banding or image quality degradation is required to prevent the system from running out of memory.

### **Vector Graphics**

Provides options for specifying the color depth, resolution, and dithering of vector output. Some of the Vector Graphics options are closely interrelated; changing an option can affect other available options.

- *Color Depth*: Displays a list for choosing color depth for the configured plotter. The color depth options change as you change the resolution and dithering values. More color depth uses more memory and takes longer to plot. You can specify either color or monochrome output.
- *Resolution*: Adjusts the DPI (dots per inch) resolution of the configured plotter. Changing the DPI resolution changes the options available in the Dithering list. A higher resolution setting uses more memory and takes longer to plot than a lower resolution setting.
- *Dithering*: Specifies a dithering choice for non-pen-based plotters. Some dithering choices cause slower plotting.

### **Raster Graphics (Non-Pen Plotters Only)**

Specifies trade-offs between plotting speed and output quality when plotting raster objects on raster devices. If you reduce the image quality, you increase output speed. If your system resources are limited, reducing image quality can reduce the chance of running out of memory while plotting.

- *Raster and Shaded/Rendered Viewports*: Specifies a position on the slider that balances output quality with memory and plotting speed when plotting raster images and shaded viewports. (Rendered viewport plotting is not supported in AutoCAD LT Position the slider at None to disable raster image printing. Degrading the image quality lets you plot in less time.

Position the slider at Best for the best output at the expense of memory and plotting speed.

- *OLE*: Specifies a position on the slider that balances output quality with memory use and plotting speed when plotting OLE objects. Position the slider at None to disable OLE object printing. Degrading the image quality lets you plot in less time. Position the slider at Best for the best output at the expense of memory and plotting speed.
- *Trade-off*: Specifies where to compromise quality if you can't output at the highest quality. Move the slider to diminish resolution and color.

### TrueType Text

On Windows system printers, specifies whether to plot TrueType text as a graphic image or as text.

Plotting as a graphic guarantees that the text is printed as displayed, at the expense of slowing down the plotter and using more memory. Plotting as TrueType text prints faster and uses less memory; the plotter may use a different font for printing.

- *TrueType as Text*: Plots TrueType text as text.
- *TrueType as Graphics*: Plots TrueType text as graphics.

### Merge Control

On raster plotters, controls the appearance of lines that cross. Merge control is not effective if your plotter is configured to plot everything as black or if you are using PostScript language.

- *Lines Overwrite*: Uses the last plotted line to obscure the lines under it. Only the topmost line is visible at the intersection.
- *Lines Merge*: Merges the colors of crossing lines.

---

**NOTE** Merge control may appear as an option for system printers that do not actually support the feature. Please check your printer's documentation to determine if merge control is supported.

---

### Custom Properties Node

Modifies the device-specific properties for the plotter configuration. The settings for each plotter vary. If the plotter manufacturer has not included a Custom Properties dialog box for the device driver, the Custom Properties option is not available.

For some drivers, such as ePlot, this is the only tree view option that is displayed. For Windows system printers, most of the device-specific settings are made in this dialog box. For more information about the custom properties settings for your device, choose Help in the Custom Properties dialog box.

### **Initialization Strings Node (for Non-System Plotters Only)**

Sets pre-initialization, post-initialization, and termination ASCII text plotter strings, which send commands to a plotting device before and after the program initializes the device and after plotting is complete.

If you are plotting to an unsupported plotter in emulation mode, you can specify ASCII text initialization strings that prepare the plotter for printing, set device-specific options, and restore the plotter to its original state. You can also use initialization strings to turn on or off a plotting device feature that is not supported by the program.

The text string is sent literally, except for a back slash (\). Use a back slash followed by a three-digit number (taken from the ASCII table), for example, \027, to specify binary (unprintable) characters such as the escape character. \027 is interpreted and sent as a single character whose value is 27. The number 27 is the escape character. For example, \27%-12345X PJJL ENTER LANGUAGE = PostScript\10 sends an HP PJJL command to a dual-language laser printer before it's initialized and switches the printer into PostScript mode. The \027 sends an escape character and the \010 sends a line feed character. The remainder of the text string is sent literally. It is best to use three decimal digits for binary characters, so you'll need to add leading zeros as necessary.

Initialization strings should be used by advanced users only.

#### **Pre-Initialization**

Forces a plotter to emulate another plotter by sending a pre-initialization ASCII text string to the plotter before it is initialized.

Use a back slash followed by a three-digit number (taken from the ASCII table), for example, \027, to specify binary (unprintable) characters such as the escape character.

#### **Post-Initialization**

Sets a device-specific option that is not supported elsewhere in the program. Specify a post-initialization ASCII text string that is sent to the plotter after it is initialized.

Use a back slash followed by a three-digit number (taken from the ASCII table), for example, \027, to specify binary (unprintable) characters such as the escape character.

### **Termination**

Restores the printer to its original state after plotting. Specify a termination ASCII text string that is sent to the plotter after plotting is complete.

Use a back slash followed by a three-digit number (taken from the ASCII table), for example, \027, to specify binary (unprintable) characters such as the escape character.

### **User-Defined Paper Sizes & Calibration Node**

Attaches a PMP file to the PC3 file, calibrates the plotter, and adds, deletes, revises, or filters custom paper sizes. You can also modify standard paper sizes. This node accesses the Plotter Calibration and Custom Paper Size wizards. If the plotter you are using has been calibrated, a Plotter Model Parameter (PMP) file contains that calibration information. If the PMP file is not already attached to the PC3 file you are editing, you must create that association so you can use the PMP file. If the plotter was calibrated from within the Add-a-Plotter wizard while creating the current PC3 file, the PMP file is already attached. Use the PMP File Name option under User-defined Paper Sizes & Calibration to attach a PMP file to, or detach the PMP file from, the PC3 file you are editing.

#### **Custom Paper Sizes (Nonsystem Printers Only)**

Creates a customized paper size or changes the printable area of a standard or nonstandard paper size.

With the Custom Paper Size wizard you can create a new paper size, or select from a list of available paper sizes (from a PMP file) if the plotter is not a Windows system printer. If the plotter is a Windows system printer, use Custom Properties.

Each plotter has a maximum printable area determined by where it grips the paper and how far the pen shuttle can reach. If you are creating a paper size that is larger than the paper sizes offered in the Plotter Configuration Editor, verify that the plotter is capable of plotting the new dimensions.

- *Add*: Starts the Custom Paper Size wizard. When you add a paper size, you can either create a new paper size from scratch or create a new one based on the listing of available paper sizes for the selected configured plotter. The new paper size is a user-defined size, not a standard size.
- *Delete*: Deletes the selected custom paper size from the list.
- *Edit*: Starts the Custom Paper Size wizard, where you can modify the selected paper size. You can change any of the custom paper size settings.

---

**NOTE** For Windows system printers, you can change the paper size settings and create custom paper sizes only in the Custom Properties dialog box.

---

### **Modify Standard Paper Sizes**

Adjusts the printable area for standard paper sizes to match the printer's capabilities. (You can't create custom paper sizes for Windows system printers using the Plotter Configuration Editor.)

- *List of Standard Paper Sizes*: Displays the available set of standard paper sizes.
- *Modify*: Starts the Custom Paper Size wizard. You can modify Printable Area and File Name. The new paper size is a user-defined size, not a standard size.

### **Filter Paper Sizes**

Filters the list of paper sizes displayed for the plotting device selected in the Plot and Page Setup dialog boxes. The list of paper sizes is displayed on the Plot Settings tab in the Plot dialog box and on the Layout Settings tab in the Page Setup dialog box.

Select the paper sizes you want to display for this device.

- *Check All*: Hides all the paper sizes for the device.
- *Uncheck All*: Displays all the paper sizes for the device.

### **Plotter Calibration**

Starts the Plotter Calibration wizard. If you need to correct scaling discrepancies, you can adjust the plotter calibration using the Plotter Calibration wizard. See “Calibrate Plotters and Work with Custom Paper Sizes” in the *Driver and Peripheral Guide*.

---

**NOTE** You should perform a plotter calibration only if your drawings must be exactly to scale and your plotter or printer produces inaccurate plots. Plotter Calibration causes the program to rescale all plots sent to your plotter. If your plotter provides a calibration utility, it is recommended that you use it instead of the utility supplied with this program.

---

**PMP File** Attaches a PMP file to or detaches a PMP file from the PC3 file you are editing. Use the Detach button to break the association between the PMP file and the PC3 file.

- *Attach*: Attaches a PMP file to the PC3 file. You can reuse calibration and custom paper size data stored in the PMP file.

- *Save PMP*: Saves a PMP file to a new file in the *AutoCAD LT 2012\drv* folder.

- *Detach*: Detaches the PMP file associated with the PC3 file you are editing.

### **Import**

Imports file information from earlier versions of the program. If you have a PCP or PC2 file from an earlier version, you can import some of the information in those files into a PC3 file. PC3 files store plotter name, port information, pen optimization level, paper size, and resolution.

### **Save As**

Saves a PC3 File to a new file name.

### **Defaults**

Restores the settings on the Device and Document Settings tab back to the default settings.

## **Configure LPT Port Dialog Box**

### **Quick Reference**

#### **See also:**

- Overview of Plotting

Specifies the time that the program waits for the plotter buffer to empty before sending more data.

### **Summary**

You specify how much time you want to elapse before you are prompted to cancel the plot. If your drawings are complex or your pen speed is very slow, set the timeout value higher than the default (30 seconds). If you begin to receive numerous timeout prompts, your timeout setting is probably too low.

### **List of Options**

The following options are displayed.

#### **Timeout**

Specifies an amount of time to wait before retrying.

### Transmission Retry

Specifies the timeout value in milliseconds.

## Settings for COM Port Dialog Box

### Quick Reference

See also:

- Overview of Plotting

Specifies the baud rate, protocol, flow control, and hardware handshaking for serial ports on plotters that support these settings.

---

**NOTE** The settings on your plotter must match the settings in the program or you cannot plot.

---

### List of Options

The following options are displayed.

#### Baud Rate

Specifies the baud rate. Use the fastest available baud rate.

#### Protocol

Displays the protocol settings available for your plotter. Use the protocol recommended by your device manufacturer. For more information see the documentation for your device.

#### Flow Control

Sets the flow control for your plotter. The default flow control setting is XON/XOFF (software handshaking) for compatibility with previous versions of the program.

If you select Hardware handshaking, you can specify additional settings in the [Advanced Settings for COM Port dialog box](#) that correspond to different pins on the RS232 connector.



## Advanced Settings for COM Port Dialog Box

### Quick Reference

See also:

- Overview of Plotting

Specifies additional hardware handshaking settings for serial ports.

### List of Options

The following options are displayed.

#### **CTS**

Enables Clear To Send handshaking. This monitors pin 5 of a 25-pin serial port or pin 8 of a 9-pin serial port. CTS is an input bit, monitored for an output from the plotter or printer.

#### **DSR**

Enables Data Set Ready handshaking. This monitors pin 6 of a 25-pin serial port, or pin 6 of a 9-pin serial port. DSR is an input bit, monitored for an output from the printer or plotter.

#### **RLSD**

Enables Received Line Signal Detector handshaking. This is sometimes called DCD or Data Carrier Detect. It is an input pin that can be monitored for an output from the plotter. It is on pin 8 of a 25-pin serial port and on pin 1 of a 9-pin serial port.

#### **RTS**

Controls the Request To Send output bit. This sends a signal to the printer or plotter on pin 4 of a 25-pin serial port or on pin 7 of a 9-pin serial port.

#### **Disabled**

Disables the RTS line when the device is opened.

#### **Enabled**

Enables the RTS line when the device is opened.

#### **Handshake**

Enables RTS handshaking. The driver raises the RTS line when the input buffer is less than one-half full and lowers the RTS line when the buffer is more than three-quarters full.

#### **Toggle**

Specifies that the RTS line is high if bytes are available for transmission. After all buffered bytes have been sent, the RTS line is low.

#### **DTR**

Controls the Data Terminal Ready output pin. This sends a signal to the printer or plotter on pin 20 of a 25-pin serial port or on pin 4 of a 9-pin serial port.

#### **Disabled**

Disables the DTR line when the device is opened.

#### **Enabled**

Enables the DTR line when the device is opened.

#### **Handshake**

Enables DTR handshaking.

## **PNGOUT**

### **Quick Reference**

#### **See also:**

- Export Raster Files

Saves selected objects to a file in a Portable Network Graphics format.

#### **Summary**

The Create Raster File dialog box (a [standard file selection dialog box](#)) is displayed. Enter the file name in the dialog box.

#### **List of Prompts**

The following prompts are displayed.

Select objects or <all objects and viewports>: *Press Enter to select all objects and viewports or use an object selection method and press Enter*

A Portable Network Graphics file is created that contains the objects you select. The file reflects what is displayed on the screen. Light glyphs that are displayed in the drawing appear in the new file, even if the Plot Glyph property of the lights is set to No.

---

**NOTE** When the FILEDIA system variable is set to 0 (Off), prompts are displayed at the Command prompt.

---

## POINT

### Quick Reference

See also:

- Draw Reference Points

Creates a point object.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Draw panel ► Multiple Points

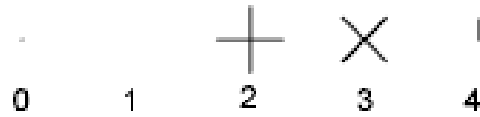
 **Menu:** Draw ► Point ► Single

 **Toolbar:** Draw

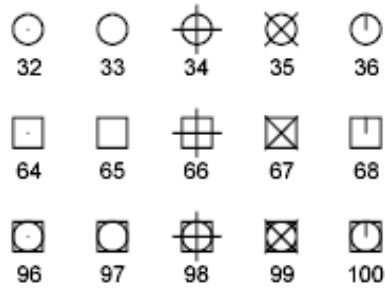
### Summary

Points can act as nodes to which you can snap objects. You can specify a full three-dimensional location for a point. The current elevation is assumed if you omit the Z coordinate value.

The PDMODE and PDSIZE system variables control the appearance of point objects. PDMODE values 0, 2, 3, and 4 specify a figure to draw through the point. A value of 1 specifies that nothing is displayed.



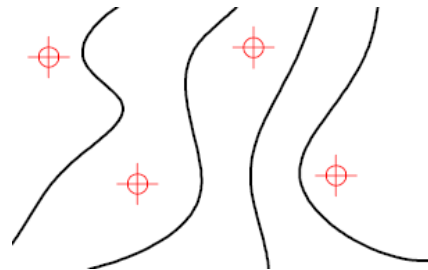
Specifying the value 32, 64, or 96 selects a shape to draw around the point, in addition to the figure drawn through it:



PDSIZE controls the size of the point figures, except for PDMODE values 0 and 1. A setting of 0 generates the point at 5 percent of the drawing area height. A positive PDSIZE value specifies an absolute size for the point figures. A negative value is interpreted as a percentage of the viewport size.

After you change PDMODE and PDSIZE, the appearance of existing points changes the next time the drawing is regenerated.

You can use MEASURE and DIVIDE to create points along an object. Use DDPTYPE to specify point size and styles easily.



**List of Prompts**

Specify a point: *Specify a point in the drawing*

# POLYGON

## Quick Reference

See also:


- Draw Rectangles and Polygons


Creates an equilateral closed polyline.

## Access Methods



Button

 **Ribbon:** Home tab ► Draw panel ► Polygon

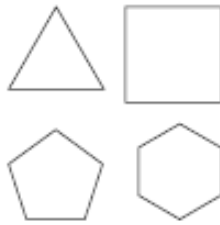
 **Menu:** Draw ► Polygon

 **Toolbar:** Draw

## List of Prompts

The following prompts are displayed.

Enter number of sides <current>: Enter a value between 3 and 1024 or press Enter  
Specify center of polygon on page 1011 or [Edge on page 1012]: Specify a point (1)  
or enter e



polygons

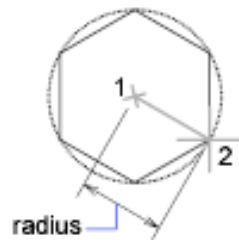
## Center of Polygon

Defines the center of the polygon.

Enter an option [Inscribed in circle/Circumscribed about circle] <current>: Enter  
i or c or press Enter

**Inscribed in Circle** Specifies the radius of a circle on which all vertices of the polygon lie.

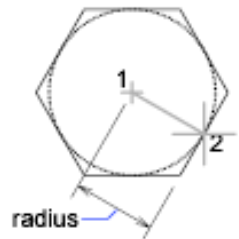
Specify radius of circle: *Specify a point (2) or enter a value*



Specifying the radius with your pointing device determines the rotation and size of the polygon. Specifying the radius with a value draws the bottom edge of the polygon at the current snap rotation angle.

**Circumscribed about Circle** Specifies the distance from the center of the polygon to the midpoints of the edges of the polygon.

Specify radius of circle: *Specify a distance*



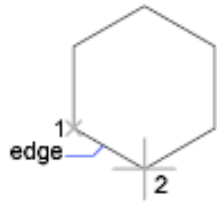
Specifying the radius with your pointing device determines the rotation and size of the polygon. Specifying the radius with a value draws the bottom edge of the polygon at the current snap rotation angle.

### **Edge**

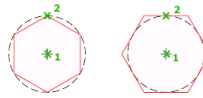
Defines a polygon by specifying the endpoints of the first edge.

Specify first endpoint of edge: *Specify a point (1)*

Specify second endpoint of edge: *Specify a point (2)*



You can specify the different parameters of the polygon including the number of sides. The difference between the inscribed and circumscribed options is shown.



## PREVIEW

### Quick Reference

See also:


- Preview a Plot

Displays the drawing as it will be plotted.


### Access Methods



Button

 **Ribbon:** Output tab > Plot panel > Preview

 **Menu:** Application menu  > Print > Plot Preview

 **Menu:** File > Plot Preview

 **Toolbar:** Standard

### Summary

The preview is based on the current plot configuration, as defined by the settings in the Page Setup or Plot dialog box. It shows exactly how the drawing will look when plotted, including lineweights, fill patterns, and other plot style options.

The cursor changes to a magnifying glass with plus (+) and minus (-) signs. Dragging the cursor toward the top of the screen while holding down the pick button enlarges the preview image. Dragging toward the bottom of the screen reduces the preview image.



## PROPERTIES

### Quick Reference

See also:


- Display and Change the Properties of Objects


Controls properties of existing objects.

### Access Methods



Button

 **Ribbon:** View tab ► Palettes panel ► Properties

 **Menu:** Modify ► Properties

 **Toolbar:** Standard

**Shortcut menu:** Select the objects whose properties you want to view or modify, right-click in the drawing area, and click Properties.

### Summary

The [Properties palette](#) is displayed and lists the properties of the selected objects.



When more than one object is selected, only those properties common to all selected objects are displayed.

When no objects are selected, only the current settings of general properties are displayed.

There are several [general properties](#) common to all objects. All other object properties are specific to the type of object.

## Properties Palette

### Quick Reference

See also:

- Display and Change the Properties of Objects
- Specify the Behavior of Dockable Windows

Displays the properties of the selected object or set of objects.

### Summary

When more than one object is selected, only those properties common to all selected objects are displayed. When no objects are selected, only the current settings of general properties are displayed.

You can specify a new value to modify any property that can be changed. Click the value and use one of the following methods:

- Enter a new value.
- Click the down arrow at the right and select a value from the list.
- Click the Pick Point button to use the pointing device to change a coordinate value.
- Click the QuickCalc calculator button to calculate a new value.
- Click the left or right arrow to increase or decrease the value.
- Click the [ ] button and change the property value in a dialog box.

---

**NOTE** When you view properties of AutoCAD objects, some properties may be unavailable.

---

## List of Options

The following options are displayed.

**Object Type** Displays the type of object that is selected.

**Toggle Value of PICKADD Sysvar** Turns the PICKADD system variable on (1) and off (0). When PICKADD is on, each object selected, either individually or by windowing, is added to the current selection set. When PICKADD is off, selected objects replace the current selection set.

**Select Objects** Selects desired objects using any selection method. The properties common to the selected objects are displayed in the Properties palette. You can then modify the properties of the selected objects in the Properties palette, or you can make other changes to the selected objects by entering an editing command.

**Quick Select** Displays the [Quick Select dialog box](#). Use Quick Select to create selection sets based on filtering criteria.

## Shortcut Menu

The following shortcut menu options are available when you right-click the title bar.

**Move** Displays a four-headed arrow cursor that you can use to move the palette. The palette does not dock.

**Size** Displays a four-headed arrow cursor that you can use to drag an edge or a corner to make the palette smaller or larger.

**Close** Closes the Properties palette.

**Allow Docking** Toggles the ability to dock or anchor palette windows. If this option is selected, a window can be docked when you drag it over a docking area at the side of a drawing. A docked window adheres to the side of the application window and causes the drawing area to be resized. Selecting this option also makes Anchor Right and Anchor Left available.

**Anchor Right/ Anchor Left** Attaches the Properties palette to an anchor tab base at the right or left side of the drawing area. The palette rolls open and closed as the cursor moves across it. When an anchored palette is open, its content overlaps the drawing area. An anchored palette cannot be set to stay open.

**Auto-hide** Causes a floating palette to roll open and closed as the cursor moves across it. When this option is cleared, the palette stays open.

**Transparency** Displays the [Transparency dialog box](#) on page 888.

# General Properties of Objects

## Quick Reference

See also:

- Display and Change the Properties of Objects

Each graphical object in a drawing shares a common set of properties known as the general properties.

## Summary

The following general properties are common to most graphical objects.

---

**NOTE** Layers or objects that are assigned property overrides in viewports display a ByLayer (VP) value and a background color for applicable properties.

---

## List of Options

The following options are displayed.

**Color** Specifies the color for objects. Selecting Select Color in the color list displays the Select Color dialog box (see COLOR).

**Layer** Specifies the current layer of the object. The list shows all layers in the current drawing (see LAYER).

**Linetype** Specifies the current linetype of the object. The list shows all linetypes in the current drawing (see LINETYPE).



**Linetype Scale** Specifies the linetype scale factor of the object (see LTSCALE).

**Plot Style** Lists NORMAL, BYLAYER, BYBLOCK, plus any plot styles contained in the current plot style table (see PLOTSTYLE).

**Lineweight** Specifies the lineweight of the object. The list shows all available lineweights in the current drawing (see LWEIGHT).

**Hyperlink** Attaches a hyperlink to a graphical object. If a description has been assigned to the hyperlink, the description is displayed. If no description has been assigned, the URL is displayed (see HYPERLINK).

**Transparency** Specifies the transparency of the object (see TRANSPARENCY).

**Thickness** Sets the current 3D thickness. This property does not apply to all objects (see CHPROP).



## Cell Border Properties Dialog Box

### Quick Reference

**See also:**

- Display and Change the Properties of Objects

Sets the properties of the borders of table cells.

### Access Methods

**Pointing device:** With a table cell selected and the Properties palette open, click in the value cell for Border Lineweight or Border Color, and click the [...] button.

### List of Options

The following options are displayed.

#### **Border Properties**

Controls the properties of the borders of the selected table cells.

#### **Lineweight**

Sets the lineweight to be used for borders that are displayed. If you use a heavy lineweight, you may have to change the cell margins.

#### **Linetype**

Sets the linetype to be used for borders that are displayed.

#### **Color**

Sets the color to be used for borders that are displayed.

#### **Double Line**

When checked, a double line border will be added to the selected cells.

**Spacing**

Determines the spacing of double-line borders. The default value is .1800.

**Preview**

Displays a preview of how the borders of the selected table will look.

---

**NOTE** Linetypes will not display in the preview.

---

**All Borders**

Applies the border properties settings to all borders of the selected table cells.

**Outside Borders**

Applies the border properties settings to the outside borders of the selected table cells.

**Inside Borders**

Applies the border properties settings to the inside borders of the selected table cells.

**No Borders**

Applies the border properties settings to none of the borders of the selected table cells.

**Top Border** Applies the border properties setting to the top borders of the selected table cells.

**Inside Horizontal Border** Applies the border properties setting to the inside horizontal borders of the selected table cells.

**Bottom Border** Applies the border properties setting to the bottom borders of the selected table cells.

**Left Border** Applies the border properties setting to the left borders of the selected table cells.

**Inside Vertical Border** Applies the border properties setting to the inside vertical border of the selected table cells.

**Right Border** Applies the border properties setting to the right border of the selected table cells.

## Add Distance or Angle Value Dialog Box

### Quick Reference

#### See also:

- Display and Change the Properties of Objects

Adds distance or angle values to a parameter's value set in a dynamic block definition.

### List of Options

The following options are displayed.

#### Distances or Angle to Add

Specifies values (separated by commas) to add to the value set.

#### Distances or Angles List (Unlabeled)

Lists the distances or angles defined for the value set.

#### Add

Adds the values specified in the Distances or Angle to Add box.

#### Delete

Deletes the selected value.

## PROPERTIESCLOSE

### Quick Reference

#### See also:

- Display and Change the Properties of Objects

Closes the Properties palette.

### Summary

The Properties palette closes.

# PSETUPIN

## Quick Reference

### See also:

- Specify Page Setup Settings

Imports a user-defined page setup into a new drawing layout.

## Summary

The Select Page Setup From File dialog box (a [standard file selection dialog box](#)) is displayed in which you can select the drawing (.dwg), template (.dwt), or drawing interchange format (.dxf) file whose page setups you want to import.

If FILEDIA is set to 0 (zero) and you enter **-psetupin** at the Command prompt, PSETUPIN displays [command prompts](#).

When you select the drawing file that you want to use, the [Import Page Setups dialog box](#) is displayed.

# -PSETUPIN

## Quick Reference

### See also:

- Specify Page Setup Settings

If you enter **-psetupin** at the Command prompt, the following prompts are displayed.

Enter file name: *Enter the name of the drawing file that contains the pagesetup to import*

Enter user defined page setup to import or [?]: *Enter the name of the page setup to import*

# PSPACE

## Quick Reference

See also:

- Work in Model Space

In a layout, switches from model space in a viewport to paper space.

## Summary

The program switches from model space to paper space when you are working on a named (paper space) layout.



On the named layout, use paper space to create a finished layout of a drawing for printing. As part of designing your layout, you create layout viewports, which are windows containing different views of the model. By switching from paper space to model space (see MSPACE), you can edit the model and views within the current layout viewport.

You can make a viewport current by double-clicking inside it. You can switch to paper space by double-clicking an area of the paper space layout that is not within a viewport.

When in paper space, you can also switch to model space by clicking Model on the status bar. If you are in model space, you can switch to the last paper space by clicking Paper on the status bar.

You can also switch between layout and model tabs at the bottom of the drawing area.

---

**NOTE** The layout and Model tabs are only displayed if you have selected the Display Layout and Model Tabs in the [Display Tab \(Options Dialog Box\)](#) on page 847.

---



# PUBLISH

## Quick Reference

See also:

- Publish Drawings

Publishes drawings to DWF, DWFX, and PDF files, or to plotters.

## Access Methods



Button

 **Ribbon:** Output tab ► Plot panel ► Batch Plot

 **Menu:** File ► Publish

 **Toolbar:** Standard

## Summary

You can assemble a collection of drawings and create an electronic drawing set. Electronic drawing sets are saved as DWF and DWFX files that can be viewed or plotted using Autodesk Design Review. PDF files can be viewed with a PDF viewer

## Select an Existing Drawing Set Description

If you enter **+publish** at the Command prompt, you can select an existing Drawing Set Descriptions (DSD) file from the Select List of Sheets dialog box (a [standard file selection dialog box](#) on page 826). The Publish dialog box opens and displays the drawing set saved in the DSD file under Sheets to Publish.

With the FILEDIA system variable set to 0, if you enter **+publish** at the Command prompt, PUBLISH displays [Command prompts](#).

# Publish Dialog Box

## Quick Reference

### See also:

- Overview of Publishing

## Summary

Specifies drawing sheets that you can assemble, reorder, rename, copy, and save for publishing as a multi-sheet drawing set. You can publish the drawing set to a DWF, DWFX, or PDF file or send it to the plotter named in the page setup for hardcopy output or as a plot file. You can save this list of drawing sheets as a DSD (Drawing Set Descriptions) file. Saved drawing sets can replace or be appended to the current list for republishing.

Specifies drawing sheets that you can assemble, reorder, rename, copy, and save for publishing as a multisheet drawing set. You can publish the drawing set to a DWF, DWFX, or PDF file or send it to the plotter named in the page setup for hardcopy output or as a plot file.

## List of Options

The following options are displayed.

### Sheet List

Displays the current drawing set (DSD) or batch plot (BP3) file.

### Load Sheet List Button

Displays the Load Sheet List dialog box (a [standard file selection dialog box](#) on page 826), in which you can select a DSD file to load. Displays the Replace or Append dialog box if a list of drawing sheets is present in the Publish Drawing Sheets dialog box. You can either replace the existing list of drawing sheets with the new sheets or append the new sheets to the current list.

### Save Sheet List Button

Displays the Save List As dialog box (a [standard file selection dialog box](#) on page 826), in which you can save the current list of drawings as a DSD file. DSD files are used to describe lists of drawing files and selected lists of layouts within those drawing files.

**Publish To:**

Defines how to publish the list of sheets. You can publish to either a multi-sheet DWF, DWFx, or PDF file (an electronic drawing set) or to the plotter specified in the page setup (a paper drawing set or a set of plot files).

**Plotter Named in Page Setup**

Indicates that the output devices given for each drawing sheet in the page setup will be used.

**DWF, DWFx, and PDF**

Selects the output file format: DWF, DWFx, or PDF.

**Automatically Load All Open Drawings**

When selected, the contents of all open documents (layouts and/or model space) are automatically loaded in the publish list. When not selected, only the current document's contents are loaded in the publish list.

**List of Sheets Buttons****Add Sheets Button**

Displays the Select Drawings dialog box (a [standard file selection dialog box](#) on page 826), in which you can select drawings to add to the list of drawing sheets. The layout names from those files are extracted, and one sheet is added to the list of drawing sheets for each layout and model.

The initial drawing sheet names are constructed from the base drawing name and the layout name or the word Model separated by a dash (-).

**Remove Sheets Button**

Deletes the selected drawing sheets from the list of sheets.

**Move Sheet Up Button**

Moves the selected drawing sheets up one position in the list.

**Move Sheet Down Button**

Moves the selected drawing sheets down one position in the list.

**Preview Button**

Displays the drawing as it will appear when plotted on paper by executing the PREVIEW command. To exit the print preview and return to the Publish dialog box, press ESC, press ENTER, or right-click and then click Exit on the shortcut menu.

## Sheets to Publish

Contains the list of drawing sheets to be included for publishing. Click the page setup column to change the sheet's settings. Use the shortcut menu to add sheets or make other changes to the list.

**Sheet Name** Combines the drawing name and the layout name with a dash (-). Includes the Model tab only if the Include Model When Adding Sheets option is selected. You can copy sheets by clicking Copy Selected Sheets on the shortcut menu. You can change the name shown in Sheet Name by clicking Rename Sheet on the shortcut menu. Drawing sheet names must be unique within a single DWF, DWFX, or PDF file. The shortcut menu also provides an option for removing all the sheets from the list.

---

**NOTE** The drawing sheets that populate the Sheets to Publish list are controlled by the PUBLISHALLSHEETS system variable.

---

**Page Setup** Displays the named page setup for the sheet. You can change the page setup by clicking the page setup name and selecting another page setup from the list. Only Model tab page setups can be applied to Model tab sheets, and only paper space page setups can be applied to paper space layouts. Select Import to import page setups from another DWG file through the Import Page Setups for Publishing dialog box (a standard file selection dialog box).

**Status** Displays the status of the sheet when it is loaded to the list of sheets.

## Show Details

Displays and hides the Selected Sheet Information and Selected Page Setup Information areas.

## Selected Sheet Details

Displays the following information about the selected page setup: plot device, plot size, plot scale, and details.

## Publish Options Information

### Publish Options

Opens the [Publish Options dialog box](#), in which you can specify options for publishing.

### Publish Output

#### Number of Copies

Specifies the number of copies to publish. If the Publish to DWF, DWFX, or PDF option is selected, the Number of Copies setting defaults to 1 and cannot be changed. If a sheet's page setup specifies to plot to file, then the number set in this option is ignored and a single plot file is created.

**Precision** Optimizes the dpi of DWF, DWFX, and PDF files for your field: manufacturing, architecture or civil engineering. Or you can configure a custom precision preset in the [Precision Presets Manager](#) on page 489.

This setting overrides the dpi setting in the .PC3 driver. This option is grayed out if no file type is selected in the Publish to: drop-down list.

---

**NOTE** The precision override is applied to all sheets in the list.

---

### **Include Plot Stamp**

Places a plot stamp on a specified corner of each drawing and logs it to a file. The plot stamp data is specified in the [Plot Stamp Dialog Box](#)[Plot Stamp Settings Dialog Box](#) on page 979.

**Plot Stamp Settings** Displays the [Plot Stamp Dialog Box](#)[Plot Stamp Settings Dialog Box](#) on page 979, in which you can specify the information, such as drawing name and plot scale, that you want applied to the plot stamp

### **Publish in Background**

Toggles background publishing for the selected sheet/s.

You can also set the background publishing in the Plot and Publish tab (Tools menu ► Options). Select the Publishing checkbox in the Background processing options group.

**Send the Sheets to the Plotter in Reverse Order** When selected, sends sheets to the plotter in reverse of default order. This option is available only if the Plotter Named in Page Setup option is selected.

**Open in Viewer when Done** When publishing completes, the DWF, DWFX or PDF file will open in a viewer application.

### **Publish**

Starts the publishing operation. Creates one or more single-sheet DWF, DWFX, or PDF files or a single multi-sheet DWF, DWFX, or PDF file, depending on the contents in the list of drawing sheets and the settings in the [Publish Options dialog box](#).

To display information about the published drawing set, including any errors or warnings, click the Plotting Details Report Available icon in the status tray on the right side of the status bar. Clicking this icon displays the [Plot and Publish Details dialog box](#), which provides information about your completed plot and publish jobs. This information is also saved to the Plot and Publish log file. The shortcut menu for this icon also provides an option to view the most recently published DWF, DWFX, or PDF file.

## Publish Options Dialog Box

### Quick Reference

See also:

- Overview of Publishing

Specifies options for publishing.

### Summary

Specifies general options for the published DWF, DWFx, or PDF file such as the file name, the save location, and layer information.

### List of Options

#### **Default Output Location (Plot to File)**

Specifies the output folder location where DWF, DWFx, PDF, and plot files are saved when you publish drawing sheets.

#### **General DFW/PDF Options**

Specifies options for creating a single-sheet DWF or DWFx file.

**Type** Specifies that a single-sheet DWF, DWFx, or PDF file or a single multi-sheet DWF, DWFx, or PDF file is generated for all the sheets listed in the [Publish Dialog Box](#) on page 1024.

#### **Naming**

- **Prompt for Name** - Indicates that you will be prompted for a name and location to publish the multi-sheet DWF, DWFx, or PDF files.
- **Specify Name** - Prompts you for a name and location to publish the multi-sheet DWF, DWFx, or PDF files.

**Name** Enables you to specify the data that you can optionally include in the DWF, DWFx or PDF file.

**Layer Information** Specifies whether layer information is included in the published DWF, DWFx or PDF file.

**Merge Control** Specifies whether overlapping lines merge (the colors of the lines blend together into a third color) or overwrite (the last plotted line obscures the line beneath it).

### **DWF Data Options**

Lists and enables you to specify the data that you can optionally include in the DWF or DWFx file.

**Password Protection** Specifies the following options for protecting DWF or DWFx files with passwords:

- **Disabled** Specifies that no password is required.
- **Prompt for Password** - Displays the [DWF Password Dialog Box](#) on page 1032 when you click Publish.
- **Specify Password** - Specifies that the password in the password box is applied to the DWF or DWFx file. When you select this option, the Password box becomes available, and you must enter a password.

---

**NOTE** If you lose or forget the password, it cannot be recovered. Keep a list of passwords and their corresponding DWF or DWFx file names in a safe place.

---

**Password** Specifies that published DWF or DWFx files have a password applied to them. A recipient of a DWF or DWFx file that has a password applied to it must have the password to open the DWF or DWFx file.

**Block Information** Specifies whether block property and attribute information is included in the published DWF or DWFx files.

---

**NOTE** You must set block information to Include in order for block template file information to be available.

---

**Block Template File** Provides options for creating a new block template (DXE) file, editing an existing block template file, or using the settings of a previously created block template file.

Create opens the [Publish Block Template dialog box](#) on page 1030, in which you can create a new block template.

Edit opens the Select Block Template dialog box (a [standard file selection dialog box](#) on page 826), in which you can select an existing block template to modify.

## Publish Block Template Dialog Box (Publish)

### Quick Reference

See also:

- Overview of Publishing

### Summary

Specifies which blocks and their properties and attributes to include in the published DWF or DWFx file.

### List of Options

The following options are displayed.

#### **Current Template**

Displays the name of the current block template.

#### **Block Source Drawings**

Displays all block source drawings that have been loaded into the Publish Block Template dialog box.

#### **Add**

Adds drawings to the list of block source drawings.

#### **Remove**

Removes selected drawings from the list of block source drawings.

#### **Scan for Blocks**

Scans block source drawings for unique definitions of blocks and their properties and attributes.

#### **Block Data to Publish**

Displays block data to publish.

#### **Unique Blocks from Source Drawings**

Displays unique blocks found in block source drawings.

#### **Check Blocks to Publish**

Displays all scanned blocks found in block source drawings.



**Exclude Blocks Without Attributes**

Excludes blocks without attributes defined.

**Properties of Selected Blocks**

Displays properties of selected blocks found in block source drawings.

**Check Properties to Publish**

Displays the union of properties of the current selection of blocks.

**Exclude General Block Properties**

Excludes all general block properties from the list display.

**Options**

Opens the Block Template Options dialog box where you can specify additional settings.

**Save**

Saves the block template file.

## Block Template Options Dialog Box (Publish)

**Quick Reference**

See also:

- Overview of Publishing

**Summary**

Specifies optional settings to include blocks within blocks and to include blocks within xrefs in the published DWF or DWFx file.

**List of Options**

The following options are displayed.

**Include Nested Blocks** Includes blocks within blocks in the published DWF or DWFx file.

**Include Blocks in Xrefs** Includes blocks within xrefs in the published DWF or DWFx file.

## DWF Password Dialog Box

### Quick Reference

See also:

- Overview of Publishing

### Summary

Specifies the password to apply to the DWF or DWFx file. DWF or DWFx passwords are case sensitive. The password or phrase can be made up of letters, numbers, punctuation, or non-ASCII characters.

---

**WARNING** If you lose or forget the password, it cannot be recovered. Keep a list of passwords and their corresponding DWF or DWFx file names in a safe place.

---

When you enter a password and click OK, the [Confirm DWF Password dialog box](#) is displayed.

## Confirm DWF Password Dialog Box

### Quick Reference

See also:

- Overview of Publishing

### Summary

Provides a space to confirm the password that you entered in the [DWF Password dialog box](#). If the two passwords do not match, you must click Publish again to reenter the correct password.

## Publish Job Progress Dialog Box

### Quick Reference

See also:

- Overview of Publishing

### Summary

Displays information about the status and progress of your publish job if background publishing is turned off in the [Options dialog box, Plot and Publish tab](#).

### List of Options

The following options are displayed.

**Cancel Sheet** Cancels publishing of the sheet currently being processed.

**Cancel Job** Cancels the publish job.


## -PUBLISH

### Quick Reference

See also:

- Overview of Publishing

### Access Method

 **Command entry:** +publish

### Summary

The Command prompt version of PUBLISH provides an interface for publishing drawing sheets that can be controlled by a script. It also provides a simplified method for regenerating DWF or DWFx files or plotted output from existing DSD files.

With the FILEDIA system variable set to 0, enter **+publish** at the Command prompt. The following prompt is displayed:

### List of Prompts

The following prompts are displayed.

Enter name of sheet list <path file name.dsd>: *Press ENTER for the current drawing or enter the sheet list name*

---

**NOTE** The bracketed text <DSD file name> contains the name of the DSD file used when this command was last run. The bracketed text area is blank if no previous name exists. If you enter a tilde (~) for the file name, the standard file selection dialog box is displayed regardless of the FILEDEA setting.

---

The file name is validated and the list of sheets is loaded.

When -PLOT, PLOT, +PUBLISH, and PUBLISH are used in a script (SCR file), the BACKGROUND PLOT system variable value is ignored, and -PLOT, PLOT, +PUBLISH, and PUBLISH are processed in the foreground.

Once the publish job starts, each drawing sheet name is listed along with an appropriate message. Drawing sheets not found or not initialized are indicated with an error message.

When the publish job is complete, the details can be viewed in the [Plot and Publish Details dialog box](#).

A log file is written during the publish operation. The log file contains the drawing sheet name, layout name, full drawing name, path name, and status. The log file name is derived from the name of the sheet list file with CSV replacing the DSD file extension.

---

**NOTE** Any existing log file is overwritten by a new log file without any warning message being displayed.

---

## PUBLISHTOWEB

### Quick Reference

#### See also:

- Use the Publish to Web Wizard to Create Web Pages

Creates HTML pages that include images of selected drawings.

### Access Methods



Button

 **Menu:** File ► Publish to Web

### Summary

The [Publish to Web wizard](#) is displayed.

This wizard provides a simplified interface for creating formatted web pages that include DWF, DWFx, JPEG, or PNG images of drawings. After creating a web page, you can post it to an Internet or intranet location.

## Publish to Web Wizard

### Quick Reference

See also:

- Use the Publish to Web Wizard to Create Web Pages

Creates a formatted HTML page.

### Summary

You can choose from a number of different formatting options that control the layout of your completed HTML page. After creating an HTML page, you can use the wizard to publish the page to an Internet or intranet location.

You can also use the wizard to modify existing HTML pages that were created using the PUBLISHTOWEB command.

You can customize the template you use for your web page. For information about customizing templates, see “Customize a Publish to Web Template” in the *Customization Guide*.

# PURGE

## Quick Reference

See also:

- Erase Objects

Removes unused items, such as block definitions and layers, from the drawing.

## Access Methods



Button

-  **Menu:** Application menu  ► Drawing Utilities ► Purge
-  **Menu:** File ► Drawing Utilities ► Purge

## Summary

The [Purge dialog box](#) is displayed.

If you enter **-purge** at the Command prompt, [options are displayed](#).

Unused named objects can be removed from the current drawing. These include block definitions, dimension styles, groups, layers, linetypes, and text styles. Zero-length geometry and empty text objects can also be removed.

---

**NOTE** The PURGE command will not remove unnamed objects (zero-length geometry or empty text and mtext objects) from blocks or locked layers.

---

## Purge Dialog Box

### Quick Reference

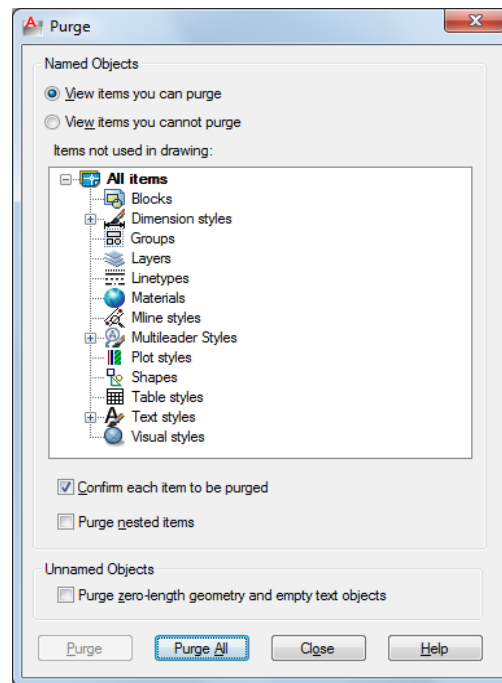
See also:

- Erase Objects

Removes unused items, such as block definitions and layers, from the drawing.

## Summary

Displays items that can be purged.



## List of Options

The following options are displayed.

### Named Objects

#### View Items You Can Purge

Switches the tree view to display a summary of named objects in the current drawing that you can purge.

#### Items Not Used in Drawing

Lists the named objects that are not used in the current drawing and that can be purged.

You can list the items for any object type by clicking the plus sign or by double-clicking the object type. You purge items by selecting the item to purge.

Purge Nested Items removes items only when you select one of the following options:

- All Items or Blocks in the tree view
- The Purge All button

### **View Items You Cannot Purge**

Switches the tree view to display a summary of named objects in the current drawing that you can't purge.

### **Items Currently Used in Drawing**

Lists named objects that cannot be removed from the drawing.

Most of these objects are currently used in the drawing or are default items that cannot be removed.

When you select individual named objects, information about why you can't purge the item is displayed below the tree view.

### **Confirm Each Item to Be Purged**

Displays the Confirm Purge dialog box when you purge an item.

### **Purge Nested Items**

Removes all unused named objects from the drawing even if they are contained within or referenced by other unused named objects.

The Confirm Purge dialog box is displayed, and you can cancel or confirm the items to be purged.

### **Tip**

Displays information detailing why you can't purge the selected item.

### **Unnamed Objects**

#### **Purge zero-length geometry and empty text objects**

Deletes geometry of zero length (lines, arcs, polylines and so on) in non-block objects. Also deletes mtext and text that contains only spaces (no text) in non-block objects.

---

**NOTE** The PURGE command will not remove zero-length geometry or empty text and mtext objects from blocks or locked layers.

---

### **Purge**

Purges the selected items.



## **Purge All**

Purges all unused items.

# **-PURGE**

## **Quick Reference**

See also:

- Erase Objects

Removes unused named objects, such as block definitions and layers, from the drawing at the Command prompt.

### **Summary**

Allows you to remove unused named objects from a drawing at the Command prompt. You can only remove one level of reference at a time. Repeat the command until there are no unreferenced, named objects.

---

**NOTE** The PURGE command will not remove unnamed objects (zero-length geometry or empty text and mtext objects) from blocks or locked layers.

---

### **List of Prompts**

The following prompts are displayed.

#### **Type of Unused Objects to Purge**

Deletes unused applications from blocks, dimension styles, groups, layers, linetypes, materials, multileader styles, plot styles, shapes, text styles, multiline styles, table styles, visual styles, regapps, zero-length geometry, empty text objects, or all.

**Enter Name (s) to Purge** Enter an object name of \* to list the objects.

**Verify Each Name to Be Purged?** Enter y to verify each name.



## Q Commands

# 17

### QCCLOSE

#### Quick Reference

##### See also:

- Overview of QuickCalc

Closes the QuickCalc calculator.

#### Summary

Closes the QuickCalc calculator.

### QDIM

#### Quick Reference

##### See also:


- Overview of Dimensioning


Creates a series of dimensions quickly from selected objects.


## Access Methods



### Button

 **Ribbon:** Annotate tab ► Dimensions panel ► Quick Dimension

 **Menu:** Dimension ► Quick Dimension

 **Toolbar:** Dimension

## Summary

This command is particularly useful for creating a series of baseline or continued dimensions, or for dimensioning a series of circles and arcs.

## List of Prompts

The following prompts are displayed.

Select geometry to dimension: *Select the objects you want to dimension or the dimensions you want to edit and press Enter*

Specify dimension line position, or

[[Continuous](#)/[Staggered](#)/[Baseline](#)/[Ordinate](#)/[Radius](#)/[Diameter](#)/[datumPoint](#)/[Edit](#)/[seTtings](#)]

<current>: *Enter an option or press Enter*

**Continuous** Creates a series of continued dimensions.

**Staggered** Creates a series of staggered dimensions.

**Baseline** Creates a series of baseline dimensions.

**Ordinate** Creates a series of ordinate dimensions.

**Radius** Creates a series of radial dimensions.

**Diameter** Creates a series of diameter dimensions.

**Datum Point** Sets a new datum point for baseline and ordinate dimensions.

**Edit** Edits a series of dimensions. You are prompted to add or remove points from existing dimensions.

**Settings** Sets the default object snap for specifying extension line origins.

# QKUNGROUP

## Quick Reference

### See also:

- Group Objects
- [UNGROUP](#) on page 1286

Removes a group definition from a drawing.

### Access Methods

 **Command entry:** qkungroup

### Summary

The group definition is deleted; the group is split into its component objects.

# QLEADER

## Quick Reference

### See also:

- Create Leaders
- Modify Leaders Using Grips

Creates a leader and leader annotation.

### Summary

It is recommended that you use the workflow available through the [MLEADER](#) on page 742 command to create leader objects.

You can use QLEADER to

- Specify leader annotation and annotation format
- Set the location where leaders attach to multiline text annotation

- Limit the number of leader points
- Constrain the angle of the first and second leader segments

You can use the [Leader Settings dialog box](#) to customize the command so that it prompts you for the number of leader points and the annotation type suited to your drawing needs.

If associative dimensioning is turned on with DIMASSOC, the leader start point can be associated with a location on an object. If the object is relocated, the arrowhead remains attached to the object and the leader line stretches, but the text or feature control frame remains in place.

### List of Prompts

The following prompts are displayed.

Specify “first leader point”, or [“Settings”] <Settings>: *Specify the first leader point, or press Enter to specify leader settings*

#### **First Leader Point**

The Number of Points setting on the Leader Line & Arrow tab of the [Leader Settings dialog box](#) determines the number of leader points you are prompted to specify.

**Width** If you set the text width value to 0.00, the width of the multiline text is unlimited.

**Tolerance** If Tolerance is selected on the Annotation tab, the [Geometric Tolerance dialog box](#) is displayed. Use the dialog box to create the tolerance feature control frame.

Enter block name or [?]: *Enter the name, or enter ? to display a list of blocks defined in the drawing*

**Insertion Point** For a description of the insertion options, see [-INSERT](#) on page 624.

#### **Settings**

Displays the [Leader Settings dialog box](#).

# Leader Settings Dialog Box

## Quick Reference

See also:

- Create Leaders
- Modify Leaders Using Grips

Creates a leader and leader annotation.

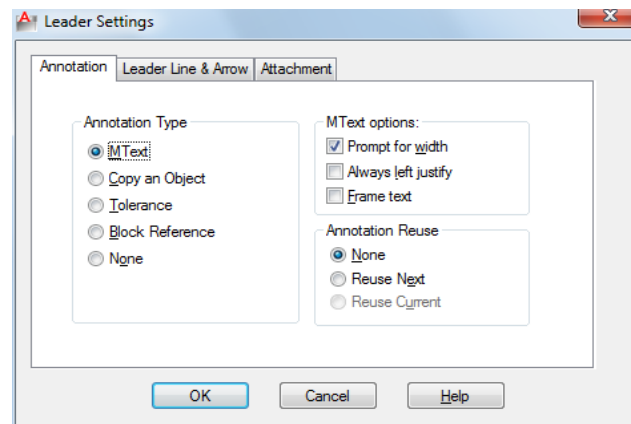
## Summary

Customizes the QLEADER command and sets properties for leaders and leader annotations.

## List of Tabs

The following tabs are displayed.

### Annotation Tab (Leader Settings Dialog Box)



## Annotation Type

Sets the leader annotation type. The type you select changes the QLEADER leader annotation prompt.

### MText

Prompts you to create multiline text (mtext) annotation.

### **Copy an Object**

Prompts you to copy a multiline text, single-line text, tolerance, or block reference object and connects the copy to the end of the leader line. The copy is associated with the leader line, meaning that if the copied object moves, the end of the leader line moves with it. The display of the hook line depends on the object copied.

### **Tolerance**

Displays the Tolerance dialog box, which you can use to create a feature control frame to attach to the leader.

### **Block Reference**

Prompts you to insert a block reference. The block reference is inserted at an offset from the end of the leader line and is associated to the leader line, meaning that if the block moves, the end of the leader line moves with it. No hook line is displayed.

### **None**

Creates a leader with no annotation.

### **MText Options**

The options are available only when the multiline text annotation type is selected.

### **Prompt for Width**

Prompts you to specify the width of the multiline text annotation.

### **Always Left Justify**

Left-justifies the multiline text annotation, regardless of leader location.

### **Frame Text**

Places a frame around multiline text annotation.

### **Annotation Reuse**

Sets options for reusing leader annotation.

### **None**

Does not reuse leader annotation.

### **Reuse Next**

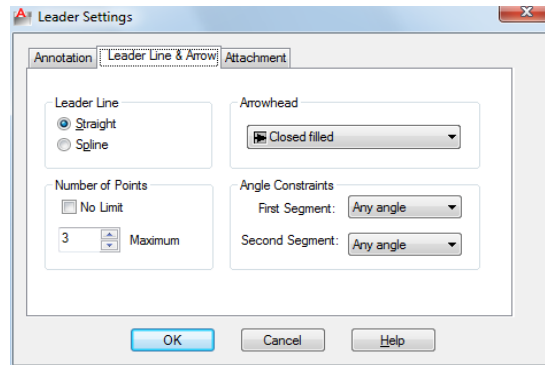
Reuses the next annotation you create for all subsequent leaders.



## Reuse Current

Reuses current annotation. This option is automatically selected when you reuse annotation after selecting Reuse Next.

## Leader Line & Arrow Tab (Leader Settings Dialog Box)



### Leader Line

Sets the leader line format.

#### Straight

Creates straight-line segments between the points you specify.

#### Spline

Creates a spline object using the leader points you specify as control points.

### Arrowhead

Defines the leader arrowhead. The arrowheads are also available for dimension lines (DIMSTYLE command). If you select User Arrow, a list of blocks in the drawing is displayed.

### Number of Points

Sets the number of leader points that QLEADER prompts you to specify before prompting for the leader annotation. For example, if you set the points to 3, QLEADER automatically prompts you to specify the annotation after you specify two leader points. Set the number to one more than the number of leader segments you want to create.

If you set the option to No Limit, QLEADER prompts for leader points until you press Enter.

## Angle Constraints

Sets angle constraints for the first and second leader lines.

### First Segment

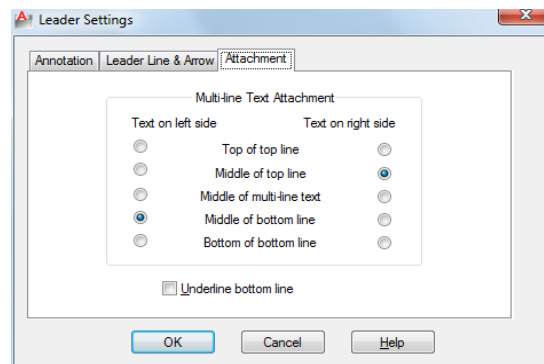
Sets the angle of the first leader segment.

### Second Segment

Sets the angle of the second leader segment.

## Attachment Tab (Leader Settings Dialog Box)

Sets the attachment location for leader lines and multiline text annotation. This tab is available only when Mtext is selected on the Annotation tab.



### Top of Top Line

Attaches the leader line at the top of the top multiline text line.

### Middle of Top Line

Attaches the leader line at the middle of the top multiline text line.

### Middle of Multiline Text

Attaches the leader line at the middle of the multiline text.

### Middle of Bottom Line

Attaches the leader line at the middle of the bottom multiline text line.

### Bottom of Bottom Line

Attaches the leader line at the bottom of the bottom multiline text line.

### Underline Bottom Line

Underlines the bottom multiline text line.

# QNEW

## Quick Reference

See also:

- Use a Drawing Template File

Starts a new drawing from a selected drawing template file.

## Access Methods



Button

- ☒ **Menu:** Application menu  ► New ► Drawing
- ☒ **Toolbar:** Standard

## Summary

QNEW creates a new drawing from the default drawing template file and folder path specified in Default Template File Name for QNEW on the File tab of the Options dialog box.

When a default drawing template file is set to *None* or is not specified, QNEW displays the Select Template File dialog box (a [standard file selection dialog box](#)).

The behavior of the QNEW command is determined by the STARTUP system variable.

- *1*: Displays the [Create New Drawing dialog box](#).
- *0*: Displays the Select Template dialog box (a [standard file selection dialog box](#)) or starts the new drawing using the default drawing template file.

If the system variable, FILEDIA, is set to 0 instead of 1, a [Command prompt](#) is displayed. If you set FILEDIA to 0, this prompt is displayed regardless of the Startup setting.

## QSAVE

### Quick Reference

See also:

- Save a Drawing

Saves the current drawing using the specified default file format.

### Access Methods



**Button**

 **Menu:** File ► Save

 **Toolbar:** Standard

### Summary

If the drawing is named, the program saves the drawing and does not request a new file name. Use the SAVEAS command if you need to save a drawing with a different name. If the drawing is read-only, use the SAVEAS command to save the changed file under a different name.

If the drawing is unnamed, the Save Drawing As dialog box (see SAVEAS) is displayed and the drawing is saved with the file name and format you specify.

---

**NOTE** The file format specified on the Open and Save tab of the Options dialog box is used when saving a drawing with this command.

---

# QSELECT

## Quick Reference

### See also:

- Select Objects by Properties


Creates a selection set based on filtering criteria.

## Access Methods



### Button

 **Ribbon:** Home tab ► Utilities panel ► Quick Select

 **Menu:** Tools ► Quick Select

**Shortcut menu:** End any active commands, right-click in the drawing area, and choose Quick Select.

## Summary

The [Quick Select dialog box](#) is displayed.

QSELECT filters selection sets by object type and property. For example, you can select all of the multiline text objects in a drawing that use a specified text style.

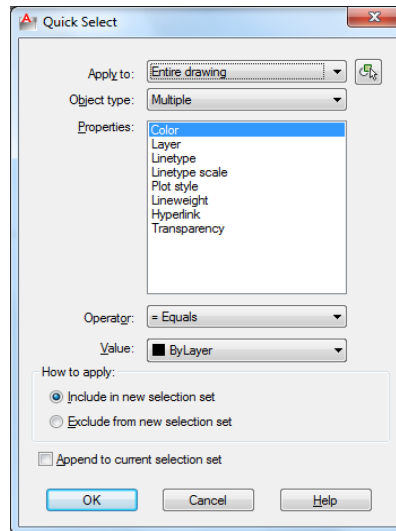
# Quick Select Dialog Box

## Quick Reference

### See also:

- Select Objects by Properties

Specifies the filtering criteria and how you want to create the selection set from that criteria.



## List of Options

The following options are displayed.

### Apply To

Applies the filtering criteria to the entire drawing or to the current selection set (if one exists).

If Append to Current Selection Set is selected, the filtering criteria is applied to the entire drawing.

### Select Objects

Temporarily closes the Quick Select dialog box so that you can select the objects to which you want to apply the filter criteria.

### Object Type

Specifies the type of objects to include in the filtering criteria. If the filtering criteria are being applied to the entire drawing, the Object Type list includes all object types, including custom. Otherwise, the list includes only the object types of the selected objects.

If an application such as AutoCAD<sup>®</sup> Map 3D was used to add a feature classification to an object, you can select a classification.

If you select an object type not supported by AutoCAD LT, it is greyed out in the Properties palette and is not available for changes.

### **Properties**

Specifies the object property for the filter. This list includes all searchable properties for the selected object type. The property you select determines the options available in Operator and Value.

If an application such as AutoCAD® Map 3D was used to add a feature classification to an object, you can select a classification property.

### **Operator**

Controls the range of the filter. Depending on the selected property, options can include Equals, Not Equal To, Greater Than, Less Than, and \*Wildcard Match. \*Wildcard Match is available only for text fields that can be edited. Use the Select All option to ignore all properties filters.

For more information, see “Filter and Sort the List of Layers”.

### **Value**

Specifies the property value for the filter.

### **How to Apply**

Specifies whether you want the new selection set to include or exclude objects that match the specified filtering criteria. Select Include in New Selection Set to create a new selection set composed only of objects that match the filtering criteria. Select Exclude from New Selection Set to create a new selection set composed only of objects that do not match the filtering criteria.

### **Append to Current Selection Set**

Specifies whether the selection set created by QSELECT replaces or is appended to the current selection set.

---

**NOTE** QSELECT supports custom objects (objects created by another application) and their properties. If a custom object uses properties other than AutoCAD LT properties, the custom object's source application must be running in order for the properties to be available to QSELECT.

---

# QTEXT

## Quick Reference

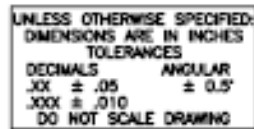
See also:

- Control the Display of Polylines, Hatches, Gradient Fills, Lineweights, and Text

Controls the display and plotting of text and attribute objects.

## Summary

When QTEXT (Quick Text) is on, each text and attribute object is displayed as a bounding box around the text object. Turning QTEXT mode on reduces the time it takes the program to redraw and regenerate drawings that contain many text objects.



QTEXT off



QTEXT on

# QUICKCALC

## Quick Reference

See also:

- Overview of QuickCalc

Opens the QuickCalc calculator.


## Access Methods



Button



 **Ribbon:** View tab ► Palettes panel ► QuickCalc

 **Menu:** Tools ► Palettes ► QuickCalc

 **Toolbar:** Standard

**Shortcut menu:** Right-click and click QuickCalc.

### Summary

The QuickCalc calculator performs a full range of mathematical, scientific, and geometric calculations, creates and uses variables, and converts units of measurement.

Displays the [QuickCalc calculator](#) on page 1055.

## QuickCalc Calculator

### Quick Reference

See also:

- Overview of QuickCalc

Performs a full range of mathematical, scientific, and geometric calculations, creates and uses variables, and converts units of measurement.

### List of Options

The following options are displayed.

#### Toolbar

Performs quick calculations of common functions.



**Clear** Clears the Input box.

**Clear History** Clears the history area.

**Paste Value to Command Line** Pastes the value in the Input box at the Command prompt. When QuickCalc is used transparently during a command, this button is replaced by the Apply button at the bottom of the calculator.

**Get Coordinates** Calculates the coordinates of a point.

**Distance Between Two Points** Calculates the distance between two points. The calculated distance always displays as a unitless decimal value.

**Angle of Line Defined by Two Points** Calculates the angle of two points.

**Two Lines Defined by Four Points** Calculates the intersection of four points.

### **History Area**

Displays a running list of previously evaluated expressions. The History area shortcut menu provides several options, including copying a selected expression to the Clipboard.

### **Input Box**

Provides a box where you enter and retrieve expressions.

### **More/Less Button**

Hides or Displays all QuickCalc function areas. Right-click to select individual function areas to hide or display.

### **Number Pad**

Provides a standard calculator keypad where you enter numbers and symbols for arithmetic expressions.

### **Scientific Area**

Evaluates trigonometric, logarithmic, exponential, and other expressions commonly associated with scientific and engineering applications.

### **Units Conversion Area**

Converts units of measurement from one unit type to another unit type. The units conversion area accepts only decimal values without units.

**Units Type** Select length, area, volume, and angular values from a list.

**Convert From** Lists the units of measurement from which to convert.

**Convert To** Lists the units of measurement to which to convert.

**Value to Convert** Provides a box to enter a value to convert.

**Converted Value** Converts the units entered and displays the converted value.

**Calculator Icon** Returns the converted value to the Input box.

### **Variables Area**

Provides access to predefined constants and functions. You can use the Variables area to define and store additional constants and functions.

**Variables Tree** Stores predefined shortcut functions and user-defined variables.

Shortcut functions are common expressions that combine a function with an object snap. The following table describes the predefined shortcut functions in the list.

Shortcut Function	Shortcut For	Description
dee	dist(end,end)	Distance between two endpoints
ille	ill(end,end,end,end)	Intersection of two lines defined by four endpoints
mee	(end+end)/2	Midpoint between two endpoints
nee	nor(end,end)	Unit vector in the XY plane and normal to two endpoints
rad	rad	Radius of a selected circle, arc, or polyline arc
vee	vec(end,end)	Vector from two endpoints
vee1	vec1(end,end)	Unit vector from two endpoints

**New Variable Button** Opens the [Variable Definition dialog box](#) on page 1057.

**Edit Variable Button** Opens the [Variable Definition dialog box](#) on page 1057 so you can make changes to the selected variable.

**Delete Variable Button** Deletes the selected variable.

**Calculator Button** Returns the selected variable to the Input box.

## Variable Definition Dialog Box

### Quick Reference

See also:

- Overview of QuickCalc

Defines a variable to store in the variables tree.

### **List of Options**

The following options are displayed.

### **Variable Type**

Specifies the type of variable.

#### **Constant**

Stores the new variable as a constant.

#### **Function**

Stores the new variable as a function.

### **Variable Properties**

Defines the properties of a new variable.

#### **Name**

Stores the name of the variable. Names of constants cannot include spaces.

#### **Group With**

Stores the named variable in the selected category. If New is selected, the [Category Definition dialog box](#) on page 1059 opens, where you can define a new category for the variable.

#### **Value or Expression**

Stores the value or expression for the variable.

#### **Description**

Stores a description for the variable.

#### **OK**

Closes the dialog box and applies the current settings to the variable.

#### **Cancel**

Closes the dialog box without applying the current settings.

#### **Help**

Displays Help.

## Settings

The following shortcut menu options are available when you right-click the title bar.

**Move** Displays a four-headed arrow cursor that you can use to move the dialog box. The dialog box does not dock.

**Size** Displays a four-headed arrow cursor that you can use to drag an edge or a corner to make the smaller or larger.

**Close** Closes the Markup Set Manager.

**Allow Docking** Toggles the ability to dock or anchor the calculator.

**Anchor Right/ Anchor Left** Attaches the QuickCalc calculator to an anchor tab base at the right or left side of the drawing area.

**Auto-hide** Causes a floating palette to roll open and closed as the cursor moves across it. When this option is cleared, the palette stays open.

**Transparency** Displays the [Transparency dialog box](#) on page 888.

## Category Definition Dialog Box

### Quick Reference

See also:

- Overview of QuickCalc

Defines a category to organize the variables in the variables tree.

### List of Options

The following options are displayed.

### Category Properties

Defines the properties of the new category.

#### Name

Stores the name of the category.

#### Description

Stores a description for the category.

**OK**

Closes the dialog box and applies the current settings to the variable.

**Cancel**

Closes the dialog box without applying the current settings.

**Help**

Displays Help.

## QUICKCUI

**Quick Reference****See also:**

- Create and Edit Toolbars

Displays the Customize User Interface Editor in a collapsed state.

**Summary**

The [Customize User Interface Editor](#) on page 242 is displayed in a collapsed state. Only the Customizations In *<filename>* and Command List panes are displayed. The Customizations In *<filename>* pane is shown collapsed and the Command List pane is shown expanded.

For more information, see User Interface Customization.

## QUICKPROPERTIES

**Quick Reference****See also:**

- Display and Change the Properties of Objects

Displays quick property data for selected objects.

### Summary

Displays the Quick Properties palette that displays a customizable list of object properties for one or more selected objects.

The behavior of the Quick Properties palette is controlled by settings on the Quick Properties tab of the Drafting Settings dialog box ([DSETTINGS](#) on page 414). The [QPMODE](#) on page 1632 system variable controls whether the palette is displayed automatically when objects are selected.

## QUIT


### Quick Reference

See also:

- Start a Drawing

Exits the program.

### Access Methods

 **Menu:** File ► Exit

### Summary

Quits the program if there have been no changes since the drawing was last saved. If the drawing has been modified, you are prompted to save or discard the changes before quitting.

You can quit a file that has been opened in read-only mode if you have made no modifications or if you are willing to discard them. To save modifications to a read-only drawing, use the `SAVEAS` command to save the drawing under another name.

# QVDRAWING

## Quick Reference

### See also:

- Switch Between Open Drawings

Displays open drawings and layouts in a drawing in preview images.

### Access Methods



**Btn**

**Shortcut menu:** Click on the status bar.

### Summary

Displays a two-level structure of preview images at the bottom of the application. The first level displays the images of open drawings and the second level displays the images for model space and layouts in a drawing.

# QVDRAWINGCLOSE

## Quick Reference

### See also:

- Switch Between Open Drawings

Closes preview images of open drawings and layouts in a drawing.

### Access Methods



**Btn**

**Shortcut menu:** Click on the Quick View drawings toolbar.



### Summary

Closes preview images of open drawings and layouts in a drawing.

## QVLAYOUT

### Quick Reference

See also:

- Switch Between Layouts in the Current Drawing

Displays preview images of model space and layouts in a drawing.

### Access Methods



**Btn**

**Shortcut menu:** Click on the status bar.

### Summary

Displays preview images of model space and layouts in a drawing in a row at the bottom of the application.

## QVLAYOUTCLOSE

### Quick Reference

See also:

- Switch Between Layouts in the Current Drawing

Closes preview images of model space and layouts in a drawing

### Access Methods



Button

**Shortcut menu:** Click on the Quick View drawings toolbar.

### Summary

Closes preview images of model space and layouts in a drawings.

## RAY

### Quick Reference

See also:


- Draw Construction Lines (and Rays)

Creates a line that starts at a point and continues to infinity.

### Access Methods



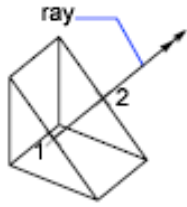
Button

 **Ribbon:** Home tab ► Draw panel ► Ray

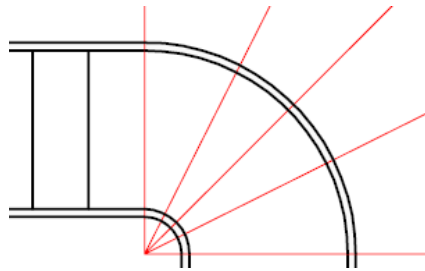
 **Menu:** Draw ► Ray

### Summary

The ray is extended to the edge of the display in the direction defined by the starting point and the through point. The prompt for a through point is redisplayed so you can create multiple rays. Press Enter to end the command.



Lines that extend to infinity in one direction, known as rays, can be used as references for creating other objects.



### List of Prompts

The following prompts are displayed.

Specify start point: *Specify a point (1)*

Specify through point: *Specify a point for the ray to pass through (2)*

## RECOVER

### Quick Reference

See also:



- Repair a Damaged Drawing File

Repairs and then opens a damaged drawing file.

### Access Methods



Button

 **Menu:** Application menu ► Drawing Utilities ► Recover ► Recover  
 **Menu:** File ► Drawing Utilities ► Recover

### Summary

The program extracts as much material as it can from the damaged file. Files that can be recovered include DWG, DWT, and DWS files. Performing a recover on a DXF file will only open the file.

In the Select File dialog box (a [standard file selection dialog box](#)), enter the drawing file name or select the damaged drawing file. Results are displayed in the text window.

When FILEDIA is set to 0 (zero), RECOVER displays the following command prompt.

Enter ~ (tilde) at the prompt to ignore FILEDIA and display the Select File dialog box.

## RECOVERALL


### Quick Reference


#### See also:

- Repair a Damaged Drawing File

Repairs a damaged drawing file along with all attached xrefs.

#### Access Methods

 **Menu:** Application menu ► Drawing Utilities ► Recover ► Recover with Xrefs

 **Menu:** File ► Drawing Utilities ► Recover Drawing and Xrefs

### Summary

In the Select File dialog box (a [standard file selection dialog box](#)), enter the drawing file name or select the damaged drawing file.

The selected drawing file and all attached xrefs, including all nested xrefs, are opened, repaired, resaved, and closed.

- Drawing files are saved in the current drawing file format.

- Copies of the original drawing files are saved as BAK files.
- If the object enabler is present, custom objects are updated.

Results are displayed in the Drawing Recovery Log window. Each drawing file checked includes a Drawing Recovery Log that can be expanded or collapsed. The entire log can be copied to the Windows clipboard with the Copy to Clipboard button.

When FILEDIA is set to 0 (zero), RECOVERALL displays the following command prompt.

Enter ~ (tilde) at the prompt to ignore FILEDIA and display the Select File dialog box.

---

**NOTE** The RECOVERALL command recovers or audits DWG, DWT, and DWS files.

---

## RECTANG

### Quick Reference

See also:


- Draw Rectangles and Polygons


Creates a rectangular polyline.

### Access Methods



Button

 **Ribbon:** Home tab ► Draw panel ► Rectangle

 **Menu:** Draw ► Rectangle

 **Toolbar:** Draw

### Summary

With this command, you can specify the rectangle parameters (length, width, rotation) and control the type of corners (fillet, chamfer, or square).



### List of Prompts

The following prompts are displayed.

Current settings: Rotation = 0

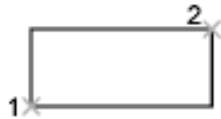
Specify **first corner point** or [Chamfer/Elevation/Fillet/Thickness/Width]:

*Specify a point or enter an option*

#### **First Corner Point**

Specifies a corner point of the rectangle.

**Other Corner Point** Creates a rectangle using the specified points as diagonally opposite corners.



**Area** Creates a rectangle using the area and either a length or a width. If the Chamfer or Fillet option is active, the area includes the effect of the chamfers or fillets on the corners of the rectangle.

**Dimensions** Creates a rectangle using length and width values.

**Rotation** Creates a rectangle at a specified rotation angle.

#### **Chamfer**

Sets the chamfer distances for the rectangle.

#### **Elevation**

Specifies the elevation of the rectangle.

#### **Fillet**

Specifies the fillet radius of the rectangle.

#### **Thickness**

Specifies the thickness of the rectangle.

#### **Width**

Specifies the polyline width of the rectangle to be drawn.

# REDO

## Quick Reference

See also:

- Correct Mistakes

Reverses the effects of previous UNDO or U command.

## Access Methods




**Button**

 **Menu:** Edit ► Redo

 **Toolbar:** Standard

**Shortcut menu:** With no command active and no objects selected, right-click in the drawing area and click Redo.

 **Command entry:** Ctrl+Y

## Summary

REDO reverses the effects of a single UNDO or U command. REDO must immediately follow the U or UNDO command.

# REDRAW

## Quick Reference


See also:

- Erase Objects

Refreshes the display in the current viewport.

## Access Methods

 **Menu:** View ► Redraw

 **Command entry:** 'redraw for transparent use



### Summary

Removes temporary graphics left by VSLIDE and some operations from the current viewport. To remove stray pixels, use the `REGEN` command.

## REFCLOSE


### Quick Reference

See also:

- Save Back Edited Referenced Drawings and Blocks

Saves back or discards changes made during in-place editing of a reference, either an xref or a block definition.

### Access Methods

 **Menu:** Tools ► Xref and Block In-Place Editing ► Save Reference Edits

 **Menu:** Tools ► Xref and Block In-Place Editing ► Close Reference

**Shortcut menu:** With no objects selected during in-place reference editing, right-click in the drawing area and choose Close Refedit Session.

### Summary

If you save or discard changes with REFCLOSE, you can still use the UNDO command to return to the reference editing session. If you have made unwanted changes to an xref and already saved back the changes, use UNDO to undo the unwanted changes; then use REFCLOSE to save back changes and restore the xref to its original state.

---

**NOTE** When you edit and save xrefs in place in a drawing, the preview image for the original reference drawing is no longer available unless you open and save the drawing again.

---

### List of Prompts

The following prompts are displayed.

Enter option [Save/Discard reference changes] <Save>:



**Save** Saves back to the xref source drawing or to the block definition in the current drawing all changes made to objects in the working set. If you remove an object from the working set and save changes, the object is deleted from the reference and added to the current drawing. The Save Back Changes to Reference button on the Refedit toolbar automatically saves reference editing changes.

---

**NOTE** If the file format of the xref source drawing is AutoCAD Release 14 or earlier, the file is saved in AutoCAD 2010 file format. The file format is not changed for xref source drawings in AutoCAD 2000 and 2004 format.

---



**Discard Reference Changes** Discards the working set; the source drawing or block definition is returned to its original state. Any changes you make to objects in the current drawing (not in the xref or block) are not discarded. If you delete any object that is not in the working set, the object is not restored even if you choose to discard changes. The Discard Changes to Reference button on the Refedit toolbar automatically discards reference editing changes without using REFCLOSE.

## REFEDIT

### Quick Reference

See also:


- Edit Selected Objects in Referenced Drawings and Blocks


Edits an xref or a block definition directly within the current drawing.

### Access Methods



**Button**

 **Ribbon:** Insert tab ► Reference panel ► Edit Reference

 **Menu:** Tools ► Xref and Block In-place Editing ► Edit Reference In-Place

 **Toolbar:** Refedit

### Summary

The objects that you select from the selected xref or block are temporarily extracted and made available for editing in the current drawing. The set of extracted objects is called the working set, which can be modified and then saved back to update the xref or block definition.

### List of Prompts

The following prompts are displayed.

Select reference: *Select an xref or a block in the current drawing*

If you edit an xref when the ribbon is active, the Edit Reference ribbon contextual tab displays.

If you enter **-refedit** at the Command prompt, [options are displayed](#).

## Edit Reference Ribbon Contextual Tab

### Quick Reference

See also:

- Edit Selected Objects in Referenced Drawings and Blocks

Manages the working set of objects that are edited in a reference.

### Reference Editing Panel

**Save or Discard Changes** ([REFCLOSE on page 1071](#)) Saves back or discards changes made during in-place editing of a reference, either an xref or a block definition.

**Add to or Remove From Working Set** ([REFSET on page 1077](#)) Adds or removes objects from a working set during in-place editing of a reference, either an xref or a block definition.

## Reference Edit Dialog Box

### Quick Reference

See also:

- Edit Selected Objects in Referenced Drawings and Blocks

Specifies the reference to edit.

### Summary

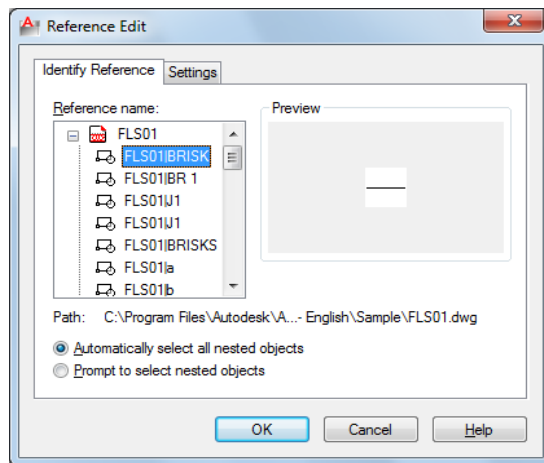
To select a reference to edit, select an object in the reference. If you select an object that is part of one or more nested references, the nested references are displayed in the dialog box.

### List of Tabs

- [Identify Reference](#) on page 1074
- [Settings](#) on page 1075

### Identify Reference Tab (Reference Edit Dialog Box)

Provides visual aids for identifying the reference to edit and controls how the reference is selected.



Reference Name

Displays the reference selected for in-place editing and any references nested within the selected reference.

Nested references are displayed only if the selected object is part of a nested reference. If multiple references are displayed, choose a specific xref or block to modify. Only one reference can be edited in place at a time.

#### **Preview**

Displays a preview image of the currently selected reference.

The preview image displays the reference as it was last saved in the drawing. The reference preview image is not updated when changes are saved back to the reference.

#### **Path**

Displays the file location of the selected reference. If the selected reference is a block, no path is displayed.

#### **Automatically Select All Nested Objects**

Controls whether nested objects are included automatically in the reference editing session.

#### **Prompt to Select Nested Objects**

Controls whether nested objects must be selected individually in the reference editing session.

If this option is checked, after you close the Reference Edit dialog box and enter the reference edit state, you are prompted to select the specific objects in the reference that you want to edit.

Select nested objects: *Select objects within the reference that you want to edit*

#### **Settings Tab (Reference Edit Dialog Box)**

Provides options for editing references.

#### **Create Unique Layer, Style, and Block Names**

Controls whether layers and other named objects extracted from the reference are uniquely altered.

If selected, named objects in xrefs are altered (names are prefixed with \$#\$), similar to the way they are altered when you bind xrefs. If cleared, the names of layers and other named objects remain the same as in the reference drawing. Named objects that are not altered to make them unique assume the properties of those in the current host drawing that share the same name.

#### **Display Attribute Definitions for Editing**

Controls whether all variable attribute definitions in block references are extracted and displayed during reference editing.

If Display Attribute Definitions for Editing is selected, the attributes (except constant attributes) are made invisible, and the attribute definitions are available for editing along with the selected reference geometry. When changes are saved back to the block reference, the attributes of the original reference remain unchanged. The new or altered attribute definitions affect only subsequent insertions of the block; the attributes in existing block instances are not affected. Xrefs and block references without definitions are not affected by this option.

#### **Lock Objects Not in Working Set**

Locks all objects not in the working set. This prevents you from accidentally selecting and editing objects in the host drawing while in a reference editing state.

The behavior of locked objects is similar to objects on a locked layer. If you try to edit locked objects, they are filtered from the selection set.

## **-REFEDIT**

### **Quick Reference**

**See also:**

- Edit Selected Objects in Referenced Drawings and Blocks

Edits an xref or a block definition directly within the current drawing.

#### **List of Prompts**

The following prompts are displayed.

Select reference: *Select an xref or block in the current drawing*

Select nesting level [OK/Next] <Next>: *Enter an option or press Enter*

**OK**

Accepts the currently highlighted reference for in-place reference editing.

If you are editing a block reference with attributes, you can enter **y** to display the attribute definitions and make them available for editing. The attributes are made invisible, and the attribute definitions are available for editing along with the selected reference geometry. When changes are saved back to the

block reference, the attributes of the original reference remain unchanged. The new or altered attribute definitions affect only subsequent insertions of the block; the attributes in existing block instances are not affected.

**All** Objects in the selected reference will be automatically included in the reference editing session.

**Nested** After you close the Reference Edit dialog box and enter the reference edit state, you are prompted to select the specific objects in the reference that you want to edit.

### **Next**

Advances through the reference and nested references available for selection. The currently selected reference is highlighted.

A working set is formed with the objects you have selected for editing. The working set includes objects that can be saved back to update the xref or block definition. When you save back changes, changes made to the objects in the reference file are saved without actually opening the reference drawing or recreating the block. The working set is visually distinct from the rest of the current drawing: all objects in the current drawing, except objects in the working set, appear faded. The XFADECTL system variable controls the fading of objects while you edit a reference in place.

You can select objects in xrefs for editing even if they are on a locked layer in the reference file. When a reference object is part of the working set, you can unlock the object's layer and make changes to the object. Only the changes made to the object are saved back to the reference file; the xref layer remains locked in the reference file.

---

**NOTE** Objects outside of the working set are not faded unless the visual style is set to 2D Wireframe during in-place reference editing.

---

## **REFSET**


### **Quick Reference**


**See also:**

- Use the Working Set to Edit Referenced Drawings and Blocks

Adds or removes objects from a working set during in-place editing of a reference, either an xref or a block definition.

### Access Methods

 **Menu:** Tools ► Xref and Block In-place Editing ► Add to Working Set

 **Menu:** Tools ► Xref and Block In-Place Editing ► Remove from Working Set

### Summary

Objects that are part of the working set are visually distinct from other objects in the current drawing. All objects in the current drawing, except objects in the working set, appear faded.

### List of Prompts

The following prompts are displayed.

Transfer objects between the Refedit working set and host drawing...

Enter an option [Add/Remove] <Add>: *Enter an option or press Enter*

**Add** Adds objects to the working set.

An object that is part of the working set is added to the reference when changes are saved back, and the object is removed from the current drawing. The Add to Working Set button on the Refedit toolbar prompts you to add objects to the working set without using [REFCLOSE](#) on page 1071.



**Remove** Removes objects from the working set.

An object that is removed from the working set is removed from the reference when changes are saved back; the object is also removed from the current drawing. The Remove from Working Set button on the Refedit toolbar prompts you to remove objects from the working set without using [REFCLOSE](#).





# REGEN

## Quick Reference

See also:

- Control the Display of Polylines, Hatches, Gradient Fills, Lineweights, and Text

Regenerates the entire drawing from the current viewport.

## Access Methods

 **Menu:** View ► Regen

## Summary

REGEN regenerates the entire drawing and recomputes the screen coordinates for all objects in the current viewport. It also reindexes the drawing database for optimum display and object selection performance.

# REGENALL


## Quick Reference

See also:

- Control the Display of Polylines, Hatches, Gradient Fills, Lineweights, and Text

Regenerates the drawing and refreshes all viewports.

## Access Methods

 **Menu:** View ► Regen All

## Summary

REGENALL regenerates the entire drawing and recomputes the screen coordinates for all objects in all viewports. It also reindexes the drawing database for optimum display and object selection performance.

# REGION

## Quick Reference

See also:


- Create and Combine Areas (Regions)


Converts an object that encloses an area into a region object.

## Access Methods



Button

 **Ribbon:** Home tab ► Draw panel ► Region

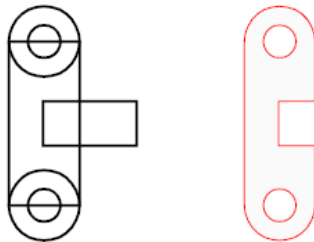
 **Menu:** Draw ► Region

 **Toolbar:** Draw

## Summary

Regions are two-dimensional areas you create from closed shapes or loops. Closed polylines, lines, and curves are valid selections. Curves include circular arcs, circles, elliptical arcs, ellipses, and splines.

You can combine several regions into a single, complex region.



Closed 2D and exploded planar 3D polylines in the selection set are converted to separate regions and then converted polylines, lines, and curves to form closed planar loops (outer boundaries and holes of a region). If more than two curves share an endpoint, the resulting region might be arbitrary.

The boundary of the region consists of end-connected curves where each point shares only two edges. All intersections and self-intersecting curves are rejected.

If a selected polyline has been smoothed by either the Spline or Fit option of PEDIT, the resulting region contains the line or arc geometry of the smoothed polyline. The polyline is not converted to a spline object.

REGION deletes the original objects after converting them to regions unless the system variable DELOBJ is set to 0. If the original objects were hatched, hatch associativity is lost. To restore associativity, rehatch the region.

## REINIT

### Quick Reference

See also:

- Digitizing Tablets

Reinitializes the digitizer, digitizer input/output port, and program parameters file.

### Summary

The [Re-initialization dialog box](#) is displayed.

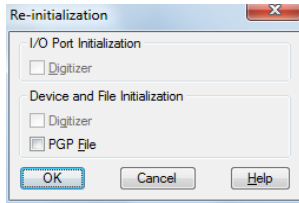
## Re-initialization Dialog Box

### Quick Reference

See also:

- Digitizing Tablets

Defines the I/O port and the device file for reinitialization.



### List of Options

The following options are displayed.

**I/O Port Initialization** Reinitializes the I/O port for the digitizer.

**Device File Initialization** Reinitializes the digitizer and the *acaslt.pgp* file.

## RENAME

### Quick Reference

See also:


- Resolve Name Conflicts in External References

Changes the names assigned to items such as layers and dimension styles.

### Access Methods



**Button**

 **Menu:** Format ► Rename

### Summary

Named objects are categories of items such as layers, dimension styles, table styles, text styles, and so on. It is strongly recommended that you create standard naming conventions for them and save them in drawing template files.

The [Rename dialog box](#) is displayed.

If you enter **-rename** at the Command prompt, [options are displayed](#).

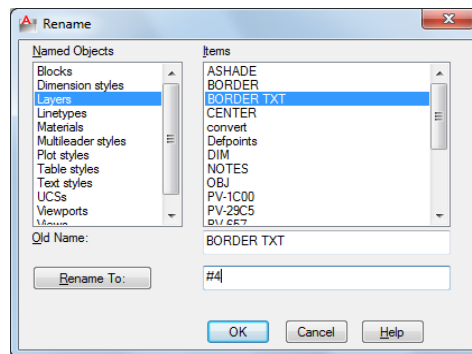
# Rename Dialog Box

## Quick Reference

See also:

- Resolve Name Conflicts in External References

Changes the names assigned to named objects such as layers and dimension styles.



## List of Options

The following options are displayed.

### Named Objects

Lists named objects in a drawing by category.

### Items

Displays items of the type specified in Named Objects.

### Old Name

Specifies the item to be renamed. You can use the wild-card characters \* and ? to rename groups of items. You can't rename some standard items, such as layer 0 and the CONTINUOUS linetype.

### Rename To

Specifies the new name you want to assign to the item.

## -RENAME

### Quick Reference

#### See also:

- Resolve Name Conflicts in External References

Changes the names assigned to named objects from the Command prompt.

### List of Prompts

The following prompts are displayed.

Enter object type to rename

[Block/Dimstyle/Layer/LType/Material/multileaderStyle/Plotstyle/textStyle/Tablestyle/Ucs/View/VPort];

*Enter a named object type to rename an object*

Enter old object name: *Enter the old name*

Enter new object name: *Enter the new name*

## RESETBLOCK

### Quick Reference

#### See also:

- Work with Dynamic Blocks in Drawings

Resets one or more dynamic block references to the default values of the block definition.

### Access Methods

**Shortcut menu:** Select a dynamic block reference in a drawing. Right-click in the drawing area and click Reset Block.

# RESUME

## Quick Reference

### See also:

- Run Slide Shows from Scripts
- Create Command Scripts

Continues an interrupted script.

### Access Methods

 **Command entry:** 'resume for transparent use

### Summary

You can interrupt a macro script that is running by pressing Esc or Backspace. Any error encountered while processing input from a script file causes the script to be suspended. If a script is suspended while the program is active, you can use RESUME to continue the script.

# REVLOUD

## Quick Reference

### See also:


- Create Revision Clouds

Creates a revision cloud using a polyline.

### Access Methods



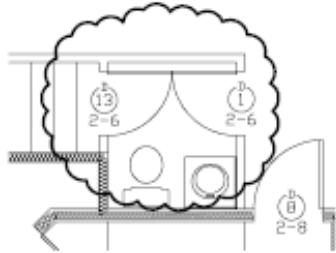
Button

 **Ribbon:** Home tab ► Draw panel ► Revision Cloud

 **Menu:** Draw ► Revision Cloud

 **Toolbar:** Draw

### Summary



---

**NOTE** REVCLOUD stores the last used arc length in the system registry. This value is multiplied by DIMSCALE to provide consistency when the program is used with drawings that have different scale factors.

---

You can create a new revision cloud by dragging your cursor, or you can convert a closed object such as an ellipse or polyline into a revision cloud. Use revision clouds to highlight parts of a drawing that are being reviewed.



The resulting object is a polyline.

### List of Prompts

The following prompts are displayed.

Minimum arc length: 0.5000 Maximum arc length: 0.5000

Specify start point or [Arc length/Object/Style] <Object>: *Drag to draw the revision cloud, enter an option, or press Enter*

**Arc Length** Specifies the length of the arcs in a revision cloud.

The maximum arc length cannot be set to more than three times the minimum arc length.

**Object** Specifies an object to be converted to a revision cloud.

**Style** Specifies the style of the revision cloud.



# REVDATE

## Quick Reference

### See also:

- Add Date and Time Stamps to Layouts

Inserts or updates a block containing user name, current time and date, and drawing name.

### Access Methods

 **Menu:** Tools ► Time and Date Stamp

### Summary

A revdate block is inserted, or an existing revdate block is updated.

You can explode the revdate block and place its contents in another location, such as a title block.

# REVERSE

## Quick Reference

### See also:

- Modify Polylines

Reverses the vertices of selected lines, polylines, splines, and helixes, which is useful for linetypes with included text, or wide polylines with differing beginning and ending widths.

### Access Methods



**Button**

 **Ribbon:** Home tab ► Modify panel ► Reverse

### Summary

Vertices of selected objects are reversed.

For example, when a linetype with text is specified with relative rotation in a LIN file, the text in the linetype might be displayed upside down. Reversing the vertices of the object changes the orientation of the text.

—— MH —— MH ——  —— HW —— HW ——

The REVERSE command does not change the orientation of text where rotation is specified as upright. For more information, see [Text in Custom Linetypes](#).

## RIBBON

### Quick Reference

See also:

- [Display and Organize the Ribbon](#)

Opens the ribbon window.

## RIBBONCLOSE

### Quick Reference

See also:

- [Display and Organize the Ribbon](#)

Closes the ribbon window.

# ROTATE

## Quick Reference

See also:

- Rotate Objects


Rotates objects around a base point.

## Access Methods



Button

 **Ribbon:** Home tab ► Modify panel ► Rotate

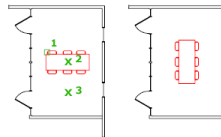
 **Menu:** Modify ► Rotate

 **Toolbar:** Modify

**Shortcut menu:** Select the objects to rotate. Right-click in the drawing area and click Rotate.

## Summary

You can rotate selected objects around a base point to an absolute angle.



## List of Prompts

The following prompts are displayed.

Current positive angle in UCS: ANGDIR=*current* ANGBASE=*current*

Select objects: *Use an object selection method and press Enter when you finish*

Specify base point: *Specify a point*

Specify **rotation angle** or [**Copy/Reference**]: *Enter an angle, specify a point, enter **c**, or enter **r***

**Rotation Angle** Determines how far an object rotates around the base point.

The axis of rotation passes through the specified base point and is parallel to the Z axis of the current UCS.

**Copy** Creates a copy of the selected objects for rotation.

**Reference** Rotates objects from a specified angle to a new, absolute angle.

When you rotate a viewport object, the borders of the viewport remain parallel to the edges of the drawing area.

## RSCRIPT

### Quick Reference

**See also:**

- Run Slide Shows from Scripts
- Create Command Scripts

Repeats a script file.

### Summary

RSCRIPT is useful for demonstrations that repeat a script; for example, a script that must run over and over during a trade show or in a showroom.

If RSCRIPT is the last line in a script file, the file runs continuously until interrupted by Esc.

---

**NOTE** Consider turning off UNDO and any log files if you anticipate running the script over a long period; otherwise, these log files continue to grow and take up increasing amounts of disk space.

---

## S Commands

# 19

### SAVE

#### Quick Reference

See also:

- Save a Drawing

Saves the drawing under the current file name or a specified name.

Obsolete. The SAVE command is functionally identical to the [QSAVE](#) on page 1050 command. The Save option on the File menu, Standard toolbar, or Quick Access toolbar is QSAVE.

#### Summary

If the drawing is read-only, use the [SAVEAS](#) on page 1091 command to save changes under a different file name.

### SAVEAS

#### Quick Reference

See also:

- Save a Drawing

Saves a copy of the current drawing under a new file name.

### Access Methods

 **Menu:** File ► Save As

### Summary

The Save Drawing As [standard file selection dialog box](#) is displayed. Enter a file name and type. Saving a drawing to any DXF™ format affects performance.

See Save Drawings to Previous Drawing File Formats for a description of the limitations that result from saving to an earlier version.

In the Save Drawing As dialog box, Tools ► Options displays the [Saveas Options dialog box](#), which controls various DWG and DXF settings.

The file is saved with the specified file name. If the drawing is already named, the drawing is saved with the new file name. If you save the file as a drawing template, the [Template Options dialog box](#) is displayed, where you can provide a description for the template and set the units of measurement.

When FILEDIA is set to 0 (zero), SAVEAS displays [command prompts](#).

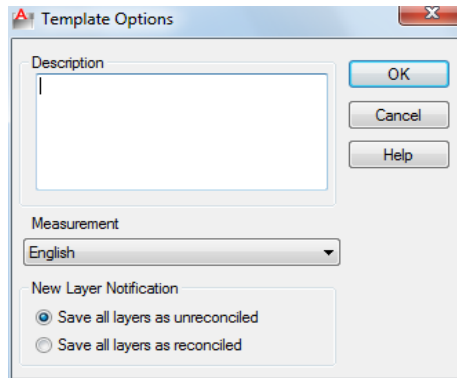
## Template Options Dialog Box

### Quick Reference

See also:

- Save a Drawing

Sets drawing template options.



### Summary

The Template Options dialog box displays automatically after you specify the files of type as \*.dwt, enter the template file name, and click Save.

### List of Options

The following options are displayed.

#### Description

Specifies a description for the drawing template. This description is displayed when you choose the template in the Startup dialog box or in the [Create New Drawing dialog box](#).

#### Measurement

Specifies whether the drawing template uses English (imperial) or metric units.

#### New Layer Notification

##### Save All Layers As Unreconciled

Saves the template file with its layers set as unreconciled, which means that a layer baseline is not created.

See Reconcile New Layers for more information about unreconciled layers.

##### Save All Layers As Reconciled

Saves the template file with its layers set as reconciled, which results in creating a layer baseline.

See Reconcile New Layers for more information about reconciled layers.

## Saveas Options Dialog Box

### Quick Reference

See also:

- Save a Drawing

Sets options for DWG files and for drawing interchange file output.

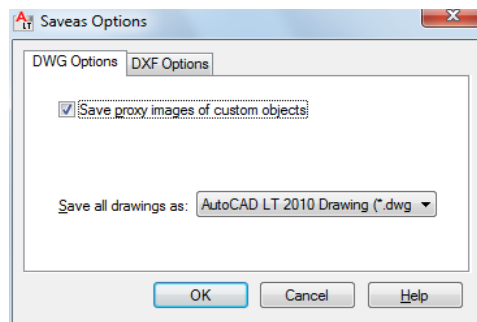
### List of Options

The following options are displayed.

- [DWG Options](#)
- [DXF Options](#)

### DWG Options Tab (Saveas Options Dialog Box)

Controls the display of custom objects and specifies the default file format for saving drawings.



### Save Proxy Images of Custom Objects

If you save to an earlier format, or the drawing contains custom objects from another application, select Save Proxy Images of Custom Objects to save images of the custom objects in the drawing file. (PROXYGRAPHICS system variable)

If you do not choose this option, a frame is saved for each custom object in the drawing file.

---

**NOTE** If you are saving a drawing file that contains DWF references to an earlier drawing format, this switch has no effect on DWF underlays as they will not appear as proxy objects or as a frame.

---



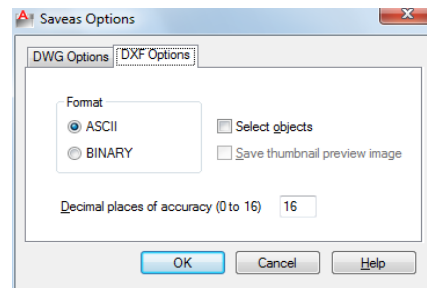
## Save All Drawings As

Specifies the default file format that drawings are saved to. You can also set this option on the Open and Save tab in the Options dialog box.

For more information, see OPTIONS.

## DXF Options Tab (Saveas Options Dialog Box)

Sets drawing interchange file output options.



### Format

Specifies whether to create an ASCII or a binary DXF file. ASCII-format DXF files can be read with a text editor and are compatible with a wider range of applications. Binary-format DXF files are more compact. Read and write operations with binary-format files is faster than with ASCII-format files.

### Select Objects

Controls whether the DXF file consists of selected objects or the entire drawing. When the output file includes only selected objects, the block definitions of only the selected block references are included.

### Save Thumbnail Preview Image

Specifies whether an image of the drawing is displayed in the Preview area of the Select File dialog box (RASTERPREVIEW system variable).

### Decimal Places of Accuracy

Saves the file using the specified precision. The default precision is usually adequate; however, you might need to increase this value for certain drawings or applications. The advantage of lower precision is decreased file size, and, in some cases, protecting intellectual property.

## SAVEAS Command Prompts

### Quick Reference

See also:

- Save a Drawing

Saves a copy of the current drawing under a new file name.

### List of Prompts

The following prompts are displayed.

Current file format: *current*

Enter file format

[R14(LT98&LT97)/2000(LT2000)/2004(LT2004)2007(LT2007)/2010(LT2010)/DXF/Template]

<2010>:

*Enter an option or press Enter*

Save drawing as <*current*>: *Enter a name or press Enter*

## SCALE

### Quick Reference

See also:


- Resize or Reshape Objects

Enlarges or reduces selected objects, keeping the proportions of the object the same after scaling.

### Access Methods



Button

 **Ribbon:** Home tab ► Modify panel ► Scale

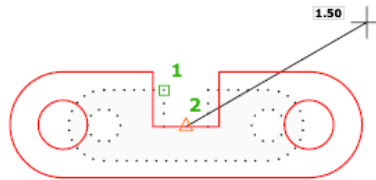
 **Menu:** Modify ► Scale

 **Toolbar:** Modify

**Shortcut menu:** Select the objects to scale. Right-click in the drawing area and click Scale.

### Summary

To scale an object, specify a base point and a scale factor. The base point acts as the center of the scaling operation and remains stationary. A scale factor greater than 1 enlarges the object. A scale factor between 0 and 1 shrinks the object.



### List of Prompts

The following prompts are displayed.

Select objects: *Use an object selection method and press Enter when you finish*

Specify base point: *Specify a point*

The base point you specify identifies the point that remains in the same location as the selected objects change size (and thus move away from the stationary base point).

---

**NOTE** When you use the SCALE command with objects, the position or location of the object is scaled relative to the base point of the scale operation, but the size of the object is not changed.

---

Specify [scale factor](#) or [\[Copy/Reference\]](#): *Specify a scale, enter c, or enter r*

**Scale Factor** Multiplies the dimensions of the selected objects by the specified scale. A scale factor greater than 1 enlarges the objects. A scale factor between 0 and 1 shrinks the objects. You can also drag the cursor to make the object larger or smaller.

**Copy** Creates a copy of the selected objects for scaling.

**Reference** Scales the selected objects based on a reference length and a specified new length.

# SCALELISTEDIT

## Quick Reference

### See also:


- Scale Views in Layout Viewports


Controls the list of scales available for layout viewports, page layouts, and plotting.

## Access Methods



### Button

 **Ribbon:** Annotate tab ► Annotation Scaling panel ► Scale List

 **Menu:** Format ► Scale List

 **Command entry:** 'scalelistedit for transparent use

## Summary

Displays a list of predefined scales used throughout the program. This list can be easily modified to display only the scales you need.

The [Edit Scale List dialog box](#) is displayed.

If you enter `-scalelistedit` at the Command prompt, [options are displayed](#).

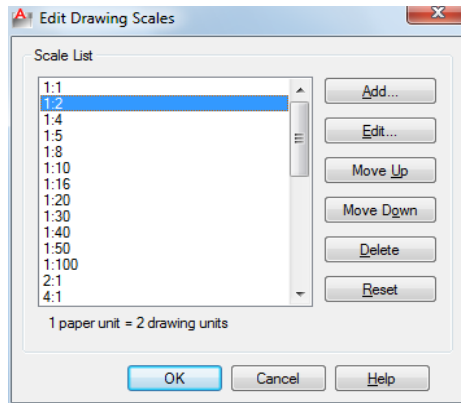
# Edit Drawing Scales Dialog Box

## Quick Reference

### See also:

- Scale Views in Layout Viewports

Controls the list of scales available for layout viewports, page layouts, and plotting.



### List of Options

The following options are displayed.

**Scale List** Displays the list of currently defined scales. Also displays temporary scales that are imported when xrefs are attached. If a scale name is duplicated, but has a different value, a number is appended to the name.

**Add** Displays the [Add Scale dialog box](#).

Press Tab to move between the fields of the scale being edited.

**Edit** Displays the [Edit Scale dialog box](#).

---

**NOTE** You cannot edit temporary scales.

---

**Move Up** Moves the currently selected scale in the scale list up one position.

**Move Down** Moves the currently selected scale in the scale list down one position.

**Delete** Removes the selected scale from the scale list.

---

**NOTE** You cannot delete a scale that is referenced by an object.

---

**Reset** Deletes all custom scales and unused scales and restores the default list of scales defined in the [Default Scale List dialog box](#) on page 891.

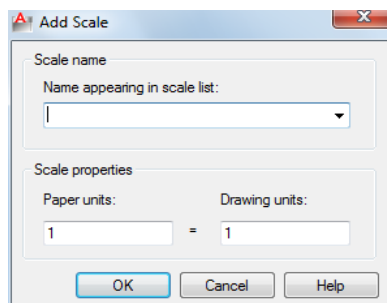
## Add Scale Dialog Box

### Quick Reference

See also:

- Scale Views in Layout Viewports

Adds a new scale to the scale list.



### List of Options

The following options are displayed.

#### Scale Name

**Name Appearing in Scale List** Specifies the scale name to add to the scale list.

#### Scale Properties

Sets the ratio of paper units to drawing units.

**Paper Units** When combined with the value of the drawing units, determines the ratio that defines the scale for viewing or plotting.

**Drawing Units** When combined with the value of the paper units, determines the ratio that defines the scale for viewing or plotting.

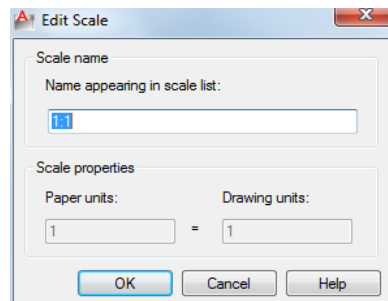
# Edit Scale Dialog Box

## Quick Reference

See also:

- Scale Views in Layout Viewports

Changes the existing scales listed in the Scale List area.



## List of Options

The following options are displayed.

### Scale Name

Lists the name of the currently selected scale in the Scale List area.

---

**NOTE** You cannot change the name of a scale that is referenced by an xref.

---

**Name Appearing in Scale List** Enter a descriptive or numeric name. For example, in an architectural drawing that uses a typical imperial scale, you can enter either 1"=4' or 1:48.

### Scale Properties

Modifies the ratio of paper units to drawing units.

---

**NOTE** You cannot change the scale properties of a scale that is referenced by an object in the drawing.

---

**Paper Units** When combined with the value of the drawing units, determines the ratio that defines the scale for viewing or plotting.

**Drawing Units** When combined with the value of the paper units, determines the ratio that defines the scale for viewing or plotting.

## -SCALELISTEDIT

### Quick Reference

#### See also:

- Scale Views in Layout Viewports

Controls the list of scales available for layout viewports, page layouts, and plotting.

### List of Prompts

The following prompts are displayed.

Enter option [?/Add/Delete/Reset/Exit] <Add>: *Enter an option or press Enter*  
? Displays a list of defined scales.

**Add** Adds a new scale to the scale list. Enter a ratio in the format **n:m**, where **n** is the number of paper units and **m** is the number of drawing units

**Delete** Removes a specified scale. If a scale is current or supported by an object, it cannot be deleted.

**Reset** Deletes all custom scales as a result and restores the default list of scales.

## SCALETEXT

### Quick Reference

#### See also:

- Change Text Scale and Justification


Enlarges or reduces selected text objects without changing their locations.


### Access Methods



Button



 **Ribbon:** Annotate tab ► Text panel ► Scale

 **Menu:** Modify ► Object ► Text ► Scale

 **Toolbar:** Text

### List of Prompts

The following prompts are displayed.

Select objects: *Use an object selection method, and press Enter when you finish*

Enter a base point option for scaling

[Existing/Left/Center/Middle/Right/TL/TC/TR/ML/MC/MR/BL/BC/BR]<Existing>:

*Specify a location to serve as a base point for resizing or scaling*

The base point is a location relative to a text object that serves as a fixed point for the resizing or scaling operation, which is applied individually to each selected text object.

Specifying a base point for the operation does not change the insertion point relative to the text.

The base point options shown above are described in the TEXT command.

The base point options for single line text are similar to those for multiline text except that the Align, Fit, and Left text options are equivalent to the bottom left (BL) multiline text attachment point.

Specify new model height or [Paper height/Match object/Scale factor]<0.5000>:

*Specify a text height or enter an option*

---

**NOTE** You can only specify a model height for non- objects.

---

### Paper Height

Scales the text height depending on the annotative property.

---

**NOTE** You can only specify a paper height for annotative objects.

---

### Match Object

Scales the text objects that you originally selected to match the size of a selected text object.

---

**NOTE** This option only affects like objects (annotative or nonannotative).

---

### Scale Factor

Scales the selected text objects based on a reference length and a specified new length.

**Reference** Scales the selected text objects relative to a reference length and a new length.

The selected text is scaled by a ratio of the values that you entered for the new length and the reference length. If the new length is less than the reference length, the selected text objects are reduced in size.

## SCRIPT

### Quick Reference

#### See also:

- Overview of Command Scripts


Executes a sequence of commands from a script file.


#### Access Methods



#### Button

 **Ribbon:** Manage tab ► Applications panel ► Run Script

 **Menu:** Tools ► Run Script

 **Command entry:** 'script for transparent use

#### Summary

A script is a text file with an `.scr` file extension. Each line of the script file contains a command that can be completed at the Command prompt, including alternative versions of commands that normally display dialog boxes.

The Select Script File dialog box (a [standard file selection dialog box](#)) is displayed. Enter the file name of a script to run that script.

When FILEDIA is set to 0 (zero), SCRIPT displays the following command prompt.

# SECURITYOPTIONS

## Quick Reference

See also:

- Protect and Sign Drawings

Specifies password or digital signature options for a drawing file.

## Summary

The [Security Options dialog box](#) is displayed. You can add security settings that are applied when you save the drawing.

# Security Options Dialog Box

## Quick Reference

See also:

- Protect and Sign Drawings

Specifies security settings to be used when your drawing is saved.

## List of Options

The following options are displayed.

### **Digital Signature Tab (Security Options Dialog Box)**

Adds a digital signature to a drawing when the drawing is saved.

**Attach Digital Signatures After Saving Drawing** Attaches a digital signature to a drawing when the drawing is saved.

**Select a Digital ID (Certificate)** Displays a list of digital IDs that you can use to sign files. Includes information about the organization or individual to whom the digital ID was issued, the digital ID vendor who issued the digital ID, and when the digital ID expires.

**Signature Information** Provides a list of time services you can use to add a time stamp to your digital signature, the status of the time server connection,

and a Comments area (to include information relevant to the digital signature or to the files you are signing).

**Get Time Stamp From** Provides a list of time servers you can use to time stamp your digital signature.

---

**NOTE** The timesrvr.txt file contains the time servers that you can choose from.

---

**Time Service Status** Displays the connection status (Successfully Contacted Time Server or Could Not Contact Time Server) of the time service.

**Comment** Provides a place for comments about the digital signature or the files you are signing.

## SEEK

### Quick Reference

**See also:**

- Use Autodesk Seek to Add and Share Drawings

Opens a web browser and displays the Autodesk Seek home page.

#### Access Methods

**Ribbon:** Insert tab ► Content panel ► Autodesk Seek search box (enter keywords)

**Shortcut menu:** Right-click on the Tool Palettes window, or a block, and click Seek Design Content.

You can also access Autodesk Seek from DesignCenter ([ADCENTER](#) on page 10) and from Content Explorer ([CONTENTEXPLORER](#) on page 229).

#### Summary

Product design information that is available on Autodesk Seek depends on what content providers, both corporate partners and individual contributors, publish to Autodesk Seek.

This service is an online source for product information that is directly accessible from your Autodesk software. From the Autodesk Seek search box, you can access 3D models, 2D drawings, and product specifications from product manufacturers, suppliers, and aggregators.

---

**NOTE** Autodesk Seek is currently available in US English only.

---

## SELECT

### Quick Reference

See also:

- Select Objects Individually

Places selected objects in the Previous selection set.

### Summary

A small box, called the object selection target or *pickbox*, replaces the crosshairs on the graphics cursor.



At the Select Objects prompt in a subsequent command, use the Previous option to retrieve the previous selection set.

To view all options, enter ? at the Command prompt.

### List of Prompts

The following prompts are displayed.

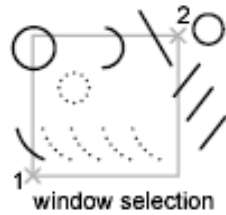
Select objects: *Use an object selection method*

Expects a point or

[Window/Last/Close/BOX/ALL/None/WR/Byln/C/Byln/Group/Add/Remove/Multiple/Previous/Undo/Alt/Single](#)

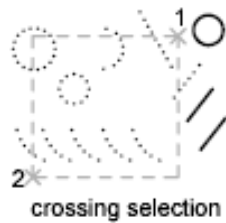
Select objects: *Specify a point or enter an option*

**Window** Selects all objects completely inside a rectangle defined by two points. Specifying the corners from left to right creates a window selection. (Specifying the corners from right to left creates a crossing selection.)



**Last** Selects the most recently created visible object. The object must be in the current space, that is, model space or paper space, and its layer must not be set to frozen or off.

**Crossing** Selects objects within and crossing an area defined by two points. A crossing selection is displayed as dashed or otherwise highlighted to differentiate it from window selection.



**Box** Selects all objects inside or crossing a rectangle specified by two points. If the rectangle's points are specified from right to left, Box is equivalent to Crossing. Otherwise, Box is equivalent to Window.

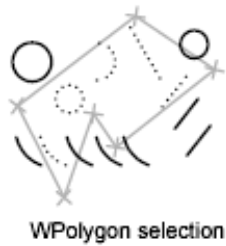
**All** Selects all objects in either model space or the current layout, except those objects on frozen or on locked layers.



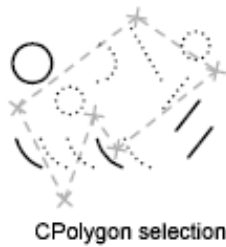
**Fence** Selects all objects crossing a selection fence. The Fence method is similar to CPolygon except that that the fence is not closed, and a fence can cross itself. Fence is not affected by the PICKADD system variable.



**WPolygon** Selects objects completely inside a polygon defined by points. The polygon can be any shape but cannot cross or touch itself. The last segment of the polygon is drawn so that it is closed at all times. WPolygon is not affected by the PICKADD system variable.

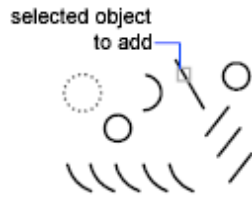


**CPolygon** Selects objects within and crossing a polygon defined by specifying points. The polygon can be any shape but cannot cross or touch itself. The last segment of the polygon is drawn so that it is closed at all times. CPolygon is not affected by the PICKADD system variable.



**Group** Selects all objects within one or more named or unnamed groups. When you specify an unnamed group, be sure to include the asterisk (\*). For example, enter **\*a3**.

**Add** Switches to the Add method: selected objects can be added to the selection set by using any of the object selection methods. Auto and Add are the default methods.



**Remove** Switches to the Remove method: objects can be removed from the current selection set using any object selection method. An alternative to Remove mode is to hold down Shift while selecting single objects or use the Automatic option.

**Multiple** Selects objects individually without highlighting them during object selection. This speeds up object selection for highly complex objects.

**Previous** Selects the most recent selection set. The Previous selection set is cleared by operations that delete objects from the drawing.

---

**NOTE** The Previous selection set is ignored if you switch spaces.

---

**Undo** Cancels the selection of the object most recently added to the selection set.

**Auto** Switches to automatic selection: pointing to an object selects the object. Pointing to a blank area inside or outside an object forms the first corner of a box defined by the Box method. Auto and Add are the default methods.

**Single** Switches to the Single method: selects the first object or set of objects designated rather than continuing to prompt for further selections.

## SELECTSIMILAR

### Quick Reference

#### See also:

- Select Objects by Properties

Adds similar objects to the selection set based on selected objects.



### Access Methods

**Shortcut menu:** Select the object that you want to use as the template object to select similar objects. Right-click in the drawing area and click Select Similar.

### Summary

Selects similar objects of the same type based on specified matching properties, such as the color or block name.

### List of Prompts

The following prompt is displayed.

Select objects or [SEttings]: *Use an object selection method and press Enter*

The Settings option displays the Select Similar Settings dialog box.

## Select Similar Settings Dialog Box

### Quick Reference

See also:

- Select Objects by Properties

Controls which properties must match for an object of the same type to be selected.

### List of Options

The following options are displayed.

**Color** Considers objects with matching colors to be similar.

**Layer** Considers objects on matching layers to be similar.

**Linetype** Considers objects with matching linetypes to be similar.

**Linetype scale** Considers objects with matching linetype scales to be similar.

**Lineweight** Considers objects with matching lineweights to be similar.

**Plot style** Considers objects with matching plot styles to be similar.

**Object style** Considers objects with matching styles (such as text styles, dimension styles, and table styles) to be similar.

**Name** Considers referenced objects (such as blocks, xrefs, and images) with matching names to be similar.

## SETBYLAYER

### Quick Reference

See also:

- Display and Change the Properties of Objects

Changes the property overrides of selected objects to ByLayer.

### Access Methods



**Button**

 **Ribbon:** Home tab ► Modify panel ► Set to ByLayer

 **Menu:** Modify ► Change to ByLayer

### List of Prompts

The following prompts are displayed.

Current active settings: Color Linetype Lineweight Transparency Material Plot Style

Select objects or [Settings]: *Use an object selection method and press Enter when you finish*

If Settings is selected, the [SetByLayer Settings dialog box](#) is displayed, in which you can specify which object properties are set to ByLayer.

If objects are selected, the Command prompt displays:

Change ByBlock to ByLayer? [Yes/No] <Yes>:

Include blocks? [Yes/No] <Yes>:

You can specify which properties are changed to ByLayer, including color, linetype, lineweight, and materials.

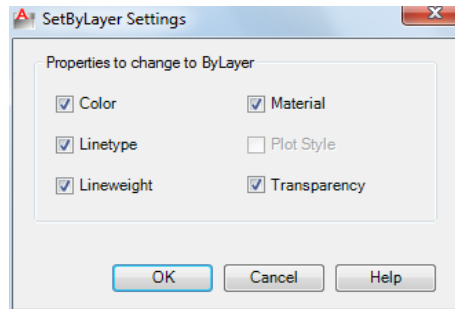
## SetByLayer Settings Dialog Box

### Quick Reference

See also:

- Display and Change the Properties of Objects

Changes property overrides for color, linetype, lineweight, material, plot style, and transparency to ByLayer for selected objects and inserted blocks on unlocked layers.



### List of Options

The following options are displayed.

#### Color

Changes the color of selected objects to ByLayer. (SETBYLAYERMODE=1)

#### Linetype

Changes the linetype of selected objects to ByLayer. (SETBYLAYERMODE=2)

#### Lineweight

Changes the lineweight of selected objects to ByLayer. (SETBYLAYERMODE=4)

#### Plot Style

Changes the plot style of selected objects to ByLayer. This option is available in named plot style drawings. (SETBYLAYERMODE=16)

#### Transparency

Changes the transparency value of selected objects to ByLayer.  
(SETBYLAYERMODE=128)

## SETENV

### Quick Reference

**See also:**

- Overview of Hatch Patterns and Fills

Sets values of specified registry variables.

### Summary

Use SETENV to view the registry settings of the MaxArray and MaxHatch registry variables.

### List of Prompts

The following prompts are displayed.

Enter variable name: *Specify a name*

Value: *Enter a new value for the variable*

---

**NOTE** SETENV is case sensitive.

---

## SETVAR

### Quick Reference

**See also:**


- Enter Commands on the Command Line

Lists or changes the values of system variables.

## Access Methods



### Button

 **Command entry:** 'setvar for transparent use

## List of Prompts

The following prompts are displayed.

Enter **variable name** or [?] <current>: *Enter a variable name, enter ?, or press Enter*  
**Variable Name** Specifies the name of the system variable you want to set.

You can also change the value of system variables at the Command prompt by entering the name of the variable and its new value.

?—**List Variables** Lists all system variables in the drawing and their current settings.

# SHADE

## Quick Reference

See also:

- Add Simple Shading to 3D Objects

Displays a flat-shaded image of the drawing in the current viewport.

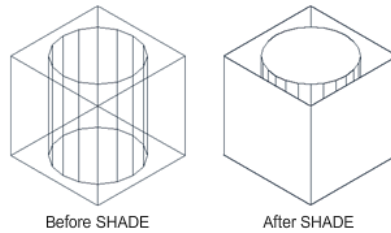
### Summary

Hidden lines are removed and a shaded picture of the drawing is displayed.

The SHADE command uses the colors of the object being shaded. Shading is calculated based on one light source from directly behind the eye. Subsequent changes to the drawing are not reflected in the shaded object until you use the SHADE command again.

The shaded image remains in the viewport until the viewport is regenerated. The shaded image cannot be printed or plotted; however, you can output a shaded image to a slide using the MSLIDE command.

On systems that display fewer than 256 colors, SHADE produces an image that removes hidden lines and displays the faces in their original color with no lighting effect.



## SHADEMODE

### Quick Reference

See also:

- Add Simple Shading to 3D Objects

Controls the display of solid object shading in the current viewport.

## SHARE

### Quick Reference

See also:




- Use AutoCAD WS for Drawing File Collaboration

Shares the AutoCAD WS online copy of the current drawing with other users.

### Access Methods



Button

-  **Ribbon:** Online tab ► Share panel ► Share Drawing
-  **Menu:** File ► AutoCAD WS ► Share Drawing
-  **Toolbar:** Online

### Summary

The [Share Drawing dialog box](#) on page 1117 is displayed. You must save the drawing before you can continue with this command.

---

**NOTE** You may first be prompted to log in to AutoCAD WS. If you do not have an account, click Create an Account and follow the on-screen instructions.

---

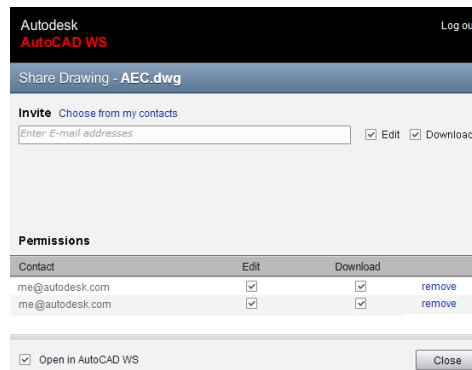
## Share Drawing Dialog Box

### Quick Reference

See also:

- Use AutoCAD WS for Drawing File Collaboration

Shares the AutoCAD WS online copy of the current drawing with other users.



### Summary

Sharing online drawings allows other users to view, edit, and download the drawings.

Invite other users to simultaneously view and edit a shared drawing, allowing participants to collaborate in real time.

The permissions can be changed at any time in the Share Drawing dialog box; new permissions take effect immediately.

### List of Options

The following options are displayed.

**Invite People** Specifies recipients from your AutoCAD WS contacts. Enter multiple email addresses to share a drawing with several users at once.

**Share** Sends email notifications to recipients with the link to the drawing, a message, and a preview of the drawing.

**Edit** Allows recipients to edit any object in the shared drawing. When this option is cleared, users can mark up and add to the drawing, but they cannot change existing objects.

**Download** Allows recipients to download a copy of the drawing.

**Open in AutoCAD WS** Opens the shared drawing in the AutoCAD WS Editor.

## SHAREWITHSEEK

### Quick Reference

See also:

- Use Autodesk Seek to Add and Share Drawings


Uploads a selected block or the current drawing to the Autodesk Seek website.

### Access Methods



Button

 **Ribbon:** Output tab ► Autodesk Seek panel ► Share with Autodesk Seek

 **Menu:** Application menu ► Publish ► Share with Autodesk Seek

 **Menu:** File ► Share with Autodesk Seek

**Shortcut menu:** Right-click on a block and click Share with Autodesk Seek



## Summary

Publishes single blocks or entire drawings to the Autodesk Seek website. You must be a registered user on the Autodesk Seek website to upload content. Currently, you can only upload a single drawing file at a time.

---

**NOTE** Autodesk Seek is currently available in US English only.

---

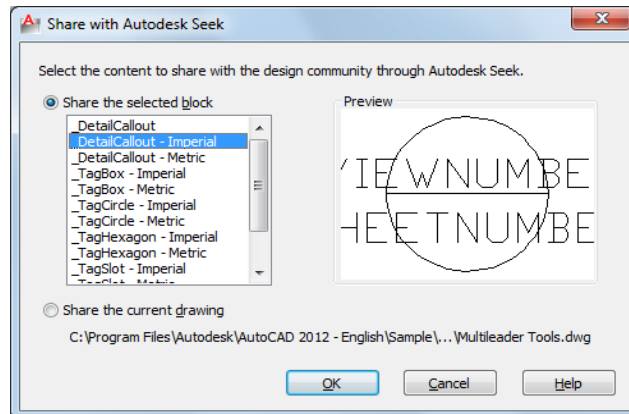
## Share with Autodesk Seek Dialog Box

### Quick Reference

See also:

- Use Autodesk Seek to Add and Share Drawings

Uploads the selected block or the current drawing file to the Autodesk Seek website.



### List of Options

The following options are displayed.

#### Share the Selected Block

Select a block to upload to the Autodesk Seek website. A DWG file is created using the default Save as file format specified in the Options dialog.

List

Lists the blocks in the current drawing available for upload to the Autodesk Seek website.

#### **Share the Current Drawing**

Selects the current drawing (not including external references) for upload to the Autodesk Seek website. If you choose to use the last saved version of the file, it uploads the file in its current file format.

#### **Preview**

Displays a preview image of the selected block or the current drawing (if available).

## **SHEETSET**

### **Quick Reference**

#### **See also:**

- Quick Start for Sheet Sets

Opens the Sheet Set Manager.

#### **Access Methods**



#### **Button**

 **Ribbon:** View tab ► Palettes panel ► Sheet Set Manager

 **Toolbar:** Standard

 **Menu:** Tools ► Palettes ► Sheet Set Manager

#### **Summary**

Displays the [Sheet Set Manager](#).

The Sheet Set Manager organizes, displays, and manages *sheet sets*, a named collection of drawing sheets. Each *sheet* in a sheet set is a layout in a drawing (DWG) file.

# Sheet Set Manager

## Quick Reference

### See also:

- [Create a Sheet Set](#)

Displays and organizes named collections of drawing sheets

## Access Methods



### Button

 **Ribbon:** View tab ► Palettes panel ► Sheet Set Manager

 **Toolbar:** Standard

 **Menu:** Tools ► Palettes ► Sheet Set Manager

## Summary

The Sheet Set Manager is not fully functional if

- The command is active;
- No drawing is open;
- The sheet set is locked by another user; or
- A lock icon displayed in front of the sheet set name in the Sheet Set Manager indicates that the sheet set is locked. Hold your cursor over the lock icon to view a tooltip that shows who has the sheet set locked.

## List of Tabs

- [Sheet List](#)
- [Sheet Views](#)
- [Model Views](#)

## Sheet List Control

The Sheet List control displays the name of the current sheet set, or, if no sheet sets are open, the Open option. The Sheet List control provides the following options for all tabs:

**Names of Open Sheet Sets** Lists all open sheet sets, if any. A check is displayed next to the current sheet set.

**Recent** Displays a list of recently opened sheet sets.

**New Sheet Set** Starts the Create Sheet Set wizard.

**Open** Displays the Open Sheet Set [standard file selection dialog box](#).

## Sheet List Tab

### Quick Reference


See also:

- Create and Modify Sheets

### Access Methods



#### Button

 **Ribbon:** View tab ► Palettes panel ► Sheet Set Manager

 **Toolbar:** Standard

 **Menu:** Tools ► Palettes ► Sheet Set Manager

### Summary

The Sheet List tab displays an ordered list of sheets. You can organize these sheets under headings, called *subsets*, that you create.

### List of Options

This tab has the following buttons:

**Publish to DWF** Publishes selected sheets or a sheet set to a specified DWF file.

**Publish to DWFX** Publishes selected sheets or a sheet set to a specified DWFX file.

**Publish to PDF** Publishes selected sheets or a sheet set to a specified DWFX file.

**Publish to Plotter** Automatically publishes the selected sheets to the default plotter or printer.

**Publish Using Page Setup Override** Automatically publishes the selected sheets using the selected page setup override rather than the page setup specified in each drawing. The page setup overrides are stored in a drawing template (DWT) file designated to be the source of the page setup override information.

**Publish** Displays a list of Publish options. The description for each option is listed in alphabetical order under Shortcut Menu Options below.

**Sheet Selections** Displays a menu where you can save, manage, and restore sheet selections by name. This makes it easy to specify a group of sheets for a publish, transmit, or archive operation. The description for each option is listed in alphabetical order under Shortcut Menu Options below.

**Details (at bottom of window)** Displays basic information about the currently selected sheet or subset.

**Preview (bottom of window)** Displays a thumbnail preview of the currently selected sheet.

### **Shortcut Menu Options**

The following options are displayed on shortcut menus for the Sheet List tab. For easier access, they are listed in alphabetical order. The options displayed in each shortcut menu depend on context: in the tree view, if you right-click the name of the sheet set, a different shortcut menu will display than if you right-click the name of a subset or the name of a sheet.

**Archive** Displays the [Archive a Sheet Set dialog box](#).

**Close Sheet Set** Closes the current sheet set, removing the sheet set information displayed in the Sheet Set Manager window.

**eTransmit** Displays the [Create Transmittal dialog box](#).

**Edit Subset and Sheet Publish Settings** Displays the [Publish Sheets dialog box](#).

**Import Layout as Sheet** Displays the [Import Layouts as Sheets dialog box](#).

**Include Plot Stamp** Turns the plot stamp on or off for the selected sheet set, subset, or sheet.

**Include for Publish** Includes the sheet for publishing.

**Insert Sheet List Table** Displays the [Insert Sheet List Table dialog box](#).

**Manage Page Setups** Displays the [Page Setup Manager dialog box](#).

**New Sheet** Displays the [New Sheet dialog box](#).

**New Subset** Displays the [Subset Properties dialog box](#), where you can create a new sheet subset for organizing the sheets in a sheet set.

**Open** Opens the drawing file of the selected sheet and displays the layout.

**Open Read-Only** Opens the drawing file of the selected sheet in read-only mode and displays the layout. You cannot save changes to the file using the original file name.

**Plot Stamp Settings** Displays the [Plot Stamp dialog box](#), in which you can specify the information, such as drawing name and plot scale, that you want applied to the plot stamp.

**Properties (Sheet Set)** When the sheet set node is selected, displays the [Sheet Set Properties dialog box](#).

**Properties (Subset)** When a subset node is selected, displays the Subset Properties dialog box. See New Subset.

**Properties (Sheet)** When a sheet node is selected, displays the [Sheet Properties dialog box](#).

**Publish** Displays the [Publish dialog box](#).

**Publish in Reverse Order** When checked, sends sheets to the plotter in reverse of default order.

**Publish Sheets in Subset** Publishes the sheets in the subset.

When Do Not Publish Sheets is checked, all sheets in the subset is not published.

Suspends all sheets in the subset from being published.

**Publish Using Page Setup Override** Automatically publishes the selected sheets using the selected page setup override rather than the page setup specified in each drawing. The page setup overrides are stored in a drawing

template (DWT) file designated to be the source of the page setup override information.

**Plot Stamp Settings** Displays the [Plot Stamp dialog box](#).

**Publish to DWF** Publishes the selected sheets or the sheet set to a specified DWF file.

**Publish to Plotter** Automatically publishes the selected sheets to the default plotter or printer.

**Remove Subset** Removes the currently selected subset from the organization of the sheet set.

**Rename & Renumber** Displays the [Rename & Renumber Sheet dialog box](#).

**Resave All Sheets** Updates the sheet set information saved with each drawing in the current sheet set. Each drawing file in the current sheet set is opened and resaved. Any changes that were made are updated in the sheet set data (DST) file.

Drawing files saved in a previous DWG file format are resaved without changing format.

---

**NOTE** In a network environment, make sure that all drawing files in the current sheet set that are opened by other users are closed before performing this operation.

---

**Remove Sheet** Removes the currently selected sheet from the sheet set.

**Save Sheet Selection** Displays the [New Sheet Selection dialog box](#).

**Sheet Set Publish Options** Displays the [Sheet Set Publish Options dialog box](#). This is the same as the Publish Options dialog, but is specific to the current sheet set.

**Transmittal Setups** Displays the [Transmittal Setups dialog box](#).

## Sheet Views Tab

### Quick Reference

See also:

- Create and Modify Sheets

## Access Methods



### Button

 **Ribbon:** View tab ► Palettes panel ► Sheet Set Manager

 **Toolbar:** Standard

 **Menu:** Tools ► Palettes ► Sheet Set Manager

### Summary

The Sheet Views tab displays an ordered list of views used in the current sheet set. You can organize these views under headings, called *categories*, that you create.

---

**NOTE** Only sheet views created in AutoCAD 2005 or later are listed on the Sheet Views tab.

---

### List of Options

This tab has the following buttons:

**New View Category Button** Displays the [View Category dialog box](#).

**View by Category** Displays the views in the current sheet set organized by their categories.

**View by Sheet** Displays a list of views in the current sheet set organized by the sheet on which they are located.

### Shortcut Menu Options

The following options are displayed on shortcut menus for the Sheet Views tab.

**Display** Displays the selected view in the sheet in which it was created. Opens the drawing file containing the sheet, if the drawing file is not already open.

**New View Category** Displays the [View Category dialog box](#), in which you can create a new view category to organize the views in a sheet set.

**Place Callout Block** Specifies and places a callout block onto a sheet.

**Place View Label** Specifies and places a view label block onto a sheet.

**Properties (Sheet Set)** Displays the [Sheet Set Properties dialog box](#).



**Properties (View Category)** Displays the [View Category dialog box](#).

**Rename** Renames the selected sheet view category.

**Rename & Renumber** Displays the [Rename and Renumber View dialog box](#) where you can renumber and retitle the selected sheet view.

**Set Category** Reassigns the selected sheet view to a category that you specify.

## Model Views Tab

### Quick Reference

See also:

- Create and Modify Sheets

### Access Methods



Button

 **Ribbon:** View tab ► Palettes panel ► Sheet Set Manager

 **Toolbar:** Standard

 **Menu:** Tools ► Palettes ► Sheet Set Manager

### Summary

The Model Views tab displays a list of folders, drawing files, and model space views available for the current sheet set. You can add and remove folder locations to control which drawing files are associated with the current sheet set.

---

**NOTE** After creating a named model space view, you must save the drawing to add the view to the Model Views tab.

---

### List of Options

**Refresh** Updates the list of drawing files listed in the tree view. The Refresh button updates all information stored in the sheet set data (DST) file, checks all folders in every resource location for new or removed drawing files, and

checks all drawing files that are expanded for new or removed model space views.

**Add New Location** Displays the Browse for Folder [standard file selection dialog box](#), in which you can add a folder location to the sheet set.

### **Shortcut Menu Options**

**Add New Location** Displays the Browse for Folder [standard file selection dialog box](#) where you can add a folder location to the sheet set.

**eTransmit** Displays the [Create Transmittal dialog box](#).

**Open File** Opens the selected drawing (DWG) file.

**Place on Sheet** Initiates a series of automated steps that creates and places a view of the selected model onto the current layout of the current drawing. These steps are

- You are prompted to place the view on the layout. Right-click to change the scale of the view before placement
- The selected model is attached as an xref in the current drawing
- A layout viewport is created on the current layout
- A sheet view is created that corresponds with the newly created layout viewport

**Remove Location** Removes the currently selected folder location from the sheet set.

**See Model Space Views** Expands a list of named model space views.

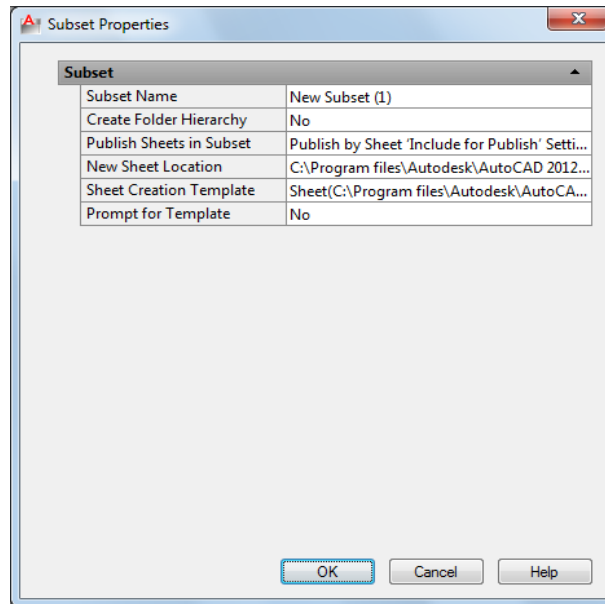
## **Subset Properties Dialog Box**

### **Quick Reference**

**See also:**

- Organize a Sheet Set

Creates a new sheet subset in a sheet set.



### Summary

You can organize sheets by dragging them to different subsets.

### List of Options

The following options are displayed.

#### Subset Name

Specifies the name of this subset and the name of the sheet storage folder for this subset if Create Folders Relative to Parent Subset Storage Location is selected.

#### Publish Sheets in Subset

Conforms to the current settings for sheet set publishing.

#### New Sheet Location

Specifies the folder location for all new drawing (DWG) files containing sheets that are associated with this subset.

#### Sheet Creation Template

Specifies the drawing template (DWT) file and layout name that is used to create new drawing files for this subset.

The syntax for this property is  
*layoutname [folderpath\]filename.dwt*

### Prompt for Template

When Yes is selected, prompts you to specify a drawing template file rather than use the default drawing template file for creating new sheets.

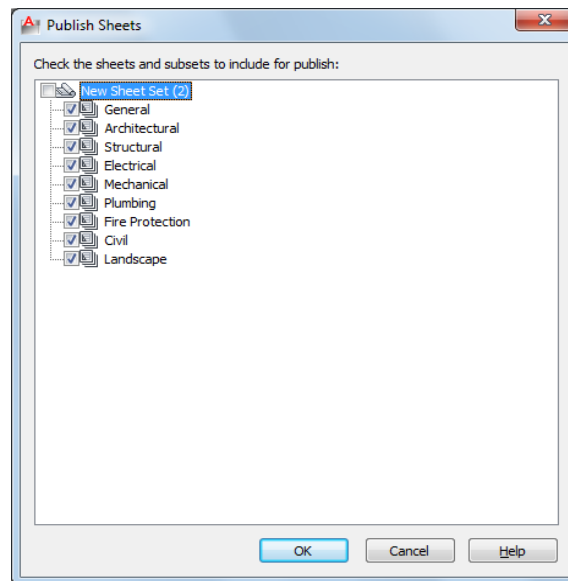
## Publish Sheets Dialog Box

### Quick Reference

#### See also:

- Publish, Transmit, and Archive Sheet Sets

Specifies the sheets to be included for publishing.



### Summary

When a sheet is selected, it is included for publishing.

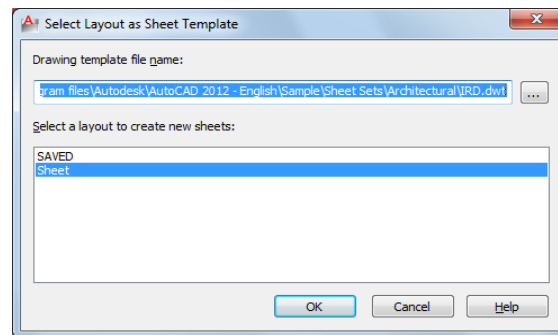
## Select Layout as Sheet Template Dialog Box

### Quick Reference

#### See also:

- Create and Modify Sheets

Specifies the folder path, drawing template (DWT) file, and layout name to be used for creating new sheets.



### List of Options

The following options are displayed.

#### Drawing Template File Name

Specifies the drawing template file path and name to be used for creating new sheets.

#### Select a Layout to Create New Sheets

Lists and specifies the name of the layout in the drawing template file to be used for new sheets.

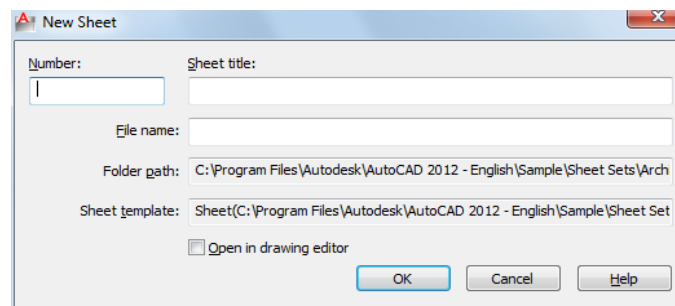
## New Sheet Dialog Box

### Quick Reference

See also:

- Create and Modify Sheets

Creates a new sheet in the current sheet set by creating a new drawing (DWG) file that includes a layout tab with the same name as the drawing.



### List of Options

The following options are displayed.

#### Number

Specifies the sheet number. It is recommended that you do not fill in the sheet number when you first create a sheet. By default the drawing name and layout name of the new sheet will be the sheet number together with sheet title.

You can remove the sheet number from the file name when you create the new sheet, but the sheet number will still be in the layout name.

#### Sheet Title

Specifies the sheet title, which corresponds to an identically named layout tab in the new drawing.

#### File Name

Specifies the name of the new drawing file containing the sheet. By default, the name of the drawing file is the sheet number combined with the sheet title. You can also change the drawing file name in this box.

#### Folder Path

Displays the default folder for the new drawing file.

The default folder for a subset is specified in the [Subset Properties dialog box](#); and the default folder for a sheet set is specified in the [Sheet Set Properties dialog box](#).

### Sheet Template

Displays the default sheet template file used for creating the new drawing file.

The default template file used for creating new drawings in a subset is specified in the [Subset Properties dialog box](#); the default template file for creating new drawings in a sheet set is specified in the [Sheet Set Properties dialog box](#).

### Open in Drawing Editor

When checked, allows you to open the drawing after creation and edit directly within the file.

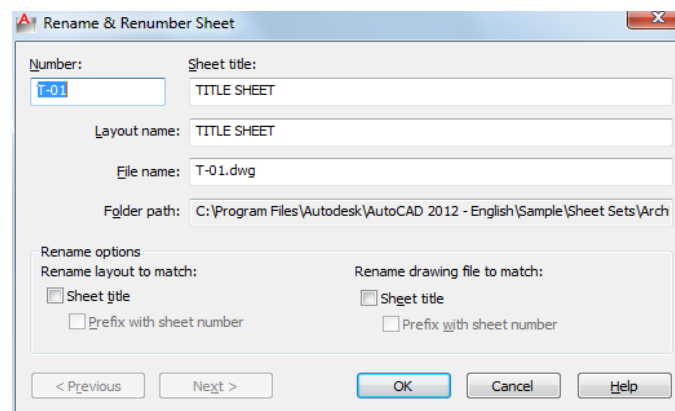
## Rename & Renumber Sheet Dialog Box

### Quick Reference

See also:

- Create and Modify Sheets

Specifies a sheet number, sheet title, and other properties for a sheet in a sheet set.



**List of Options**

The following options are displayed.

**Number**

Specifies the sheet number of the selected sheet.

**Sheet Title**

Specifies the sheet title of the selected sheet.

**Layout Name**

Specifies the name of the layout associated with the selected sheet.

**File Name**

Specifies the name of the drawing file associated with the selected sheet.

**Folder Path**

Displays the folder path for the drawing file.

**Rename Layout to match Sheet Title**

When checked, changes the layout name to match the sheet title.

**Prefix with Sheet Number**

When checked, changes the layout name to a new name formed by adding the sheet number to the beginning of the sheet title.

**Rename Drawing File to match Sheet Title**

When checked, changes the drawing file name to match the sheet title.

**Prefix with Sheet Number**

When checked, changes the drawing file name to a new name formed by adding the sheet number to the beginning of the sheet title.

**Next**

Loads the next sheet into this dialog box. This provides a convenient method for renumbering or retitling a series of sheets.

**Previous**

Loads the previous sheet into this dialog box.



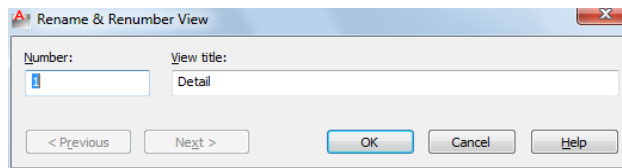
## Rename & Renumber View Dialog Box

### Quick Reference

See also:

- Create and Modify Sheets

Specifies a sheet number and view title for a view in a sheet set.



### List of Options

The following options are displayed.

#### Number

Specifies the sheet number of the selected view.

#### View Title

Specifies the view title of the selected view.

#### Previous

Loads the previous view into this dialog box.

#### Next

Loads the next view into this dialog box.

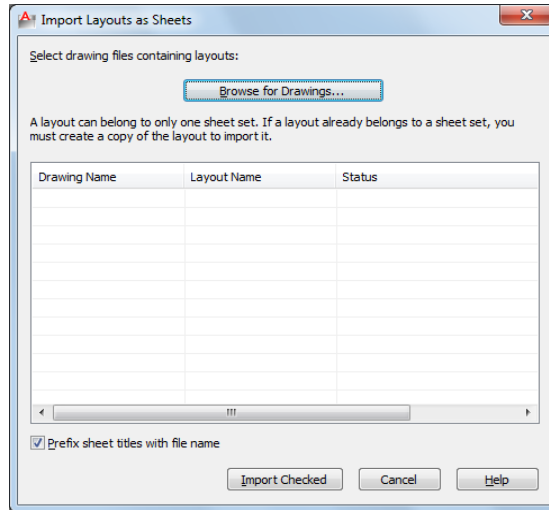
## Import Layouts as Sheets Dialog Box

### Quick Reference

See also:

- Create and Modify Sheets

Provides a method for quickly importing layouts into a sheet set, and specifying which layout tab is to be used as the sheet.



### Summary

If a layout already belongs to a sheet set, you must create a copy of the drawing containing the layout to import it.

### List of Options

The following options are displayed.

#### Browse for Drawings

Displays the Select Drawing [standard file selection dialog box](#).

#### List of Layouts in Selected Drawing

Lists all available layouts in the specified drawing file. Click a check box to select a layout.

#### Prefix Sheet Titles with File Name

When checked, automatically adds the drawing file name to the beginning of the sheet title.

**Import Checked** Imports a layout from the list only if it displays a check mark.

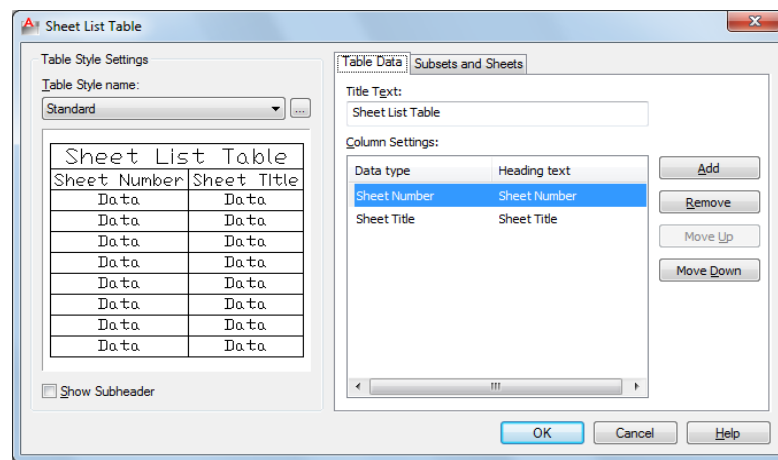
# Insert Sheet List Table Dialog Box

## Quick Reference

See also:

- Create and Modify Sheets

Creates a table listing the sheets in the sheet set.



## Summary

This table can be added to any sheet in the current sheet set, but it is typically added to the title sheet.

**NOTE** Insert Sheet List Table on the sheet set shortcut menu is not available if the Model tab is active, or if the current layout is not a sheet in the current sheet set.

## List of Tabs

This dialog box contains the following tabs.

- [Table Data Tab](#)
- [Subsets and Sheets Tab](#)

### List of Options

The following options are displayed.

#### Table Style Name

Specifies the table style to be used for the table.

#### Table Style Preview

Displays a preview of the currently selected table style.

#### Include Subsets as Headers in Output

When checked, displays the names of the subsets, dividing the sheet list table into sections.

**Table Style Settings** Displays options for the table style.

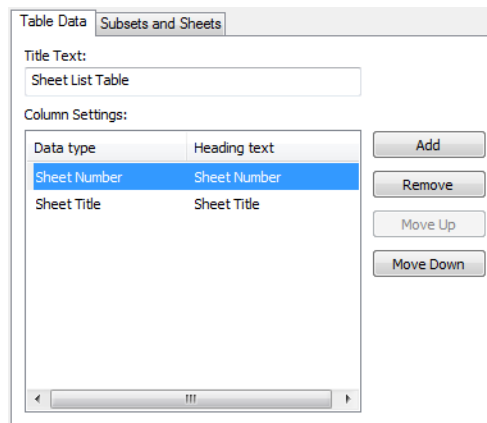
## Table Data Tab

### Quick Reference

See also:

- Create and Modify Sheets

Displays options for the table data.



**List of Options**

The following options are displayed.

**Title Text**

Specifies the name of the title of the sheet list table.

**Column Settings Area**

Displays a list of the column definitions in the sheet list table. Each line in the list represents a column. The top-to-bottom order of the list represents how the columns will be displayed in the table (left to right).

**Data Type Column** Selecting a column definition and then clicking on an entry in the Data Type column displays a list. From this list, you can change the type of information that is going to be displayed in the columns of the sheet list table.

**Heading Text Column** Allows you to change the title text for each column in the sheet list table.

**Add**

Adds a sheet number column to the sheet list table.

**Remove**

Removes the selected column from the sheet list table. If you accidentally remove a column, you can add a Number column and then change its data type from the data type list.

**Move Up**

Moves the selected column up in the column list and to the left in the sheet list table.

**Move Down**

Moves the selected column down in the column list and to the right in the sheet list table.

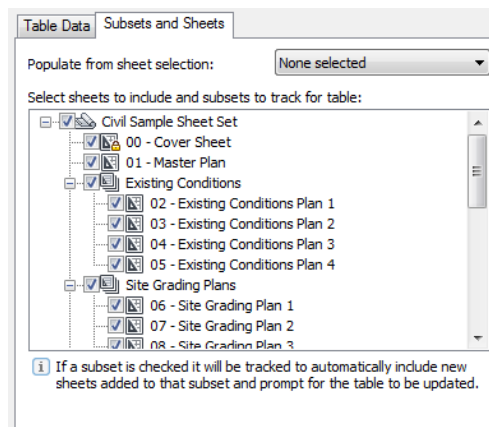
## Subsets and Sheets Tab

### Quick Reference

See also:

- Create and Modify Sheets

Displays options to control the sheet selection represented by the current sheet list table



### List of Options

The following options are displayed.

**Populate From Sheet Selection Drop-Down Menu** Sets the check state of the items in the view based on a previous saved sheet selection.

**Sheet Set Tree View** Displays the sheet set subsets that are to be updated automatically.

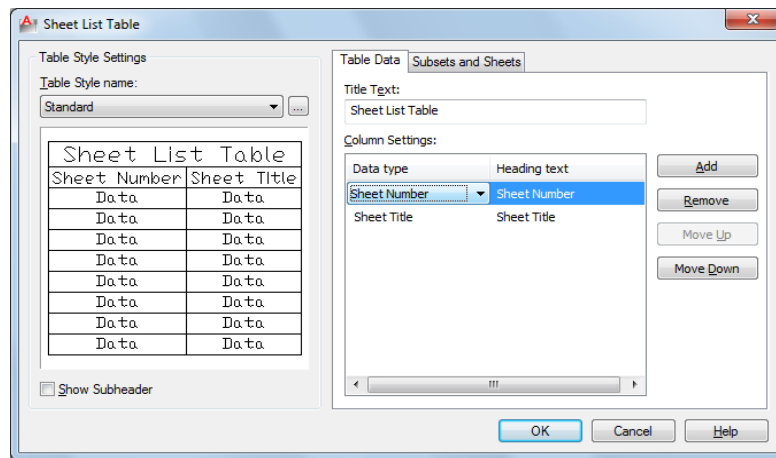
# Edit Sheet List Table Settings Dialog Box

## Quick Reference

See also:

- Create and Modify Sheets

Allows you to edit a sheet list table that exists in the current drawing.



## Access Methods

**Shortcut menu:** Select any cell in Sheet List Table ► Right-click to open the shortcut menu ► Edit Sheet List Table Settings

## Summary

The Edit Sheet List Table Settings dialog box gives you access to all the settings found on the [Insert Sheet List Table dialog box](#).

## List of Options

The following options are displayed.

### Table Style Settings

Displays options for the table style.

**Table Style Name**

Specifies the table style to be used for the table. The Browse button displays the [Table Style dialog box](#).

#### **Table Style Sample Area**

Displays a sample of the currently selected table style.

#### **Show Subheader**

When checked, displays the names of the subsets, dividing the sheet list table into sections.

#### **Table Data Settings**

Displays options for the table data.

#### **Title Text**

Specifies the name of the title of the sheet list table.

#### **Column Settings Area**

Displays a list of the column definitions in the sheet list table. Each line in the list represents a column. The top-to-bottom order of the list represents how the columns will be displayed in the table (left to right).

**Data Type Column** Selecting a column definition and then clicking on an entry in the Data Type column displays a list. From the list, you can change the type of information that is going to be displayed in the columns of the sheet list table.

**Heading Text Column** Allows you to change the title text for each column in the sheet list table.

#### **Add**

Adds a sheet number column to the sheet list table.

#### **Remove**

Removes the selected column from the sheet list table. If you accidentally remove a column, you can add a new Sheet Number column and then change its data type from the data type list.

#### **Move Up**

Moves the selected column up in the column list and to the left in the sheet list table.

#### **Move Down**

Moves the selected column down in the column list and to the right in the sheet list table.



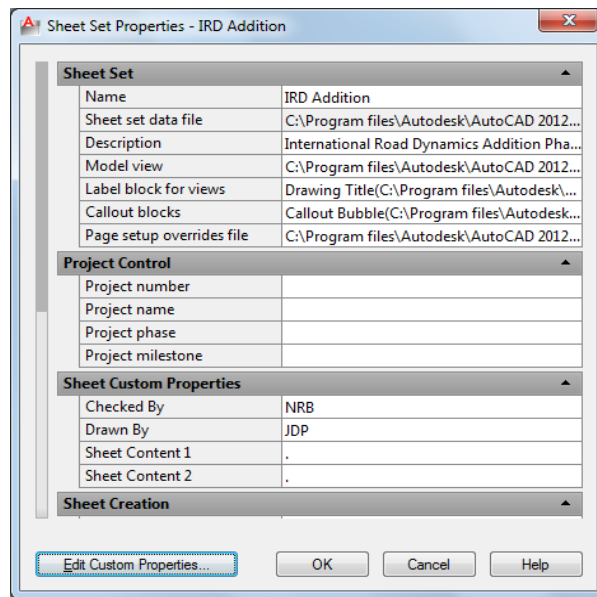
# Sheet Set Properties Dialog Box

## Quick Reference

See also:

- Create and Modify Sheets

Displays information that is specific to the selected sheet set.



## Summary

You can click on each field to display a description at the bottom of the dialog box.

This includes information such as the path and file name of the sheet set data (DST) file, the paths of the folders that contain the drawing files associated with the sheet set, and any custom properties associated with the sheet set.

## List of Options

The following options are displayed.

**Name** Displays the name of the sheet set.

**Sheet Set Data File** Displays the path and file name of the sheet set data (DST) file.

**Description** Displays a description of the sheet set.

**Model View** Displays the paths and names of folders that contain drawings used by the sheet set.

**Label Block for Views** Displays the path and file name of the DWT or DWG file that contains the label blocks for the sheet set.

**Callout Blocks** Displays the path and file name of the DWT or DWG file that contains the callout blocks for the sheet set.

**Page Setup Overrides File** Displays the path and file name for the drawing template (DWT) file containing the page setup overrides for the sheet set.

**Project Control** Displays several fields commonly used in projects including Project Number, Project Name, Project Phase, and Project Milestone.

**Sheet Custom Properties** Displays the user-defined custom properties associated with each sheet in the sheet set.

**Sheet Storage Location** Displays the path and name of the folder where new sheets are created.

**Sheet Creation Template** Displays the path and name of the DWG or DWT file to be used when creating new sheets for the sheet set.

**Prompt for Template** Controls whether you will be prompted for a sheet creation template every time you create a new sheet in a sheet set.

**Sheet Set Custom Properties** Displays the user-defined custom properties associated with the sheet set.

**Edit Custom Properties**

Displays the [Sheet Set Custom Properties dialog box](#).

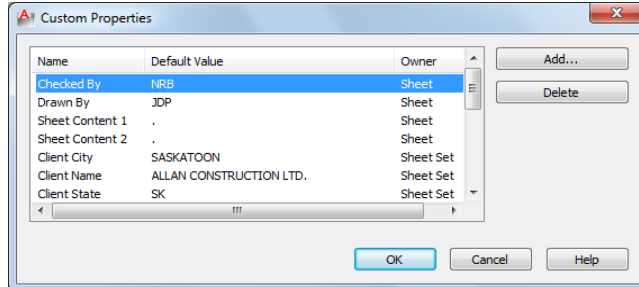
## Sheet Set Custom Properties Dialog Box

### Quick Reference

See also:

- Include Information with Sheets and Sheet Sets

Lists the custom properties associated with the current sheet set.



### List of Options

The following options are displayed.

#### Add

Displays the [Add Custom Property dialog box](#).

#### Delete

Removes the selected custom property from the sheet set.

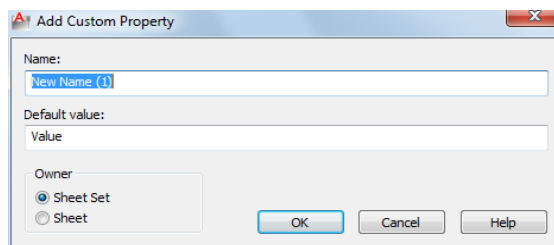
## Add Custom Property Dialog Box

### Quick Reference

See also:

- [Include Information with Sheets and Sheet Sets](#)

Creates a custom property to be associated with the current sheet set or with each sheet.



## Summary

Custom properties can be used to store information such as a contract number, the name of the designer, and the release date.

## List of Options

The following options are displayed.

### Name

Specifies the name of a new custom property.

### Default Value

Specifies a value for the custom property.

### Owner

Specifies whether the custom property belongs to the sheet set or to a sheet.

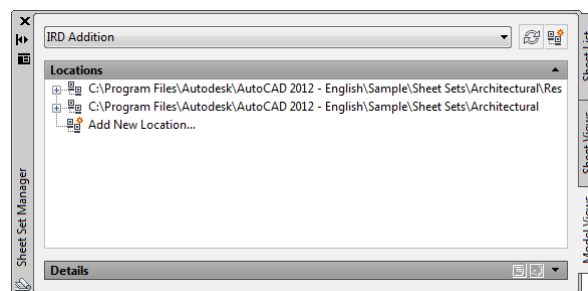
## Resource Drawing Locations Dialog Box

### Quick Reference

#### See also:

- Organize a Sheet Set

Displays a list of folders that are available for the current sheet set.



### Summary

You can add and remove folder locations to control which drawing files are available for the current sheet set.

## List of Options

The following options are displayed.

### Add

Displays the Browse for Folder [standard file selection dialog box](#), in which you can add a folder location to the list.

### Delete

Removes the selected folder from the list.

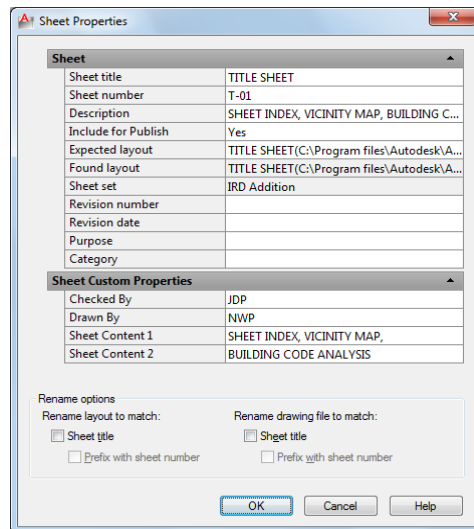
## Sheet Properties Dialog Box

### Quick Reference

See also:

- Create and Modify Sheets

Displays information that is specific to the selected sheet, such as the sheet title, sheet number, and whether it will be included in publishing operations. Also displays custom properties, if any.



## Summary

You can enter a new value to modify any available sheet property.

## List of Options

The following options are displayed.

**Sheet and Sheet Custom Properties** Displays the properties of the selected sheet. Also displays custom properties, if any. You can enter a new value to modify any sheet property. The Expected Layout is the path and file name of the drawing where the sheet was saved. The Found Layout is the path and file name of the drawing where the sheet was found. If the paths are different, you can modify the path and file name in Expected Layout. This operation reassociates the sheet with the sheet set.

**Rename Options** Displays the options for renaming the selected sheet. These settings are the same as those in [Rename & Renumber Sheet dialog box](#) on page 1133.

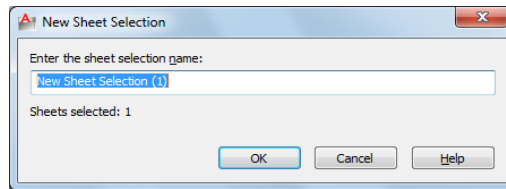
# New Sheet Selection Dialog Box

## Quick Reference

### See also:

- Publish, Transmit, and Archive Sheet Sets

Saves a named selection of sheets for future operations.



## Summary

After you select several sheets and then save the selection, you can restore the sheet selection by name. This makes it easy to specify a set of sheets for a publish, transmit, or archive operation.

### List of Options

The following options are displayed.

#### Enter the Sheet Selection Name

Specifies a name for the sheet selection.

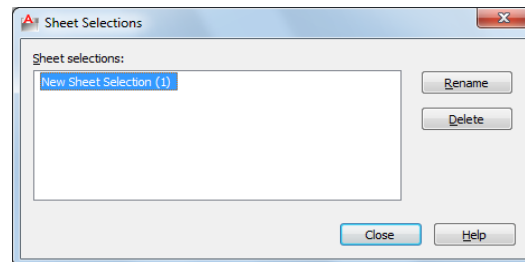
## Sheet Selections Dialog Box

### Quick Reference

See also:

- Publish, Transmit, and Archive Sheet Sets

Renames or deletes saved sheet selections.



### List of Options

The following options are displayed.

#### Sheet Selections

Specifies the sheet selection that you want to rename or delete.

#### Rename

Renames the selected sheet selection.

#### Delete

Deletes the selected sheet selection.

## View Category Dialog Box

### Quick Reference

#### See also:

- Organize a Sheet Set

Creates a new view category in a sheet set.

### Summary

You can organize views by dragging them under different view categories.

### List of Options

The following options are displayed.

#### Category Name

Specifies the name of a new view category.

#### Select the Callout Blocks to be Used in this Category

Provides a method for listing the callout blocks appropriate to the current view category.

#### Add Blocks

Displays the [List of Blocks dialog box](#).

## List of Blocks Dialog Box

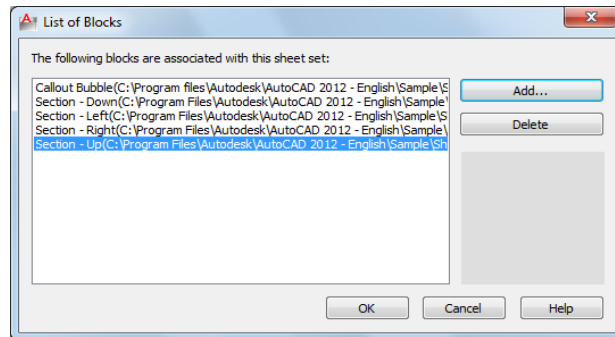
### Quick Reference

#### See also:

- Create and Modify Sheets

Lists, adds, or deletes callout blocks for use in the current sheet set.





## Summary

This dialog box is displayed by clicking the Add Blocks button in the View Category dialog box, or by clicking the [...] button next to Callout blocks in the Sheet Set Properties dialog box.

## List of Options

The following options are displayed.

### List of Blocks

Displays the list of blocks available for use with the current sheet set.

### Add

Displays the [Select Block dialog box](#).

### Delete

Removes the selected block from the list of callout blocks.

**Preview area** Displays a preview image when a single block is selected.

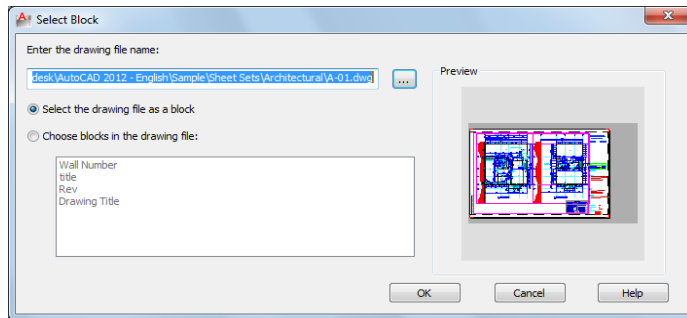
## Select Block Dialog Box

### Quick Reference

#### See also:

- [Create and Modify Sheets](#)

Adds a new label block or callout blocks for use in the current sheet set.



### List of Options

The following options are displayed.

#### Enter the Drawing File Name

Specifies the path and name of a drawing (DWG) file or the name and path of a drawing template (DWT) file to be used as the source of a block definition.

#### Select the Drawing File as a Block

Uses the entire specified drawing file or drawing template file as the block definition.

#### Choose Blocks in the Drawing File

Uses a selected block definition from the specified drawing file or drawing template file.

#### Preview

Displays a preview image when a single block is selected.

## SHEETSETHIDE

### Quick Reference

#### See also:

- Create a Sheet Set

Closes the Sheet Set Manager.

# SHOWPALETTES

## Quick Reference

### See also:

- Specify the Behavior of Dockable Windows

Restores the display of hidden palettes.

### Access Methods

 **Command entry:** Ctrl+Shift+H

### Summary

Restores the state of the display and position of palettes hidden by [HIDEPALETTES](#).

Press Ctrl+Shift+H to switch between HIDEPALETTES and SHOWPALETTES.

---

**NOTE** If a palette was manually turned back on, it is not affected by SHOWPALETTES (even if it was manually closed again)

---

# SIGVALIDATE

## Quick Reference

### See also:

- View Digital Signature Details

Displays information about the digital signature attached to a drawing file.

### Summary

The [Validate Digital Signatures dialog box](#) is displayed. Review the information displayed in the dialog box, and click Close to view the signed file.

## Validate Digital Signatures Dialog Box

### Quick Reference

See also:

- [View Digital Signature Details](#)

Displays information about a digital signature.

### Summary

You can determine if a digital signature is valid and if the signed file has been modified since it was signed.

### List of Options

The following options are displayed.

#### **Name**

Displays the location and name of the file whose digital signature is being viewed.

#### **Digital Signature Status**

Displays a Valid Signature icon if a digital signature is valid, and an Invalid Signature icon if the digital signature is not valid.

#### **File Status**

Displays the status of the signed file.

#### **View Base Signature**

Displays the [Digital Signature Contents dialog box](#). This option is available only if the digital signature is valid and the file has not been modified since it was signed.

#### **Xref Drawings**

Contains detailed information about any xrefs in the signed file.

#### **View Xref Drawings**

Displays the xref drawings contained in a file's base drawing.

#### **View Xref List**

Contains a list of the xref drawings in a signed file. This list is available only if the current file contains xrefs and View Xref Drawings is selected.

#### **View Xref Signature**

Displays the Digital Signatures Contents dialog box for the selected xref. This button is enabled only if the xref has a valid digital signature attached.

## **Digital Signature Contents Dialog Box**

### **Quick Reference**

**See also:**

- View Digital Signature Details

Displays information about a digital signature.

### **Summary**

You can determine if a digital signature is valid and if the signed file has been modified since it was signed.

### **List of Options**

The following options are displayed.

#### **Name**

Displays the location and name of the file whose digital signature is being viewed.

#### **Digital Signature Status**

Displays the status of the digital signature.

#### **File Status**

Displays the status of the signed file.

#### **Signed By**

Displays the name of the organization or individual who attached a digital signature to the current file.

### **Other Fields**

Displays the subject, issuer, valid from date, valid to date, or serial number in the Values box.

**Subject** Displays information about the organization or individual who owns the digital ID and attached the digital signature.

**Issuer** Displays the name of the certificate authority that originally issued the digital ID.

**Valid From** Displays the day, month, year, and exact time from which the digital ID can be first used and is considered valid.

**Valid To** Displays the day, month, year, and exact time at which the digital ID ceases to be valid.

**Serial Number** Displays the serial number assigned to the digital ID.

### **Values**

Displays information about a digital signature based on the item you select in the Other Fields list.

### **Comment**

Displays any comments about the digital signature that is attached to the current file.

### **Signature Date and Time**

Displays the date and time that the digital signature was attached to the current file. The date and time are based on the time service used when the signature was attached.

### **Time Service Used**

Displays the time service used to add the time stamp to the current file.

### **Skip Xref Warnings**

Determines if the Digital Signature Contents dialog box is displayed for signed xrefs. This check box is displayed only in the Digital Signature Contents dialog box when a signed drawing is opened.

# SKETCH

## Quick Reference

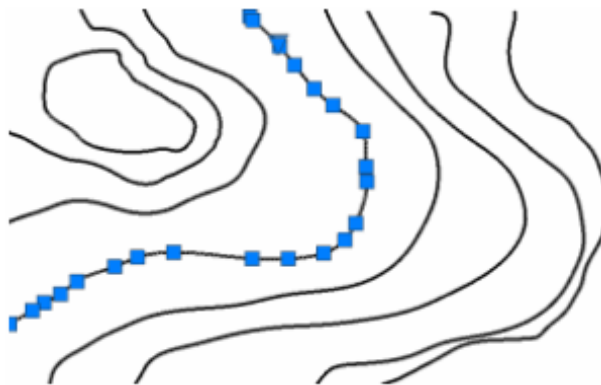
### See also:

- Draw Freehand Sketches

Creates a series of freehand line segments.

### Summary

Sketching is useful for creating irregular boundaries or for tracing with a digitizer. Specify the object type (line, polyline, or spline), increment, and tolerance before sketching.



### List of Prompts

The following prompts are displayed.

[Sketch](#) on page 1157 or [[Type](#) on page 1157/[Increment](#) on page 1158/[toLerance](#) on page 1158]:

**Sketch** Creates a sketch.

**Type** Specifies the object type for the sketch line. ([SKPOLY](#) on page 1659 system variable)

- [Line](#) on page 702
- [Polyline](#) on page 954
- [Spline](#) on page 1169

**Increment** Defines the length of each freehand line segment. You must move the pointing device a distance greater than the increment value to generate a line. ([SKETCHINC](#) on page 1659 system variable)

**Tolerance** For Splines, specifies how closely the spline's curve fits to the freehand sketch. ([SKTOLERANCE](#) on page 1660 system variable)

## SNAP

### Quick Reference



See also:

- Adjust Grid and Grid Snap

Restricts cursor movement to specified intervals.

#### Access Methods

 **Menu:** Tools ► Drafting Settings

 **Toolbar:** Status bar ► Snap 

 **Command entry:** `snap` or `'snap` for transparent use

#### List of Prompts

The following prompts are displayed.

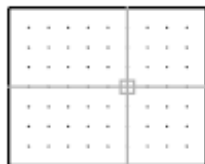
Specify [snap spacing](#) on page 1158 or [[ON](#) on page 1158/[OFF](#) on page 1159/[Aspect](#) on page 1159/[Style](#) on page 1159/[Type](#) on page 1159] *<current>*: Specify a distance, enter an option, or press Enter

#### **Snap Spacing**

Activates Snap mode with the value you specify.

#### **On**

Activates Snap mode using the current settings of the snap grid.



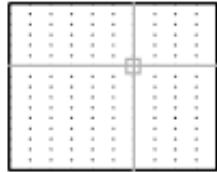


**Off**

Turns off Snap mode but retains the current settings.

**Aspect**

Specifies different spacing in the *X* and *Y* directions.

**Style**

Specifies the format of the snap grid, which is Standard or Isometric.

**Standard**

Sets a rectangular snap grid that is parallel to the *XY* plane of the current UCS. *X* and *Y* spacing may differ.

**Spacing** Specifies the overall spacing of the snap grid.

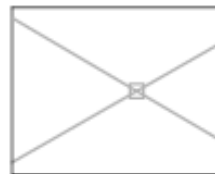
**Aspect** Specifies the horizontal and vertical spacing of the snap grid separately.

**Isometric**

Sets an isometric snap grid, in which the snap locations are initially at 30-degree and 150-degree angles. Isometric snap cannot have different Aspect values. The lined grid does not follow the isometric snap grid.



left isoplane



top isoplane



right isoplane

**ISOPLANE** determines whether the crosshairs lie in the top isometric plane (30- and 150-degree angles), the left isoplane (90- and 150-degree angles), or the right isoplane (30- and 90-degree angles).

**Type**

Specifies the snap type, polar or rectangular. This setting is also controlled by the **SNAPTYP**E system variable.

**Polar** Sets the polar angle increment.

(**POLARANG** system variable)

**Grid** Sets the snap to Grid. When you specify points, the cursor snaps along vertical or horizontal grid points.

## SOLID

### Quick Reference

See also:

- Modify Hatch Properties

Creates solid-filled triangles and quadrilaterals.

### Summary

2D solids are filled only when the FILLMODE system variable is on (1) and the viewing direction is orthogonal to the 2D solid.

### List of Prompts

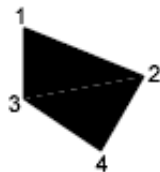
The following prompts are displayed.

**First point** Sets the first point in the 2D solid.

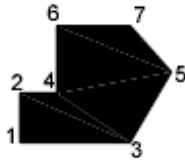
**Second point** Sets the first edge of the 2D solid.

**Third point** Sets the corner that is opposite the second point.

**Fourth point or <exit>** The fourth point is diagonally opposite the first point. Pressing Enter at the Fourth Point prompt creates a filled triangle. Specifying a fifth point creates a quadrilateral area.



Specifying successive third and fourth points creates further connected triangles and four-sided polygons in a single solid object.



## SPACETRANS

### Quick Reference

See also:

- Change Text Scale and Justification

Calculates equivalent model space and paper space lengths in a layout.

### Access Methods



**Button**

 **Toolbar:** Text

### List of Prompts

In a layout, when in model space, the prompt is displayed as follows:

Specify paper space distance <1.000>: *Enter a length in paper space to convert to the equivalent length in model space*

In a layout, when in paper space, the prompt is displayed as follows:

Select a viewport: *Pick a layout viewport object (this prompt is displayed when more than one viewport object is available in the layout)*

Specify model space distance <1.000>: *Enter a length in model space to convert to the equivalent length in paper space*

SPACETRANS converts lengths, typically text heights, from either model space or paper space to its equivalent length in the other space. It is intended to be invoked transparently at a prompt for text height or other length value. When

used at the Command prompt, SPACETRANS displays the computed length equivalent at the Command prompt.

---

**NOTE** This command is not available from the Model tab or in a perspective view.

---

## SPELL

### Quick Reference

See also:

- Check Spelling


Checks spelling in a drawing.

### Access Methods




Button

 **Ribbon:** Annotate tab ► Text panel ► Check Spelling

 **Menu:** Tools ► Spelling

 **Toolbar:** Text

 **Command entry:** 'spell for transparent use

### Summary

When you enter **spell** at the Command prompt, the [Check Spelling dialog box](#) is displayed. Select the Start button to begin the spelling check.

If Check Spelling is set to Entire Drawing, spelling is checked on the Model layout, then on named (paper space) layouts. If a flagged word is identified, the drawing area highlights and zooms to that word.

---

**NOTE** Invisible text such as text on hidden layers, and hidden block attributes is not checked. Non-uniformly scaled blocks and objects not on the supported annotation scale are also not checked.

---

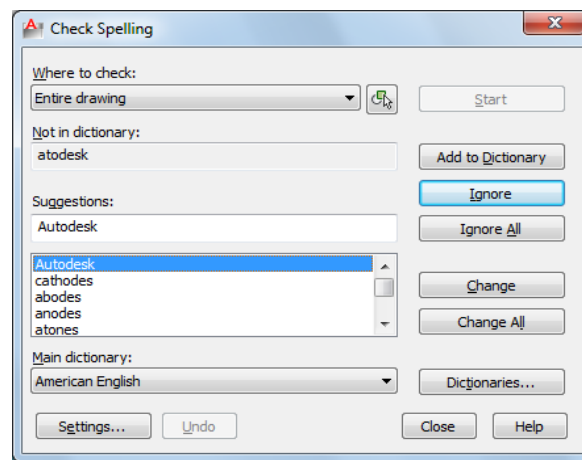
# Check Spelling Dialog Box

## Quick Reference

See also:

- Check Spelling

Displays the spelling checker dialog box that picks and displays the wrongly spelt words and suggests alternate words.



## Summary

Checks the spelling in single-line text, multiline text, multileader text, text within block attributes, text within xrefs, and text added to dimensions.

In block attributes, only the attribute values are checked. The spelling in text objects within block references and nested block references is checked, but spell checking in block definitions is performed only if the associated block reference has been selected.

## List of Options

The following options are displayed.

### Where to Check

Displays the areas you want checked for spelling.

**Select Text Objects**

Limits the spelling check to the selected single-line text, multiline text, dimension text, multileader text, text within block attributes, and text within xrefs.

**Not in Dictionary**

Displays the word identified as misspelled.

**Suggestions**

Displays a list of suggested replacement words from the current dictionary.

You can select another replacement word from the list, or edit or enter a replacement word in the top Suggestions text area.

**Main Dictionary**

Lists the main dictionary options. The default dictionary will depend on the language setting.

**Start**

Starts checking text for spelling errors.

**Ignore**

Skips the current word.

**Ignore All**

Skips all remaining words that match the current word.

**Add to Dictionary**

Adds the current word to the current custom dictionary. The maximum word length is 63 characters.

**Change**

Replaces the current word with the word in the Suggestions box.

**Change All**

Replaces the current word in all selected text objects in the spell check area.

**Dictionaries**

Displays the [Dictionaries dialog box](#).

**Settings**

Displays the Check Spelling Settings dialog box.

## Undo

Reverses the previous check spelling action or series of actions, including Ignore, Ignore All, Change, Change All, and Add to Dictionary.

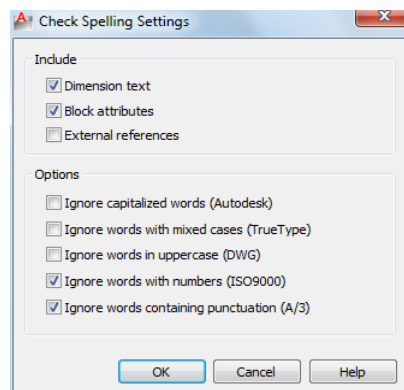
## Check Spelling Settings Dialog Box

### Quick Reference

See also:

- Check Spelling

Provides options to change the way the default behavior of the spelling checker dialog box.



### Summary

Specifies specific text options that will be checked in your drawing.

### List of Options

The following options are displayed.

#### **Include**

##### **Dimension Text**

Searches dimension text.

##### **Block Attributes**

Searches block attributes text for spelling errors.

**External References**

Specifies to search external references for spelling errors.

**Options**

**Ignore Capitalized Words**

Specifies to ignore capitalized words.

**Ignore Words with Mix Cases**

Specifies to ignore words that contain uppercase and lowercase letters.

**Ignore Words in Uppercase**

Specifies to ignore words that are in all uppercase.

**Ignore Words with Numbers**

Specifies to ignore words that include numbers.

**Ignore Words Containing Punctuation**

Specifies to ignore words that contain punctuation.

## Dictionaries Dialog Box

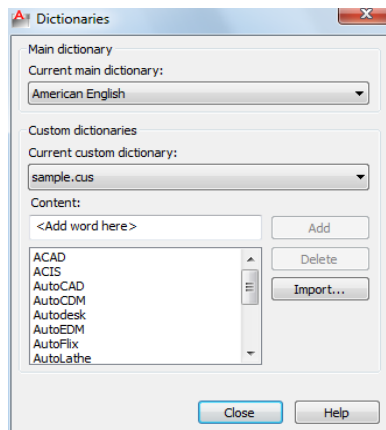
### Quick Reference

See also:

- Check Spelling

Displays the installed dictionaries and allows you to edit the custom dictionary.





## Summary

Manages dictionaries. During a spelling check, the words in the drawing are matched to the words in the current main and current custom dictionaries. Any spelling exceptions that you identify with the Add option are stored in the custom dictionary you are currently using.

If you want to check spelling in another language, you can change to a different main dictionary. You can also create any number of custom dictionaries and switch between them as needed.

## List of Options

The following options are displayed.

### Main Dictionary

Displays a list of language-specific dictionaries from which you can choose a different main dictionary. This dictionary is used in conjunction with the custom dictionary.

### Custom Dictionary

Displays the name of the current custom dictionary. The .cus extension is used for an AutoCAD custom dictionary.

### Current Custom Dictionary

Displays a list from which you can select a custom dictionary file. The selected dictionary file is used until another file is selected.

The list also includes a Manage custom dictionaries selection which brings up the Manage Custom Dictionaries dialog box.

### Content

Displays a list of the words that currently exist in the specified custom dictionary.

You can add words to or delete words from the list below.

### Add

Adds the word that you enter in the box to the current custom dictionary. The maximum length is 63 characters.

### Delete

Deletes a word from current custom dictionary content.

### Import

Imports words from another dictionary or word list into your current custom dictionary.

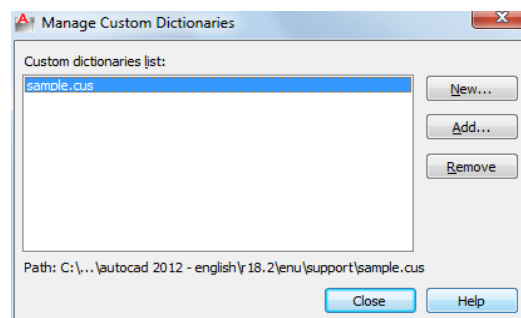
## Manage Custom Dictionaries Dialog Box

### Quick Reference

#### See also:

- Check Spelling

Manages your custom dictionaries allowing you to add or remove a dictionary.



### List of Options

The following options are displayed.

### Custom Dictionaries List

Displays the custom dictionaries list. Only one dictionary can be selected at a time.

#### New

Allows you to create a custom dictionary. The new dictionary is highlighted as the current one.

---

**NOTE** The filename for a custom dictionary cannot use any non-current code page characters in its name. If you are sharing a custom dictionary between different locals or languages do not use non-ASCII characters.

---

#### Add

Allows you to add an existing custom dictionary from your file lists.

#### Remove

Allows you to delete a custom dictionary file from your list.

## SPLINE

### Quick Reference

#### See also:

- Draw Splines

Creates a smooth curve that passes through or near a set of fit points, or that is defined by the vertices in a control frame.

#### Access Methods



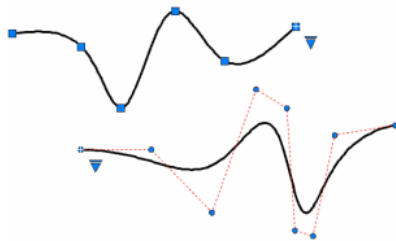
#### Button

- ☒ **Ribbon:** Home tab ► Draw panel ► Spline
- ☒ **Menu:** Draw ► Spline ► Fit Points
- ☒ **Menu:** Draw ► Spline ► Control Vertices
- ☒ **Toolbar:** Draw

## Summary

SPLINE creates curves called *nonuniform rational B-splines* (NURBS), referred to as splines for simplicity.

Splines are defined either with fit points, or with control vertices. By default, fit points coincide with the spline, while control vertices define a *control frame*. Control frames provide a convenient method to shape the spline. Each method has its advantages.



For splines created with control vertices, you can display the control frame by selecting the spline.

## List of Prompts

The prompts that display depend on whether you create a spline with fit points or with control vertices.

For splines created with the fit point method:

Specify first point or [[Method](#) on page 1170/[Degree](#) on page 1173/[Object](#) on page 1171]:

For splines created with the control vertices method:

Specify first point or [[Method](#) on page 1170/[Knots](#) on page 1171/[Object](#) on page 1171]:

### First Point

Specifies the first point of the spline, either the first fit point or the first control vertex, depending on the current method.

### Method

Controls whether the spline is created with fit points or with control vertices. ([SPLMETHOD](#) on page 1667 system variable)

**Fit** Creates a degree 3 (cubic) B-spline by specifying fit points that the spline must pass through. When the tolerance value is greater than 0, the spline must be within the specified tolerance distance from each point.

Changing the Method updates the [SPLMETHOD](#) on page 1667 system variable.

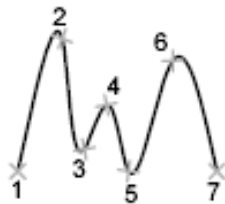
**Control Vertices** Creates a spline by specifying control vertices. Use this method to create splines of degree 1 (linear), degree 2 (quadratic), degree 3 (cubic), and so on up to degree 10. Adjusting the shape of a spline by moving control vertices often provides better results than moving fit points.

**Object**

Converts 2D or 3D quadratic or cubic spline-fit polylines to equivalent splines. The original polyline is retained or discarded depending on the setting of the DELOBJ system variable.

**Next Point**

Creates additional spline segments until you press Enter.



**Undo**

Removes the last specified point.

**Close**

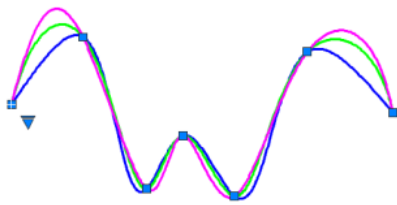
Closes the spline by defining the last point to be coincident with the first. By default, closed splines are periodic, maintaining curvature continuity (C2) along the entire loop.



**Options for Splines with Fit Points**

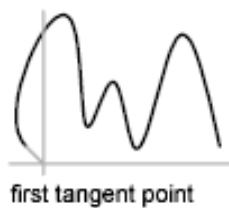
The following options are specific to the fit point method.

**Knots** Specifies the *knot parameterization*, one of several computational methods that determines how the component curves between successive fit points within a spline are blended. ([SPLKNOTS](#) on page 1666 system variable)

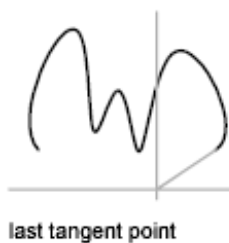


- *Chord* (or Chord-Length method). Spaces the *knots* connecting each component curve to be proportional to the distances between each associated pair of fit points. An example is the green curve in the illustration.
- *Square Root* (or Centripetal method). Spaces the knots connecting each component curve to be proportional to the square root of the distance between each associated pair of fit points. This method usually produces “gentler” curves. An example is the blue curve in the illustration.
- *Uniform* (or Equidistant method). Spaces the knots of each component curve to be equal, regardless of the spacing of the fit points. This method often produces curves that overshoot the fit points. An example is the magenta curve in the illustration.

**Start Tangency** Specifies a tangent condition on the starting point of the spline.



**End Tangency** Specifies a tangent condition on the ending point of the spline.



**Tolerance** Specifies the distance by which the spline is allowed to deviate from the specified fit points. A tolerance value of 0 requires the resulting spline to pass directly through the fit points. The tolerance value applies to all fit points except the starting and ending fit points, which always have a tolerance of 0.



### Options for Splines with Control Vertices

The following option is specific to the control vertices (CV) method.  
([SPLMETHOD](#) on page 1667 system variable)

**Degree** Sets the polynomial degree of the resulting spline. Use this option to create splines of degree 1 (linear), degree 2 (quadratic), degree 3 (cubic), and so on up to degree 10.

## SPLINEDIT

### Quick Reference

See also:

- Modify Splines

Modifies the parameters of a spline or converts a spline-fit polyline to a spline.

### Access Methods



#### Button

 **Ribbon:** Home tab ► Modify panel ► Edit Spline

 **Menu:** Modify ► Object ► Spline

 **Toolbar:** Modify II

**Shortcut menu:** Select a spline to edit. Right-click in the drawing area and click Spline.

## Summary

Modifies the data that defines a spline, such as the number and weight of control vertices, the fit tolerance, and the starting and ending tangents.

---

**NOTE** SPLINEDIT automatically converts spline-fit polylines to splines even if you immediately exit SPLINEDIT after selecting the spline-fit polyline.

---

The data that defines a spline is represented in one of two formats: as a control frame or as fit points. The format can change depending on how the spline was originally created, the options selected from the grip menus, or the options used in SPLINEDIT.

You can change any of following data:

- Control frame data consists of control vertices, the polynomial degree of the spline, and the weights assigned to each control vertex.
- Fit data consists of fit points, knot parameterization, the fit tolerance, and the tangents at the endpoints of the spline.

---

**NOTE** Switching from displaying control vertices to fit points automatically changes the selected spline to degree 3. Splines originally created using higher-degree equations will likely change shape as a result. In addition, if the spline was created using a positive tolerance value, the fit points will be relocated to the knots on the spline, and the tolerance value is reset to 0.

---

## List of Prompts

The following prompts are displayed.

Select spline:

Enter an option [[Close](#) on page 1174/[Join](#) on page 1175/[Fit data](#) on page 1175/[Edit Vertex](#) on page 1176/[convert to Polyline](#) on page 1177/[Reverse](#) on page 1178/[Undo](#) on page 1178] <eXit>:

### **Close/Open**

One of the following options displays, depending on whether the selected spline is open or closed. An open spline has two endpoints, while a closed spline forms a loop.

**Close** Closes an open spline by defining the last point to be coincident with the first. By default, closed splines are periodic, maintaining curvature continuity (C2) along the entire curve.

**Open** Opens a closed spline by removing the final curve segment between the first and last points specified when the spline was originally created.



## Join

Combines a selected spline with other splines, lines, polylines, and arcs at coincident endpoints to form a larger spline. Objects are joined with kinks at the points where they are joined (C0 continuity).

## Fit Data

Edits fit point data using the following options:

Enter a fit data option [[Add](#) on page 1175/[Close](#) on page 1175/[Delete](#) on page 1175/[Kink](#) on page 1176/[Move](#) on page 1176/[Purge](#) on page 1176/[Tangents](#) on page 1176/[toLerance](#) on page 1176/[eXit](#) on page 1176] <eXit>:

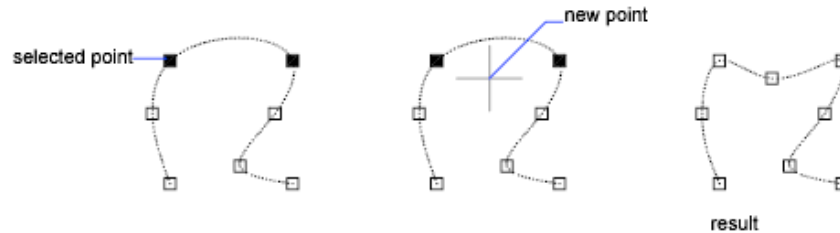
## Add

Adds fit points to the spline.

After selecting a fit point, specify a new fit point to be added to the spline in the direction of the next fit point, which is automatically highlighted.

If you select the last fit point on an open spline, the new fit point is added to the end of the spline.

If you select the first fit point on an open spline, you have the option of specifying whether the new fit point is added before or after the first point.



## Close/Open

One of the following options displays, depending on whether the selected spline is open or closed. An open spline has two endpoints, while a closed spline forms a loop.

**Close** Closes an open spline by defining the last point to be coincident with the first. By default, closed splines are periodic, maintaining curvature continuity (C2) along the entire curve.

**Open** Opens a closed spline by removing the final curve segment between the first and last points specified when the spline was originally created.

## Delete

Removes selected fit points from a spline.

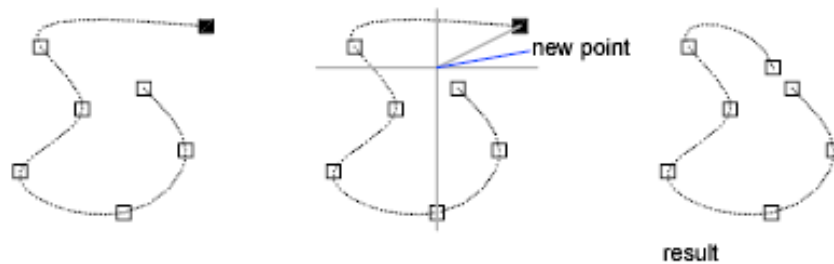
**Kink**

Adds a knot and fit point at the specified location on the spline, which does not maintain tangent or curvature continuity at that point.

**Move**

Moves fit points to new locations.

**New Location** Moves the selected fit point to the specified location.



**Next** Selects the next fit point.

**Previous** Selects the previous fit point.

**Select Point** Select any fit point on the spline.

**Purge**

Replaces the fit data from the spline with control vertices.

**Tangents**

Changes the starting and ending tangents of a spline. Specify a point to establish a tangent direction. You can use object snaps such as Perpendicular or Parallel.

If the spline is closed, the prompt becomes `Specify Tangent or [System Default]`.

The System Default option calculates the default end tangents.

**Tolerance**

Refits the spline to the existing fit points using the new tolerance value.

**Exit**

Returns to the previous prompt.

**Edit Vertex**

Edits control frame data using the following options:

Enter a vertex editing option [[Add](#) on page 1177/[Delete](#) on page 1177/[Elevate order](#) on page 1177/[Move](#) on page 1177/[Weight](#) on page 1177/[eXit](#) on page 1177] <eXit>:

### **Add**

Adds a new control vertex at the point you specify that is located between two existing control vertices.

### **Delete**

Removes a selected control vertex.

### **Elevate Order**

Increases the polynomial order (degree plus one) of the spline. This results in increasing the number of control vertices across the spline.

The maximum value is 26.

### **Move**

Relocates a selected control vertex.

- [New Location](#) on page 1176
- [Next](#) on page 1176
- [Previous](#) on page 1176
- [Select Point](#) on page 1176

### **Weight**

Changes the weight of a specified control vertex.

**New Weight** Recalculates the spline based on the new weight value for the specified control vertex. A larger value pulls the spline closer to the control vertex.

- [Next](#) on page 1176
- [Previous](#) on page 1176
- [Select Point](#) on page 1176

### **Exit**

Returns to the previous prompt.

### **Convert to Polyline**

Converts the spline to a polyline.

The precision value determines how closely the resulting polyline matches the spline. Valid values are any integer between 0 and 99.

---

**NOTE** A high precision value will decrease performance.

---

The PLINECONVERTMODE system variable determines whether the polylines are created with linear or arc segments.

The DELOBJ system variable determines whether the original spline is retained.

**Reverse**

Reverses the direction of the spline. This option is intended primarily for third-party applications.

**Undo**

Cancels the last action.

**Exit**

Returns to the Command prompt.

## STRETCH

### Quick Reference

See also:

- Resize or Reshape Objects


Stretches objects crossed by a selection window or polygon.

### Access Methods



Button

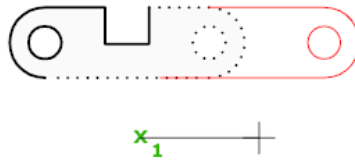
 **Ribbon:** Home tab ► Modify panel ► Stretch

 **Menu:** Modify ► Stretch

 **Toolbar:** Modify

### Summary

Objects that are partially enclosed by a crossing window are stretched. Objects that are completely enclosed within the crossing window, or that are selected individually, are moved rather than stretched. Several objects such as circles, ellipses, and blocks, cannot be stretched.

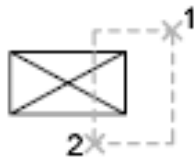


### List of Prompts

The following prompts are displayed.

Select objects to stretch by crossing-window or crossing-polygon...

Select objects: *Use the cpolygon option or the crossing object selection method, and press Enter. Individually selected objects and objects that are completely enclosed by the crossing selection are moved rather than stretched.*



STRETCH moves only the vertices and endpoints that lie inside the crossing selection, leaving those outside unchanged. STRETCH does not modify 3D solids, polyline width, tangent, or curve-fitting information.

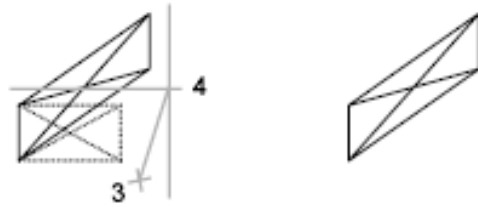
### Base Point

Specify base point or [Displacement] <last displacement>: *Specify a base point or enter displacement coordinates*

Specify second point or <use first point as displacement>: *Specify a second point, or press Enter to use the previous coordinates as a displacement*

### Displacement

Specify displacement <last value>: *Enter displacement values for X,Y (and optionally Z)*



If you enter a second point, the objects are stretched the vector distance from the base point to the second point. If you press Enter at the Specify Second Point of Displacement prompt, the first point is treated as an  $X,Y,Z$  displacement.

## STYLE

### Quick Reference

#### See also:

- Overview of Text Styles


Creates, modifies, or specifies text styles.

#### Access Methods




#### Button

 **Ribbon:** Home tab ► Annotation panel ► Text Style

 **Menu:** Format ► Text Style

 **Toolbar:** Text

 **Command entry:** 'style for transparent use

#### Summary

The [Text Style dialog box](#) is displayed.

If you enter **-style** at the Command prompt, [options are displayed](#).

You can specify the current text style to determine the appearance of all new text. A text style includes the font, size, obliquing angle, orientation, and other text characteristics.

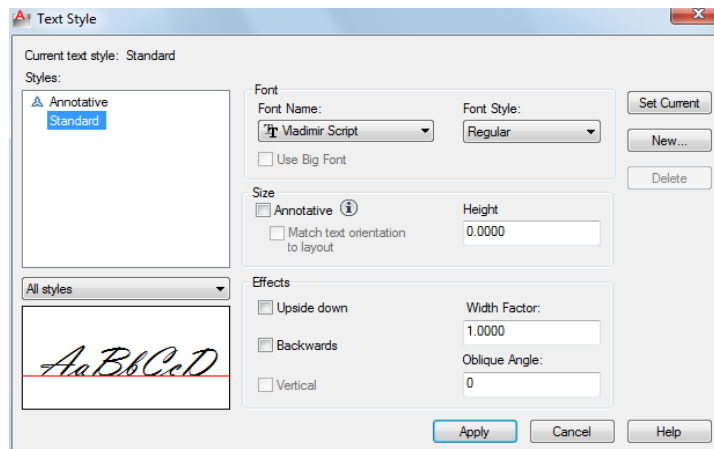
## Text Style Dialog Box

### Quick Reference

See also:

- Overview of Text Styles

Creates, modifies, or specifies text styles.



### Summary

Creates, modifies, or sets named text styles.


### List of Options

The following options are displayed.

#### Current Text Style

Lists the current text style.

## Styles

Displays the list of styles in the drawing. A  icon before the style name indicates that the style is .

Style names can be up to 255 characters long. They can contain letters, numbers, and the special characters dollar sign (\$), underscore (\_), and hyphen (-).

### Style List Filter

The drop-down list specifies whether all styles or only the styles in use are displayed in the styles list.

### Preview

Displays sample text that changes dynamically as you change fonts and modify the effects.

### Font

Changes the style's font.

---

**NOTE** If you change the orientation or font file of an existing text style, all text objects with that style use the new values when the drawing is regenerated.

---

### Font Name

Lists the font family name for all registered TrueType fonts and all compiled shape (SHX) fonts in the *Fonts* folder.

When you select a name from the list, the program reads the file for the specified font. The file's character definitions are loaded automatically unless the file is already in use by another text style. You can define several styles that use the same font. For more information, see “Assign Text Fonts”.

### Font Style

Specifies font character formatting, such as italic, bold, or regular. When Use Big Font is selected, this option changes to Big Font Name and is used to select a Big Font file name.

### Use Big Font

Specifies an Asian-language Big Font file. Only SHX files are valid file types for creating Big Fonts.

For more information, see “Use Text Fonts for International Work”.



**Size**

Changes the size of the text.

**Annotative**

Specifies that the text is . Click the information icon to learn more about the annotative objects.

**Match Text Orientation to Layout**

Specifies that the orientation of the text in paper space viewports matches the orientation of the layout. This option is unavailable if the option is cleared.

**Height or Paper Text Height**

Sets the text height based on the value you enter. Entering a height greater than 0.0 sets the text height for this style automatically. If you enter 0.0, the text height defaults to the last text height used, or the value stored in the drawing template file.

TrueType fonts might be displayed at a smaller height than SHX fonts with the same height setting.

If the annotative option is selected, the value entered sets the text height in paper space.

See “Set Text Height” for more information.

**Effects**

Modifies characteristics of the font, such as its height, width factor, and obliquing angle and whether it is displayed upside down, backwards, or vertically aligned.

**Upside Down**

Displays the characters upside down.

**Backwards**

Displays the characters backwards.

**Vertical**

Displays the characters aligned vertically. Vertical is available only if the selected font supports dual orientation. Vertical orientation is not available for TrueType fonts.

**Width Factor**

Sets the character spacing. Entering a value less than **1.0** condenses the text. Entering a value greater than **1.0** expands it.

### **Oblique Angle**

Sets the obliquing angle of the text. Entering a value between **-85** and **85** italicizes the text.

---

**NOTE** TrueType fonts using the effects described in this section might appear bold on the screen. Onscreen appearance has no effect on plotted output. Fonts are plotted as specified by applied character formatting.

---

### **Set Current**

Sets the style selected under Styles to current.

### **New**

Displays the New Text Style dialog box and automatically supplies the name “*stylen*” (where *n* is the number of the supplied style) for the current settings. You can accept the default or enter a name and choose OK to apply the current style settings to the new style name.

### **Delete**

Deletes unused text styles.

### **Apply**

Applies style changes made in the dialog box to the current style and to the text of the current style in the drawing.

## **-STYLE**

### **Quick Reference**

#### **See also:**

- Overview of Text Styles

Creates, modifies, or specifies text styles.

#### **List of Prompts**

The following prompts are displayed.

Enter [name of text style](#) or [?] <current>: *Enter a style name, enter ?, or press Enter*

**Text Style Name** Specifies the text style name. To define a style that uses Big Fonts, you can use long file names that do not contain commas. Commas are used to separate SHX files and Big Font files for defining a Big Font file.

Enter a TrueType font family name or an SHX font file name. If you do not enter a file name extension, this program searches for an SHX file. If the file is not located, Windows substitutes the first located registered TrueType font.

All long file names except those containing commas are accepted at the prompt. The comma is reserved for the Big Font naming convention: an SHX file followed by a comma (,), followed by the Big Font file name. A space is interpreted as part of the font name, not as a carriage return.

If you enter **annotative**, you are prompted to create an text style.

**Tilde (~)** Displays the Select Font File dialog box.

In the Select Font File dialog box, valid types include SHX and TTF. The character definitions of the selected font file are loaded automatically unless the file is already in use by another text style. You can define several styles that use the same font file.

**Match Text Orientation to Layout** If you enter **yes** the current text style orientation in paper space viewports matches the layout.

**Height of Text** If you enter a height of **0.0**, you are prompted for the text height each time you enter text using this style. Entering a height greater than **0.0** sets the Text Height (Non annotative), entering a height greater than **0.0** sets the Paper Text Height (Annotative), for this style.

**Width Factor** Entering a value less than **1.0** condenses the text. Entering a value greater than **1.0** expands it.

**Obliquing Angle** Entering a value between **-85** and **85** obliquates the text.

**Vertical** Vertical is available only if the selected font supports dual orientation.

?—**List Text Styles** Lists the text styles available in the drawing.

At the Enter Text Style(s) to List prompt, entering the name of a style displays the name, font file, height, width factor, obliquing angle, and generation of the style and exits the command. Entering an asterisk (\*) or pressing Enter displays the height, width factor, obliquing angle, and generation (whether text is drawn backwards, upside-down, vertically, or normally) of each style, and then exits the command.

# STYLESMANAGER

## Quick Reference

See also:

- Manage Plot Style Tables


Displays the Plot Style Manager, where you can revise plot style tables.

## Access Methods



**Button**

 **Menu:** Application menu ► Print ► Manage Plot Styles

 **Menu:** File ► Plot Style Manager

## Summary

In the folder, you can start the Add-a-Plot-Style-Table wizard, or double-click an STB or CTB file to open the Plot Style Table Editor.

- Double-click the [Add-a-Plot-Style-Table wizard](#) to add plot style tables.
- Double-click a plot style table (STB or CTB file) to start the [Plot Style Table Editor](#).

# Add-a-Plot-Style-Table Wizard

## Quick Reference

See also:

- Choose a Type of Plot Style Table

Adds new plot style tables.

## Summary

Plot style tables contain and define plot styles, which can be assigned to objects. When complete, the wizard produces an STB or CTB file depending on the type of table you are creating. You can edit these files in the [Plot Style Table Editor](#). To use your new plot style table, the selected options on the Plot and Publish tab of the [Options dialog box](#) must be appropriate for the type of plot style table (named or color-dependent) you created.

You can create a plot style table from scratch, use an existing plot style table as a starting point, or use settings from a PCP, PC2, or CFG file.

You can create either a named plot style table or a color-dependent plot style table. With a named plot style table, you can add and define plot styles as you like; the file name has the extension *.stb*. A color-dependent plot style table creates 255 plot styles based on color; the file name has the extension *.ctb*. You can specify whether you want to use a plot style table for new drawings or for pre-AutoCAD 2000 drawings when they are saved in a later format.

# Plot Style Table Editor

## Quick Reference

See also:

- Manage Plot Style Tables

Modifies the plot styles in a plot style table.

## Summary

If the plot style table is attached to a layout or the Model tab, and you change a plot style, any objects that use that plot style are affected. If the plot style table is color-dependent, the file extension is CTB. If the plot style table is named, the file extension is STB. For information, see “Use Plot Styles to Control Plotted Objects”.

Open the Plot Style Table Editor with any of the following methods:

- Double-click a CTB or STB file in the Plot Style Manager.
- Right-click a CTB or STB file in the Plot Style Manager, and then choose Open from the shortcut menu.

- Choose Plot Style Table Editor from the Finish screen in the Add Plot Style Table wizard.
- In the Page Setup dialog box under Plot Style Table (Pen Assignments), select a plot style and click the Edit button.
- In the Current Plot Style and Select Plot Style dialog boxes, choose Editor.
- [General](#)
- [Table View and Form View](#)

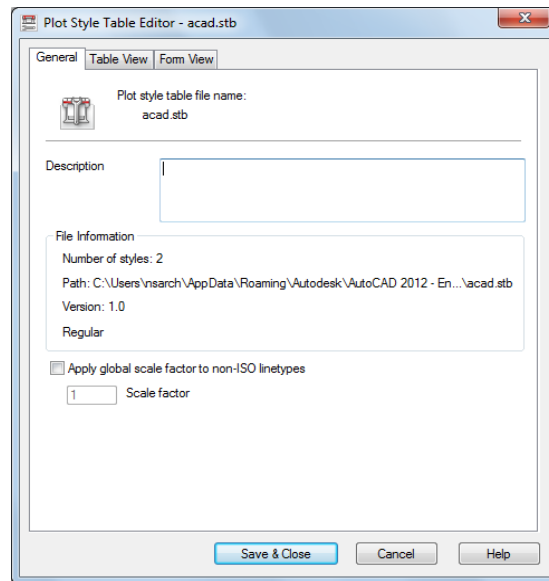
## General Tab (Plot Style Table Editor)

### Quick Reference

See also:

- [Use Plot Styles to Control Plotted Objects](#)

Lists the plot style table file name, description, version number, location (path name), and table type.



### **List of Options**

The following options are displayed.

**Plot Style Table File Name** Displays the name of the plot style table file you are editing.

#### **Description**

Provides a description area for a plot style table.

#### **File Information**

Displays information about the plot style table you are editing: number of plot styles, path, and version number of the Plot Style Table Editor.

#### **Apply Global Scale Factor to Non-ISO Linetypes**

Scales all the non-ISO linetypes and fill patterns in the plot styles of objects controlled by this plot style table.

#### **Scale Factor**

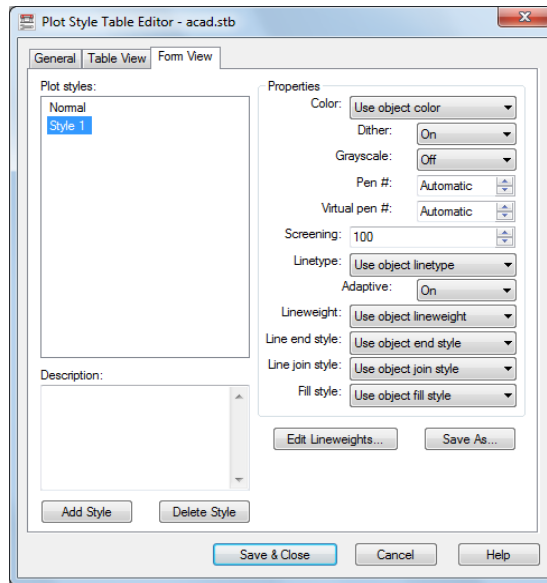
Specifies the amount to scale non-ISO linetypes and fill patterns.

## **Table View and Form View Tabs (Plot Style Table Editor)**

### **Quick Reference**

#### **See also:**

- Use Plot Styles to Control Plotted Objects



## Summary

Lists all of the plot styles in the plot style table and their settings.

Plot styles are displayed in columns from left to right. In general, the Table View tab is convenient if you have a small number of plot styles. If you have a large number of plot styles, the Form view is more convenient because the plot style names are listed at the left and the properties of the selected style are displayed to the right. The first plot style in a named plot style table is NORMAL and represents an object's default properties (no plot style applied). You cannot modify or delete the NORMAL style.

## List of Options

The following options are displayed.

**Name** Displays the names of plot styles in named plot style tables. Plot styles in named plot style tables can be changed. Plot style names in color-dependent plot style tables are tied to object color and cannot be changed. The program accepts up to 255 characters for style names.

### Description

Provides a description for each plot style.

### Properties



Specifies the settings for the new plot style you are adding to the current plot style table.

### **Color**

Specifies the plotted color for an object. The default setting for plot style color is Use Object Color. If you assign a plot style color, the color overrides the object's color at plot time.

You can choose Select Color to display the [Select Color dialog box](#) and select one of the 255 AutoCAD Color Index (ACI) colors. The color you specify is displayed in the plot style color list as Custom Color. If the plot device does not support the color you specify, it plots the nearest available color or, in the case of monochrome devices, black.

### **Enable Dithering**

Enables dithering. A plotter uses dithering to approximate colors with dot patterns, giving the impression of plotting more colors than available in the AutoCAD Color Index (ACI). If the plotter does not support dithering, the dithering setting is ignored.

Dithering is usually turned off in order to avoid false line typing that results from dithering of thin vectors. Turning off dithering also makes dim colors more visible. When you turn off dithering, the program maps colors to the nearest color, resulting in a smaller range of colors when plotting.

### **Convert to Grayscale**

Converts the object's colors to grayscale if the plotter supports grayscale. If you clear Convert to Grayscale, the RGB values are used for object colors. Dithering is available whether you use the object's color or assign a plot style color.

### **Use Assigned Pen Number (Pen Plotters Only)**

Specifies a pen to use when plotting objects that use this plot style. Available pens range from 1 to 32. If plot style color is set to Use Object Color, or you are editing a plot style in a color-dependent plot style table, the value is set to Automatic.

If you specify 0, the field updates to read Automatic. The program determines the pen of the closest color to the object you are plotting using the information you provided under Physical Pen Characteristics in the Plotter Configuration Editor.

### **Virtual Pen Number**

Specifies a virtual pen number between 1 and 255. Many non-pen plotters can simulate pen plotters using virtual pens. For many devices, you can program the pen's width, fill pattern, end style, join style, and color/screening from the front panel on the plotter.

Enter 0 or Automatic to specify that the program should make the virtual pen assignment from the AutoCAD Color Index.

The virtual pen setting in a plot style is used only by non-pen plotters and only if they are configured for virtual pens. If this is the case, all the other style settings are ignored and only the virtual pen is used. If a non-pen plotter is not configured for virtual pens, then the virtual and physical pen information in the plot style is ignored and all the other settings are used.

You can configure your non-pen plotter for virtual pens under Vector Graphics on the Device and Document Settings tab in the PC3 Editor. Under Color Depth, select 255 Virtual Pens.

### **Screening**

Specifies a color intensity setting that determines the amount of ink placed on the paper while plotting. Selecting 0 reduces the color to white. Selecting 100 displays the color at its full intensity. The Enable Dithering option must be selected for screening.

### **Linetype**

Displays a list with a sample and a description of each linetype. If you assign a plot style linetype, the linetype overrides the object's linetype at plot time.

### **Adaptive Adjustment**

Adjusts the scale of the linetype to complete the linetype pattern.

If you do not select Adaptive Adjustment, the line might end in the middle of a pattern. Turn off Adaptive Adjustment if linetype scale is important. Turn on Adaptive Adjustment if complete linetype patterns are more important than correct linetype scaling.

### **Lineweight**

Displays a sample of the lineweight as well as its numeric value. You can specify the numeric value of each lineweight in millimeters.

If you assign a plot style lineweight, the lineweight overrides the object's lineweight when it is plotted.

### **Line End Style**

If you assign a line end style, the line end style overrides the object's line end style at plot time.

**Line Join Style**

If you assign a line join style, the line join style overrides the object's line join style at plot time.

**Fill Style**

If you assign a fill style, the fill style overrides the object's fill style at plot time.

**Add Style**

Adds a new plot style to a named plot style table.

The plot style is based on Normal, which uses an object's properties and doesn't apply any overrides by default. You must specify the overrides you want to apply after you create the new plot style. You cannot add a new plot style to a color-dependent plot style table; a color-dependent plot style table has 255 plot styles mapped to color. You also cannot add a plot style to a named plot style table that has a translation table.

**Delete Style**

Deletes the selected style from the plot style table.

Objects assigned this plot style retain the plot style assignment but plot as Normal because the plot style is no longer defined in the plot style table. You cannot delete a plot style from a named plot style table that has a translation table, or from a color-dependent plot style table.

**Edit Lineweights**

Modifies the widths values of existing lineweights.

Displays the [Edit Lineweights dialog box](#).

There are 28 lineweights available to apply to plot styles in plot style tables. If the lineweight you need does not exist in the list of lineweights stored in the plot style table, you can edit an existing lineweight. You cannot add or delete lineweights from the list in the plot style table.

**Save As**

Displays the Save As dialog box and saves the plot style table to a new name.

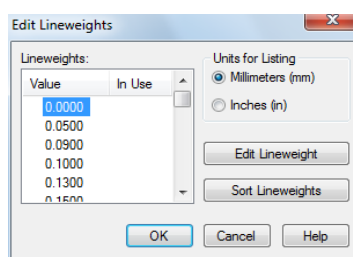
## Edit Lineweights Dialog Box

### Quick Reference

See also:

- Use Plot Styles to Control Plotted Objects

Modifies the width values of existing lineweights.



### List of Options

The following options are displayed.

#### Lineweights

Lists the lineweights in the plot style table. You can modify existing lineweights, but you can't add or delete them. If you change a lineweight value, other plot styles that use the lineweight also change.

When you edit a lineweight value, it is rounded and displayed with a precision of four places past the decimal point. Lineweight values must be zero or a positive number. If you create a lineweight with a zero width, the line is plotted as thin as the plotter can create it. The maximum possible lineweight value is 100 millimeters (approximately four inches).

#### Units for Listing

Specifies the units in which to display the list of lineweights.

#### Edit Lineweight

Makes the selected lineweight available for editing.

#### Sort Lineweights

Sorts the list of lineweights by value. If you change lineweight values, choose Sort Lineweights to resort the list.

# SUBTRACT

## Quick Reference

### See also:


- Create and Combine Areas (Regions)

Combines selected regions by subtraction.

## Access Methods



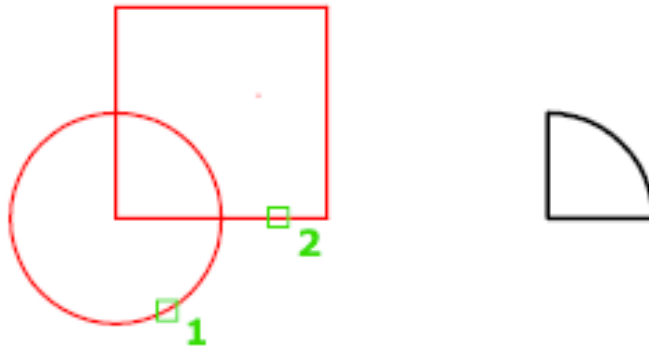
### Button

 **Menu:** Modify ► Region ► Subtract

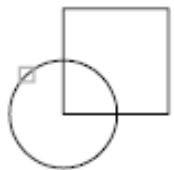
## Summary

With SUBTRACT, you can create a 2D region object by subtracting one set of existing region objects from another, overlapping set. You can select only regions for use with this command.

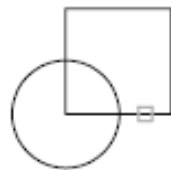
Select the objects that you want to keep, press Enter, then select the objects that you want to subtract.



Objects in the second selection set are subtracted from objects in the first selection set. A single new region is created.



**region to be subtracted from**



**region to subtract**



**region after SUBTRACT**

You can only subtract regions from other regions that are on the same plane. However, you can perform simultaneous SUBTRACT actions by selecting sets of regions on different planes. The program then produces separate subtracted regions on each plane. Regions for which there are no other selected coplanar regions are rejected.

### List of Prompts

The following prompts are displayed.

**Select objects (to subtract from)** Specifies the regions to be modified by subtraction.

**Select objects (to subtract)** Specifies the regions to subtract.

# SYSWINDOWS

## Quick Reference

### See also:

- Switch Between Open Drawings

Arranges windows and icons when the application window is shared with external applications.

### Access Methods



#### Button

- ☒ **Ribbon:** View tab ► Window panel ► Tile Horizontally
- ☒ **Menu:** Window ► Cascade
- ☒ **Menu:** Window ► Tile Horizontally
- ☒ **Menu:** Window ► Tile Vertically
- ☒ **Menu:** Window ► Arrange Icons

### List of Prompts

The following prompts are displayed.

Enter an option [[Cascade](#) on page 1197/[tile Horizontal](#) on page 1197/[tile Vertical](#) on page 1197/[Arrange icons](#) on page 1198]: *Enter an option*

#### Cascade

Organizes a large number of windows by overlapping them for easier access.

**Tile Horizontal** Arranges open drawings in horizontal, nonoverlapping windows.

When several drawings are open, you can view them in rows. Additional columns are added only when there's not enough space.

**Tile Vertical** Arranges windows in vertical, nonoverlapping tiles.

When several drawings are open, you can view them in columns. Additional rows are added only when there's not enough space.

**Arrange Icons** Arranges the window icons.

Arranges multiple open drawings, when minimized, in a line at the bottom of the workspace.



# T Commands

# 20

## TABLE

### Quick Reference

See also:


- Create and Modify Tables

Creates an empty table object.

### Access Methods



Button

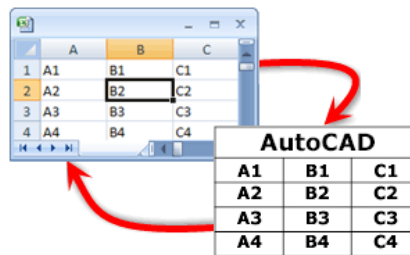
 **Ribbon:** Home tab ► Annotation panel ► Insert Table

 **Menu:** Draw ► Table

 **Toolbar:** Draw

### Summary

A table is a compound object that contains data in rows and columns. It can be created from an empty table or a table style. A table can also be linked to data in a Microsoft Excel spreadsheet.



The [Insert Table dialog box](#) is displayed.

If you select a table cell when the ribbon is active, the [Table ribbon contextual tab](#) displays.

If you enter `-table` at the Command prompt, [options are displayed](#).

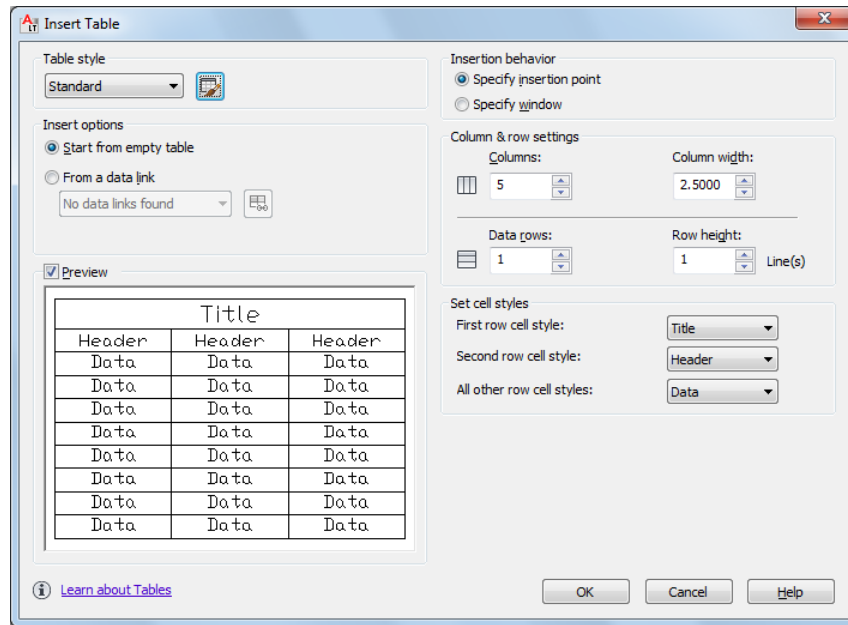
## Insert Table Dialog Box

### Quick Reference

See also:

- [Create and Modify Tables](#)

Creates an empty table object.



## Summary

Inserts an empty table in the drawing.

## List of Options

The following options are displayed.

### Table Style

Choose a table style from within the current drawing from which to create a table. You can create a new table style by clicking the button next to the drop-down list.

### Insert Options

Specifies the method for inserting your table.

#### Start from Empty Table

Creates an empty table that can be filled in with data manually.

#### Start from Data Link

Creates a table from data in an external spreadsheet.

**Preview**

Controls whether a preview displays. If you start from an empty table, the preview displays an example of the table style. If you create a table link, the preview displays the resulting table. Clear this option to improve performance when working with large tables.

**Insertion Behavior**

Specifies the location of the table.

**Specify Insertion Point**

Specifies the location of the upper-left corner of the table. You can use the pointing device or enter coordinate values at the Command prompt. If the table style sets the direction of the table to read from the bottom up, the insertion point is the lower-left corner of the table.

**Specify Window**

Specifies a size and a location for the table. You can use the pointing device or enter coordinate values at the Command prompt. When this option is selected, the number of columns and rows and the column width and row height depend on the size of the window and the column and row settings.

**Column & Row Settings**

Set the number and size of columns and rows.

**Columns Icon**

Indicates columns.

**Rows Icon**

Indicates rows.

**Columns**

Specifies the number of columns. When the Specify Window option is selected and you specify a column width, the Auto option is selected, and the number of columns is controlled by the width of the table. If a table style containing a starting table has been specified, then you can choose the number of additional columns you would like added to that starting table.

**Column Width**

Specifies the width of the columns. When the Specify Window option is selected and you specify the number of columns, the Auto option is selected, and the column width is controlled by the width of the table. The minimum column width is one character.

**Data Rows**

Specifies the number of rows. When the Specify Window option is selected and you specify a row height, the Auto option is selected, and the number of rows is controlled by the height of the table. A table style with a title row and a header row has a minimum of three rows. The minimum row height is one line. If a table style containing a starting table has been specified, then you can choose the number of additional data rows you would like added to that starting table.

**Row Height**

Specifies the height of the rows in number of lines. The height of a line is based on the text height and the cell margin, which are both set in the table style. When the Specify Window option is selected and you specify the number of rows, the Auto option is selected, and the row height is controlled by the height of the table.

**Set Cell Styles**

For table styles that do not contain a starting table, specifies a cell style for rows in the new table.

**First Row Cell Style**

Specifies a cell style for the first row in the table. The Title cell style is used by default.

**Second Row Cell Style**

Specifies a cell style for the second row in the table. The Header cell style is used by default.

**All Other Row Cell Styles**

Specifies a cell style for all other rows in the table. The Data cell style is used by default.

**Table Options**

For table styles that contain a starting table, specifies the table elements from the starting table that are retained upon insertion.

**Label Cell Text**

Retains text from the Header or Title rows in the starting table in the newly-inserted table.

**Data Cell Text**

Retains text from the Data rows in the starting table in the newly-inserted table.

**Blocks**

Retains blocks from the starting table in the newly-inserted table.

**Retain Cell Style Overrides**

Retains cell style overrides from the starting table in the newly-inserted table.

**Data Links**

Retains data links from the starting table in the newly-inserted table.

## Table Ribbon Contextual Tab

**Quick Reference**

See also:

- Create and Modify Tables

**List of Options**

The following options are displayed.

**Rows/Columns Panel**

**Insert Row Above** Inserts a row above the currently selected cell or row.

**Insert Row Below** Inserts a row below the currently selected cell or row

**Delete Row(s)** Deletes the currently selected row(s).

**Insert Column Left** Inserts a column to the left of the currently selected cell or row.

**Insert Column Right** Inserts a column to the right of the currently selected cell or row.

**Delete Column(s)** Deletes the currently selected column(s).

**Merge Panel**

**Merge Cells** Merges the selected cells into one large cell.

**Unmerge Cells** Unmerges cells that were previously merged.

**Cell Styles Panel**

**Match Cell** Applies the properties of a selected cell to other cells.

**Cell Styles** Lists all cell styles contained within the current table style. The cell styles Title, Header, and Data are always contained within any table style, and cannot be deleted or renamed.

**Cell Borders** Sets the properties of the borders of the selected table cells.

**Alignment** Specifies alignment for the content within cells. Content is middle-, top-, or bottom-aligned with respect to the top and bottom borders of the cell. Content is center-, left-, or right-aligned with respect to the left and right borders of the cell.

**Background Fill** Specifies the fill color. Select None or a background color, or click Select Color to display the [Select Color dialog box](#).

### **Cell Format Panel**

**Cell Locking** Locks or unlocks cell content and/or formatting from editing.

**Data Format** Displays a list of data types (Angle, Date, Decimal Number, and so on) that you can format for table rows.

**Preview** Displays a preview of the option you selected in the Format list.

**Format** Depending on the data type you select, displays a list of relevant format types. For example, if you selected Angle as the data type, options such as Decimal Degrees, Grads, Radians, and so on are displayed.

**Precision** For Angle, Decimal Number and Points data types only, sets the precision for applicable formats. For example, if you select Angle as the data type and Radians as the format type, options such as Current Precision, 0.0r, 0.00r, 0.000r, and so on are displayed.

**List Separator** For a Point data type only, displays a list of options (comma, semicolon, or colon) that you can use to separate list items.

**Symbol** For Currency data types only, displays a list of currency symbols that you can use.

**Append Symbol** In Currency data types, places the currency symbol after the number. In the Percentage data types, places the percent symbol after the number.

**Negative Numbers** For Currency data types only, lists options for displaying negative numbers.

**X, Y, and Z** For a Point data type only, filters X, Y, or Z coordinates.

**Additional Format** For Angle, Decimal Number, Point and Whole Number data types only, opens the [Additional Format dialog box](#), where you set additional formatting options for table cells.

**Examples** For the Date data type only, displays a list of date display options for the date option you selected in the Format field. Click a date in the Format field to see an example.

### **Insert Panel**

**Block** The [Insert dialog box](#) is displayed, where you can insert a block into the currently selected table cell.

**Field** The [Field dialog box](#) is displayed, where you can insert a field into the currently selected table cell.

**Formula** Inserts a formula into the currently selected table cell. A formula must start with an equal sign (=). The formulas for sum, average, and count ignore empty cells and cells that do not resolve to a numeric value. Other formulas display an error (#) if any cell in the arithmetic expression is empty or contains nonnumeric data.

**Manage Cell Contents** Displays the content of the selected cell. You can change the order of cell content as well as change the direction in which cell content will appear.

### **Data Panel**

**Link Cell** The [New and Modify Excel Link dialog box](#) is displayed, where you can link data from a spreadsheet created in Microsoft Excel to a table within your drawing.

**Download from Source** Updates data in the table cell that is referenced by changed data in an established data link.

## **Manage Cell Content Dialog Box**

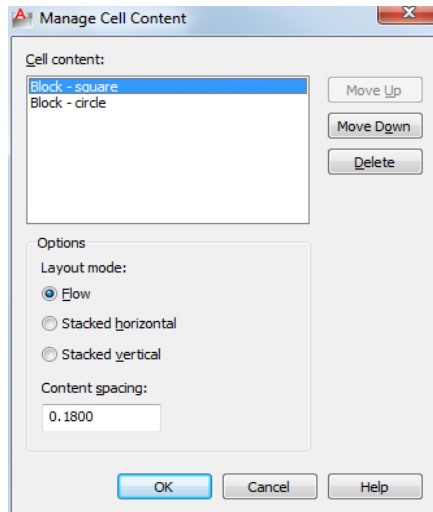
### **Quick Reference**

**See also:**

- [Create and Modify Tables](#)

Displays the content of the selected cell.





### Access Methods

 **Toolbar:** Table

**Shortcut menu:** Right-click while editing any single cell, and click Manage Cell Content.

### List of Options

The following options are displayed.

#### Cell Content List Box

Lists all text and/or blocks in the selected cell in order of appearance. Text is indicated with the label Table Cell Text. Blocks are indicated with Block preceding the name of the block.

#### Content Order Buttons

##### Move Up

Moves the selected list box content up in the display order.

##### Move Down

Moves the selected list box content down in the display order.

##### Delete

Removes the selected list box content from the table cell.

### **Layout Mode Options**

Changes the direction in which cell content will appear.

#### **Flow**

Places cell content based on the width of the cell.

#### **Stacked Horizontal**

Places cell content horizontally, regardless of cell width.

#### **Stacked Vertical**

Places cell content vertically, regardless of cell height.

#### **Content Spacing**

Determines the spacing between text and/or blocks within the cell.

## **-TABLE**

### **Quick Reference**

#### **See also:**

- Create and Modify Tables

Creates an empty table object.

#### **List of Prompts**

The following prompts are displayed.

Current table style: "Standard" Cell width: 2.5000 Cell height: 1 line(s)

Enter [number of columns](#) on page 1208 or [[Auto/from Style/data Link](#)] <5>:

#### **Number of Columns**

Specifies the number of columns.

#### **Number of Rows**

Specifies the number of rows.

**Insertion Point** Specifies the location of the upper-left corner of the table. If the table style sets the direction of the table to read from the bottom up, the insertion point is the lower-left corner of the table.

**Width** Specifies a width for the table columns.

**Height** Specifies a height for the table rows.

**Style** Specifies a table style for the table. The specified table style must contain a starting table.

For more information, see *Work with Table Styles*.

**Auto** Specifies a size and a location for the table. When this option is selected, you can set the number of columns or the column width, but not both. The number of rows and the row height depend on the size of the window you specify.

**First Corner** Specifies the location of the upper-left corner of the table. If the table style sets the direction of the table to read from the bottom up, the insertion point is the lower-left corner of the table.

**Height** Specifies a height for the table rows.

**Auto**

Specifies a size and a location for the table.

**Number of Rows** Specifies the number of rows.

**From Style**

Specifies a table style for creating the table. You can use the pointing device or enter coordinate values at the Command prompt. The specified table style must contain a starting table.

For more information about starting tables, see *Work with Table Styles*.

**Insertion Point** Specifies the location of the upper-left corner of the table. If the table style sets the direction of the table to read from the bottom up, the insertion point is the lower-left corner of the table.

**Style** Specifies a table style for the table.

Entering [?] displays a list of table styles available in your drawing.

**Rows** Specifies the number of rows you want to add to the table stored in the specified table style. The rows are added to the rows already in the specified table.

**Columns** Specifies the number of columns you want to add to the table stored in the specified table style. The columns are added to the columns already in the specified table.

**Options**

Specifies special formatting options that can be inserted in the table.

**Label Text** Retains rows with a cell type of Label found in the table style's starting table.

The cell type is set in the Properties palette. The Header and Title cell styles use the Label cell type by default.

**Data Text** Retains rows with a cell type of Data found in the table style's starting table.

The cell type is set in the Properties palette. The Data cell style uses the Data cell type property by default.

**Data Links** Retains data links found in the specified table style's starting table. For more information, see [Link a Table to External Data](#).

**Blocks** Retains blocks found in the specified table style's starting table.

**Cell Style Overrides** Retains cell style overrides found in the specified table style's starting table.

For more information, see [Work with Table Styles](#).

### **Data Link**

Specifies a data link from which a table is created.

Entering [?] displays a list of data links available in your drawing.

## **TABLEDIT**

### **Quick Reference**

#### **See also:**

- [Add Text and Blocks to Tables](#)

Edits text in a table cell.

#### **Access Methods**

**Shortcut menu:** With a table cell selected, right-click and click Edit Cell Text.

**Pointing device:** Double-click inside a table cell.

Pick a table cell: *Click inside a table cell, and enter text or use the Text Formatting toolbar or the Options shortcut menu to make changes*

# TABLEEXPORT

## Quick Reference

See also:

- Create and Modify Tables

Exports data from a table object in CSV file format.

## Access Methods

**Shortcut menu:** With a table selected, right-click and click Export.

## Summary

A [standard file selection dialog box](#) is displayed. Table data is exported in the comma-separated (CSV) file format. All formatting of the table and its text is lost.

# TABLESTYLE

## Quick Reference

See also:

- Work with Table Styles


Creates, modifies, or specifies table styles.

## Access Methods



**Button**

 **Ribbon:** Annotate tab ► Tables ►  ► Table Style

 **Menu:** Format ► Table Style

 **Toolbar:** Styles

## Summary

The [Table Style dialog box](#) is displayed.

You can specify the current table style to determine the appearance of all new tables. A table style includes settings for background colors, margins, borders, text, and other table characteristics.

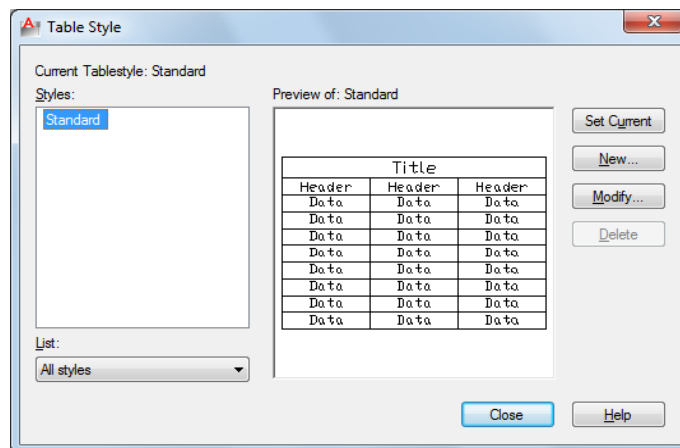
## Table Style Dialog Box

### Quick Reference

See also:

- [Work with Table Styles](#)

Sets the current table style and creates, modifies, and deletes table styles.



### List of Options

The following options are displayed.

#### Current Table Style

Displays the name of the table style that is applied to tables you create.

#### Styles

Displays a list of table styles. The current style is highlighted.

**List**

Controls the contents of the Styles list.

**Preview Of**

Displays a preview image of the style that is selected in the Styles list.

**Set Current**

Sets the table style selected in the Styles list as the current style. All new tables are created using this table style.

**New**

Displays the [Create New Table Style dialog box](#), in which you can define new table styles.

**Modify**

Displays the [Modify Table Style dialog box](#), in which you can modify table styles.

**Delete**

Deletes the table style selected in the Styles list. A style that is being used in the drawing cannot be deleted.

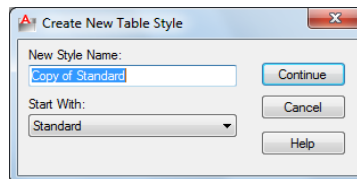
## Create New Table Style Dialog Box

### Quick Reference

**See also:**

- [Work with Table Styles](#)

Specifies a name for the new table style and specifies the existing table style on which the new table style will be based.



### List of Options

The following options are displayed.

#### New Style Name

Names the new table style.

#### Start With

Specifies an existing table style whose settings are the default for the new table style.

**Continue** Displays the [New Table Style dialog box](#), in which you define the new table style.

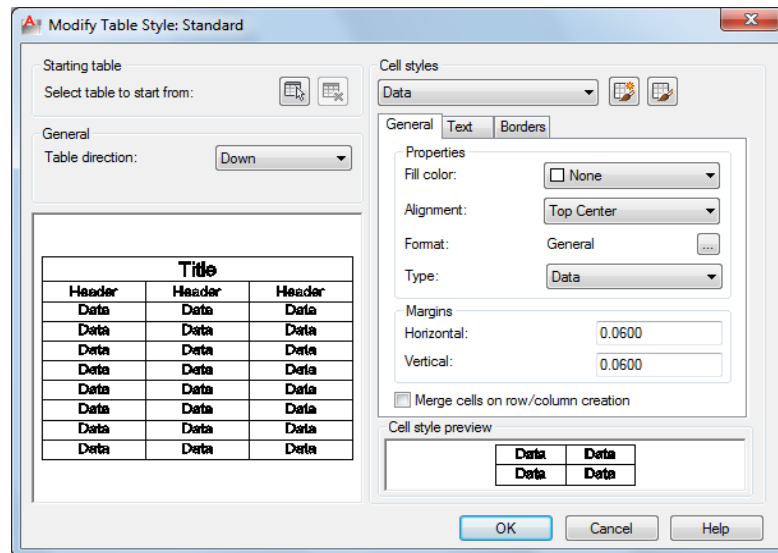
## New and Modify Table Style Dialog Boxes

### Quick Reference

See also:

- Work with Table Styles

Defines a new table style or modifies an existing table style.





### **List of Options**

The following options are displayed.

### **Starting Table**

Allows you to specify a table in your drawing to use as an example for formatting this table style. Once you select a table, you can specify the structure and contents you want copied from that table to the table style.

With the Remove Table icon, you can remove a table from the current specified table style.

### **General**

#### **Table Direction**

Sets the direction of a table. Down creates a table that reads from top to bottom. Up creates a table that reads from bottom to top.

- **Down:** The title row and the column heads row are at the top of the table. When you click Insert Rows and click Below, the new row is inserted below the current row.
- **Up:** The title row and the column heads row are at the bottom of the table. When you click Insert Rows and click Below, the new row is inserted above the current row.

### **Preview**

Displays an example of the effect of the current table style settings.

### **Cell Styles**

Defines a new cell style or modifies an existing cell style. You can create any number of cell styles.

#### **Cell Style Menu**

Displays cell styles already found within the table.

#### **Create Cell Styles Button**

Launches the [Create New Cell Style dialog box](#).

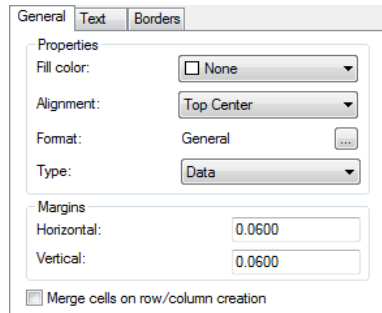
#### **Manage Cell Styles Button**

Launches the [Manage Cell Styles dialog box](#).

### **Cell Style Tabs**

Set the appearance of the data cells, the cell text, and the cell borders.

## General Tab



### Properties

#### Fill Color

Specifies the background color of the cell. The default is None.

You can choose Select Color to display the [Select Color dialog box](#).

#### Alignment

Sets justification and alignment for the text in the table cell. Text is middle-, top-, or bottom-aligned with respect to the top and bottom borders of the cell. Text is center-justified, left-justified, or right-justified with respect to the left and right borders of the cell.

See “Justify Multiline Text” in the *User's Guide* for an illustration of the nine options.

#### Format

Sets data type and formatting for the Data, Column Heading, or Title rows in a table. Clicking this button displays the [Table Cell Format dialog box](#), where you can further define formatting options.

#### Type

Specifies the cell style as either a label or data.

### Margins

Controls the spacing between the border of the cell and the cell content. The cell margin settings apply to all cells in the table. The default setting is 0.06 (imperial) and 1.5 (metric).

#### Horizontal

Sets the distance between the text or block in the cell and the left and right cell borders.

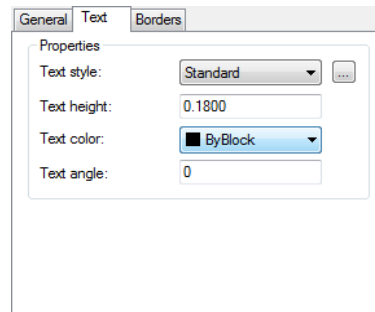
## Vertical

Sets the distance between the text or block in the cell and the top and bottom cell borders.

## Merge cells on row/column creation

Merges any new row or column created with the current cell style into one cell. You can use this option to create a title row at the top of your table.

## Text Tab



## Text Style

Lists the available text styles.

## Text Style Button

Displays the [Text Style Dialog Box](#) where you can create or modify text styles. (DIMTXSTY system variable)

## Text Height

Sets the text height. The default text height for data and column head cells is 0.1800. The default text height for the table title is 0.25.

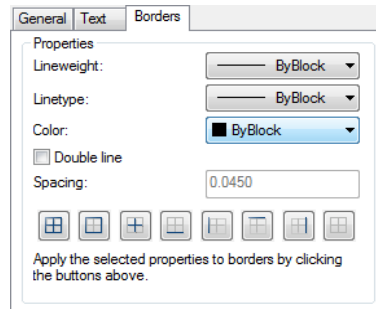
## Text Color

Specifies the color of the text. Choose Select Color at the bottom of the list to display the [Select Color dialog box](#).

## Text Angle

Sets the text angle. The default text angle is 0 degrees. You can enter any angle between -359 and +359 degrees.

## Borders Tab



### Lineweight

Sets the lineweight to be applied to the borders you specify by clicking a border button. If you use a heavy lineweight, you may have to increase the cell margins.

### Linetype

Sets the linetype to be applied to the borders you specify. Choose Other to load a custom linetype.

### Color

Sets the color to be applied to the borders you specify by clicking a border button. Choose Select Color to display the [Select Color dialog box](#).

### Double Line

Displays table borders as double lines.

### Spacing

Determines the spacing for double line borders. The default spacing is 0.1800.

### Border Buttons

Controls the appearance of the borders of the cells. The border properties are lineweight and color of the gridlines.

#### All Borders

Applies the border properties settings to all borders.

#### Outside Border

Applies the border properties settings to the outside border.

#### Inside Border

Applies the border properties settings to the inside border.

**Bottom Border**

Applies the border properties settings to the bottom borders.

**Left Border**

Applies the border properties settings to the left borders.

**Top Border**

Applies the border properties settings to the top borders.

**Right Border**

Applies the border properties settings to the right borders.

**No Border**

Hides borders.

**Cell Style Preview**

Displays an example of the effect of the current table style settings.

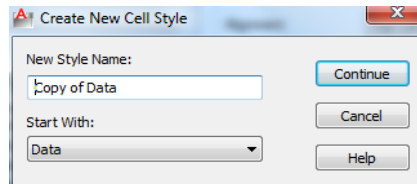
## Create New Cell Style Dialog Box

### Quick Reference

See also:

- Work with Table Styles

Specifies a name for the new cell style and specifies the existing cell style on which the new cell style will be based.



### List of Options

The following options are displayed.

### New Style Name

Names the new cell style.

### Start With

Specifies an existing cell style whose settings are the default for the new cell style.

**Continue** Returns you to the [New Table Style dialog box](#), in which you define the new cell style.

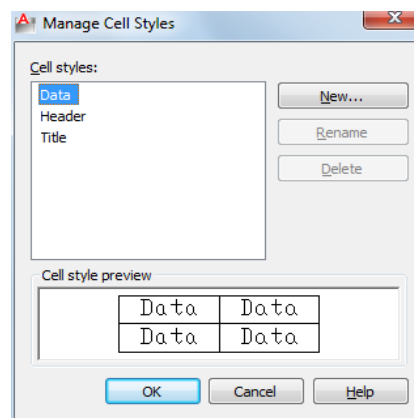
## Manage Cell Styles Dialog Box

### Quick Reference

See also:

- Work with Table Styles

Displays all cell styles within the current table style and allows you to create or delete a cell style.



### List of Options

The following options are displayed.

Cell Styles

Lists all cell styles contained within the current table style. The cell styles Title, Header, and Data are always contained within any table style.

#### **New**

Displays the [Create New Cell Style dialog box](#). From here, you can create a new cell style to be contained within the current table style.

#### **Rename**

Allows you to give a new name to the selected cell style. The Title, Header, and Data cell styles cannot be renamed.

#### **Delete**

Allows you to delete the selected cell style.

#### **Cell Style Preview**

Displays an example of the effect of the current cell style settings.

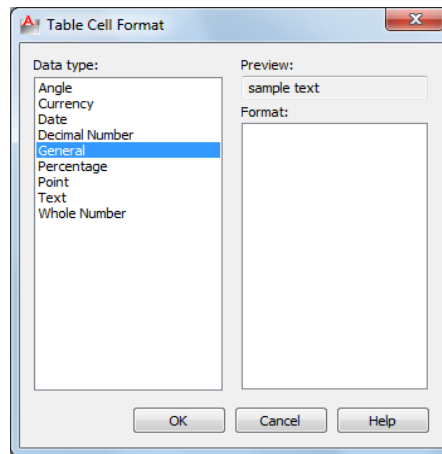
## **Table Cell Format Dialog Box**

### **Quick Reference**

#### **See also:**

- [Work with Table Styles](#)

The options displayed here change based on the selected data type and format you select.



### List of Options

The following options are displayed.

**Data Type** Displays a list of data types (Angle, Date, Decimal Number, and so on) that you can format for table rows.

**Preview** Displays a preview of the option you selected in the Format list.

**Format** Depending on the data type you select, displays a list of relevant format types. For example, if you selected Angle as the data type, options such as Decimal Degrees, Grads, Radians, and so on are displayed.

**Precision** For Angle, Decimal Number, and Points data types only, sets the precision for applicable formats. For example, if you select Angle as the data type and Radians as the format type, options such as Current Precision, 0.0r, 0.00r, 0.000r, and so on are displayed.

**List Separator** For a Point data type only, displays a list of options (comma, semicolon, or colon) that you can use to separate list items.

**Symbol** For Currency data types only, displays a list of currency symbols that you can use.

**Append Symbol** In Currency data types, places the currency symbol after the number. In the Percentage data types, places the percent symbol after the number.

**Negative Numbers** For Currency data types only, lists options for displaying negative numbers.



**X, Y, and Z Coordinates** For a Point data type only, filters X, Y, or Z coordinates.

**Additional Format** For Angle, Decimal Number, Point, and Whole Number data types only, opens the [Additional Format dialog box](#), where you set additional formatting options for table cells.

**Examples** For the Date data type only, displays a list of date display options for the date option you selected in the Format field. Click a date in the Format field to see an example.

## Additional Format Dialog Box

### Quick Reference

See also:

- Work with Table Styles

Provides additional formatting options for table cells.

### List of Options

The following options are displayed.

#### **Current Value**

Displays the value in base drawing units.

#### **Preview**

Displays updates to the format as you change the conversion factor and other settings.

#### **Conversion Factor**

Specifies the conversion factor to use on the current value. The default is 1 for no conversion.

#### **Additional Text**

Specifies a prefix or a suffix for the value.

#### **Number Separators**

Specifies a decimal separator and the formatting for numbers over 1000.

**Decimal** Specifies the separator for decimal values. Select a period, a comma, or a space.

**Thousands** Inserts a comma to group thousands in a field value.

### **Zero Suppression**

Controls the suppression of leading and trailing zeros, and of feet and inches that have a value of zero.

**Leading** Suppresses leading zeros in all decimal values. For example, 0.5000 becomes .5000.

**Trailing** Suppresses trailing zeros in all decimal values. For example, 12.5000 becomes 12.5, and 30.0000 becomes 30.

**0 Feet** Suppresses the feet portion of a feet-and-inches value when the distance is less than one foot. For example, 0'-6 1/2" becomes 6 1/2".

**0 Inches** Suppresses the inches portion of a feet-and-inches value when the distance is an integral number of feet. For example, 1'-0" becomes 1'.

## **TABLET**

### **Quick Reference**

**See also:**

- Digitizing Tablets

Calibrates, configures, and turns on and off an attached digitizing tablet.

### **Access Methods**

 **Menu:** Tools ► Tablet

### **List of Options**

The following options are displayed.

Enter an option [[ON](#) on page 1224/[OFF](#) on page 1224/[CAL](#) on page 1225/[CFG](#) on page 1227]:

#### **On**

Turns on Tablet mode. Setting the [TABMODE](#) system variable to 1 also turns on Tablet mode. Pressing Ctrl+T on some systems turns Tablet mode on and off.

#### **Off**

Turns off Tablet mode. Setting the [TABMODE](#) system variable to 0 also turns off Tablet mode. Pressing Ctrl+T on some systems turns Tablet mode on and off.

## **Cal**

Calibrates the digitizer with a paper drawing or photograph, creating the tablet transformation, which is the mapping of points from the tablet to the coordinate drawing system. Calibration is digitizing points on the drawing and mapping them to their real coordinates.

Calibration can be performed in model space or paper space. The Cal option turns on Tablet mode in the space in which the tablet is calibrated. When the space is changed, the Cal option turns off Tablet mode.

The paper should be flat (with no bumps or wrinkles) and securely fastened to the digitizing tablet. The paper can be oriented at any angle.

The points you enter cannot be duplicates. The points need not be the origin on either axis, and you can enter as many points as you like. The more points you enter, the more accurate the drawing will be.

If you enter only two points, the program automatically computes an orthogonal transformation.

If you enter three or more points, the program computes the transformation in each of the three transformation types (Orthogonal, Affine, and Projective) to determine which best fits the calibration points. If you enter more than four points, computing the best-fitting projective transformation can take a long time. You can cancel the process by pressing Esc.

When the computations are complete, the program displays a table with the number of calibration points and a column for each transformation type.

If there have been no failures of projection transformation, the program prompts you to choose a transformation type.

Only transformation types for which the outcome was Success, Exact, or Canceled are included in this prompt. A projective transformation can be specified even if it was canceled. The program uses the result computed at the time you canceled.

**Orthogonal** Specifies translation, uniform scaling, and rotation with two calibration points.

Use Orthogonal for dimensionally accurate paper drawings and paper drawings in which the portion to be digitized is long and narrow, with most points confined to single lines.

---

**NOTE** You must specify the lower-left point location before specifying the upper-right point location.

---

**Affine** Specifies arbitrary linear transformation in two dimensions consisting of translation, independent *X*- and *Y*-scaling, rotation, and skewing with three calibration points.

Use Affine when horizontal dimensions in a paper drawing are stretched with respect to vertical dimensions, and lines that are supposed to be parallel actually are parallel.

The RMS (root mean square) error reported after calibration measures how close the program has come to making a perfect fit. Affine should be used if the RMS is small.

**Projective** Specifies a transformation equivalent to a perspective projection of one plane in space onto another plane with four calibration points. A projective transformation provides a limited form of what cartographers call *rubber sheeting*, in which different portions of the tablet surface are stretched by varying amounts. Straight lines map into straight lines. Parallel lines do not necessarily stay parallel.

Projective transformation corrects parallel lines that appear to converge.

**Repeat Table** Redisplays the computed table, which rates the transformation types.

#### **Transformation Table**

Reports the number of calibration points and provides information about each transformation type.

#### **Outcome of Fit**

Reports the outcome of fit for each of the transformation types. If the outcome of fit is not Success or Exact for any of the transformation types, the program reports failure of the entire calibration process and ends the command. The remaining entries in each column are blank unless Outcome of Fit is Success.

**Exact** Indicates the correct number of points for a valid transformation.

**Success** Indicates more than enough points. The program succeeded in fitting a transformation to the data.

**Impossible** Indicates not enough points.

**Failure** Indicates enough points, but the program was unable to fit a transformation to the points, usually because some points were colinear or coincident.

**Canceled** Indicates that the fit process was canceled. This outcome occurs only with the projective transformation.

**RMS Error**

Reports the RMS (root mean square) error, which measures how close the program has come to finding a perfect fit. The goal is the smallest RMS error.

**Standard Deviation**

Reports the standard deviation of the residuals. If it is near zero, the residual at each calibration point is about the same.

**Largest Residual/At Point**

Reports the point at which the mapping is least accurate. The residual is the distance between where the point was mapped during transformation and where it would be mapped if the fit were perfect. The distance is given in the current linear units.

**Second-Largest Residual/At Point**

Reports the point at which the mapping is second-least accurate. The residual is the distance between where the point was mapped during transformation and where it would be mapped if the fit were perfect. The distance is given in the current linear units.

**Cfg**

Designates or realigns the tablet menu areas or designates a small portion of a large tablet as a screen pointing area.

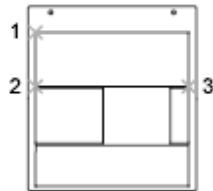
If tablet menus are in use and the same number of menus is selected, the following prompts are displayed:

Do you want to realign tablet menus? [Yes/No] <N>: *Enter y or n or press Enter*

Digitize upper-left corner of menu area *n*: *Digitize a point (1)*

Digitize lower-left corner of menu area *n*: *Digitize a point (2)*

Digitize lower-right corner of menu area *n*: *Digitize a point (3)*



In the prompt, *n* is the menu number (1-4).

The printed menu form must be affixed to the tablet surface, and the requested points must be digitized. The set of three points must form a 90-degree angle. Tablet menu areas can be skewed at any angle.

After all interaction concerning tablet menus is complete, the following prompt is displayed:

Do you want to respecify the screen pointing area? [Yes/No] <N>: *Enter y or n or press Enter*

If you enter **y**, the following prompts are displayed:

Digitize lower-left corner of the pointing area: *Digitize a point*

Digitize upper-right corner of the pointing area: *Digitize a point*

A small portion of the tablet's surface is designated as the fixed screen pointing area.

Do you want to specify the Floating Screen Pointing area? [Yes/No] <N>: *Enter y or n or press Enter*

If you responded **y** to the previous prompt, respond to the following prompt:

Do you want the Floating Screen Area to be the same size as the Fixed Screen Pointing Area? [Yes/No] <Y>: *Enter y or n or press Enter*

If you responded **n** to the previous prompt, respond to the following prompts:

Digitize lower-left corner of the Floating Screen pointing area: *Digitize a point*

Digitize upper-right corner of the Floating Screen pointing area: *Digitize a point*

Respond to the following prompt:

Would you also like to specify a button to toggle the Floating Screen Area? [Yes/No] <N>: *Enter y or n or press Enter*

If you responded **y** to the previous prompt, respond to the following prompt:

Press any non-pick button on the digitizer puck that you wish to designate as the toggle for the Floating Screen Area

## TASKBAR

### Quick Reference

#### See also:

- Transfer Information between Open Drawings

Controls whether multiple open drawings are displayed separately or grouped on the Windows taskbar.

### List of Prompts

The following prompts are displayed.

Enter new value for Taskbar <varies>:

- On Windows 7 systems, the default value is **1**.
- For all other Windows operating systems, the default value is **0**.

When TASKBAR is set to 1, drawings are displayed separately on the Windows taskbar. With Windows 7, preview images of each open drawing are displayed when the cursor is over the AutoCAD taskbar button.

When TASKBAR is set to 0, only the name of the current drawing is displayed on the Windows taskbar buttons.

## TEXT

### Quick Reference

See also:


- Create Single-Line Text

Creates a single-line text object.

### Access Methods



Button

 **Ribbon:** Home tab ► Annotation panel ► Single Line Text

 **Menu:** Draw ► Text ► Single Line Text

 **Toolbar:** Text

## Summary

You can use single-line text to create one or more lines of text, where each text line is an independent object that you can move, format, or otherwise modify. Right-click in the text box to select options on the shortcut menu.

If TEXT was the last command entered, pressing Enter at the Specify Start Point of Text prompt skips the prompts for paper height and rotation angle. The text that you enter in the text box is placed directly beneath the previous line of text. The point that you specified at the prompt is also stored as the insertion point of the text.

If the **TEXTED** system variable is set to 1, text created using TEXT displays the **Edit Text dialog box**. If **TEXTED** is set to 2, the In-Place Text Editor is displayed.

When creating text, you can click anywhere in a drawing to create a new text block. You can also use the keyboard to move among text blocks (for example: for new text created using the **TEXT** command, you can navigate through text groups by pressing Tab or Shift+Tab, or edit a group of text lines by pressing Alt and clicking each text object.)

---

**NOTE** Text that would otherwise be difficult to read (if it is very small, very large, or is rotated) is displayed at a legible size and is oriented horizontally so that you can easily read and edit it.

---

You can enter special characters and format text by entering **Unicode strings** and **control codes**.

## List of Prompts

The following prompts are displayed.

Current text style: <current> Current text height: <current> Annotative: <current>  
Specify **start point** on page 1230 of text or **[Justify** on page 1231/**Style** on page 1233]:  
*Specify a point or enter an option*

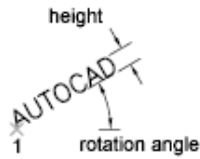
### **Start Point**

Specifies a start point for the text object. Enter text in the In-Place Text Editor for single-line text.

The SpecifyHeight prompt is displayed only if the current text style is not and does not have a fixed height.

The Specify Paper Text Height prompt is displayed only if the current text style is annotative.





## Justify

Controls justification of the text.

You can also enter any of these options at the Specify Start Point of Text prompt.

**Align** Specifies both text height and text orientation by designating the endpoints of the baseline.

The size of the characters adjusts in proportion to their height. The longer the text string, the shorter the characters.

1  $\phi$  12.7 FOR  $\phi$  8  $\times$  2  
 BUSHING-PRESS  
 FIT-4 REQ.-EQ. SP.

**Fit** Specifies that text fits within an area and at an orientation defined with two points and a height. Available for horizontally oriented text only.

$\phi$  12.7 FOR  $\phi$  8  
 BUSHING-PRESS  
 FIT-4 REQ.-EQ. SP.

The height is the distance in drawing units that the uppercase letters extend from the baseline. Designated text height is the distance between the start point and a point you specify. The longer the text string, the narrower the characters. The height of the characters remains constant.

**Center** Aligns text from the horizontal center of the baseline, which you specify with a point.

The rotation angle specifies the orientation of the text baseline with respect to the center point. You can designate the angle by specifying a point. The text baseline runs from the start point toward the specified point. If you specify a point to the left of the center point, the text is drawn upside down.

AUTOCAD  
 1

**Middle** Aligns text at the horizontal center of the baseline and the vertical center of the height you specify. Middle-aligned text does not rest on the baseline.

The Middle option differs from the MC option in that it uses the midpoint of all text, including descenders. The MC option uses the midpoint of the height of uppercase letters.



AUTOCAD  
1

**Right** Right-justifies the text at the baseline, which you specify with a point.



AUTOCAD  
1

**TL (Top Left)** Left-justifies text at a point specified for the top of the text. Available for horizontally oriented text only.



1  
AUTOCAD

**TC (Top Center)** Centers text at a point specified for the top of the text. Available for horizontally oriented text only.



1  
AUTOCAD

**TR (Top Right)** Right-justifies text at a point specified for the top of the text. Available for horizontally oriented text only.



AUTOCAD  
1

**ML (Middle Left)** Left-justifies text at a point specified for the middle of the text. Available for horizontally oriented text only.



1  
AUTOCAD

**MC (Middle Center)** Centers the text both horizontally and vertically at the middle of the text. Available for horizontally oriented text only.

The MC option differs from the Middle option in that it uses the midpoint of the height of uppercase letters. The Middle option uses the midpoint of all text, including descenders.

AUTOCAD<sup>1</sup>

**MR (Middle Right)** Right-justifies text at a point specified for the middle of the text. Available for horizontally oriented text only.

AUTOCAD<sub>1</sub>

**BL (Bottom Left)** Left-justifies text at a point specified for the baseline. Available for horizontally oriented text only.

AUTOCAD<sub>1</sub>

**BC (Bottom Center)** Centers text at a point specified for the baseline. Available for horizontally oriented text only.

AUTOCAD<sub>1</sub>

**BR (Bottom Right)** Right-justifies text at a point specified for the baseline. Available for horizontally oriented text only.

AUTOCAD<sub>1</sub>

### **Style**

Specifies the text style, which determines the appearance of the text characters. Text you create uses the current text style.

Entering ? lists the current text styles, associated font files, height, and other parameters.

*AUTOCAD*

*AUTOCAD*

AUTOCAD

**various styles**

## Text Shortcut Menu

### Quick Reference

See also:

- Create Single-Line Text

Displays options available for creating and modifying single-line text.

### List of Options

The following options are displayed.

**Opaque Background** When checked, makes the background of the editor opaque.

**Find and Replace** Displays the [Replace dialog box](#).

**Select All** Selects all the text in the single-line text object.

**Change Case** Changes the case of selected text.

## Special Unicode Characters

### Quick Reference

See also:

- Create Single-Line Text

When entering text, you can create special characters, including the degree symbol, plus/minus tolerance symbol, and the diameter symbol, by entering the following Unicode character strings.

### List of Options

The following options are displayed.

**\U+00B0** Degrees symbol (°)

**\U+00B1** Tolerance symbol ( )

\U+2205 Diameter symbol ( $\varnothing$ )

## Control Codes and Special Characters

### Quick Reference

See also:

- Create Single-Line Text

### Summary

In addition to using Unicode characters for entering special characters, you can also overscore text, underscore text, or insert a special character by including control information in the text string. Use a pair of percent signs to introduce each control sequence.

You can use this control code with standard AutoCAD LT text fonts and Adobe PostScript fonts.

### List of Options

The following options are displayed.

%%*nnn* Draws character number *nnn*.

You can use these control codes with standard AutoCAD LT text fonts only:

%%**o** Toggles overscoring on and off.

36.63

%%**u** Toggles underscoring on and off.

36.63

%%**d** Draws degrees symbol (°).

36.63°

%%**p** Draws plus/minus tolerance symbol ( ).

36.63±.1

**%%c** Draws circle diameter dimensioning symbol (∅).

∅36.63

**%%%** Draws a single percent sign (%). This is valid for the TEXT command only.

36.63%

Overscoring and underscoring can be in effect at the same time. Both turn off automatically at the end of the text string.

36.63

You can use the **%%nnn** control sequence to display special characters using the PostScript fonts.

A sample drawing (*truetype.dwg*) showing the character map for each font is provided in the *sample* folder.

### **The Euro Symbol**

You can use the euro symbol with SHX fonts and their TrueType equivalent fonts shipped with AutoCAD 2000 and later releases. If your keyboard does not contain a euro symbol, hold down the Alt key and enter **0128** on the numeric keypad.

## **TEXTEDIT**

### **Quick Reference**

**See also:**

- Change Text

Edits a selected multiline or single-line text object, or the text in a dimension object.

### **Summary**

Displays the in-place text editor, and accepts your changes to the selected multiline text, single-line text, or dimension object.

### List of Prompts

The following prompt is displayed.

Select an annotation object: *Select a text, mtext, or dimension object*

## TEXTSCR

### Quick Reference

See also:


- Navigate and Edit Within the Command Window

Opens the text window.


### Access Methods



Button

 **Ribbon:** Views tab ► Windows panel ► User Interface drop-down ► Text Window

 **Menu:** View ► Display ► Text Window

 **Command entry:** 'textscr for transparent use

### Summary

The Command prompt is displayed in a separate window. You can press F2 to switch between the drawing area and the text window.

When the Command prompt is hidden, you can turn it back on by entering **commandline** in the text window.

This command is ignored on dual-screen systems.

# TEXTTOFRONT


## Quick Reference


See also:


- Control How Overlapping Objects Are Displayed

Brings text and dimensions in front of all other objects in the drawing.

## Access Methods

 **Ribbon:** Home tab ► Modify panel (expanded) ► Draw Order Drop-down ► Bring Text to Front

 **Ribbon:** Home tab ► Modify panel (expanded) ► Draw Order Drop-down ► Bring Dimensions to Front

 **Menu:** Tools ► Draw Order ► Bring Text and Dimensions to Front ► Text and Dimension Objects

## List of Prompts

The following prompts are displayed.

Bring to front: [Text/Dimensions/Both] <Both>: *Enter an option or press Enter*  
**Text** Brings all text in front of all other objects in the drawing.

**Dimensions** Brings all dimensions in front of all other objects in the drawing.

**Both** Brings all text and dimensions in front of all other objects in the drawing.

---

**NOTE** Text and dimensions that are contained within blocks and xrefs cannot be brought to the front apart from the containing object. Also, text in multileaders and tables are not supported.

---

# TIFOUT

## Quick Reference

See also:

- Export Raster Files



Saves selected objects to a file in TIFF file format.

### Summary

The Create Raster File dialog box (a [standard file selection dialog box](#)) is displayed. Enter the file name in the dialog box.

### List of Prompts

The following prompts are displayed.

Select objects or <all objects and viewports>: *Press Enter to select all objects and viewports or use an object selection method and press Enter*

A TIFF file is created that contains the objects you select. The file reflects what is displayed on the screen.

---

**NOTE** When the [FILEDIA](#) system variable is set to 0 (Off), command prompts are displayed.

---

## TIME

### Quick Reference

See also:

- Obtain General Drawing Information


Displays the date and time statistics of a drawing.

### Access Methods



Button

 **Menu:** Tools ► Inquiry ► Time

 **Command entry:** 'time for transparent use

## Summary

### List of Prompts

The following prompts are displayed.

**Current time:** Wednesday, December 31, 2003 9:54:51:406 AM

Times for this drawing:

**Created:** Friday, December 12, 2003 1:21:36:203 AM

**Last Updated:** Wednesday, December 31, 2003 9:49:19:208 AM

**Total Editing Time:** 0 days 06:44:10.520

**Elapsed Timer (on):** 0 days 00:07:05.312

**Next Automatic Save In:** 0 days 01:59:15.570

Enter option [**Display/On/OFF/Reset**]: *Enter an option or press Enter*

**Current Time** Displays the current date and time to the nearest millisecond using a 24-hour clock.

**Created** Displays the date and time that the current drawing was created.

**Last Updated** Displays the date and time of the latest update of the current drawing. This date and time is initially the drawing creation time. The time is revised whenever the drawing file is saved.

**Total Editing Time** Displays the time spent editing the current drawing. This timer is updated by the program and cannot be reset or stopped. Plotting time is not included in the total editing time. If you quit the editing session without saving the drawing, the time you spent in the editing session is not added to the accumulated editing time.

**Elapsed Timer** Runs as another timer while the program is running. You can turn it on and off or reset it whenever you like.

**Next Automatic Save In** Indicates the time remaining until the next automatic save. You can set the time interval using **OPTIONS** or the **SAVETIME** system variable.

**Display** Repeats the display with updated times.

**On** Starts the user elapsed timer if it was off.

**Off** Stops the user elapsed timer.

**Reset** Resets the user elapsed timer to 0 days 00:00:00.000.

# TIMELINE

## Quick Reference

### See also:

- Use AutoCAD WS for Drawing File Collaboration

Provides access to previous versions of the AutoCAD WS online copy of the current drawing.

## Access Methods



### Button

 **Ribbon:** Online tab ► Content panel ► Timeline

 **Menu:** File ► AutoCAD WS ► Timeline

 **Toolbar:** Online

## Summary

The [Timeline dialog box](#) on page 1241 is displayed. You must save the drawing before you can continue with this command.

---

**NOTE** You may first be prompted to log in to AutoCAD WS. If you do not have an account, click Create an Account and follow the on-screen instructions.

---

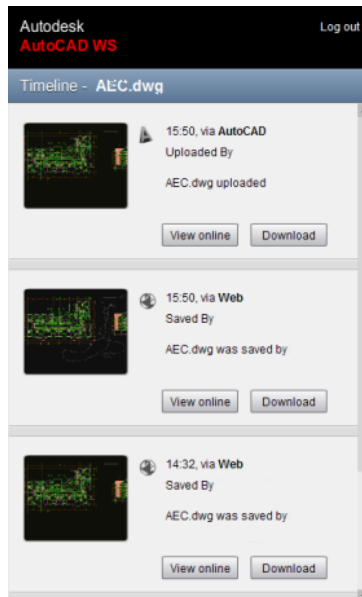
# Timeline Dialog Box

## Quick Reference

### See also:

- Use AutoCAD WS for Drawing File Collaboration

Provides access to previous versions of the AutoCAD WS online copy of the current drawing.



## Summary

The timeline presents a visual representation of the history of any drawing uploaded to AutoCAD WS. A unique version is added to the timeline whenever the drawing is uploaded from AutoCAD or online edits are saved in AutoCAD WS, including changes resulting from collaboration sessions.

Use the timeline to refer to previous versions of the drawing and track all changes. Users with whom you have shared the drawing can view the timeline.

## List of Options

The following options are displayed.

**View Online** Opens the specified version in AutoCAD WS and displays the timeline of the drawing.

**Download** Downloads the selected version as follows:

- **Open.** Downloads the drawing to a default location on the local computer and opens it in AutoCAD.
- **Save.** Saves the drawing to a specified location.

# TINSERT

## Quick Reference

### See also:

- Add Text and Blocks to Tables

Inserts a block in a table cell.

### Access Methods

**Shortcut menu:** With a cell in a table selected, right-click and click Insert Block on the shortcut menu.

### Summary

The [Insert a Block in a Table Cell dialog box](#) is displayed.

## Insert a Block in a Table Cell Dialog Box

### Quick Reference

#### See also:

- Add Text and Blocks to Tables

Specifies options for inserting a block in a table cell.

### List of Options

The following options are displayed.

**Name** Specifies the block reference to insert.

**Browse** Displays the Select Drawing File dialog box. Select the drawing file to insert as a block reference.

**Path** Displays the location of the drawing file selected in the Select Drawing File dialog box.

**Scale**

Specifies the scale for the block reference. Enter a value or select AutoFit to scale the block to fit in the selected cell.

**AutoFit** Controls if the block reference should be scaled to fit in the select table cell, or if the height and width of the table cell should be adjusted to fit the block reference being inserted.

### **Rotation Angle**

Specifies a rotation angle for the block.

### **Overall Cell Alignment**

Specifies alignment for the block in the table cell. The block is middle-, top-, or bottom-aligned with respect to the top and bottom borders of the cell. The block is center-, left-, or right-aligned with respect to the left and right borders of the cell.

## **TOLERANCE**

### **Quick Reference**

**See also:**


- Overview of Geometric Tolerances


Creates geometric tolerances contained in a feature control frame.


### **Access Methods**



**Button**

 **Ribbon:** Annotate tab ► Dimensions panel ► Tolerance

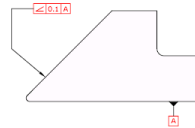
 **Menu:** Dimension ► Tolerance

 **Toolbar:** Dimension

### **Summary**

The [Geometric Tolerance dialog box](#) is displayed.

Geometric tolerances show acceptable deviations of form, profile, orientation, location, and runout. Feature control frames can be created with leader lines using TOLERANCE, LEADER, or QLEADER.



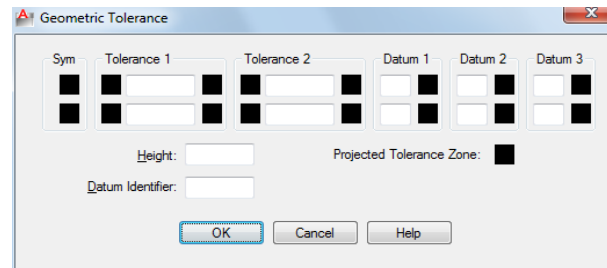
## Geometric Tolerance Dialog Box

### Quick Reference

See also:

- Overview of Geometric Tolerances

Specifies the symbols and values for a feature control frame.



### Summary

After you select geometric characteristic symbols, the Geometric Tolerance dialog box closes and the following prompt is displayed:

Enter tolerance location: *Specify a location*

The feature control frame is placed at the specified location.

### List of Prompts

The following prompts are displayed.

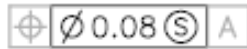
## Sym

Displays the geometric characteristic symbol, which you select from the [Symbol dialog box](#). The dialog box is displayed when you select one of the Sym boxes.



## Tolerance 1

Creates the first tolerance value in the feature control frame. The tolerance value indicates the amount by which the geometric characteristic can deviate from a perfect form. You can insert a diameter symbol before the tolerance value and a material condition symbol after it.



## First Box

Inserts a diameter symbol in front of the tolerance value. Click the box to insert the diameter symbol.

## Second Box

Creates the tolerance value. Enter a value in the box.

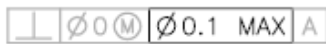
## Third Box

Displays the [Material Condition dialog box](#), in which you select a modifying symbol. These symbols act as modifiers to the geometric characteristic and the tolerance value of features that can vary in size.

The symbol is inserted into the MC box for the first tolerance value in the Geometric Tolerance dialog box.

## Tolerance 2

Creates the second tolerance value in the feature control frame. Specify the second tolerance value in the same way as the first.



## Datum 1

Creates the primary datum reference in the feature control frame. The datum reference can consist of a value and a modifying symbol. A datum is a theoretically exact geometric reference used to establish the tolerance zone for a feature.





### First Box

Creates the datum reference value.

### Second Box

Displays the [Material Condition dialog box](#), in which you select a modifying symbol. These symbols act as modifiers to the datum reference.

The symbol is inserted into the MC box for the primary datum reference in the Geometric Tolerance dialog box.

### Datum 2

Creates the secondary datum reference in the feature control frame in the same way as the primary datum reference.



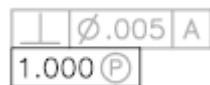
### Datum 3

Creates the tertiary datum reference in the feature control frame in the same way as the primary datum reference.



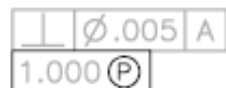
### Height

Creates a projected tolerance zone value in the feature control frame. A projected tolerance zone controls the variation in height of the extended portion of a fixed perpendicular part and refines the tolerance to that specified by positional tolerances.



### Projected Tolerance Zone

Inserts a projected tolerance zone symbol after the projected tolerance zone value.



## Datum Identifier

Creates a datum-identifying symbol consisting of a reference letter. A datum is a theoretically exact geometric reference from which you can establish the location and tolerance zones of other features. A point, line, plane, cylinder, or other geometry can serve as a datum.



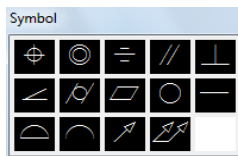
## Symbol Dialog Box

### Quick Reference

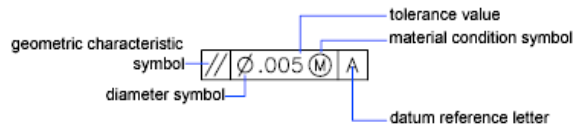
See also:

- Overview of Geometric Tolerances

Displays the geometric characteristic symbols for location, orientation, form, profile, and runout.

















### Summary



The symbol is inserted into the Sym text box in the [Geometric Tolerance dialog box](#). The following table describes the symbols.

#### Geometric characteristic symbols

Symbol	Characteristic	Type
	Position	Location

Geometric characteristic symbols		
Symbol	Characteristic	Type
	Concentricity or coaxiality	Location
	Symmetry	Location
	Parallelism	Orientation
	Perpendicularity	Orientation
	Angularity	Orientation
	Cylindricity	Form
	Flatness	Form
	Circularity or roundness	Form
	Straightness	Form
	Profile of a surface	Profile
	Profile of a line	Profile
	Circular runout	Runout
	Total runout	Runout

## Material Condition Dialog Box

### Quick Reference

See also:

- Overview of Geometric Tolerances

Specifies a modifying symbol. These symbols act as modifiers to the geometric characteristic and the tolerance value of features that can vary in size.



### Summary

The symbol is inserted into the MC box for the first or second tolerance value in the [Geometric Tolerance dialog box](#).

## TOOLBAR

### Quick Reference

See also:

- Toolbars

Displays, hides, and customizes toolbars.

### Access Methods



### Button

 **Ribbon:** View tab ► Windows panel ► Toolbars

 **Menu:** View ► Toolbars

**Shortcut menu:** Right-click any toolbar and choose Customize.

## Summary

The [Customize User Interface dialog box](#) (see CUI) is displayed.

If you enter **-toolbar** at the Command prompt, [options are displayed](#).

# -TOOLBAR

## Quick Reference

See also:

- Toolbars

### List of Prompts

The following prompts are displayed.

Enter [toolbar name](#) on page 1251 or [\[ALL on page 1252\]](#): *Enter a name or enter all*

#### **Toolbar Name**

Specifies a toolbar to display, close, or position.

Enter a valid toolbar name. If the default menu is loaded, the following names are available:

array_edit	insert	parametric	ucs_ii
array_toolbar	layers	properties	view
dimension	layers_ii	refedit	viewports
draw	layouts	reference	web
draw_order	measure- ment_tools	standard	workspaces
draw_order,_an- nota- tion_to_front	modify	standard_annota- tion	zoom
find_text	modify_ii	styles	
group	multileader	text	

`inquiry`            `object_snap`            `ucs`

---

**Show** Displays the specified toolbar.

**Hide** Closes the specified toolbar.

**Left** Docks the specified toolbar at the left side of the screen.

**Right** Docks the specified toolbar at the right side of the screen.

**Top** Docks the specified toolbar at the top of the screen.

**Bottom** Docks the specified toolbar at the bottom of the screen.

**Enter New Position** Sets the position of the toolbar in columns and rows relative to a toolbar dock. The first value is horizontal. The second value is vertical.

**Float** Changes the toolbar from docked to floating.

**Enter Number of Rows** Specifies the number of rows in the floating toolbar.

### **All**

Displays or closes all toolbars.

**Show** Displays all toolbars.

**Hide** Closes all toolbars.

## **TOOLPALETTES**

### **Quick Reference**

**See also:**

- Create and Use Tools from Objects and Images


Opens the Tool Palettes window.



**Button**

### **Access Methods**

 **Ribbon:** View tab ► Palettes panel ► Tool Palettes

 **Menu:** Tools ► Palettes ► Tool Palettes

 **Toolbar:** Standard

### Summary

Use tool palettes to organize blocks, hatches, and custom tools in a tabbed window. Various options and settings are accessible from shortcut menus that display when you right-click different areas of the Tool Palettes window.

---

**NOTE** Tool palettes can be used only in the version of the product in which they were created. For example, you cannot use a tool palette that was created in AutoCAD LT 2012 in AutoCAD LT 2007.

---

### List of Options

The following options are displayed.

**Add Text** Inserts a text entry box at the cursor location, where you can add a label that helps organize palette contents.

**Add Separator** Adds a tool palette separator line at the location of the cursor.

**All Palettes** Displays all tool palette tabs in the palette window.

**Allow Docking** Toggles the ability to dock or anchor palette windows. A docked window adheres to the side of the application window and causes the drawing area to be resized. Selecting this option also makes Anchor Right and Anchor Left available. Clear this option to undock a docked tool palette.

**Anchor Left/ Anchor Right** Attaches the palette to an anchor tab base at the left or right side of the drawing area. An anchored palette rolls open and closed as the cursor moves across it. When an anchored palette is open, its content overlaps the drawing area. An anchored palette cannot be set to stay open.

**Auto-hide** A setting that causes a floating window to roll open and closed as the cursor moves across it. When this option is cleared, the full tool palette stays open continuously.

**Close** Closes the tool palette window.

**Copy** Copies the selected tool to the Clipboard.

**Customize Commands** Displays the [Customize User Interface Dialog Box](#).

**Customize Palettes** Displays the [Customize dialog box](#).

**Cut** Removes the selected tool from the tool palette and places it on the Clipboard.

**Delete** Removes the selected tool from the tool palette.

**Delete Palette** Removes the current palette.

**Dynamic Blocks** Displays the palette tabs containing dynamic blocks.

**Move** Changes the cursor to a four-direction arrow.

**Move Up** Moves the selected tool palette up one position.

**Move Down** Moves the selected tool palette down one position.

**New Palette** Creates a new palette. Enter a name or press Enter to use the default name.

**Paste** Pastes a tool from the Clipboard to the current tab.

**Properties** Displays the [Tool Properties dialog box](#), where you can change the properties of the selected tool.

**Rename** Renames the selected tool.

**Rename Palette** Renames the current palette.

**Samples** Displays the Samples tool palette.

**Sort By** Specifies whether palette contents are sorted by name or by type.

**Size** Changes the cursor to a four-direction arrow.

**Transparency** Displays the [Transparency dialog box](#).

**View Options** Displays the [View Options dialog box](#), where you can control how tools are displayed.

## View Options Dialog Box

### Quick Reference

See also:

- [Change Tool Palette Settings](#)

Controls the display of tools in the current tool palette or in all tool palettes.



**Access Methods**

**Shortcut menu:** Right-click a blank area or a tab on a tool palette and click View Options.

**List of Options**

The following options are displayed.

**Image Size**

Controls the display size of the selected tool palette icon.

**View Style**

Controls the text displayed with a tool palette icon.

**Icon Only**

Displays the tool icon only.

**Icon with Text**

Displays the tool icon with the tool name below.

**List View**

Displays the tool icon with the tool name to the right.

**Apply To**

Controls whether the view options are applied to the current tool palette or to all tool palettes in the Tool Palettes window.

## Tool Properties Dialog Box

**Quick Reference****See also:**

- Customize Tool Palettes

Controls the properties associated with the selected tool.

**Access Methods**

**Shortcut menu:** Right-click a tool on a tool palette and click Properties.

### Summary

The types of properties that are displayed will vary depending on the type of tool that is selected. In addition the following controls are displayed:

### List of Options

The following options are displayed.

#### Image

Displays the icon of the selected tool.

#### Name

Displays the name of the selected tool. This can be edited.

#### Description

Displays a description of the selected tool.

## TOOLPALETTECLOSE

### Quick Reference

#### See also:

- Create and Use Tools from Objects and Images

Closes the Tool Palettes window.

#### Access Methods

 **Ribbon:** View tab ► Palettes panel ► Tool Palettes

 **Menu:** Tools ► Palettes ► Tool Palettes

 **Toolbar:** Standard

# TPNAVIGATE

## Quick Reference

### See also:

- Organize Tool Palettes

Displays a specified tool palette or palette group.

### List of Prompts

The following prompts are displayed.

Specify tool palette to display or [palette Group]: *Enter a tool palette name, or enter g*

**Tool Palette Name** Displays the specified tool palette.

Specifying a tool palette that is not part of the current group displays the specified palette and its palette group.

**Palette Group** Displays the specified tool palette group.

---

**NOTE** TPNAVIGATE opens the Tool Palettes window if closed.

---

# TRANSPARENCY

## Quick Reference

### See also:

- Modify Color and Transparency for Bitonal Raster Images

Controls whether background pixels in an image are transparent or opaque.

### Access Methods



**Button**

 **Menu:** Modify ► Object ► Image ► Transparency

 **Toolbar:** Reference

**Shortcut menu:** Select an image, right-click in the drawing area, and click Image ► Transparency.

### List of Prompts

The following prompts are displayed.

Select image(s):

Enter transparency mode [ON/OFF] <current>: *Enter an option or press Enter*

**On** Turns transparency on so that objects beneath the image are visible.

**Off** Turns transparency off so that objects beneath the image are not visible.

---

**NOTE** The [PALETTEOPAQUE](#) system variable controls whether dockable windows can be made transparent.

---

## TRAYSETTINGS

### Quick Reference

See also:

- Application Status Bar

Controls the display of icons and notifications in the status bar tray.

### Access Methods



Button

**Shortcut menu:** Right-click the status bar and click Tray Settings.

### Summary

The [Tray Settings dialog box](#) is displayed.

## Tray Settings Dialog Box

### Quick Reference

See also:

- Application Status Bar

Controls the display of icons and notifications in the tray at the right end of the status bar.

### List of Options

The following options are displayed.

#### **Display Icons from Services**

Displays the tray at the right end of the status bar and displays icons from services. When this option is cleared, the tray is not displayed.

#### **Display Notifications from Services**

Displays notifications from services.

#### **Display Time**

Sets the time in seconds that a notification is displayed.

#### **Display Until Closed**

Displays a notification until you click the Close button.

## TRIM

### Quick Reference

See also:

- Trim or Extend Objects

Trims objects to meet the edges of other objects.

## Access Methods



### Button

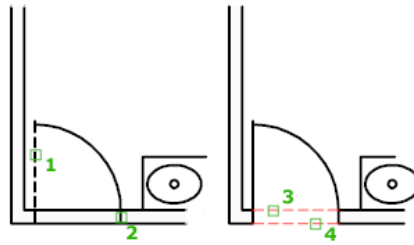
**Ribbon:** Home tab ► Modify panel ► Trim

**Menu:** Modify ► Trim

**Toolbar:** Modify

### Summary

To trim objects, select the boundaries. Then press Enter and select the objects that you want to trim. To use all objects as boundaries, press Enter at the first Select Objects prompt.



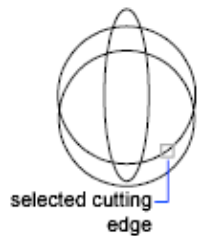
### List of Prompts

The following prompts are displayed.

Current settings: Projection = *current*, Edge = *current*

Select cutting edges...

Select objects or <select all>: *Select one or more objects and press Enter, or press Enter to select all displayed objects*



Select the objects that define the cutting edges to which you want to trim an object, or press Enter to select all displayed objects as potential cutting edges. TRIM projects the cutting edges and the objects to be trimmed onto the *XY* plane of the current user coordinate system (UCS).

---

**NOTE** To select cutting edges that include blocks, you can use only the single selection, Crossing, Fence, and Select All options.

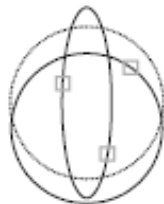
---

Select [object to trim](#) on page 1261 or [shift-select to extend](#) on page 1261 or [[Fence](#) on page 1261/[Crossing](#) on page 1261/[Project](#) on page 1261/[Edge](#) on page 1262/[eRase](#) on page 1263/[Undo](#) on page 1263]: *Select an object to trim, hold down SHIFT and select an object to extend it instead, or enter an option*

Specify an object selection method to select the objects to trim. If more than one trim result is possible, the location of the first selection point determines the result.

### **Object to Trim**

Specifies the object to trim.



objects to trim

### **Shift-Select to Extend**

Extends the selected objects rather than trimming them. This option provides an easy method to switch between trimming and extending.

### **Fence**

Selects all objects that cross the selection fence. The selection fence is a series of temporary line segments that you specify with two or more fence points. The selection fence does not form a closed loop.

### **Crossing**

Selects objects within and crossing a rectangular area defined by two points.

---

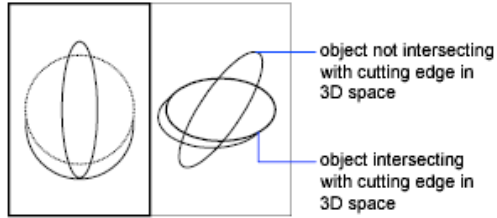
**NOTE** Some crossing selections of objects to be trimmed are ambiguous. TRIM resolves the selection by following along the rectangular crossing window in a clockwise direction from the first point to the first object encountered.

---

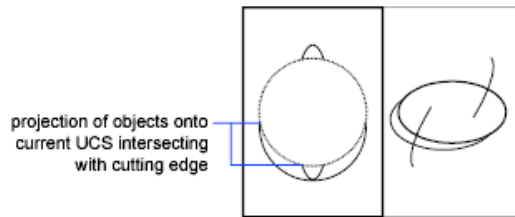
### **Project**

Specifies the projection method used when trimming objects.

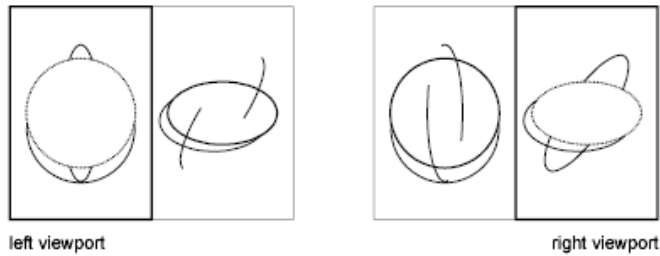
**None** Specifies no projection. The command trims only objects that intersect with the cutting edge in 3D space.



**UCS** Specifies projection onto the *XY* plane of the current UCS. The command trims objects that do not intersect with the cutting edge in 3D space.

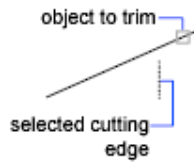


**View** Specifies projection along the current view direction. The command trims objects that intersect the boundary in the current view.



### Edge

Determines whether an object is trimmed at another object's extrapolated edge or only to an object that intersects it in 3D space.





**Extend** Extends the cutting edge along its natural path to intersect an object in 3D space.

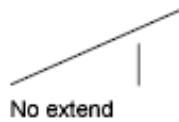


**No Extend** Specifies that the object is trimmed only at a cutting edge that intersects it in 3D space.

---

**NOTE** When trimming hatches, do not set Edge to Extend. If you do, gaps in the trim boundaries will not be bridged when trimming hatches, even when the gap tolerance is set to a correct value.

---



### **Erase**

Deletes selected objects. This option provides a convenient method to erase unneeded objects without leaving the TRIM command.

### **Undo**

Reverses the most recent change made by TRIM.



# U Commands

# 21

## U

### Quick Reference

See also:

- Correct Mistakes

Reverses the most recent operation.

### Access Methods




**Button**

 **Menu:** Edit ► Undo

 **Toolbar:** Standard

**Shortcut menu:** With no command active and no objects selected, right-click in the drawing area and click Undo.

 **Command entry:** Ctrl+Z

### Summary

You can enter **u** as many times as you wish, backing up one step at a time, until the drawing is as it was when you began the current editing session.

When an operation cannot be undone, the command name is displayed but no action is performed. Operations external to the current drawing, such as plotting or writing to a file, cannot be undone.

If you changed modes or used transparent commands during a command, their effects are undone, along with the effects of the main command.

The U command is equivalent to entering **undo 1**.

## UCS

### Quick Reference

See also:

- Work with the User Coordinate System (UCS)
- UCSSELECTMODE

Sets the origin and orientation of the current UCS.

### Access Methods




Button

---

**NOTE** By default, the Coordinates panel is hidden in the Drafting & Annotation workspace. To display the Coordinates panel, click the View tab, then right-click and choose Show Panels, and then click Coordinates.

---

 **Ribbon:** View tab ► Coordinates panel ► UCS

 **Menu:** Tools ► New UCS

 **Toolbar:** UCS

**Shortcut menu:** Right-click the UCS icon and click an option.

### Summary

The UCS is the active coordinate system that establishes the XY plane (work plane) and Z-axis direction for drawing and modeling. Control the UCS origin and orientation to make drawing more convenient as you specify points, enter coordinates, and work with drawing aids, such as Ortho mode and the grid.

## List of Prompts

The following prompts are displayed.

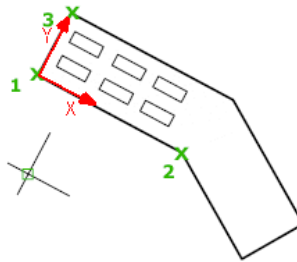
[Specify Origin of UCS](#) on page 1267 or [[Face](#) on page 1267/[NAmed](#) on page 1268/[Object](#) on page 1269/[Previous](#) on page 1269/[View](#) on page 1269/[World](#) on page 1269/[X/Y/Z](#) on page 1269/[ZAxis](#) on page 1271] <World>:

### Specify Origin of UCS

Defines a new UCS using one, two, or three points:

- If you specify a single point, the origin of the current UCS shifts without changing the orientation of the X, Y, and Z axes.
- If you specify a second point, the UCS rotates to pass the positive X axis through this point.
- If you specify a third point, the UCS rotates around the new X axis to define the positive Y axis.

The three points specify an origin point, a point on the positive X axis, and a point on the positive XY plane.



---

**NOTE** If you do not specify a Z coordinate value when entering a coordinate, the current Z value is used.

---

**TIP** You can also select and drag the UCS icon origin grip directly to a new location, or choose Move Origin Only from the origin grip menu. For more information, see [To define a new UCS origin using the origin grip](#).

---

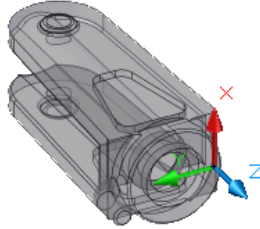
### Face

**TIP** You can also select and drag the UCS icon (or choose Move And Align from the origin grip menu) to dynamically align the UCS with faces.

---

Dynamically aligns the UCS to a face on a 3D object.

Move the cursor over a face to see a preview of how the UCS will be aligned.



**Next** Locates the UCS on either the adjacent face or the back face of the selected edge.

**Xflip** Rotates the UCS 180 degrees around the *X* axis.

**Yflip** Rotates the UCS 180 degrees around the *Y* axis.

**Accept** Accepts the changes and places the UCS.

3D objects can be created in AutoCAD.

### **Named**

Saves or restores named UCS definitions.

---

**TIP** You can also right-click the UCS icon and click Named UCS to save or restore named UCS definitions.

---

### **Restore**

Restores a saved UCS definition so that it becomes the current UCS.

**Name** Specifies the name of the UCS definition to restore.

?—**List UCS definitions** Lists details about the specified UCS definitions.

### **Save**

Saves the current UCS to a specified name.

**Name** Specifies the name for the UCS definition.

### **Delete**

Removes the specified UCS definition from the list of saved definitions.

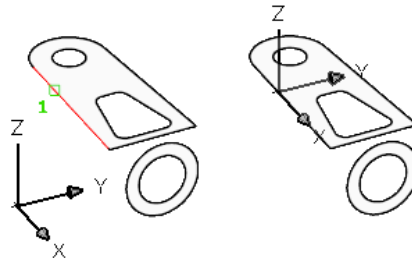
### ?—**List UCS Definitions**

Lists saved UCS definitions showing the origin and *X*, *Y*, and *Z* axes for each saved UCS definition relative to the current UCS. Enter an asterisk to list all UCS definitions. If the current UCS is the same as the WCS (World Coordinate System), it is listed as WORLD. If it is custom, but unnamed, it is listed as NO NAME.

### Object

Aligns the UCS to a selected 2D or 3D object. The UCS can be aligned with any object type except xlines and 3D polylines.

Move the cursor over an object to see a preview of how the UCS will align, and click to place the UCS. In most cases, the UCS origin will be located at the endpoint that is nearest to the specified point, the X axis will align to an edge or tangent to a curve, and the Z axis will align perpendicular to the object.



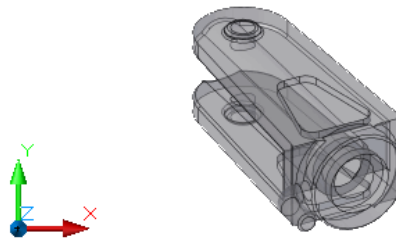
### Previous

Restores the previous UCS.

You can step back through the last 10 UCS settings in the current session. UCS settings are stored independently for model space and paper space.

### View

Aligns the XY plane of the UCS to a plane perpendicular to your viewing direction. The origin point remains unchanged, but the X and Y axes become horizontal and vertical.



### World

Aligns the UCS with the world coordinate system (WCS).

---

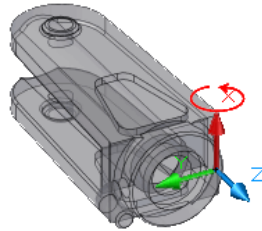
**TIP** You can also click the UCS icon and choose World from the origin grip menu.

---

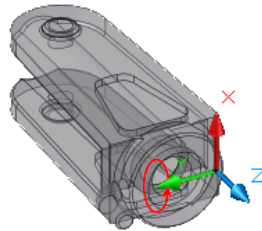
### X, Y, Z

Rotates the current UCS about a specified axis.

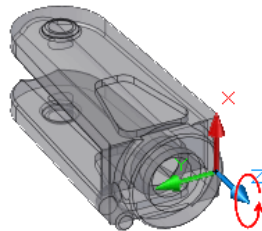
Point your right thumb in the positive direction of the  $X$  axis and curl your fingers. Your fingers indicate the positive rotation direction about the axis.



Point your right thumb in the positive direction of the  $Y$  axis and curl your fingers. Your fingers indicate the positive rotation direction about the axis.

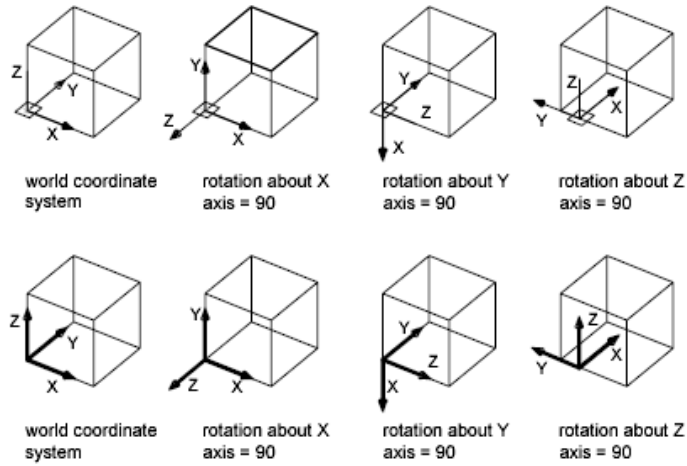


Point your right thumb in the positive direction of the  $Z$  axis and curl your fingers. Your fingers indicate the positive rotation direction about the axis.



You can define any UCS by specifying an origin and one or more rotations around the  $X$ ,  $Y$ , or  $Z$  axis.

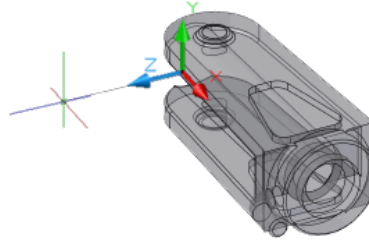




### Z Axis

Aligns the UCS to a specified positive Z axis.

The UCS origin is moved to the first point and its positive Z axis passes through the second point.



**Object** Aligns the Z axis tangent to the endpoint that is nearest to the specified point. The positive Z axis points away from the object.

## UCSICON

### Quick Reference

See also:

- Control the Display of the User Coordinate System Icon

Controls the visibility, placement, appearance, and selectability of the UCS icon.

### Access Methods





#### Button

---

**NOTE** By default, the Coordinates panel is hidden in the Drafting & Annotation workspace. To display the Coordinates panel, click the View tab, then right-click and choose Show Panels, and then click Coordinates.

---

 **Ribbon:** View tab ► Coordinates panel ► UCS Icon Properties

 **Menu:** View ► Display ► UCS Icon ► Properties

### Summary

The UCS icon indicates the location and orientation of the current UCS. You can manipulate the UCS icon using grips. This is controlled by the [UCSSELECTMODE](#) on page 1704 system variable.

---

**NOTE** If the location of the UCS origin is not visible in a viewport, the UCS icon is displayed in the lower-left corner of the viewport instead.

---

Different coordinate system icons are displayed in paper space and model space. In model space, you can choose between 2D and 3D icon display styles (see the [Properties](#) on page 1273 option):

- **2D.** The letter *W* appears in the *Y* portion of the icon if the UCS is the same as the WCS (world coordinate system). If the UCS is rotated so that the *Z* axis lies in a plane parallel to the viewing plane—that is, if the *XY* plane is edge-on to the viewer—the 2D UCS icon is replaced by a broken pencil icon.
- **3D.** A square is displayed in the *XY* plane at the origin if the current UCS is the same as the WCS, and you are viewing the UCS from above (the positive *Z* direction). The square is missing if you are viewing the UCS from below. The *Z* axis is solid when viewed from above the *XY* plane and dashed when viewed from below the *XY* plane.



### List of Prompts

The following prompts are displayed.

Enter an option [[ON](#)/[OFF](#)/[All](#)/[Noorigin](#)/[ORigin](#)/[Selectable](#)/[Properties](#) on page 1273]<current>: Enter an option or press Enter

**On** Displays the UCS icon.

**Off** Turns off display of the UCS icon.

**All** Applies changes to the icon in all active viewports. Otherwise, UCSICON affects only the current viewport.

**No Origin** Displays the icon at the lower-left corner of the viewport regardless of the location of the UCS origin.

**Origin** Displays the icon at the origin (0,0,0) of the current UCS. If the origin is out of view, it is displayed at the lower-left corner of the viewport.

**Selectable** Controls whether the UCS icon is selectable and can be manipulated with grips.

**Properties** Displays the [UCS Icon dialog box](#), in which you can control the style, visibility, and location of the UCS icon.

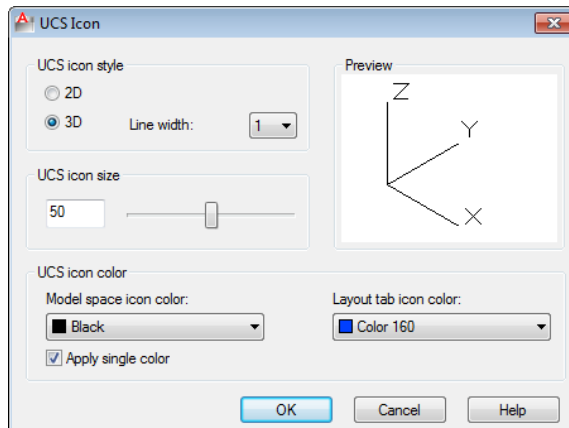
## UCS Icon Dialog Box

### Quick Reference

See also:

- [Control the Display of the User Coordinate System Icon](#)

Controls the style, visibility, and location of the UCS icon.



### List of Options

The following options are displayed.

#### UCS Icon Style

Specifies display of either the 2D or the 3D UCS icon and its appearance.

##### 2D

Displays a 2D icon without a representation of the Z axis.

##### 3D

Displays a 3D icon.

#### Line Width

Controls the line width of the UCS icon if the 3D UCS icon is selected.

#### Preview

Displays a preview of the UCS icon in model space.

#### UCS Icon Size

Controls the size of the UCS icon as a percentage of viewport size. The default value is 50, and the valid range is from 5 to 95. Note that the size of the UCS icon is proportional to the size of the viewport in which it is displayed.

#### UCS Icon Color

Controls the colors of the UCS icon in model space viewports and in layout tabs.

##### Model Space Icon Color

Controls the color of the UCS icon in model space viewports.

#### **Layout Tab Icon Color**

Controls the UCS icon color in layout tabs.

**Apply Single Color** Applies the selected Model space icon color to all axes of the 2D UCS icon.

## UCSMAN

### Quick Reference

See also:

- Work with the User Coordinate System (UCS)

Manages UCS definitions.

### Access Methods




Button

---

**NOTE** By default, the Coordinates panel is hidden in the Drafting & Annotation workspace. To display the Coordinates panel, click the View tab, then right-click and choose Show Panels, and then click Coordinates.

---

 **Ribbon:** View tab ► Coordinates panel ► Named

 **Menu:** Tools ► Named UCS

 **Toolbar:** UCS

### Summary

The [UCS dialog box](#) is displayed.

# UCS Dialog Box

## Quick Reference

See also:

- [Work with the User Coordinate System \(UCS\)](#)

Controls the UCS and UCS icon settings for viewports.

## Summary

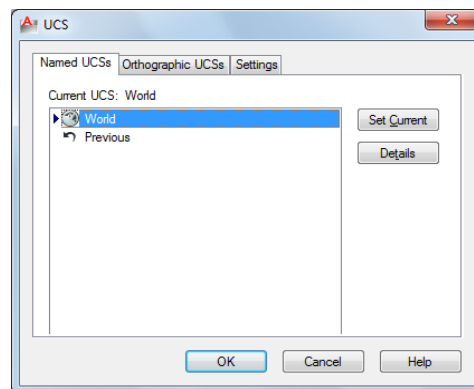
Lists, renames, and restores user coordinate system (UCS) definitions, and controls UCS and UCS icon settings for viewports.

## List of Tabs

- [Named UCSs](#) on page 1276
- [Orthographic UCSs](#) on page 1277
- [Settings](#) on page 1279

## Named UCSs Tab (UCS Dialog Box)

Lists UCS definitions and sets the current UCS.



## Current UCS

Displays the name of the current UCS. If the UCS has not been saved and named, it is listed as UNNAMED.

### UCS Names List

UNNAMED is always the first entry if the current UCS is unnamed. World is always listed and cannot be renamed or deleted. If you define other coordinate systems for the active viewport during the current editing session, a Previous entry is next. You can step back through these coordinate systems by selecting Previous and Set Current repeatedly.

To add a UCS name to this list, use the Save option of the UCS command.

### Set Current

Restores the selected coordinate system. You can also restore a selected coordinate system by double-clicking its name in the list, or by right-clicking the name and choosing Set Current.

### Details

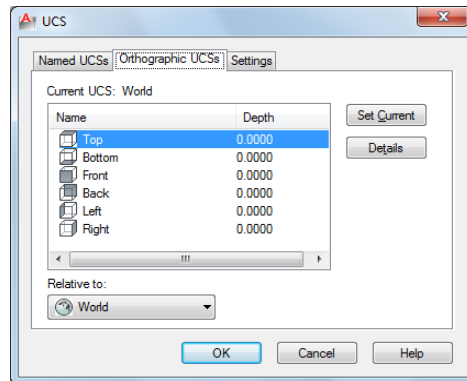
Displays the [UCS Details dialog box](#), which displays UCS coordinate data. You can also view the details about a selected coordinate system by right-clicking the name and choosing Details.

**Rename (Shortcut Menu Only)** Renames a customized UCS. You cannot rename the World UCS.

**Delete (Shortcut Menu Only)** Deletes a customized UCS. You cannot delete the World UCS.

### Orthographic UCSs Tab (UCS Dialog Box)

Changes the UCS to one of the orthographic UCS settings.



### Current UCS

Displays the name of the current UCS. If the UCS has not been saved and named, it is listed as UNNAMED.

## Orthographic UCS Names

Lists the six orthographic coordinate systems defined in the current drawing. The orthographic coordinate systems are defined relative to the UCS specified in the Relative To list.

- **Name.** Specifies the name of the orthographic coordinate system.
- **Depth.** Specifies the distance between the *XY* plane of the orthographic UCS and a parallel plane that passes through the origin of the coordinate system specified by the UCSBASE system variable. The parallel plane of the UCSBASE coordinate system can be an *XY*, *YZ*, or *XZ* plane.

---

**NOTE** You can specify the depth or a new origin for the selected orthographic UCS. See Depth option.

---

## Set Current

Restores the selected coordinate system.

## Details

Displays the [UCS Details dialog box](#), which displays UCS coordinate data. You can also view the details about a selected coordinate system by right-clicking the name and choosing Details.

## Relative To

Specifies the base coordinate system for defining the orthographic UCSs. By default, WCS is the base coordinate system.

Whenever you change the Relative To setting, the origin of the selected orthographic UCS is restored to its default position.

If you save an orthographic coordinate system in a drawing as part of a viewport configuration, or if you select a setting in Relative To other than World, the orthographic coordinate system name changes to UNNAMED to distinguish it from the predefined orthographic coordinate system.

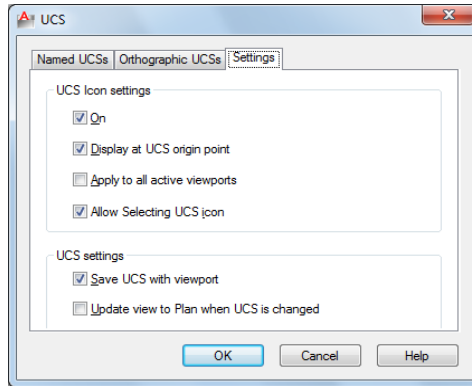
**Reset (Shortcut Menu Only)** Restores the origin of the selected orthographic coordinate system. The origin is restored to its default location (0,0,0) relative to the specified base coordinate system.

**Depth (Shortcut Menu or Double-Click)** Specifies the distance between the *XY* plane of the orthographic UCS and a parallel plane that passes through the origin of the coordinate system. In the Orthographic UCS Depth dialog box, enter a value or choose the Select New Origin button to use the pointing device to specify a new depth or a new origin.



## Settings Tab (UCS Dialog Box)

Displays and modifies UCS icon settings and UCS settings saved with a viewport.



### UCS Icon Settings

Specifies the UCS icon display settings for the current viewport.

#### On

Displays the UCS icon in the current viewport.

#### Display at UCS Origin Point

Displays the UCS icon at the origin of the current coordinate system in the current viewport. If this option is cleared, or if the origin of the coordinate system is not visible in the viewport, the UCS icon is displayed at the lower-left corner of the viewport.

#### Apply to All Active Viewports

Applies the UCS icon settings to all active viewports in the current drawing.

#### Allow Selecting UCS Icon

Controls whether the UCS icon is highlighted when the cursor moves over it and whether you can click to select it and access the UCS icon grips.

### UCS Settings

Specifies UCS behavior when the UCS setting is updated.

#### Update View to Plan When UCS Is Changed

Restores Plan view when the coordinate system in the viewport is changed. (UCSFOLLOW system variable)

## Orthographic UCS Depth Dialog Box

### Quick Reference

See also:

- Work with the User Coordinate System (UCS)

Specifies the depth for an orthographic UCS.

### Access Methods

**Shortcut menu:** Right-click in the Orthographic UCSs list. Click Depth.

### List of Options

The following options are displayed.

*<Name>* **Depth**

Specifies the distance between the *XY* plane of the orthographic UCS and a parallel plane that passes through the origin of the coordinate system.

### Select New Origin

Temporarily closes the dialog box so that you can use the pointing device to specify a new depth location in the drawing.

To reset the origin of the selected orthographic UCSs to the default location (0,0,0), right-click, and click Reset.

## UCS Details Dialog Box

### Quick Reference

See also:

- Work with the User Coordinate System (UCS)

Displays information about the origin and axes of the selected UCS.

### **Summary**

By default, the origin and the values for the X, Y, and Z axes are calculated relative to the world coordinate system.

### **List of Options**

The following options are displayed.

#### **Name**

Displays the name of the current named UCS.

#### **Origin**

Displays the UCS origin relative to the UCS selected in Relative To.

#### **X Axis**

Displays the values for the X axis relative to the UCS selected in Relative To.

#### **Y Axis**

Displays the values for the Y axis relative to the UCS selected in Relative To.

#### **Z Axis**

Displays the values for the Z axis relative to the UCS selected in Relative To.

#### **Relative To**

Sets a base coordinate system for calculating the values for Origin, X Axis, Y Axis, and Z Axis. (UCSBASE system variable)

## **ULAYERS**

### **Quick Reference**

#### **See also:**


- Control the Display of Layers in an Underlay

Controls the display of layers in a DWF, DWFX, PDF, or DGN underlay.

## Access Methods



### Button

 **Ribbon:** Insert tab ► Reference panel ► Layers

**Shortcut menu:** Select an underlay, right-click in the drawing area, and choose DWF, PDF, or DGN Layers.

### Summary

After selecting the underlay, the [Underlay Layers dialog box](#) is displayed.

## Underlay Layers Dialog Box

### Quick Reference

#### See also:

- Control the Display of Layers in an Underlay

Controls the display of layers in a DWF, DWFX, PDF, or DGN underlay.

### Summary

You can turn layers on and off to filter which layers display in an underlay.

### List of Options

The following options are available in this dialog box.

**Reference Name** Select the reference whose layers you want to manage.

### Search for layer

Filters the layer list by name quickly as you enter characters. This filter is not saved when you close the Underlay Layers dialog box. You can also search using wild cards.

### On

Turns the selected layers on and off. When a layer is on it is visible and available for plotting. When a layer is off, it is invisible and not plotted, even if Plot is on.

**Name**

Displays the name of the layer.

## UNDO

### Quick Reference

**See also:**

- Correct Mistakes

Reverses the effect of commands.

### Access Methods



**Button**

 **Toolbar:** Standard

### Summary

UNDO displays the command or system variable name at the Command prompt to indicate that you have stepped past the point where the command was used.

---

**NOTE** UNDO has no effect on some commands and system variables, including those that open, close, or save a window or a drawing, display information, change the graphics display, regenerate the drawing, or export the drawing in a different format.

---

### List of Prompts

The following prompts are displayed.

Enter the [number](#) on page 1284 of operations to undo or [[Auto](#) on page 1284/[Control](#) on page 1284/[Begin/End](#) on page 1284/[Mark/Back](#) on page 1285]: *Enter a positive number, enter an option, or press Enter to undo a single operation*

### **Number**

Undoes the specified number of preceding operations. The effect is the same as entering **u** multiple times.

### **Auto**

Groups the commands in a macro, such as a menu macro, into a single action, making them reversible by a single U command.

UNDO Auto is not available if the Control option has turned off or limited the UNDO feature.

### **Control**

Limits or turns off UNDO.

**All** Turns on the full UNDO command.

**None** Turns off the U and UNDO commands and discards any UNDO command information saved earlier in the editing session. The Undo button on the Standard toolbar is unavailable.

The Auto, Begin, and Mark options are not available when None or One is in effect. If you attempt to use UNDO while it is turned off, the following prompt is displayed:

Enter an UNDO control option [All/None/One/Combine/Layer] <All>:

**One** Limits UNDO to a single operation.

The Auto, Begin, and Mark options are not available when None or One is in effect. The main prompt for the UNDO command changes to show that only a Control option or a single step of the UNDO command is available when the One option is in effect.

**Combine** Controls whether multiple, consecutive zoom and pan commands are combined as a single operation for undo and redo operations.

---

**NOTE** Pan and zoom commands that are started from the menu are not combined, and always remain separate actions.

---

**Layer** Controls whether the layer dialog operations are combined as a single undo operation.

### **Begin, End**

Groups a sequence of actions into a set. After you enter the Begin option, all subsequent actions become part of this set until you use the End option.

Entering **undo begin** while a group is already active ends the current set and begins a new one. UNDO and U treat grouped actions as a single action.

If you enter **undo begin** without **undo end**, using the Number option undoes the specified number of commands but does not back up past the begin point. If you want to go back to before the begin point, you must use the End option, even if the set is empty. The same applies to the U command. A mark placed by the Mark option disappears inside an UNDO group.

### **Mark, Back**

Mark places a mark in the undo information. Back undoes all the work done back to this mark. If you undo one operation at a time, you are informed when you reach the mark.

You can place as many marks as necessary. Back moves back one mark at a time, removing the mark. If no mark is found, Back displays the following prompt:

This will undo everything. OK? <Y>: *Enter y or n or press Enter*

Enter **y** to undo all commands entered in the current session. Enter **n** to ignore the Back option.

When you use the Number option to undo multiple actions, UNDO stops if it encounters a mark.

## **Undocumented Command or System Variable**

### **Quick Reference**

This command or system variable is not documented in the Help system for one of several reasons, including

- It is obsolete, but included in the product to maintain legacy script compatibility
- It was included for testing purposes and has limited or no functionality
- It is a special case of a similar, documented command and is used in the menu or the ribbon only
- It was included to maintain AutoCAD compatibility and has limited or no functionality in AutoCAD LT

Use Search to find additional information about the feature in which you are interested, and the documented commands and system variables associated with it.

# UNGROUP

## Quick Reference


### See also:


- Edit Groups

Disassociates the objects from a group.

## Access Methods



 **Ribbon:** Home tab ► Groups ► Ungroup

 **Menu:** Tools ► Ungroup

 **Toolbar:** Group

## Summary

The following prompts are displayed.

*Select group or [Name]:*

If a group contains sub-groups, you are prompted to *Accept* to ungroup the current selection or choose *Next* to cycle through the groups in the selection set.

# UNION

## Quick Reference

### See also:

- Create and Combine Areas (Regions)

Combines selected regions by addition.



## Access Methods

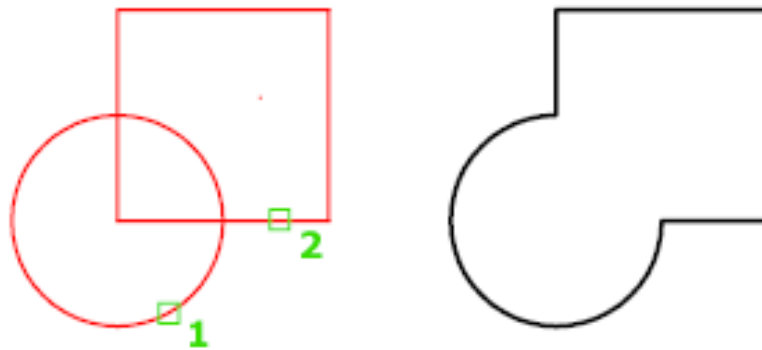


### Button

 **Menu:** Modify ► Region ► Union

### Summary

You can combine two or more 2D regions into a single, composite region. Regions combine only with other region objects that are located on the same plane.



However, you can perform simultaneous UNION actions by selecting sets of regions on different planes. UNION then produces separate, combined regions on each plane.

### List of Prompts

The following prompt is displayed.

**Select objects** Select the regions to be combined.

# UNISOLATEOBJECTS


## Quick Reference

See also:

- Control the Display of Objects

Displays previously hidden objects.

## Access Methods

 **Menu:** Tools ► Isolate ► End Object Isolation

**Shortcut menu:** Right-click in the drawing area and click Isolate ► End Object Isolation.

## Summary

Displays objects previously hidden with the [ISOLATEOBJECTS](#) on page 629 or [HIDEOBJECTS](#) on page 586 command.

# UNITS

## Quick Reference

See also:


- Determine the Units of Measurement


Controls coordinate and angle display formats and precision.


## Access Methods



**Button**

 **Menu:** Application menu ► Drawing Utilities ► Units

 **Menu:** Format ► Units

 **Command entry:** 'units for transparent use

## Summary

The format, precision, and other conventions to be used in displaying coordinates, distances, and angles are set and saved in drawing template files. These settings can also be changed in the current drawing file.

The [Drawing Units dialog box](#) is displayed.

If you enter `-units` at the Command prompt, [options are displayed](#).

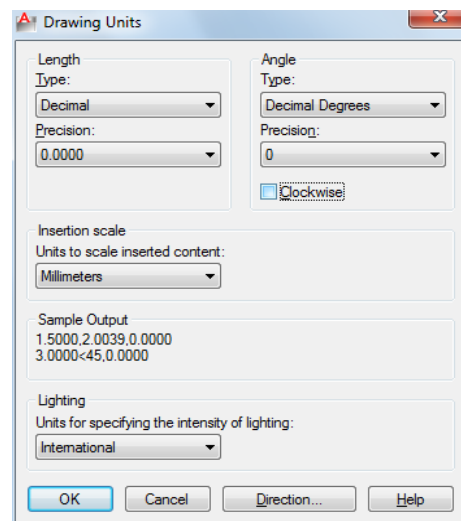
## Drawing Units Dialog Box

### Quick Reference

See also:

- Determine the Units of Measurement

Controls the displayed precision and format for coordinates and angles.



### List of Options

The following options are displayed.

## **Length**

Specifies the current unit of measurement and the precision for the current units.

### **Type**

Sets the current format for units of measure. The values include Architectural, Decimal, Engineering, Fractional, and Scientific. The Engineering and Architectural formats produce feet-and-inches displays and assume that each drawing unit represents one inch. The other formats can represent any real-world unit.

### **Precision**

Sets the number of decimal places or fractional size displayed for linear measurements.

## **Angle**

Specifies the current angle format and the precision for the current angle display.

### **Type**

Sets the current angle format.

### **Precision**

Sets the precision for the current angle display.

The following conventions are used for the various angle measures: decimal degrees appear as decimal numbers, grads appear with a lowercase *g* suffix, and radians appear with a lowercase *r* suffix. The degrees/minutes/seconds format uses *d* for degrees, ' for minutes, and " for seconds; for example:

123d45'56.7"

Surveyor's units show angles as bearings, using N or S for north or south, degrees/minutes/seconds for how far east or west the angle is from direct north or south, and E or W for east or west; for example:

N 45d0'0" E

The angle is always less than 90 degrees and is displayed in the degrees/minutes/seconds format. If the angle is precisely north, south, east, or west, only the single letter representing the compass point is displayed.

### **Clockwise**

Calculates positive angles in the clockwise direction. The default direction for positive angles is counterclockwise.

When prompted for an angle, you can point in the desired direction or enter an angle regardless of the setting specified for Clockwise.

### **Insertion Scale**

Controls the unit of measurement for blocks and drawings that are inserted into the current drawing. A block or a drawing that is created with units that are different from the units specified with this option is scaled when inserted. The insertion scale is the ratio of the units used in the source block or drawing and the units used in the target drawing. Select Unitless to insert the block without scaling it to match the specified units.

---

**NOTE** In the Options dialog box, User Preferences tab, the Source Content Units and Target Drawing Units settings are used when, either in the source block or the target drawing, Insertion Scale is set to Unitless.

---

### **Sample Output**

Displays an example of the current settings for units and angles.

### **Lighting**

Controls the unit of measurement for the intensity of photometric lights in the current drawing.

---

**NOTE** In order to create and use photometric lights, a unit other than Generic must be specified from the list of options. If Insertion Scale is set to Unitless, a warning message is displayed informing you that the rendered output might not be as expected.

---

### **Direction**

Displays the [Direction Control dialog box](#).

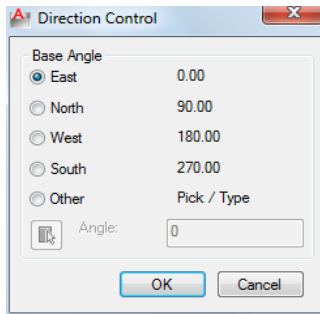
## **Direction Control Dialog Box**

### **Quick Reference**

See also:

- Determine the Units of Measurement

Defines the angle for 0 degrees and specifies the direction in which angles are measured.



### Summary

When prompted for an angle, you can locate a point in the desired direction or enter an angle.

### Base Angle

Sets the direction of the zero angle. The following options affect the entry of angles, the display format, and the entry of polar, cylindrical, and spherical coordinates.

#### East

Specifies the compass direction east (the default).

#### North

Specifies the compass direction north.

#### West

Specifies the compass direction west.

#### South

Specifies the compass direction south.

#### Other

Specifies a direction different from the points of the compass.

#### Angle

Specifies a value for the zero angle when Other is selected.

#### Pick an Angle Button

Defines the zero angle in the graphics area based on the angle of an imaginary line that connects any two points you specify with the pointing device.

# -UNITS

## Quick Reference

### See also:

- Determine the Units of Measurement

Controls coordinate and angle display formats and precision.

### List of Prompts

The following prompts are displayed.

Report formats: (Examples)

1. Scientific 1.55E+01
2. Decimal 15.50
3. Engineering 1'-3.50"
4. Architectural 1'-3 1/2"
5. Fractional 15 1/2

Enter choice, 1 to 5 <current>: *Enter a value (1-5) or press Enter*

The following prompt for decimal precision is displayed if you specify the scientific, decimal, or engineering format:

Enter number of digits to right of decimal point (0 to 8) <current>: *Enter a value (0-8) or press Enter*

The following prompt for the denominator of the smallest fraction is displayed if you specify the architectural or fractional format.

Enter denominator of smallest fraction to display  
(1, 2, 4, 8, 16, 32, 64, 128, or 256) <current>: *Enter a value (1, 2, 4, 8, 16, 32, 64, 128, or 256) or press Enter*

The next prompt is for angle formats and precision:

Systems of angle measure: (Examples)

1. Decimal degrees 45.0000
2. Degrees/minutes/seconds 45d0'0"
3. Grads 50.0000g
4. Radians 0.7854r
5. Surveyor's units N 45d0'0" E

Enter choice, 1 to 5 <current>: *Enter a value (1-5) or press Enter*

Enter number of fractional places for display of angles (0 to 8) <current>: *Enter a value (0-8) or press Enter*

The next prompt is for the direction for angle 0:

Direction for angle 0:

East 3 o'clock = 0

North 12 o'clock = 90

West 9 o'clock = 180

South 6 o'clock = 270

Enter direction for angle 0 <current>: *Enter a value or press Enter*

The default direction for 0 degrees is to the east quadrant, or 3 o'clock. The default direction for positive angular measurement is counterclockwise.

Measure angles clockwise? [Yes/No] <current>: *Enter y or n or press Enter*

## UPDATEFIELD

### Quick Reference

See also:

- Update Fields

Manually updates fields in selected objects in the drawing.

### Access Methods



Button

**Ribbon:** Insert tab ► Data panel ► Update Fields

**Menu:** Tools ► Update Fields

**Shortcut menu:** With any text command active and a field selected, right-click and click Update Field.

### Summary

You can update a field manually when you want to see the latest value. With Date fields, you must update them manually, they never update automatically.



# UPDATETHUMBSNOW

## Quick Reference

See also:

- Switch Between Open Drawings

Manually updates thumbnail previews for named views, drawings, and layouts.

## Summary

The [UPDATETHUMBNAIL](#) system variable controls how the thumbnail previews are updated. The UPDATETHUMBSNOW command updates the following:

- Sheets, sheet views, and model space views thumbnails in the Sheet Set Manager
- Quick View images

---

**NOTE** The thumbnail previews displayed in the Sheet Set Manager is not available in AutoCAD for Mac. This command is made available for use in mixed environments.

---

# UPLOAD

## Quick Reference

See also:


- Use AutoCAD WS for Drawing File Collaboration


Uploads the current drawing to AutoCAD WS and controls whether to automatically upload changes.

## Access Methods



**Button**

 **Ribbon:** Online tab ► Upload panel ► Upload

 **Menu:** File ► AutoCAD WS ► Upload

 **Toolbar:** Online

### Summary

The [Upload Drawing dialog box](#) on page 1296 is displayed. You must save the drawing before you can continue with this command.

---

**NOTE** You may first be prompted to log in to AutoCAD WS. If you do not have an account, click Create an Account and follow the on-screen instructions.

---

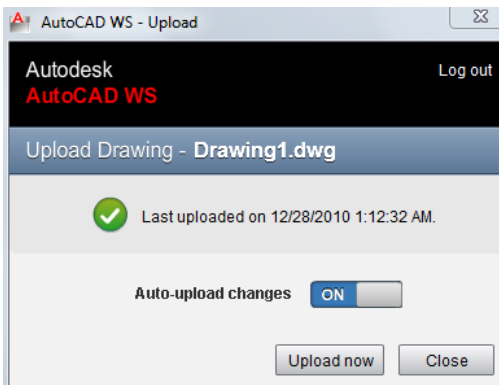
## Upload Drawing Dialog Box

### Quick Reference

See also:

- Use AutoCAD WS for Drawing File Collaboration

Uploads the current drawing to AutoCAD WS and controls whether to automatically upload changes.



### Summary

When you upload a drawing, you can indicate whether subsequent changes to the local file are automatically uploaded each time the drawing is saved in AutoCAD.

### List of Options

The following options are displayed.

**Auto-Upload Changes** Controls whether to automatically upload the current drawing every time it is saved.

**Upload Now** Uploads the current drawing. If the drawing has been previously uploaded, the current drawing replaces the latest version of the online copy.

**Hide** Hides the dialog box. Use [UPLOAD](#) on page 1295 to redisplay the dialog box.

**Retry** Reattempts to upload the drawing if previous attempt failed.

## UPLOADFILES

### Quick Reference

See also:


- Use AutoCAD WS for Drawing File Collaboration


Uploads selected files to AutoCAD WS.

### Access Methods



#### Button

 **Ribbon:** Online tab ► Upload panel ► Upload Multiple Files

 **Menu:** File ► AutoCAD WS ► Upload Multiple Files

 **Toolbar:** Online

### Summary

The [Choose Files to Upload dialog box](#) on page 1298 is displayed.

---

**NOTE** You may first be prompted to log in to AutoCAD WS. If you do not have an account, click Create an Account and follow the on-screen instructions.

---

## Choose Files to Upload Dialog Box

### Quick Reference

#### See also:

- Use AutoCAD WS for Drawing File Collaboration

Uploads selected files to AutoCAD WS.

### Summary

The Choose Files to Upload dialog box is a [standard file selection dialog box](#) on page 826. Select up to 10 files from your local hard drive and network drives to upload to AutoCAD WS without opening them in AutoCAD. You can upload all types of files.

# V Commands

# 22

## VIEW

### Quick Reference

See also:

- Save and Restore Views

Saves and restores named model space views, layout views, and preset views.

### Access Methods



Button

 **Ribbon:** View tab ► View panel ► Named Views

 **Menu:** View ► Named Views

 **Toolbar:** View

### Summary

The [View Manager](#) on page 1300 is displayed.

If you enter **-view** at the Command prompt, [options are displayed](#).

---

**NOTE** The VIEW command cannot be used transparently.

---

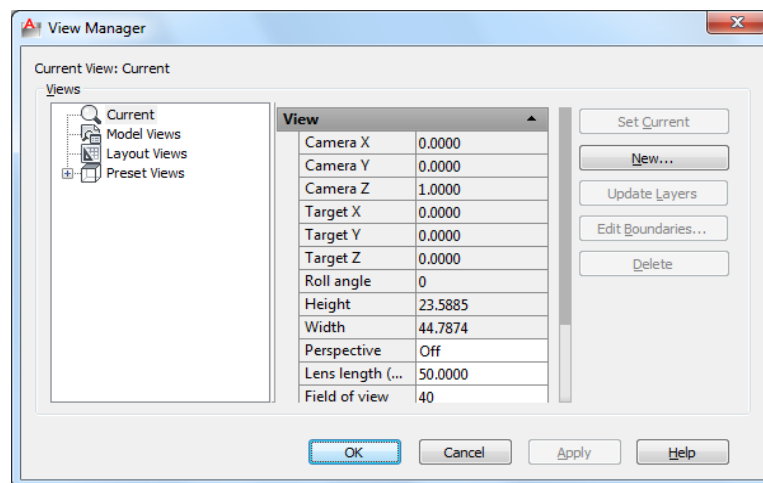
# View Manager

## Quick Reference

See also:

- Save and Restore Views

Creates, sets, renames, modifies, and deletes named views, including model named views and camera views, layout views, and preset views.



## Summary

### List of Options

The following options are displayed.

#### Views

Displays a list of the available views. You can expand each node (except for the Current node) to display its views.

- **Current.** Displays the current view and its View and Clipping properties
- **Model Views.** Displays a list of named views and cameras, and lists General, View, and Clipping properties for a selected view.

- **Layout Views.** Displays a list of viewports on a layout that define a view, and lists General and View properties for a selected view.
- **Preset Views.** Displays a list of orthogonal and isometric views, and lists the General properties for a selected view.

### **General**

The following properties are available:

**Name** Displays the name of a selected camera, model, or layout view.

**UCS** For model and layout views, displays the name of the user coordinate system saved with the named view.

**Restore Ortho UCS** For preset views, restores the associated UCS when an orthographic view is current. This option sets the UCSORTHO system variable.

**Set Relative To** For preset views, specifies the base coordinate system for defining the orthographic view. The UCSBASE system variable controls the orientation of orthographic UCSs relative to the WCS or to named UCSs. Changing this setting also changes the orientation of the predefined orthographic UCSs.

**Layer Snapshot** For model views and layout views, specifies whether the current layer on/off settings are stored with the selected view.

**Annotation Scale** Specifies the annotation scale saved with the view.

### **Animation**

**View Type** For model and layout views, displays the view type assigned to the named view.

**Transition Type** For model and layout views, displays the transition type assigned to the named view and is used when playing back the view.

**Transition Duration** For model and layout views, displays the length of time for the transition that is assigned to the named view and is used when playing back the view.

**Movement** For model views only, displays the movement assigned to a named view that is assigned the Cinematic view type.

**Playback Duration** For model and layout views, displays the length of time that the animation takes to play back.

**Distance** For model views only, displays the distance used for the Cinematic view type.

**Distance Up** For model views only, displays the distance the camera can move upward. Applies to the Crane Up movement type.

**Distance Down** For model views only, displays the distance the camera can move downward. Applies to the Crane Down movement type.

**Distance Forward** For model views only, displays the distance the camera can move forward. Applies to the Crane Down movement type.

**Distance Back** For model views only, displays the distance the camera can move backward. Applies to the Crane Up movement type.

**Degrees Left / Right** For model views only, displays the amount of rotation around the Z axis. Applies to Look and Orbit movement types.

**Degrees Up / Down** For model views only, displays the amount of rotation around the XY plane. Applies to Look and Orbit movement types.

**Distance (Pan) Left / Right** For layout views only, displays the distance the camera can pan left and right. Applies to Pan + Zoom movement type.

**Distance (Pan) Up / Down** For layout views only, displays the distance the camera can pan up and down. Applies to Pan + Zoom movement type.

**Percentage In / Out** For layout views only, displays the percentage the camera can zoom in and out. Applies to Pan + Zoom movement type.

**Current Position** For model and layout views, displays the current position of the camera.

**Always Look at Pivot Point** For model views only, displays if the view is locked to the center-of-interest. Applies to Track and Crane movement types.

### **View**

**Camera X** For current and model views only, displays the X coordinate of the view's camera.

**Camera Y** For current and model views only, displays the Y coordinate of the view's camera.

**Camera Z** For current and model views only, displays the Z coordinate of the view's camera.

**Target X** For current and model views only, displays the X coordinate of the view's target.

**Target Y** For current and model views only, displays the Y coordinate of the view's target.



**Target Z** For current and model views only, displays the Z coordinate of the view's target.

**Roll angle** Displays the rotation angle of the view within your viewing plane, which is a plane parallel to your monitor's screen.

**Height** Specifies the height of the view.

**Width** Specifies the width of the view.

**Perspective** For current and model views, specifies whether perspective view is on.

**Lens Length (mm)** For all views except layouts, specifies the lens length (in millimeters). Changing this value changes the Field of View setting accordingly.

**Field of View** For all views except layouts, specifies the horizontal field of view (in current angle units). Changing this value changes the Lens Length setting accordingly.

### **Clipping**

**Front Plane** Specifies the offset value for the front clipping plane if front clipping is enabled for the view.

**Back Plane** Specifies the offset value for the back clipping plane if back clipping is enabled for the view.

**Clipping** Sets clipping options.

### **Set Current**

Restores the selected view.

### **New**

Displays the [New View dialog box](#) on page 1304.

### **Update Layers**

Updates layer information saved with a selected view to match the layer visibility in the current model space or layout viewport.

### **Edit Boundaries**

Displays the selected view, with the rest of the drawing area displayed in a lighter color to show the boundaries of the named view.

### **Delete**

Deletes a selected view.

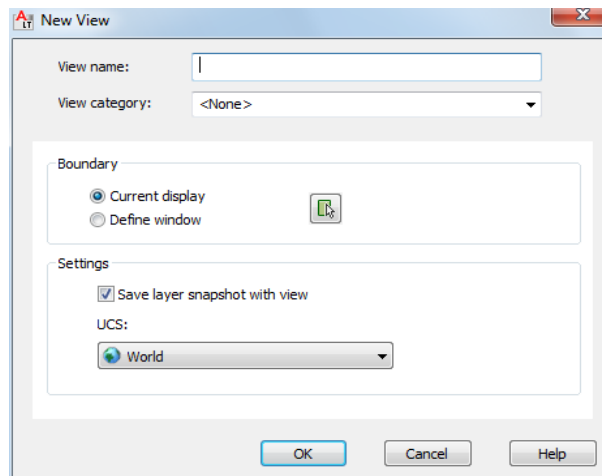
## New View Dialog Box

### Quick Reference

See also:

- Save and Restore Views

Creates a named view.



### List of Options

The following options are displayed.

#### View Name

Specifies the view's name.

#### View Category

Specifies a category for the named view.

#### View Type

Specifies the type of view for the named view. Recorded Walk is available for model space views only.

#### Boundary

Defines the area of the drawing that is assigned to the named view.

#### Current Display

Uses the current display as the new view.

#### **Define Window**

Uses a window as the new view, which you define in the drawing area by specifying two opposite corners.

#### **Define View Window Button**

Temporarily closes the New View and View Manager dialog boxes so that you can use the pointing device to define the opposite corners of the New View window.

#### **Settings**

Provides options for saving settings with the named view.

#### **Save Layer Snapshot with View**

Saves the current layer visibility settings with the new named view.

#### **UCS**

For model and layout views, specifies a UCS to save with the new view.

#### **List of Tabs**

The following tabs are displayed.

- View Properties tab
- Shot Properties tab

## **-VIEW**

### **Quick Reference**

**See also:**

- Save and Restore Views

#### **List of Prompts**

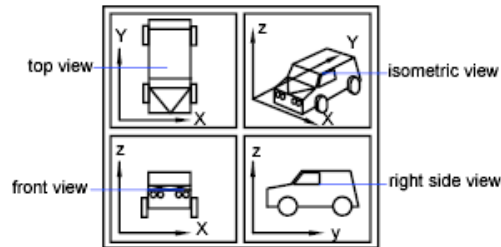
The following prompts are displayed.

Enter an option [[?/Delete/Orthographic/Restore/Save/sEttings/Window](#)]:  
?—**List Views** Lists the named views in the drawing.

The list includes the name of each specified view and the space in which it was defined. *M* designates model space, and *P* designates paper space.

**Delete** Deletes one or more named views.

**Orthographic** Restores the predefined orthographic view you specify to the current viewport.



The view orientation of the specified orthographic view is based on the UCSBASE system variable, which is set to the world coordinate system by default. When one of the orthographic views is restored, the program zooms to the extents in the current viewport.

**Restore** Restores the view you specify to the current viewport. If a UCS setting was saved with the view, it is also restored.

The center point and magnification of the saved view are also restored. If you restore a model space view while working in paper space, you are prompted to select a viewport in which to restore that view.

Select the viewport by clicking its border. The viewport you select must be on and active. The program switches to model space and restores the view in the selected viewport.

If you restore a paper space view while working in model space in a layout tab, the program switches to paper space and restores the view. You can't restore a paper space view if you are working in the Model tab.

**Save** Saves the display in the current viewport using the name you supply.

The current value of the UCSVIEW system variable is displayed when you save a view. To change the setting and turn this option on or off, use the UCS option of VIEW.

**Settings** Specifies various settings for the VIEW command.

**Layer Snapshot** Saves the current layer visibility settings with the new named view.

**UCS** Determines whether the current UCS and elevation settings are saved when a view is saved. (UCSVIEW system variable)

**Window** Saves a portion of the current display as a view.

Restoring such a view may display objects outside the window you specified because the shape of the window may differ from that of the viewport in which you are restoring the view. However, plotting the view plots only the objects inside the window, not the entire viewport display.

## VIEWGO

### Quick Reference

**See also:**

- Save and Restore Views

Restores a named view.

### Summary

Restores the view you specify to the current viewport. If a layer state, UCS, live section, visual style, or background setting was saved with the view, the settings are also restored.

## VIEWPLOTDETAILS

### Quick Reference

**See also:**

- Overview of Plotting

Displays information about completed plot and publish jobs.

### Access Methods



#### Button

 **Ribbon:** Output tab ► Plot panel ► View Details

 **Menu:** File ► View Plot and Publish Details

### Summary

The [Plot and Publish Details dialog box](#) is displayed.

You can view detailed information about all completed plot and publish jobs, or just the errors that have occurred. You can also copy the information displayed in the dialog box to the Clipboard.

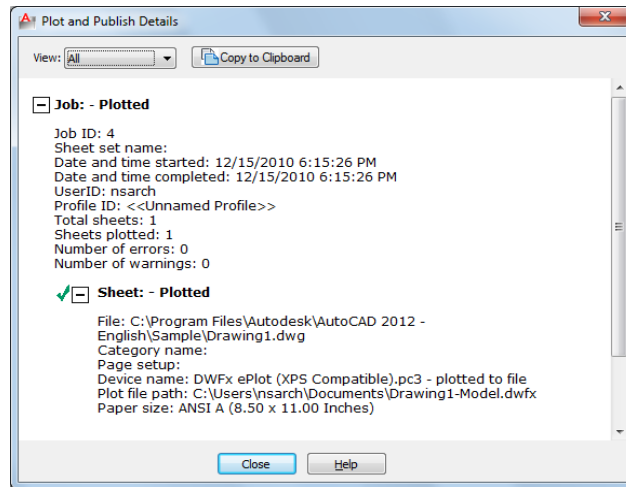
## Plot and Publish Details Dialog Box

### Quick Reference

#### See also:

- Overview of Plotting

Displays information about plotting and publishing jobs that have been completed in the current session.



## Summary

Plot and publish details are also available through the [Plot and Publish status bar icon shortcut menu](#).

## List of Options

The following options are displayed.

### View

Specifies what is displayed. You can also right-click in the details area and click View Errors Only or View All to change this setting.

**All** Displays information about all completed plot and publish jobs and sheets within those jobs.

**Errors** Lists errors that have occurred as jobs were plotted or published.

### Copy to Clipboard

Copies all highlighted text to the Clipboard.

### Details Area

Lists details of completed plot and publish jobs.

## Plot and Publish Status Bar Icon Shortcut Menu

### Quick Reference

#### See also:

- Overview of Plotting

### Summary

When background plotting is enabled, provides options for cancelling the sheet that is currently being plotted, cancelling the entire plot or publish job, viewing the [Plot and Publish Details dialog box](#), and viewing the most recently created Design Web Format (DWF™) file. Right-click any of the plot and publish icons in the tray on the right side of the status bar. These icons are described in the following table.



A plot or publish job is currently being processed in the background



A plotting details report is available. No errors and warnings occurred.



A plotting details report is available. Errors and warnings occurred.

---

### List of Options

The following options are displayed.

**Cancel Sheet** Cancels the sheet that is currently being plotted.

**Cancel Entire Job** Cancels the entire plot or publish job.

**View Plot and Publish Details** Displays [Plot and Publish Details dialog box](#).

**View <filename>.dwf** Opens the most recently created DWF file.

**Enable Balloon Notification** Turns on balloon notification of the status of jobs you have plotted and published.



# VIEWRES

## Quick Reference

See also:

- Change Views

Sets the resolution for objects in the current viewport.

## Summary

The model is regenerated.

VIEWRES controls the appearance of circles, arcs, splines, and arced polylines using short vectors. The greater the number of vectors, the smoother the appearance of the circle or arc. For example, if you create a very small circle and then zoom in, it might appear to be a polygon. Using VIEWRES to increase the zoom percentage and regenerate the drawing updates and smooths the circle's appearance.



VIEWRES  
at 500



VIEWRES  
at 15

---

**NOTE** Increasing the zoom percentage in VIEWRES may increase the time it takes to regenerate the drawing.

---

When a named (paper space) layout is made current for the first time and a default viewport is created in the layout, the viewing resolution for this initial viewport is the same as the viewing resolution for the Model layout viewport.

The VIEWRES setting is saved in the drawing. To change the default for new drawings, consider specifying the VIEWRES setting in the template files on which you base your new drawings.

# VPCLIP

## Quick Reference

See also:

- Create and Modify Layout Viewports

Clips layout viewport objects and reshapes the viewport border.

## Access Methods



Button

 **Ribbon:** View tab ► Viewports panel ► Clip

 **Menu:** Modify ► Clip ► Viewport

 **Toolbar:** Viewports

**Shortcut menu:** Select the viewport to clip. Right-click in the drawing area and choose Viewport Clip.

## Summary

You can either select an existing object to designate as the new boundary, or specify the points of a new boundary. The new boundary does not clip the old boundary, it redefines it.

---

**TIP** Use the generic [CLIP](#) on page 211 command to clip images, external references, viewports, and underlays.

---

## List of Prompts

The following prompts are displayed.

**Clipping Object** Specifies an object to act as a clipping boundary. Objects that are valid as clipping boundaries include closed poly-lines, circles, ellipses, closed splines, and regions.

**Polygonal** Draws a clipping boundary. You can draw line segments or arc segments by specifying points. The following prompt is displayed:

The descriptions of the Next Point, Arc, Close, Length, and Undo options match the descriptions of the corresponding options in the PLINE command.

**Delete** Deletes the clipping boundary of a selected viewport. This option is available only if the selected viewport has already been clipped. If you clip a viewport that has been previously clipped, the original clipping boundary is deleted, and the new clipping boundary is applied.

## VPLAYER

### Quick Reference

**See also:**

- Freeze Specified Layers in a Layout Viewport

Sets layer visibility within viewports.

### List of Prompts

The following prompts are displayed.

Enter an option [? on page 1313/[Color](#) on page 1313/[Ltype/LWeight/PStyle](#) on page 1314/[Transparency](#) on page 1314/[Freeze](#) on page 1315/[Thaw](#) on page 1315/[Reset](#) on page 1315/[Newfrz](#) on page 1315/[Vpvisdflt](#) on page 1315]:

In the Model layout, the VPLAYER command has two options.

Enter an option [[Newfrz/Vpvisdflt](#)]:

#### ?—List Frozen Layers

Displays the names of frozen layers in a selected viewport.

#### Color

Changes the color associated with a layer.

**True Color** Specifies a true color to use for the selected object.

**Color Book** Specifies a color from a loaded color book to use for the selected object.

**All** Applies the changes in all viewports.

**Select** Applies the changes in selected viewports.

**Current** Applies the changes in the current viewport only.

**Ltype**

Changes the linetype associated with a layer.

- [All](#) on page 1313
- [Select](#) on page 1313
- [Current](#) on page 1313

**Lweight**

Changes the lineweight associated with a layer.

If you enter a lineweight that is not valid, the current lineweight is set to the nearest fixed lineweight value.

If you want to plot an object with a custom width not found in the list of fixed lineweight values, you can use the Plot Style Table Editor to customize plotted lineweights.

- [All](#) on page 1313
- [Select](#) on page 1313
- [Current](#) on page 1313

**Pstyle**

Sets the plot style assigned to a layer. This option is not available if you are using color-dependent plot styles in the current drawing (the [PSTYLEPOLICY](#) on page 1627 system variable is set to 1). See Use Plot Styles to Control Plotted Objects in the *User's Guide*.

- [All](#) on page 1313
- [Select](#) on page 1313
- [Current](#) on page 1313

**Transparency**

Changes the transparency level associated with a layer.

- [All](#) on page 1313
- [Select](#) on page 1313
- [Current](#) on page 1313

**Freeze**

Freezes a layer or set of layers in one or more viewports. Objects on frozen layers are not displayed, regenerated, or plotted.

- [All](#) on page 1313
- [Select](#) on page 1313
- [Current](#) on page 1313
- *Except Current*. Freezes specified layers in all viewports across all layouts, except in the current viewport.

**Thaw**

Thaws layers in specific viewports.

- [All](#) on page 1313
- [Select](#) on page 1313
- [Current](#) on page 1313

**Reset**

Sets the visibility of layers in specified viewports to their current default setting.

- [All](#) on page 1313
- [Select](#) on page 1313
- [Current](#) on page 1313

**Newfrz (New Freeze)**

Creates new layers that are frozen in all viewports.

**Vpvisdflt (Viewport Visibility Default)**

Thaws or freezes the specified layers in subsequently created viewports.

## VPMAX


**Quick Reference**

See also:

- [Access Model Space from a Layout Viewport](#)

Expands the current layout viewport for editing.

#### Access Methods

 **Toolbar:** Status bar ► Maximize Viewport

**Shortcut menu:** Select a named layout viewport to maximize. Right-click and click Maximize Viewport.

**Pointing device:** Double-click a named layout viewport.

#### Summary

The viewport is expanded to fill the screen and switched to model space for editing.

## VPMIN

#### Quick Reference

See also:

- Access Model Space from a Layout Viewport

Restores the current layout viewport.

#### Access Methods

 **Toolbar:** Status bar ► Minimize Viewport

**Shortcut menu:** Select a named layout viewport to maximize. Right-click and click Minimize Viewport.

**Pointing device:** Double-click outside of the maximized viewport.

#### Summary

The center point and magnification are returned to the settings that were in effect before the viewport was maximized.

# VPOINT


## Quick Reference

See also:

- Define a 3D View with Coordinate Values or Angles

Sets the viewing direction for a 3D visualization of the drawing.

## Access Methods

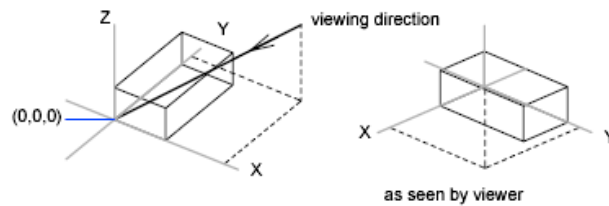
 **Menu:** View ► 3D Views ► Viewpoint

## List of Prompts

The following prompts are displayed.

Specify a [view point](#) [Rotate] <[display compass and tripod](#)>: *Specify a point, enter **r**, or press Enter to display a compass and axis tripod*

**View Point** Creates a vector that defines a direction from which the drawing can be viewed. The view defined is as if the viewer is looking from the point back at the origin (0,0,0).



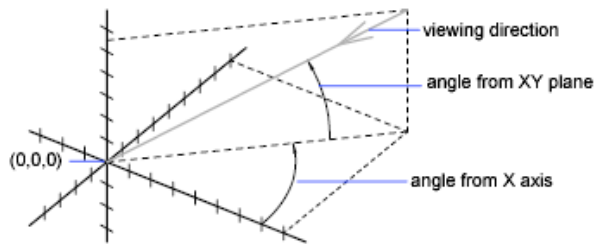
**Rotate** Specifies a new viewing direction using two angles.

- Enter angle in XY plane from X axis.

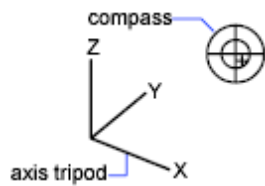
The first angle is specified with respect to the X axis, in the XY plane.

- Enter angle from XY plane.

The second angle is specified up or down from the XY plane.



**Compass and Axis Tripod** Displays a compass and axis tripod, which you use to define a viewing direction in the viewport.



The compass is a two-dimensional representation of a globe. The center point is the north pole  $(0,0,n)$ , the inner ring is the equator  $(n,n,0)$ , and the entire outer ring is the south pole  $(0,0,-n)$ .

As you move the crosshairs, the axis tripod rotates to conform to the viewing direction indicated on the compass. To select a viewing direction, move your pointing device to a location on the globe and click.

## VPORTS

### Quick Reference

See also:

- Set Model Space Viewports

Creates multiple viewports in model space or paper space.

### Access Methods



Button



- ☒ **Ribbon:** View tab ► Viewports panel ► Named Viewports
- ☒ **Menu:** View ► Viewports ► New Viewports, Named Viewports
- ☒ **Toolbar:** Layouts

### Summary

The [Viewports dialog box](#) is displayed.

If you enter `-vports` at the Command prompt, [options are displayed](#).

## Viewports Dialog Box

### Quick Reference

See also:

- Set Model Space Viewports

Creates new viewport configurations, or names and saves a model space viewport configuration.

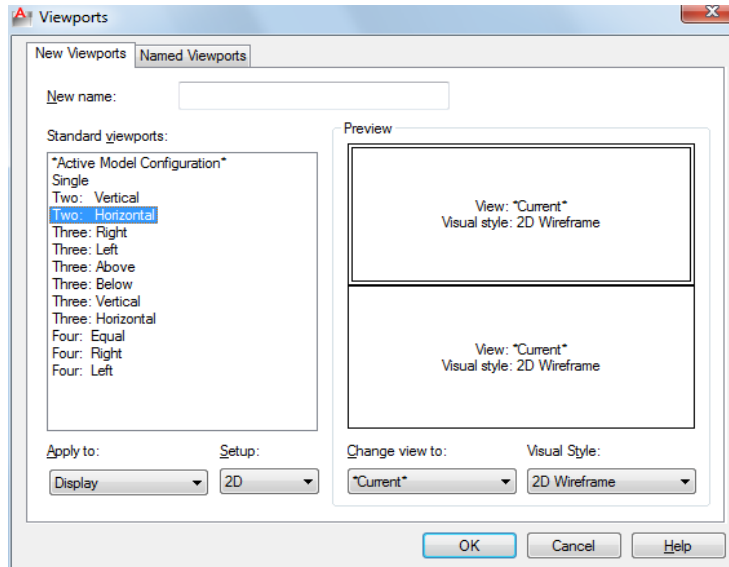
### Summary

The options available depend on whether you are configuring model space viewports (on the Model layout) or layout viewports (on a named (paper space) layout).

### List of Options

The following options are displayed.

## New Viewports Tab—Model Space (Viewports Dialog Box)



### New Name

Specifies a name for the new model space viewport configuration. If you do not enter a name, the viewport configuration is applied but not saved. If a viewport configuration is not saved, it cannot be used in a layout.

### Standard Viewports

Lists and sets the standard viewport configurations, including CURRENT, which is the current configuration.

### Preview

Displays a preview of the viewport configuration you select and the default views assigned to each individual viewport in the configuration.

### Apply To

Applies the model space viewport configuration to the entire display or to the current viewport.

- *Display*: Applies the viewport configuration to the entire Model tab display.
- *Current Viewport*: Applies the viewport configuration to the current viewport only.

### Setup

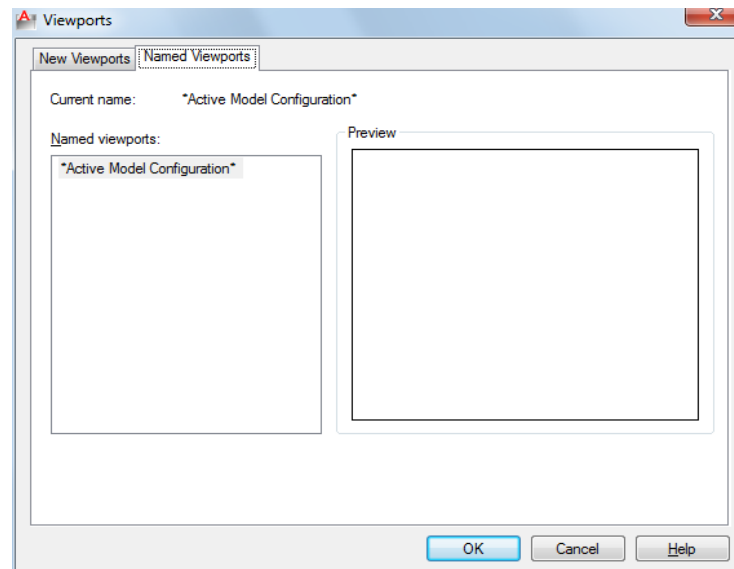
Specifies either a 2D or a 3D setup. When you select 2D, the new viewport configuration is initially created with the current view in all of the viewports. When you select 3D, a set of standard orthogonal 3D views is applied to the viewports in the configuration.

### Change View To

Replaces the view in the selected viewport with the view you select from the list. You can choose a named view, or if you have selected 3D setup, you can select from the list of standard views. Use the Preview area to see the choices.

### Named Viewports Tab—Model Space (Viewports Dialog Box)

Lists all saved model viewport configurations in the drawing.



### Current Name

Displays the name of the current viewport configuration.

### New Viewports Tab—Layouts (Viewports Dialog Box)

**Standard Viewports** Displays a list of standard viewport configurations and configures layout viewports.

**Preview** Displays a preview of the viewport configuration you select and the default views assigned to each individual viewport in the configuration.

### **Viewport Spacing**

Specifies the spacing you want to apply between the layout viewports you are configuring.

**Setup** Specifies either a 2D or a 3D setup. When you select 2D, the new viewport configuration is initially created with the current view in all of the viewports. When you select 3D, a set of standard orthogonal 3D views is applied to the viewports in the configuration.

**Change View To** Replaces the view in the selected viewport with the view you select from the list. You can choose a named view, or if you have selected 3D setup, you can select from the list of standard views.

### **Named Viewports Tab—Layouts (Viewports Dialog Box)**

Displays any saved and named model space viewport configurations for you to use in the current layout. You cannot save and name a layout viewport configuration.

## **-VPOR TS**

### **Quick Reference**

**See also:**

- Set Model Space Viewports

Creates multiple viewports in model space or paper space.

### **Summary**

The command prompts available depend on whether you are configuring [model viewports](#) (on the Model tab) or [layout viewports](#) (on a layout tab).

## **-VPOR TS - Model Space Viewports**

### **Quick Reference**

**See also:**

- Set Model Space Viewports

Creates multiple viewports in model space.

### Summary

The number and layout of active viewports and their associated settings are called viewport configurations.

### List of Prompts

The following prompts are displayed.

Enter an option [[Save/Restore/Delete/Join/Single/?/2/3/4](#)] <3>: *Enter an option*

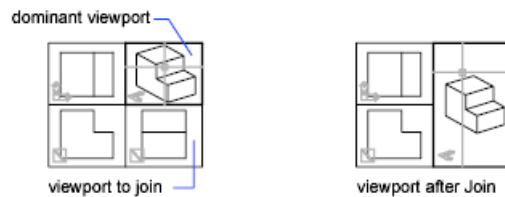
**Save** Saves the current viewport configuration using a specified name.

**Restore** Restores a previously saved viewport configuration.

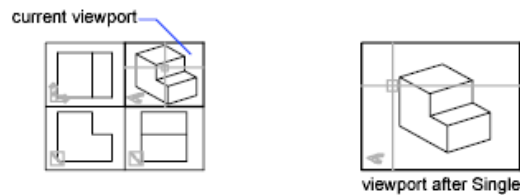
**Delete** Deletes a named viewport configuration.

**Join** Combines two adjacent model viewports into one larger viewport.

The two model viewports must share a common edge of the same length. The resulting viewport inherits the view of the dominant viewport.



**Single** Returns the drawing to a single viewport view, using the view from the current viewport.



**?—List Viewport Configurations** Displays the identification numbers and screen positions of the active viewports.

The lower-left and upper-right corners of the viewport define its location. For these corners, values between 0.0,0.0 (for the lower-left corner of the drawing area) and 1.0,1.0 (for the upper-right corner) are used. The current viewport is listed first.

2 Divides the current viewport in half.

3 Divides the current viewport into three viewports.

The Horizontal and Vertical options split the area into thirds. The Above, Below, Left, and Right options specify where the larger viewport is placed.

4 Divides the current viewport into four viewports of equal size.

## -VPOR TS - Layout Viewports

### Quick Reference

See also:

- Create and Modify Layout Viewports

Creates multiple viewports in named (paper space) layouts.

### Summary

The number and layout of active viewports and their associated settings are called viewport configurations.

### List of Prompts

The following prompts are displayed.

Specify corner of viewport or [ON/OFF/Fit/Shadeplot/Lock/Restore/Layer/2/3/4]  
<Fit>: *Specify a point or enter an option*

**On** Turns on a viewport, making it active and making its objects visible.

**Off** Turns off a viewport. When a viewport is off, its objects are not displayed, and you cannot make that viewport current.

**Fit** Creates one viewport that fills the available display area. The actual size of the viewport depends on the dimensions of the paper space view.

**Shadeplot** Specifies how viewports in layouts are plotted.

- *As Displayed*: Plots the same way it is displayed
- *Wireframe*: Plots wireframe regardless of display
- *Hidden*: Plots with hidden lines removed regardless of display

**Lock** Locks the current viewport. This is similar to layer locking.

**Object** Creates a nonrectangular layout viewport from a closed polyline, ellipse, spline, region, or circle. The polyline you specify must be closed and contain at least three vertices. It can be self-intersecting, and it can contain arcs as well as line segments.

**Polygonal** Creates a nonrectangular layout viewport defined by a series of line and arc segments.

The descriptions of the Next Point, Arc, Close, Length, and Undo options match the descriptions of the corresponding options in the PLINE command.

**Restore** Restores a previously saved viewport configuration.

**Layer** Resets layer property overrides for the selected viewport to their global layer properties.

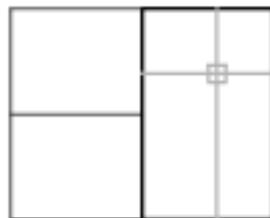
**2** Divides the current viewport in half.



**2/Vertical**

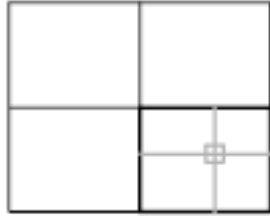
**3** Divides the current viewport into three viewports.

Horizontal and Vertical split the area into thirds. The other options create one large viewport in half the available area and two smaller ones in the other half. Above, Below, Left, and Right specify where the larger viewport is placed.



**3/Right**

**4** Divides the current viewport into four viewports of equal size.



4

## VSLIDE

### Quick Reference

See also:

- View Slides

Displays an image slide file in the current viewport.

### Summary

The Select Slide File dialog box, a [standard file selection dialog box](#), is displayed.

To display a slide in a slide library (*.slb* extension), set FILEDIA to 0, enter **vslide**, and then specify the slide library file name followed by the slide file name enclosed in parentheses: **slidelibrary (slide)**.

When you view slides of images shaded with the -SHADE command in a larger window or a higher resolution than was used for creating the slide, black lines may appear interspersed among the lines of the shaded image. To avoid this situation, use a full screen that is set at the highest resolution when creating the slides.



# VTOPTIONS

## Quick Reference

### See also:

- Pan or Zoom a View

Displays a change in view as a smooth transition.

### Summary

The [View Transitions dialog box](#) on page 1327 is displayed.

## View Transitions Dialog Box

### Quick Reference

#### See also:

- Pan or Zoom a View

Controls when smooth view transitions are used.

### Summary

Sets the options for smooth view transitions.

### List of Options

The following options are displayed.

**Enable Animation for Pan and Zoom** Makes a smooth view transition during panning and zooming. (VTENABLE system variable)

**Enable Animation When View Rotates** Makes a smooth view transition when the view angle is changed. (VTENABLE system variable)

**Enable Animation During Scripts** Makes smooth view transitions while a script is running. (VTENABLE system variable)

**Transition Speed** Sets the speed of a smooth view transition in milliseconds.

**Performance**

Set the minimum speed for a smooth view transition in frames per second. When a smooth view transition cannot maintain this speed, an instant transition is used to preserve performance.

# W Commands

# 23

## WBLOCK

### Quick Reference

See also:

- Create Drawing Files for Use as Blocks

Saves selected objects or converts a block to a specified drawing file.

### Access Methods



Button

 **Ribbon:** Insert tab ► Block Definition panel ► Write Block

### Summary

The [Write Block dialog box](#) is displayed.

Entering **-wblock** at the Command prompt displays a standard file selection dialog box in which to specify a name for the new drawing file, followed by [command prompts](#). If FILEDIA is set to 0, the standard file selection dialog box is suppressed.

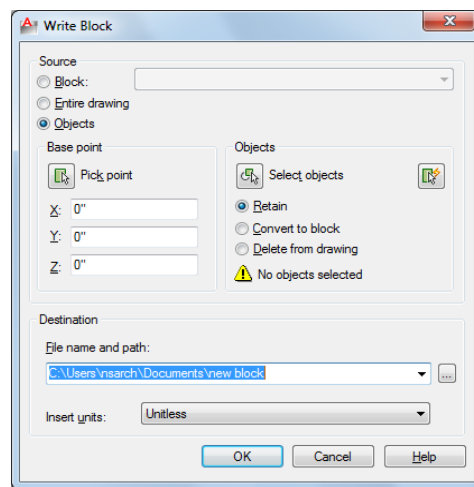
## Write Block Dialog Box

### Quick Reference

See also:

- Create Drawing Files for Use as Blocks

Saves selected objects or converts a block to a specified drawing file.



### Summary

The Write Block dialog box provides a convenient method for saving part of the current drawing to a different drawing file, or saving a specified block definition as a separate drawing file.

### List of Options

The following options are displayed.

#### Source

Specifies blocks and objects, saves them as a file, and specifies insertion points.

#### Block

Specifies an existing block to save as a file. Select a name from the list.

#### Entire Drawing

Selects current drawing to save as another file.

**Objects**

Selects objects to save as a file. Specify a base point and select objects below.

**Base Point**

Specifies a base point for the block. The default value is 0,0,0.

**Pick Point**

Temporarily closes the dialog box so that you can specify an insertion base point in the current drawing.

**X**

Specifies the *X* coordinate value for the base point.

**Y**

Specifies the *Y* coordinate value for the base point.

**Z**

Specifies the *Z* coordinate value for the base point.

**Objects**

Sets the effect of block creation on objects used to create a block.

**Retain**

Retains the selected objects in the current drawing after saving them as a file.

**Convert to Block**

Converts the selected object or objects to a block in the current drawing after saving them as a file.

**Delete from Drawing**

Deletes the selected objects from the current drawing after saving them as a file.

**Select Objects Button**

Temporarily closes the dialog box so that you can select one or more objects to save to the file.

**Quick Select Button**

Opens the [Quick Select dialog box](#), which you can use to filter your selection set.

### Objects Selected

Indicates the number of objects selected.

### Destination

Specifies the new name and location of the file and the units of measurement to be used when the block is inserted.

### File Name and Path

Specifies a file name and path where the block or objects will be saved.

[...]

Displays a [standard file selection dialog box](#).

### Insert Units

Specifies the unit value to be used for automatic scaling when the new file is dragged from DesignCenter™ or inserted as a block in a drawing that uses different units. Select Unitless if you do not want to automatically scale the drawing when you insert it. See INSUNITS.

## -WBLOCK

### Quick Reference

#### See also:

- Create Drawing Files for Use as Blocks

Saves selected objects or converts a block to a specified drawing file.

### Summary

If FILEDIA is set to 1, entering **-wblock** at the Command prompt displays a standard file selection dialog box in which to specify a name for the new drawing file. If FILEDIA is set to 0, entering **-wblock** at the Command prompt displays a prompt. The new drawing is saved in the file format that is specified in Save As on the Open and Save tab in the Options dialog box.

After the file is created, the selected objects are deleted from the drawing. You can use OOPS to restore the objects.

In the new drawing, the world coordinate system (WCS) is set parallel to the user coordinate system (UCS).

### List of Prompts

The following prompts are displayed.

Enter name of output file:

Enter name of existing block or

[= (block=output file)/\* (whole drawing)] <define new drawing>:

**Existing Block** Writes that block to a file. You cannot enter the name of an external reference (xref) or one of its dependent blocks.

= Specifies that the existing block and the output file have the same name.

\* Writes the entire drawing to the new output file, except for unreferenced symbols. Model space objects are written to model space, and paper space objects are written to paper space.



## WHOHAS

### Quick Reference

**See also:**

- Open a Drawing

Displays ownership information for opened drawing files.

### Summary

You can use WHOHAS to track which users have certain drawing files open.

After you select a file, the ownership information is displayed at the Command prompt. The information includes the current user's computer name, login ID, and full name (if available) and the date and time the drawing file was opened.

---

**NOTE** Similar information is displayed automatically when you try to open a drawing file that another user has already opened.

---

The information displayed by WHOHAS is stored in a temporary DWL (drawing lock) file. A DWL file is deleted when the file is closed.

## WIPEOUT

### Quick Reference

See also:

- Create a Blank Area to Cover Objects


Creates a wipeout object, and controls whether wipeout frames are displayed in the drawing.

### Access Methods



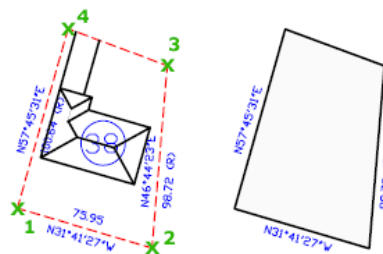
Button

 **Ribbon:** Home tab ► Draw panel ► Wipeout

 **Menu:** Draw ► Wipeout

### Summary

Creates a polygonal area that masks underlying objects with the current background color. The wipeout area is bounded by a frame that you can turn on for editing and turn off for plotting.



### List of Prompts

The following prompts are displayed.



Specify [first point](#) on page 1335 or [[Frames](#) on page 1335/[Polyline](#) on page 1335] <Polyline>.

**First Point** Determines the polygonal boundary of the wipeout object from a series of points.

**Frames** Determines whether the edges of all wipeout objects are displayed or hidden.

**Polyline** Determines the polygonal boundary of the wipeout objects from a selected polyline.

**Erase Polyline** Enter **y** to erase the polyline that was used to create the wipeout object. Enter **n** to retain the polyline.

## WMFIN

### Quick Reference

**See also:**

- [Insert WMF Files](#)

Imports a Windows metafile.

### Access Methods



**Button**

 **Menu:** Insert ► Windows Metafile

### Summary

WMF files can contain both vector and raster information, however only the vector information is imported. WMF files are inserted as a block reference and can be resized and printed without losing resolution.

The Import WMF dialog box (a [standard file selection dialog box](#)) is displayed.

In the Import WMF dialog box, if you click Tools ► Options, the [WMF In Options dialog box](#) is displayed. You can also open this dialog box directly by using WMFOPTS.

## List of Prompts

The following prompts are displayed.

Specify [insertion point](#) on page 1336 or [[Scale](#) on page 1336/[X](#) on page 1336/[Y](#) on page 1336/[Z](#) on page 1336/[Rotate](#) on page 1336/[PScale](#) on page 1337/[PX](#) on page 1337/[PY](#) on page 1337/[PZ](#) on page 1337/[PRotate](#) on page 1337]: *Specify a point or enter an option*

### **Insertion Point**

Places a copy of the metafile with its base point at the specified insertion point.

**X Scale Factor** Sets the *X* and *Y* scale factors.

All *X* and *Y* dimensions of the metafile are multiplied by the *X* and *Y* scale factors supplied. The metafile is rotated by the angle specified, using the insertion point as the center of rotation.

**Corner** Defines the *X* and *Y* scales at the same time, using the insertion point and another point as the corners of a box. The *X* and *Y* dimensions of the box become the *X* and *Y* scale factors. The insertion point is the first corner.

The rotation angle sets the angle of the WMF file.

**XYZ** Scales the metafile in all three dimensions.

If you enter *c*, you specify a corner point. The specified point and the insertion point determine the *X* and *Y* scale factors for the WMF file.

The rotation angle sets the angle of the WMF file.

### **Scale**

Sets the scale factor for the *X*, *Y*, and *Z* axes. The scale for the *Z* axis is the absolute value of the specified scale factor.

#### **X**

Sets the *X* scale factor.

#### **Y**

Sets the *Y* scale factor.

#### **Z**

Sets the *Z* scale factor.

### **Rotate**

Sets the angle of insertion for the WMF file.

- [X Scale Factor](#) on page 1336
- [Corner](#) on page 1336
- [XYZ](#) on page 1336

**PScale**

Sets the temporary scale factor for the  $X$ ,  $Y$ , and  $Z$  axes to control the display of the WMF file as it is dragged into position.

- [X Scale Factor](#) on page 1336
- [Corner](#) on page 1336
- [XYZ](#) on page 1336

**PX**

Sets the temporary scale factor for the  $X$  axis to control the display of the WMF file as it is dragged into position.

- [X Scale Factor](#) on page 1336
- [Corner](#) on page 1336
- [XYZ](#) on page 1336

**PY**

Sets the temporary scale factor for the  $Y$  axis to control the display of the WMF file as it is dragged into position.

- [X Scale Factor](#) on page 1336
- [Corner](#) on page 1336
- [XYZ](#) on page 1336

**PZ**

Sets the temporary scale factor for the  $Z$  axis to control the display of the WMF file as it is dragged into position.

- [X Scale Factor](#) on page 1336
- [Corner](#) on page 1336
- [XYZ](#) on page 1336

**PRotate**

Sets the temporary rotation angle of the WMF file as it is dragged into position.

- [X Scale Factor](#) on page 1336
- [Corner](#) on page 1336
- [XYZ](#) on page 1336

## WMFOPTS

### Quick Reference

See also:

- Insert WMF Files

Sets options for WMFIN.

### Summary

The [WMF In Options dialog box](#) is displayed.

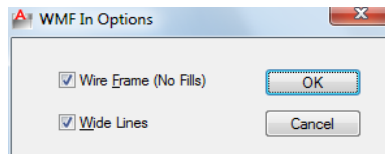
## WMF In Options Dialog Box

### Quick Reference

See also:

- Insert WMF Files

Controls whether metafiles maintain relative line widths and whether they are imported as wireframes or solid objects.



### List of Options

The following options are displayed.

#### Wire Frame (No Fills)

Imports objects as wireframes. If you clear this option, objects are imported as filled objects.

#### Wide Lines

Maintains the relative line width of lines and borders. If you clear this option, lines are imported with zero width.

## WMFOUT

### Quick Reference

See also:

- [Export WMF Files](#)

Saves objects to a Windows metafile.

### Summary

The Create WMF [standard file selection dialog box](#) is displayed.

## WORKSPACE

### Quick Reference

See also:

- [Create Task-Based Workspaces](#)

Creates, modifies, and saves workspaces and makes a workspace current.

### List of Prompts

The following prompts are displayed.

Enter Workspace option [[setCurrent](#) on page 1339/[SAveas](#) on page 1339/[Edit](#) on page 1339/[Rename](#) on page 1257/[Delete](#) on page 1340/[SEttings](#) on page 1340/? on page 1340].

**Set Current** Sets a current workspace.

**Save As** Saves a current interface configuration as a workspace.

**Edit** Opens the [Customize User Interface dialog box](#), [Customize tab](#) on page 242, where you can make modifications to a workspace.

**Rename** Renames a workspace.

**Delete** Deletes a workspace.

**Settings** Opens the [Workspace Settings dialog box](#) on page 1341, which controls the display, menu order, and Save settings of a workspace.

**?—List Workspaces** Lists all workspaces defined in the main and enterprise CUIx files.

## WSSAVE

### Quick Reference

See also:

- [Create Task-Based Workspaces](#)

Saves a workspace.

### Summary

If you enter **-wssave** at the Command prompt, WSSAVE displays prompts.

The [Save Workspace dialog box](#) is displayed.

## Save Workspace Dialog Box

### Quick Reference

See also:

- [Create Task-Based Workspaces](#)

Saves the current workspace scheme and settings of a workspace.

### List of Options

The following option are displayed.

**Name** Displays a text box where you can specify a name for a newly saved workspace and view a list of existing workspaces. These workspaces can be overwritten if the CUIx file in which they are included is writable. Read-only

files, such as CUIx files that are shared across a network (called *enterprise* CUIx files), are displayed with a “Read-Only” file name extension.

## WSSETTINGS

### Quick Reference

See also:

- Create Task-Based Workspaces

Sets options for workspaces.

### Summary

The [Workspace Settings dialog box](#) is displayed.

## Workspace Settings Dialog Box

### Quick Reference

See also:

- Create Task-Based Workspaces

Controls the display, menu order, and Save settings of a workspace.

### List of Options

The following options are displayed.

#### My Workspace

Displays a list of workspaces from which you can choose a workspace to assign to the My Workspace toolbar button.

#### Menu Display and Order

Controls which workspace name you want to display in the Workspaces toolbar and menu, the order of those workspace names, and whether a separator line is added between each workspace name. The workspaces displayed here and in the Workspaces toolbar and menu include the current workspace (displayed

with a check mark in the toolbar and menu) and the workspace you've defined in the My Workspace= option, regardless of the display settings.

**Move Up**

Moves workspace names up in the display order.

**Move Down**

Moves workspace names down in the display order.

**Add Separator**

Adds a separator between workspace names.

**Do Not Save Changes to Workspace**

Does not save changes you've made to a workspace when you switch to another workspace

([WSAUTOSAVE](#) on page 1725 system variable)

**Automatically Save Workspace Changes**

Saves changes you've made to a workspace when you switch to another workspace.

([WSAUTOSAVE](#) on page 1725 system variable)



# X Commands

# 24

## XATTACH

### Quick Reference

See also:

- Attach Drawing References (Xrefs)

Inserts DWG files as an external reference (xref).

### Access Methods



#### Button

 **Ribbon:** Insert tab ► Reference panel ► Attach

 **Menu:** Insert ► DWG Reference

 **Toolbar:** Reference

### Summary

When you attach a drawing file as an xref, you link that referenced drawing to the current drawing. Any changes to the referenced drawing are displayed in the current drawing when it is opened or reloaded.

The Select Reference File dialog box (a [standard file selection dialog box](#)) is displayed. After you select the DWG files, the [Attach External Reference dialog box](#) is displayed.

After the files are attached, you can adjust and clip the xref through the [External Reference ribbon contextual tab](#).

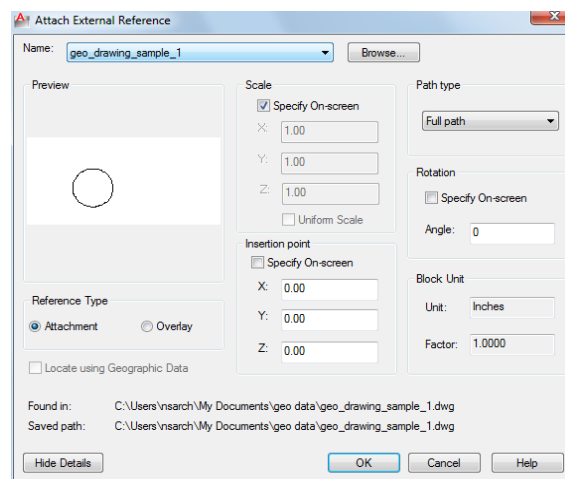
## Attach External Reference Dialog Box

### Quick Reference

See also:

- [Attach Drawing References \(Xrefs\)](#)

Attaches drawings as an external reference (xref).



### Summary

If you attach a drawing that contains an attached xref, the attached xref appears in the current drawing. You can select multiple DWG files to attach. Like blocks, attached xrefs can be nested. If another person is currently editing the xref, the attached drawing is based on the most recently saved version.

External references that have been clipped in AutoCAD® can be attached and viewed in AutoCAD LT®.

### List of Options

The following options are displayed.

**Name**

Identifies the DWG you have selected to attach.

**Browse**

Displays the Select Reference File dialog box (a [standard file selection dialog box](#)), in which you can select a new external reference for the current drawing.

**Preview**

Displays the DWG you have selected to attach.

**Reference Type**

Specifies whether the external reference is an attachment or an overlay. Unlike an xref that is an attachment, an overlay is ignored when the drawing to which it is attached is then attached as an xref to another drawing.

**Locate using Geographic Data**

Attaches drawings using geographic data as the reference.

**Scale****Specify On-screen**

Allows you to input at the Command prompt or the pointing device.

X

Sets the X scale factor.

Y

Sets the Y scale factor.

Z

Sets the Z scale factor.

**Uniform Scale**

Sets the Y and X scale factors as the same as Z.

**Insertion Point****Specify On-Screen**

Allows you to input at the Command prompt or the pointing device.

X

Sets the X coordinate value.

Y

Sets the *Y* coordinate value.

**Z**

Sets the *Z* coordinate value.

### **Path Type**

Select the full (absolute) path, the relative path to the external reference file, or No Path, the name of the external reference (the file must be located in the same folder as the current drawing file).

### **Rotation**

#### **Specify on-screen**

If Specify On-Screen is selected, you may wait until you exit the dialog box to rotate the object with your pointing device or at the Command prompt.

#### **Angle**

If Specify On-Screen is cleared, enter the rotation angle value in the dialog box.

### **Block Unit**

Displays information about the block units.

**Block Name** Displays the name of the block associated with the selected external reference.

**Unit** Displays the specified INSUNITS value for the inserted block.

**Factor** Displays the unit scale factor, which is calculated based on the INSUNITS value of the block and the drawing units.

### **Show Details**

Displays the external reference file paths.

**Found In** Displays the path where the external reference file is located.

**Saved Path** Displays the path that is saved with the drawing when the external reference is attached. The path is dependent upon the Path Type setting.

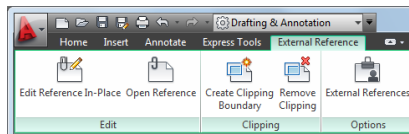
## External Reference Ribbon Contextual Tab

### Quick Reference

See also:

- Attach Drawing References (Xrefs)

Displays options for attaching external references.



### Summary

The External Reference tab is displayed when you select an external reference.

### List of Options

The following options are displayed.

#### Edit Panel

**Edit Reference In-Place** ([REFEDIT](#) on page 1072) Edits an xref or a block definition directly within the current drawing.

**Open Reference** ([XOPEN](#) on page 1355) Opens a selected drawing reference (xref) in a new window.

#### Clipping Panel

**Create Clipping Boundary** ([XCLIP](#) on page 1350) Crops the display of a selected external reference or block reference to a specified boundary.

**Remove Clipping** ([XCLIP](#) on page 1350) Deletes the clipping boundary.

#### Options Panel

**External References** ([EXTERNALREFERENCES](#) on page 504) Opens the External References palette.

# XBIND

## Quick Reference

### See also:

- Archive Drawings That Contain Referenced Drawings (Bind)

Binds one or more definitions of named objects in an xref to the current drawing.

### Access Methods



#### Button

 **Menu:** Modify ► Object ► External Reference ► Bind

 **Toolbar:** Reference

### Summary

The [Xbind dialog box](#) is displayed.

If you enter **-xbind** at the Command prompt, [options are displayed](#).

---

**NOTE** The Bind option of XREF binds the xref file. Use XBIND for individual dependent definitions.

---

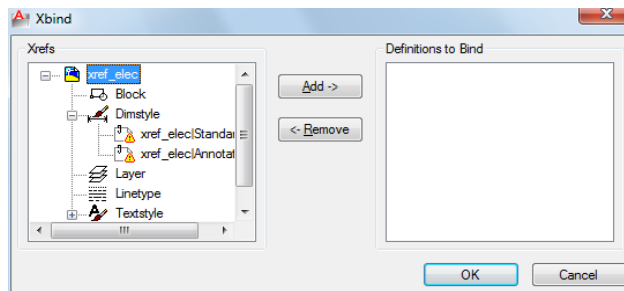
## Xbind Dialog Box

### Quick Reference

### See also:

- Archive Drawings That Contain Referenced Drawings (Bind)

Adds xref-dependent named objects (such as blocks, dimension styles, layers, linetypes, and text styles) to your drawing.



### List of Options

The following options are displayed.

#### Xrefs

Lists the xrefs currently attached to the drawing. Selecting an xref (double-clicking) displays the named object definitions in the attached xref.

#### Definitions to Bind

Lists the xref-dependent named object definitions to bind to the host drawing.

#### Add

Moves the named object definitions selected in the Xrefs list into the Definitions to Bind list.

#### Remove

Moves the xref-dependent named object definition selected in the Definitions to Bind list back to its xref-dependent definition table.

## -XBIND

### Quick Reference

#### See also:

- Archive Drawings That Contain Referenced Drawings (Bind)

Binds one or more definitions of named objects in an xref to the current drawing.

### List of Prompts

The following prompts are displayed.

Enter symbol type to bind [Block/Dimstyle/Layer/LType/Style]: *Enter an option*

Depending on the option, you are prompted for a xref-dependent named object (symbol) such as a block, dimension style, layer, linetype, or text style.

Enter dependent *Symbol name(s)*: *Enter a name list or \* to bind all xref-dependent named objects (symbols) from that definition table*

The name you specify must be the full name, including the vertical bar character ( | ).

The xref-dependent named objects you specify are added to your drawing. You can manipulate them as you would any other named object. The vertical bar character ( | ) from each xref-dependent named object is replaced with a number (usually 0) between two dollar signs (\$).

If you specify a layer whose associated linetype is not CONTINUOUS, XBIND also binds the referenced linetype. If you apply XBIND to a block, any block, dimension style, layer, linetype, or text style that's referenced by objects in the block is also bound. If the block contains an xref, XBIND binds that xref and all its dependent named objects.

## XCLIP

### Quick Reference

See also:

- Clip External References and Blocks

Crops the display of a selected external reference or block reference to a specified boundary.


### Access Methods




Button



 **Ribbon:** Inset tab ► Reference panel ► Clip.

 **Menu:** Modify ► Clip ► Xref

 **Toolbar:** Reference

**Shortcut menu:** Select an xref. Right-click in the drawing area and click Clip Xref.

### Summary

The clipping boundary determines the portion of an xref or block instance that is hidden, either outside or inside the boundary. The visibility of the clipping boundary is controlled by the [XCLIPFRAME](#) system variable.

---

**TIP** Use the generic [CLIP](#) command to clip images, external references, viewports, and underlays.

---

### List of Options

The following options are displayed.

#### On

Displays the clipped portion of the external reference or block in the current drawing.

#### Off

Displays all of the geometry of the external reference or block in the current drawing, ignoring the clipping boundary.

#### Clipdepth

Sets the front and back clipping planes on an xref or block. Objects outside the volume defined by the boundary and the specified depth are not displayed. Regardless of the current UCS, the clip depth is applied parallel to the clipping boundary.

**Front Clip Point** Creates a clipping plane passing through and perpendicular to the clipping boundary.

**Distance** Creates a clipping plane the specified distance from and parallel to the clipping boundary.

**Remove** Removes both the front and back clipping planes.

#### Delete

Removes a clipping boundary for the selected xref or block. To temporarily turn off a clipping boundary, use the Off option. Delete erases the clipping boundary and the clipdepth. The [ERASE](#) command cannot be used to delete clipping boundaries.

### **Generate Polyline**

Automatically draws a polyline coincident with the clipping boundary. The polyline assumes the current layer, linetype, lineweight, and color settings. Use this option when you want to modify the current clipping boundary using **PEDIT** and then redefine the clipping boundary with the new polyline. To see the entire xref while redefining the boundary, use the Off option.

### **New Boundary**

Defines a rectangular or polygonal clipping boundary, or generates a polygonal clipping boundary from a polyline.

**Select Polyline** Defines the boundary with the selected polyline. The polyline can be open but must consist of straight line segments and cannot intersect itself.

**Polygonal** Defines a polygonal clipping boundary with three or more points that you specify for the vertices of a polygon.

**Rectangular** Defines a rectangular boundary with the points that you specify for opposite corners.

**Invert Clip** Inverts the mode of the clipping boundary: objects are clipped either outside the boundary or inside the boundary.

---

**NOTE** You can only create a new clipping boundary for a selected XREF underlay when the old boundary is deleted.

---

## **XLINE**

### **Quick Reference**

See also:


- Draw Construction Lines (and Rays)

Creates a line of infinite length.

### **Access Methods**



Button

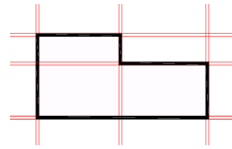
 **Ribbon:** Home tab ► Draw panel ► Construction Line

 **Menu:** Draw ► Construction Line

 **Toolbar:** Draw

### Summary

Lines that extend to infinity, such as xlines, can be used to create construction and reference lines, and for trimming boundaries.



### List of Prompts

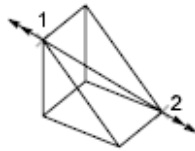
The following prompts are displayed.

Specify a [point](#) on page 1353 or [[Hor](#) on page 1353/[Ver](#) on page 1353/[Ang](#) on page 1354/[Bisect](#) on page 1354/[Offset](#) on page 1354.

#### **Point**

Specifies the location of the infinite line using two points through which it passes.

The xline is created through the specified point.



#### **Hor**

Creates a horizontal xline passing through a specified point.

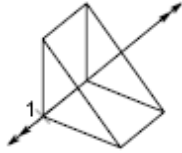
The xline is created parallel to the X axis.



#### **Ver**

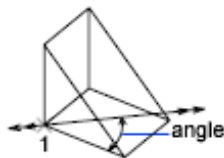
Creates a vertical xline passing through a specified point.

The xline is created parallel to the Y axis.



### **Ang**

Creates an xline at a specified angle.



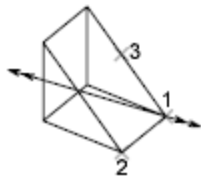
**Angle of Xline** Specifies the angle at which to place the line.

**Reference** Specifies the angle from a selected reference line. The angle is measured counterclockwise from the reference line.

### **Bisect**

Creates an xline that passes through the selected angle vertex and bisects the angle between the first and second line.

The xline lies in the plane determined by the three points.



### **Offset**

Creates an xline parallel to another object.

**Offset Distance** Specifies the distance the xline is offset from the selected object.

**Through** Creates an xline offset from a line and passing through a specified point.

# XOPEN

## Quick Reference

### See also:

- Edit a Referenced Drawing in a Separate Window

Opens a selected drawing reference (xref) in a new window.

### Summary

Opens a selected drawing reference in a separate window for editing.

If the selected reference contains nested xrefs, [Open Reference Files dialog box](#) on page 1355 is displayed where you can specify which xref to open.

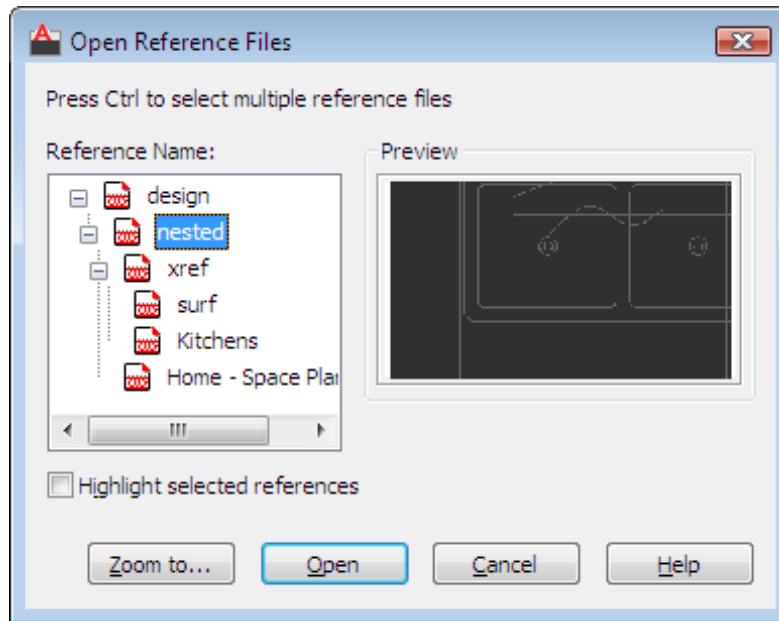
## Open Reference Files Dialog Box

### Quick Reference

#### See also:

- Edit a Referenced Drawing in a Separate Window

Opens a selected drawing reference (xref) in a new window.



### Summary

The Open Reference Files dialog box, displays a reference tree showing all nested xrefs. The source file for the selected xref opens in a separate drawing window, where you can edit, save, and then close the drawing.

### List of Options

The following options are displayed.

#### Reference Name

Displays a reference tree of all nested xrefs for a specified reference.

#### Highlight Selected Reference

Highlights the selected xrefs in the drawing area.

#### Preview

Displays a preview of the selected reference.

#### Zoom To...

Temporarily closes the Open Reference Files dialog box and zooms the view in the drawing area to the selected reference. Press Enter to redisplay the dialog box.

### Open

Opens the source file for the selected reference in a separate window.

## XPLODE

### Quick Reference

#### See also:

- Disassemble a Block Reference (Explode)

Breaks a compound object into its component objects.

### Summary

Reports how many objects were selected and, of those, how many objects cannot be exploded.

### List of Prompts

The following prompts are displayed.

Enter an option [[Individually](#) on page 1357/[Globally](#) on page 1358].



block before  
XPLODE



component  
objects after  
XPLODE

### Individually

Applies changes to the selected objects one at a time. The following prompt is displayed for each object.

**All** Sets the color, linetype, lineweight, and layer of the component objects after you explode them. The prompts associated with the Color, Linetype, Lineweight, and Layer options are displayed.

**Color** Sets the color of the objects after you explode them.

- Enter **bylayer** to inherit the color of the exploded object's layer.
- Enter **byblock** to inherit the color of the exploded object.
- Enter **t** for a true color to be used for the selected object.
- Enter **co** for a color from a loaded color book to be used for the selected object.

**Layer** Sets the layer of the component objects after you explode them. The default option is to inherit the current layer rather than the layer of the exploded object.

**LType** Sets the linetype of the component objects after you explode them. Enter **bylayer** to inherit the linetype of the exploded object's layer. Enter **byblock** to inherit the linetype of the exploded object.

**LWeight** Sets the lineweight of the component objects after you explode them.

**Inherit from Parent Block** Sets the color, linetype, lineweight, and layer of the component objects to that of the exploded object if the component objects' color, linetype, and lineweight are BYBLOCK and the objects are drawn on layer 0.

**Explode** Breaks a compound object into its component objects exactly as the EXPLODE command does.

### **Globally**

Applies changes to all the selected objects.

## **XREF**

### **Quick Reference**

**See also:**

- Attach and Detach Referenced Drawings
- ERHIGHLIGHT

Starts the EXTERNALREFERENCES command.



### Summary

The [External References palette](#) is displayed.

If you enter `-xref` at the Command prompt, [options are displayed](#).

## Bind Xrefs/DGN Underlays Dialog Box

### Quick Reference

See also:

- [Attach and Detach Referenced Drawings](#)

Converts DWG references (xrefs) and DGN Underlays to standard local block definitions.



### Summary

If you bind an xref into the current drawing, the xref and all its dependent named objects become a part of the current drawing. Use XBIND to add individual xref-dependent named objects, such as blocks, text styles, dimension styles, layers, and linetypes, to the local definition table. The two methods of binding xrefs to the current drawing are Bind and Insert. Bind alters the definition table names of an xref when it is inserted. Insert does not alter the definition table names of an xref when it is inserted. To bind a nested xref, you must also select the parent xref.

### List of Options

The following options are displayed.

#### Bind

Binds the selected DWG reference to the current drawing. Xref-dependent named objects are changed from *blockname**definitionname* to *blockname**\$n**\$definitionname* syntax. In this manner, unique named objects are created for all xref-dependent definition tables bound to the current drawing.

For example, if you have an xref named FLOOR1 containing a layer named WALL, after binding the xref, the xref-dependent layer FLOOR1|WALL becomes a locally defined layer named FLOOR1\$0\$WALL. The number in *\$n\$* is automatically increased if a local named object with the same name already exists. In this example, if FLOOR1\$0\$WALL already existed in the drawing, the xref-dependent layer FLOOR1|WALL would be renamed FLOOR1\$1\$WALL.

### **Insert**

Binds the DWG reference to the current drawing in a way similar to detaching and inserting the reference drawing. Rather than being renamed using *blockname\$n\$definitionname* syntax, xref-dependent named objects are stripped of the xref name. As with inserting drawings, no name-incrementing occurs if a local named object shares the same name as a bound xref-dependent named object. The bound xref-dependent named object assumes the properties of the locally defined named object.

For example, if you have an xref named FLOOR1 containing a layer named WALL, after binding with the Insert option, the xref-dependent layer FLOOR1|WALL becomes the locally defined layer WALL.

## **-XREF**

### **Quick Reference**

#### **See also:**

- Attach and Detach Referenced Drawings

#### **List of Prompts**

The following prompts are displayed.

#### **Enter an Option**

?—**List Xrefs** Lists the DWG reference name, path, and type and the number of DWG references currently attached to your drawing.

**Bind** Converts a specified DWG reference into a block, making it a permanent part of the drawing.

The xref-dependent named objects, such as layer names, of the former xref are added to your drawing. In each xref-dependent named object, the vertical bar (|) is replaced with three new characters: a number (usually 0) between

two dollar signs (\$). The number is increased if the same name already exists in the current drawing.

**Detach** Detaches one or more DWG references from your drawing, erasing all instances of a specified xref and marking the xref definition for deletion from the definition table. Only the xrefs attached or overlaid directly to the current drawing can be detached; nested xrefs cannot be detached.

**Path** Displays and edits the path name associated with a particular DWG reference. This option is useful if you change the location of or rename the drawing file associated with the xref.

**Unload** Unloads the selected DWG references.

A marker is left in place of the xref so that it can be reloaded later.

**Reload** Reloads one or more DWG references. This option reloads and displays the most recently saved version of that drawing.

If the program encounters an error while reloading, it ends XREF and undoes the entire reloading sequence.

**Overlay** Displays the Enter Name of File to Overlay dialog box (a standard file selection dialog box). If you reference a drawing that contains an overlaid xref, the overlaid xref does not appear in the current drawing.

Unlike blocks and attached xrefs, overlaid xrefs cannot be nested. If another person is currently editing the xref file, the program overlays the most recently saved version.

If the xref you specify is not already overlaid, a new xref is created, using the name of the referenced file.

If FILEDIA is set to 0, the following prompt is displayed:

Enter Name of File to Overlay.

You can enter a tilde (~) to display a dialog box.

**Attach** Displays the External Reference dialog box, if a DWG reference is selected, or the Select Reference File dialog box, if no DWG reference is selected. See XATTACH.

If you reference a drawing that contains an attached xref, the attached xref appears in the current drawing. Like blocks, attached xrefs can be nested. If another person is currently editing the xref file, the most recently saved version is attached.

### **Specify Insertion Point**

Specify a point or enter an option

**Scale** Sets the scale factor. All *X* and *Y* dimensions of the xref are multiplied by the *X* and *Y* scale factors. The xref is rotated by the specified angle, using the insertion point as the center of rotation.

**X, Y, and Z** Sets *X*, *Y*, and *Z* scale factors.

- **X Scale Factor.** Defines *X*, *Y*, and *Z* scale factors for the xref.
- **Corner.** Defines the *X* and *Y* scales at the same time, using the insertion point and another point as the corners of a box, and then defines the *Z* scale.

**Rotate** Sets the angle of insertion for the xref.

**PScale** Sets the scale factor for the *X*, *Y*, and *Z* axes to control the display of the xref as it is dragged into position.

**PX, PY, and PZ** Sets the *X*, *Y*, and *Z* axes to control the display of the xref as it is dragged into position.

**PRotate** Sets the rotation angle of the xref as it is dragged into position.

# Z Commands

# 25

## ZOOM

### Quick Reference

See also:


- Pan or Zoom a View

Increases or decreases the magnification of the view in the current viewport.

### Access Methods



Button

 **Ribbon:** View tab ► Navigate panel ► Realtime

 **Menu:** View ► Zoom ► Realtime

 **Toolbar:** Standard

**Shortcut menu:** With no objects selected, right-click in the drawing area and choose Zoom to zoom in real time.

### Summary

You can change the magnification of a view by zooming in and out, which is similar to zooming in and out with a camera. Using ZOOM does not change the absolute size of objects in the drawing. It changes only the magnification of the view.

In a perspective view, ZOOM displays the 3DZOOM prompts.

---

**NOTE** You cannot use ZOOM transparently during VPOINT or while ZOOM, PAN, or VIEW is in progress.

---

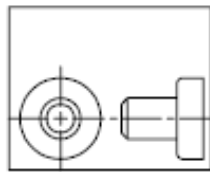
### List of Prompts

The following prompts are displayed.

Specify corner of window, enter a scale factor (nX or nXP), or  
[All on page 1364/Center/Dynamic/Extents on page  
1365/Previous/Scale/Window/Object] <real time>

All Zooms to display all visible objects and visual aids.

Adjusts the magnification of the drawing area to accommodate the extents of all visible objects in the drawing, or visual aids such as the grid limits (the LIMITS command), whichever is larger.



before ZOOM All

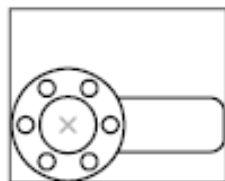


after ZOOM All

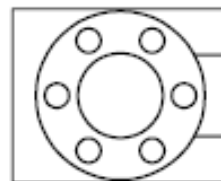
In the illustration on the right, the grid limits are set to a larger area than the extents of the drawing.

Because it always regenerates the drawing, you cannot use ZOOM All transparently.

**Center** Zooms to display a view defined by a center point and a magnification value or a height. A smaller value for the height increases the magnification. A larger value decreases the magnification. Not available in perspective projection.



before ZOOM center



after ZOOM center,  
magnification increased

**Dynamic** Pans and zooms using a rectangular view box. The view box represents your view, which you can shrink or enlarge and move around the drawing. Positioning and sizing the view box pans or zooms to fill the viewport with the view inside the view box. Not available in perspective projection.



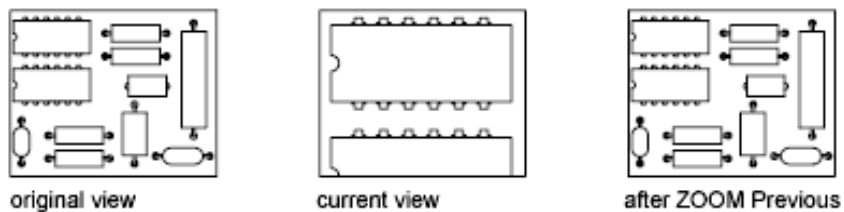
- To change the size of the view box, click, resize it, and click again to accept the new size of the view box.
- To pan with the view box, drag it to the location you want and press Enter.

**Extents** Zooms to display the maximum extents of all objects.

The extents of each object in the model are calculated and used to determine how the model should fill the window.



**Previous** Zooms to display the previous view. You can restore up to 10 previous views.



**Scale** Zooms to change the magnification of a view using a scale factor.

- Enter a value followed by **x** to specify the scale relative to the current view.
- Enter a value followed by **xp** to specify the scale relative to paper space units.

For example, entering **.5x** causes each object to be displayed at half its current size on the screen.



Entering **.5xp** displays model space at half the scale of paper space units. You can create a layout with each viewport displaying objects at a different scale. Enter a value to specify the scale relative to the grid limits of the drawing. (This option is rarely used.) For example, entering **2** displays objects at twice the size they would appear if you were zoomed to the limits of the drawing.



**Window** Zooms to display an area specified by a rectangular window.

With the cursor, you can define an area of the model to fill the entire window.





**Object Zooms** to display one or more selected objects as large as possible and in the center of the view. You can select objects before or after you start the ZOOM command.

**Real Time Zooms** interactively to change the magnification of the view. The cursor changes to a magnifying glass with plus (+) and minus (-) signs. See [Zoom Shortcut Menu](#) on page 1367 for a description of the options that are available while zooming in real time.

g

Holding down the pick button at the midpoint of the window and moving vertically to the top of the window zooms in to 100%. Conversely, holding the pick button down at the midpoint of the window and moving vertically to the bottom of the window zooms out by 100%.

When you reach the zoom-in limit, the plus sign in the cursor disappears, indicating that you can no longer zoom in. When you reach the zoom-out limit, the minus sign in the cursor disappears, indicating that you can no longer zoom out.

When you release the pick button, zooming stops. You can release the pick button, move the cursor to another location in the drawing, and then press the pick button again and continue to zoom the display from that location. To exit zooming, press Enter or Esc.

## Zoom Shortcut Menu

### Quick Reference

See also:

- Pan or Zoom a View

Shortcut menu allows you to switch between pan and different zoom options.

### Summary

When the ZOOM command is active, you can exit ZOOM or switch to PAN using the options on the Zoom shortcut menu. To access the Zoom shortcut menu, right-click in the drawing area while ZOOM is active.

### **List of Options**

The following options are displayed.

**Exit** Cancels ZOOM or PAN.

**Pan** Switches to PAN.

**Zoom** Switches to ZOOM in real time.

**Zoom Window** Zooms to display an area specified by a rectangular window.

**Zoom Object** Zooms to display one or more selected objects as large as possible and in the center of the drawing area.

**Zoom Original** Restores the original view.

**Zoom Extents** Zooms to display the drawing extents.

# Command Modifiers

# 26

You can use command modifiers to help you locate points or select objects while a command is in progress. Use the Coordinate Filter, Direct Distance Entry, From, MTP, and Tracking command modifiers at any prompt that requires point specification. Use the Selection Mode command modifiers at any prompt that requires object selection.


## Coordinate Filters (Command Modifier)

### Quick Reference

See also:

- Combine Coordinate Values (Coordinate Filters)

Combines X, Y, and Z values from different points to specify a single point

 **Command entry:** Enter *.x*, *.y*, *.xy*, *.xz*, or *.yz*

At any prompt for locating a point, you can enter point filters to specify a single coordinate by extracting the X, Y, and Z values of several points. In the following example, the start point for the line has a coordinate constructed from the X value of the midpoint of the first object you select, with the Y and Z values of the midpoint of the second object you select.

Command: **line**  
Specify first point: *.x*  
of **mid**  
of *Select an object*  
of (need YZ) **mid**  
of *Select another object*  
To point: *Specify a point*


## Direct Distance Entry (Command Modifier)

### Quick Reference

See also:

- Enter Direct Distances

Locates the next point at a specified distance in the direction of your cursor

 **Command entry:** *At a prompt to locate a point, enter a numeric value*

With direct distance entry, you can quickly specify a point relative to the last point you entered. At any prompt for a point location, you move the cursor first to specify the direction, and then enter a numeric distance.

In the following example, the second point for the line will be located 5 units toward the direction of the cursor. The direct distance that you enter is measured along the path from the last point to the current location of the cursor. This feature is usually used with Ortho or Snap mode turned on.

Command: **line**

Specify first point: *Specify a point*

Specify next point: *Move the cursor in the desired direction and enter 5*

---

**NOTE** The direct distance entry method is not available while you are using temporary override keys for Ortho, object snap tracking, or polar tracking.

---

## FROM (Command Modifier)


### Quick Reference

See also:

- Offset from Temporary Reference Points

Locates a point offset from a reference point within a command.

 **Toolbar:** Object Snap

 **Command entry:** *At a prompt to locate a point, enter from*

Base Point: *Specify a point to use as a base point*

of <offset>: *Enter a relative offset*

At a prompt for locating a point, enter **from**, and then enter a temporary reference or base point from which you can specify an offset to locate the next point. Enter the offset location from this base point as a relative coordinate, or use [direct distance entry](#).

---

**NOTE** You cannot use this method during dragging in commands such as MOVE and COPY. Specifying an absolute coordinate, either by keyboard entry or with a pointing device, cancels the FROM command.

---


## MTP (Command Modifier)

### Quick Reference

See also:

- Use Object Snaps

Locates the midpoint between two points.

 **Command entry:** *At a prompt to locate a point, enter **mtp***

The midpoint between two points (MTP) command modifier can be used with running object snaps or object snap overrides. (OSNAP command)

At any Command prompt to locate a point, enter **mtp** or **m2p**.

First point of mid: *Specify a point*

Second point of mid: *Specify a second point*

## TRACKING (Command Modifier)

### Quick Reference

See also:

- Track to Offset Point Locations (Tracking)

Locates a point from a series of temporary points.

 **Command entry:** *At a prompt to locate a point, enter **tracking***

Tracking turns on Ortho mode and can be used with Snap mode.

At any prompt to locate a point, enter **tracking**, **track**, or **tk**.

First tracking point: *Specify a location or distance*

Next point (Press ENTER to end tracking): *Specify a second location or distance*

Tracking specifies a series of temporary points, each offset from the previous one. Thus, you specify a new point location from a series of directions and distances. To determine the location of each temporary point, you can use [direct distance entry](#). First move the cursor to specify the direction, and then enter a numeric distance.

Alternatively, tracking can establish a new point by combining the *X* and *Y* values of two specified points. You can specify these two points in any order, depending on the cursor direction after the first point. Direct distance entry specifies a distance in the direction of the current location of your cursor. [Coordinate filters](#) combine *X*, *Y*, and *Z* values from different points into a single point. Relative coordinate entry locates a point relative to the last point entered.

You can also access tracking by holding down SHIFT and right-clicking to display the object snap shortcut menu.


## Object Snaps (Command Modifier)

### Quick Reference

**See also:**

- Use Object Snaps

Specifies a precise point at a location on an object.

 **Command entry:** *Within a command, at a prompt to locate a point, specify an object snap*

When you specify an object snap, the cursor snaps to the specified point on an object closest to the center of the cursor. By default, a marker and a tooltip are displayed when you move the cursor over the object snap location on an object.

### Specify a Single Object Snap

If you specify a single object snap, it stays in effect only for the next point you specify.

You can specify an object snap with any of the following methods:

- Enter a object snap by typing its name. To see a list of valid object snaps, refer to the [OSNAP](#) on page 893 command or the [Drafting Settings Dialog Box](#) on page 414.
- Click an object snap from the Object Snap toolbar.
- Click an object snap from the Object Snap shortcut menu. You can display this shortcut menu by pressing SHIFT while you right-click.

### Use Running Object Snaps

Using the OSNAP or DSETTINGS commands, you can specify a set of *running object snaps*. Running object snaps are one or more object snaps that remain in effect as you work.

- To turn running object snaps on and off, click the OSNAP button on the status bar or press F3.
- Press TAB to cycle through the object snap possibilities before you specify the point.
- To turn off running object snaps for the next point only, specify the None object snap.


## Selection Modes (Command Modifier)

### Quick Reference

See also:

- Select Objects

Controls how you create selection sets

 **Command entry:** *At a prompt to select objects, enter one of the valid selection modes described in the SELECT command*

The selection mode you enter remains active only for the current Select Objects prompt.





# System Variables

AutoCAD LT® stores the values for its operating environment and some of its commands in system variables. You can examine any system variable and change any writable system variable directly at the command prompt by entering the system variable name or by using the SETVAR command. Many system variables are also accessible through dialog box options.

To access a list of system variables, on the Contents tab of the Help window, click the + sign next to System Variables.



## 3DSELECTIONMODE

### Quick Reference

See also:

- Select Objects Individually

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls the selection precedence of both visually and physically overlapping objects when using 3D visual styles.

---

0	Use legacy 3D selection precedence.
1	Use line-of-sight 3D selection precedence for selecting 3D solids and surfaces. Also, a defining object associated with a surface is given selection precedence with this setting.

---

3DSELECTIONMODE has no effect when selecting 3D solids if they are displayed as 2D or 3D wireframes.



# A System Variables

# 28

## ADCSTATE

### Quick Reference

See also:

- Access Content with DesignCenter

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** Varies

Indicates whether the DesignCenter window is open or closed.

For developers who need to determine status through AutoLISP.

---

0	Closed
---	--------

---

1	Open
---	------

---

# AFLAGS

## Quick Reference

See also:

- Define Block Attributes

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 16

Sets options for attributes.

The value is the sum of the following:

---

0	No attribute mode selected
---	----------------------------

---

1	Invisible
---	-----------

---

2	Constant
---	----------

---

4	Verify
---	--------

---

8	Preset
---	--------

---

16	Lock position in block
----	------------------------

---

32	Multiple lines
----	----------------

---

# ANGBASE

## Quick Reference

See also:

- Create Angular Dimensions

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Sets the base angle to 0 with respect to the current UCS.

## ANGDIR

### Quick Reference

See also:

- Create Angular Dimensions

**Type:** Integer  
**Saved in:** Drawing

**Initial value:** 0

Sets the direction of positive angles.

Angle values are measured from angle 0 relative to the orientation of the current UCS.

---

0	Counterclockwise
---	------------------

---

1	Clockwise
---	-----------

---

## ANNOALLVISIBLE

### Quick Reference

See also:

- Display Annotative Objects

**Type:** Integer  
**Saved in:** Drawing

**Initial value:** 1

Hides or displays annotative objects that do not support the current annotation scale.

---

0	Only annotative objects that support the current are displayed
---	--

---

1 All annotative objects are displayed

---

The ANNOALLVISIBLE setting is saved individually for model space and each layout.

---

**NOTE** When ANNOALLVISIBLE is set to 1, annotative objects that support more than one scale will only display one .

---

## ANNOAUTOSCALE

### Quick Reference

See also:

- Set Annotation Scale

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** -4

Updates annotative objects to support the annotation scale when the annotation scale is changed.

When the value is negative, the autoscale functionality is turned off, but the settings are maintained:

---

0	Newly set annotation scale is not added to annotative objects.
1	Adds the newly set annotation scale to annotative objects that support the current scale except for those on layers that are turned off, frozen, locked or that are set to Viewport > Freeze.
2	Adds the newly set annotation scale to annotative objects that support the current scale except for those on layers that are turned off, frozen, or that are set to Viewport > Freeze.
3	Adds the newly set annotation scale to annotative objects that support the current scale except for those on layers that are locked.

---



- 4 Adds the newly set annotation scale to all annotative objects that support the current scale.
- 

## ANNOTATIVEDWG

### Quick Reference

See also:

- Create Annotative Blocks and Attributes

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Specifies whether or not the drawing will behave as an annotative block when inserted into another drawing.

---

0	Nonannotative
---	---------------

---

1	Annotative
---	------------

---

---

**NOTE** The ANNOTATIVEDWG system variable becomes read-only if the drawing contains annotative objects.

---

## APBOX

### Quick Reference

See also:

- Set Visual Aids for Object Snaps (AutoSnap)

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Turns the display of the AutoSnap aperture box on or off.

The aperture box is displayed in the center of the crosshairs when you snap to an object.

---

0	Off
1	On

---

## APERTURE

### Quick Reference

**See also:**

- Use Object Snaps

**Type:** Integer

**Saved in:** Registry

**Initial value:** 10

Sets the display size for the object snap target box, in pixels.

This system variable has the same name as a command. Use the SETVAR command to access this system variable.

Enter a value (1-50). The higher the number, the larger the target box.

You can also change this setting in the [Options dialog box, Drafting tab](#).

APERTURE controls the object snap target box, not the pickbox displayed at the Select Objects prompt. The object selection pickbox is controlled by the PICKBOX system variable.

## APPLYGLOBALOPACITIES

### Quick Reference

**See also:**

- Set Up the Drawing Area
- [Transparency Dialog Box](#) on page 888

**Type:** Switch  
**Saved in:** Registry  
**Initial value:** 0

Applies transparency settings to all palettes.

---

0	Transparency settings off
---	---------------------------

---

1	Transparency settings on
---	--------------------------

---

This system variable determines the default setting for the [Transparency dialog box > Apply these settings to all palettes option](#) on page 889.

## APSTATE

### Quick Reference

See also:

- [Create Custom Block Authoring Tools](#)

(Read-only)

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 0

Indicates whether the Block Authoring Palettes window in the Block Editor is open or closed.

---

0	Closed
---	--------

---

1	Open
---	------

---

## ARRAYEDITSTATE

### Quick Reference

See also:

- [Edit Associative Arrays](#)

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Indicates whether the drawing is in the array editing state, which is activated while editing an associative array's source objects.

---

0	Off
---	-----

---

1	On
---	----

---

## AREA

### Quick Reference

**See also:**

- Obtain Area and Mass Properties Information

(Read-only)

**Type:** Real

**Saved in:** Not-saved

**Initial value:** 0.0000

Stores the last area computed by the AREA command.

This system variable has the same name as a command.

Use the GETVAR command to access this system variable.

## ARRAYTYPE

### Quick Reference

**See also:**

- Array Objects

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Specifies the default array type.

---

0	Rectangular array
1	Path array
2	Polar array

---

## ATTDIA

### Quick Reference

See also:

- Insert Blocks

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls whether the INSERT command uses a dialog box for attribute value entry.

---

0	Issues Command prompts
1	Uses a dialog box

---

## ATTIPE

### Quick Reference

See also:

- Define Block Attributes

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls the which Text Formatting toolbar is used with the in-place editor for modifying multiline attributes.

---

0	Displays the abbreviated Text Formatting toolbar with the in-place editor
1	Displays the full Text Formatting toolbar with the in-place editor

---

Use the abbreviated Text Formatting toolbar with the in-place editor when modifying multiline attributes for best compatibility with releases prior to AutoCAD LT 2008.

## ATTMODE

### Quick Reference

**See also:**

- Define Block Attributes

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1

Controls display of attributes.

---

0	Off: Makes all attributes invisible
1	Normal: Retains current visibility of each attribute; visible attributes are displayed; invisible attributes are not
2	On: Makes all attributes visible

---

# ATTMULTI

## Quick Reference

See also:

- Define Block Attributes

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls whether multiline attributes can be created.

---

0	Turns off all access methods for creating multiline attributes. They can still be viewed and edited.
1	Turns on all access methods for creating multiline attributes.

---

# ATTREQ

## Quick Reference

See also:

- Insert Blocks

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls whether INSERT uses default attribute settings during insertion of blocks.

---

0	Assumes the defaults for the values of all attributes
1	Turns on prompts or a dialog box for attribute values, as specified by ATTDIA

---

# AUDITCTL

## Quick Reference

See also:

- Repair a Damaged Drawing File

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls whether AUDIT creates an audit report (ADT) file.

---

0	Prevents writing of ADT files
---	-------------------------------

---

1	Writes ADT files
---	------------------

---

# AUNITS

## Quick Reference

See also:

- Set the Unit Format Conventions

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Sets units for angles.

---

0	Decimal degrees
---	-----------------

---

1	Degrees/minutes/seconds
---	-------------------------

---

2	Gradians
---	----------

---

3	Radians
---	---------

---

4	Surveyor's units
---	------------------

---



# AUPREC

## Quick Reference

### See also:

- Set the Unit Format Conventions

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0

Sets the display precision for angular units and coordinates.

However, the internal precision of angular values and coordinates is always maintained, regardless of the display precision. AUPREC does not affect the display precision of dimension text (see [DIMSTYLE](#) on page 361).

Valid values are integers from 0 to 8.

# AUTOCOMPLETEDELAY

## Quick Reference

### See also:

- The Command Line Window

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0.3

Controls the amount of time that elapses before automated keyboard features display at the Command prompt.

The time delay setting in the [AUTOCOMPLETEMODE](#) on page 1392 system variable must be turned on for AUTOCOMPLETEDELAY to have an effect.

Valid values are real numbers from 0 to 10, which represent seconds.

# AUTOCOMPLETEMODE

## Quick Reference

See also:

- The Command Line Window

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 15

Controls what types of automated keyboard features are available at the Command prompt.

The setting is stored as a bitcode using the sum of the following values:

---

0	Turns off all automated keyboard features when typing at the Command prompt
1	Turns on any automated keyboard features when typing at the Command prompt
2	Automatically appends suggestions as each keystroke is entered after the third keystroke
4	Displays a list of suggestions as keystrokes are entered
8	Displays the icon of the command or system variable, if available
16	Excludes the display of system variables

---

# AUTODWFPUBLISH

## Quick Reference

See also:

- Set Publish Options

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 0

Controls whether DWF (Design Web Format) files are created automatically when you save or close drawing (DWG) files.

---

0	Turns off automatic publishing to DWF files when a drawing is saved or closed
1	Turns on automatic publishing to DWF files when a drawing is saved or closed

---

The [AUTOPUBLISH](#) command controls additional options.

---

**NOTE** This command will be removed in a future release.

---

## AUTOMATICPUB

### Quick Reference

See also:

- Set Publish Options

**Type:** Integer  
**Saved in:** User-settings  
**Initial value:** 0

Controls whether electronic files (DWF/PDF) are created automatically when you save or close drawing (DWG) files.

---

0	Turns off automatic publishing to DWF/PDF files when a drawing is saved or closed
1	Turns on automatic publishing to DWF/PDF files when a drawing is saved or closed

---

The [AUTOPUBLISH](#) command controls additional options.

# AUTOSNAP

## Quick Reference

See also:

- Set Visual Aids for Object Snaps (AutoSnap)

**Type:** Integer

**Saved in:** Registry

**Initial value:** 63

Controls the display of the AutoSnap marker, tooltip, and magnet.

Also turns on polar and object snap tracking, and controls the display of polar tracking, object snap tracking, and Ortho mode tooltips. The setting is stored as a bitcode using the sum of the following values:

---

0	Turns off the AutoSnap marker, tooltips, and magnet. Also turns off polar tracking, object snap tracking, and tooltips for polar tracking, object snap tracking, and Ortho mode
1	Turns on the AutoSnap marker
2	Turns on the AutoSnap tooltips
4	Turns on the AutoSnap magnet
8	Turns on polar tracking
16	Turns on object snap tracking
32	Turns on tooltips for polar tracking, object snap tracking, and Ortho mode

---

## BACKGROUNDPLOT

### Quick Reference

See also:

- Overview of Plotting

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 2

Controls whether background plotting is turned on or off for plotting and publishing.

By default, background plotting is turned off for plotting and on for publishing.

Value	PLOT	PUBLISH
0	Foreground	Foreground
1	Background	Foreground
2	Foreground	Background
3	Background	Background

When -PLOT, PLOT, -PUBLISH, and PUBLISH are used in a script (SCR file), the BACKGROUNDPLOT system variable value is ignored, and -PLOT, PLOT, -PUBLISH, and PUBLISH are processed in the foreground.

## BACTIONBARMODE

### Quick Reference

See also:

- Group Related Actions in Dynamic Blocks

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Indicates whether the action bars or the legacy action objects are displayed in the Block Editor.

---

0	Legacy action objects are displayed in the Block Editor.
1	Action bars are displayed in the Block Editor.

---

**NOTE** The [BACTIONSET](#), [BASSOCIATE](#), and [BLOOKUPTABLE](#) on page 142 commands are disabled when the `BACTIONBARMODE` system variable is set to 1.

---

## BACTIONCOLOR

### Quick Reference

See also:

- Overview of Actions and Parameters

**Type:** String

**Saved in:** Registry

**Initial value:** 7

Sets the text color of actions in the Block Editor.

Valid values include `BYLAYER`, `BYBLOCK`, and an integer from 1 to 255.

# BCONSTATUSMODE

## Quick Reference

### See also:

- Work with AutoCAD Drawings in AutoCAD LT

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 0

Turns the constraint display status on and off and controls the shading of objects based on their constraint level.

When the display status is on, objects are shaded based on whether they are partially constrained, fully constrained, over constrained, or not constrained.

---

0	Turns off the constraint display status
1	Turns on the constraint display status

---

You can turn the display status on or off using an icon in the drawing status bar. The colors corresponding to the constraint status can also be modified in the [Block Editor Settings dialog box](#). When you enter the Block Editor, the value is always set to 0.

# BDEPENDENCYHIGHLIGHT

## Quick Reference

### See also:

- Overview of Actions and Parameters

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls whether or not dependent objects are dependency highlighted when a parameter, action, or grip is selected in the Block Editor.

---

0	Specifies that dependent objects are not highlighted
---	--

---

1	Specifies that dependent objects are highlighted
---	--

---

Dependency highlighting displays objects with a halo effect.

## BGRIPOBJCOLOR

### Quick Reference

See also:

- Overview of Actions and Parameters

**Type:** String

**Saved in:** Registry

**Initial value:** 141

Sets the color of grips in the Block Editor.

Valid values include BYLAYER, BYBLOCK, and an integer from 1 to 255.

## BGRIPOBJSIZE

### Quick Reference

See also:

- Overview of Actions and Parameters

**Type:** Integer

**Saved in:** Registry

**Initial value:** 8

Sets the display size of custom grips in the Block Editor relative to the screen display.

Valid values are integers from 1 to 255.



# BLIPMODE

## Quick Reference

See also:

- Erase Objects

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 0

Controls whether marker blips are visible.

Obsolete

Marker blips have been removed from the product.

This system variable has the same name as the BLIPMODE command. Use the SETVAR command to access this system variable.

---

0	Turns off marker blips
---	------------------------

---

1	Turns on marker blips
---	-----------------------

---

# BLOCKEDITLOCK

## Quick Reference

See also:

- Create and Edit Dynamic Blocks

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 0

Disallows opening of the Block Editor and editing of dynamic block definitions.

When BLOCKEDITLOCK is set to 1, double-clicking a dynamic block in a drawing opens the Properties palette. Double-click actions can be customized using the Double Click Actions.

---

0	Specifies that the Block Editor can be opened
1	Specifies that the Block Editor cannot be opened

---

## BLOCKEDITOR

### Quick Reference

See also:

- Create and Edit Dynamic Blocks

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Indicates whether or not the Block Editor is open.

---

0	Indicates that the Block Editor is not open
1	Indicates that the Block Editor is open

---

## BLOCKTESTWINDOW

### Quick Reference

See also:

- Test Blocks Within the Block Editor

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Indicates whether or not a test block window is current.

The BLOCKTESTWINDOW system variable controls the display of the contextual panel that is displayed when a test block window is current. When the test block window is current, this system variable is set to 1, otherwise it is set to 0.

## BPARAMETERCOLOR

### Quick Reference

See also:

- Overview of Actions and Parameters

**Type:** String  
**Saved in:** Registry  
**Initial value:** 170

Sets the color of parameters in the Block Editor.

Valid values include BYLAYER, BYBLOCK, and an integer from 1 to 255.

## BPARAMETERFONT

### Quick Reference

See also:

- Overview of Actions and Parameters

**Type:** String  
**Saved in:** Registry  
**Initial value:** Simplex.shx

Sets the font used for parameters and actions in the Block Editor.

You can specify either a True Type font or a SHX font (for example, **Verdana** or **Verdana.ttf**). You must add the *.shx* extension to specify an AutoCAD SHX font. When specifying an Asian Big Font, use the following naming convention: an SHX file followed by a comma (,), followed by the Big Font file name (for example, **Simplex.shx, Bigfont.shx**).

## BPARAMETERSIZE

### Quick Reference

**See also:**

- Overview of Actions and Parameters

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 12

Sets the size of parameter text and features in the Block Editor relative to the screen display.

Valid values include an integer from 1 to 255.

## BPTEXTHORIZONTAL

### Quick Reference

**See also:**

- Overview of Actions and Parameters

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Forces the text displayed for action parameters and constraint parameters in the Block Editor to be horizontal.

---

0	Aligns text with the dimension line of the parameter
1	Displays the text for action parameters and constraint parameters in the Block Editor horizontally

---

The BPTEXTHORIZONTAL system variable is applicable to the action parameters and block constraint parameters.

# BTMARKDISPLAY

## Quick Reference

See also:

- Overview of Actions and Parameters

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls whether or not value set markers are displayed for dynamic block references.

---

0	Specifies that value set markers are not displayed
1	Specifies that value set markers are displayed

---

# BVMODE

## Quick Reference

See also:

- Work With Action Parameters in Blocks

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 0

Controls how objects that are made invisible for the current visibility state are displayed in the Block Editor.

---

0	Specifies that hidden objects are not visible
1	Specifies that hidden objects are visible but dimmed

---



# C System Variables

# 30

## CALCINPUT

### Quick Reference

See also:

- Set Up the Drawing Area

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether mathematical expressions and global constants are evaluated in text and numeric entry boxes of windows and dialog boxes.

---

0 Expressions are not evaluated

---

1 Expressions are evaluated after you press Alt+Enter

---

## CANNOSCALE

### Quick Reference

See also:

- Set Annotation Scale

**Type:** String  
**Saved in:** Drawing  
**Initial value:** 1:1

Sets the name of the current annotation scale for the current space.

You can only enter a named scale that exists in the drawing's named scale list.

## CANNOSCALEVALUE

### Quick Reference

See also:

- Set Annotation Scale

(Read-only)

**Type:** Real  
**Saved in:** Drawing  
**Initial value:** 1.0000

Returns the value of the current annotation scale.

## CBARTRANSPARENCY

### Quick Reference

See also:

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 50

Controls the transparency of the constraint bars.

The valid CBARTRANSPARENCY system variable is between 10 and 90. The higher value makes the constraint bars more opaque.



# CDATE

## Quick Reference

### See also:

- Obtain General Drawing Information

(Read-only)

**Type:** Real

**Saved in:** Not-saved

**Initial value:** Varies

Stores the current date and time in decimal format.

The date and time displays in a decimal format starting with the year. After the decimal point, CDATE displays the time using a 24-hour clock. For example, the ninth day of February in the year 2006 at 3:05 pm displays as 20060209.150500.

# CECOLOR

## Quick Reference

### See also:

- Change the Color of an Object

**Type:** String

**Saved in:** Drawing

**Initial value:** BYLAYER

Sets the color of new objects.

Valid values include the following:

- BYLAYER or BYBLOCK
- AutoCAD Color Index (ACI): integer values from 1 to 255, or a color name from the first seven colors
- True Colors: RGB or HSL values from 000 to 255 in the form "RGB:130,200,240"

- Color Books: Text from standard PANTONE or custom color books, the DIC color guide, or RAL color sets, for example "DIC COLOR GUIDE(R)\$DIC 43"

## CELTSCALE

### Quick Reference

See also:

- Control Linetype Scale

**Type:** Real  
**Saved in:** Drawing  
**Initial value:** 1.0000

Sets the current object linetype scaling factor.

Sets the linetype scaling for new objects relative to the [LTSCALE](#) on page 712 command setting. A line created with CELTSCALE = 2 in a drawing with LTSCALE set to 0.5 would appear the same as a line created with CELTSCALE = 1 in a drawing with LTSCALE = 1.

## CELTYPE

### Quick Reference

See also:

- Set the Current Linetype

**Type:** String  
**Saved in:** Drawing  
**Initial value:** BYLAYER

Sets the linetype of new objects.

# CELWEIGHT

## Quick Reference

See also:

- Set the Current Lineweight

**Type:** Integer

**Saved in:** Drawing

**Initial value:** -1

Sets the lineweight of new objects.

---

-1 Sets the lineweight to "BYLAYER."

---

-2 Sets the lineweight to "BYBLOCK."

---

-3 Sets the lineweight to "DEFAULT." "DEFAULT" is controlled by the LWDEFAULT system variable.

---

Other valid values entered in hundredths of millimeters include 0, 5, 9, 13, 15, 18, 20, 25, 30, 35, 40, 50, 53, 60, 70, 80, 90, 100, 106, 120, 140, 158, 200, and 211.

All values must be entered in hundredths of millimeters. (Multiply a value by 2540 to convert values from inches to hundredths of millimeters.)

# CENTERMT

## Quick Reference

See also:

- Change Multiline Text

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls how grips stretch multiline text that is centered horizontally.

CENTERMT does not apply to stretching multiline text by using the ruler in the In-Place Text Editor.

---

0	When you move a corner grip in centered multiline text, the center grip moves in the same direction, and the grip on the opposite side remains in place
1	When you move a corner grip in centered multiline text, the center grip stays in place, and both sets of side grips move in the direction of the stretch

---

## CETRANS PareNCY

### Quick Reference

See also:

- Display and Change the Properties of Objects

**Type:** String

**Saved in:** Drawing

**Initial value:** ByLayer

Sets the transparency level for new objects.

---

ByLayer	Transparency value determined by layer
---------	--

---

ByBlock	Transparency value determined by block
---------	--

---

0	Fully opaque (not transparent)
---	--------------------------------

---

1-90	Transparency value defined as a percentage
------	--

---

To change the transparency of existing objects, use the Properties palette or the Layer Properties Manager.

---

**NOTE** Transparency is limited to 90 percent to avoid confusion with layers that are turned off or frozen.

---

The transparency level for new hatch objects is controlled by the HPTRANSPARENCY system variable.

## CHAMFERA

### Quick Reference

See also:

- Create Chamfers

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Sets the first chamfer distance when CHAMMODE is set to 0.

## CHAMFERB

### Quick Reference

See also:

- Create Chamfers

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Sets the second chamfer distance when CHAMMODE is set to 0.

## CHAMFERC

### Quick Reference

See also:

- Create Chamfers

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Sets the chamfer length when CHAMMODE is set to 1.

## CHAMFERD

### Quick Reference

See also:

- Create Chamfers

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Sets the chamfer angle when CHAMMODE is set to 1.

## CHAMMODE

### Quick Reference

See also:

- Create Chamfers

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Sets the input method for CHAMFER

---

0	Requires two chamfer distances
1	Requires a chamfer length and an angle

---

## CIRCLERAD

### Quick Reference

See also:

- Draw Circles

**Type:** Real  
**Saved in:** Not-saved  
**Initial value:** 0.0000  
Sets the default circle radius.  
A zero indicates no default.

## CLASSICKEYS

### Quick Reference

See also:

- Set Interface Options

**Type:** Switch  
**Saved in:** Registry  
**Initial value:** 0  
Sets the behavior of the AutoCAD LT shortcut keys.

---

0	To copy, press Ctrl+C
1	To cancel, press Ctrl+C

---

## CLAYER

### Quick Reference

See also:

- Change Layer Settings and Layer Properties

**Type:** String  
**Saved in:** Drawing  
**Initial value:** 0  
Sets the current layer.

## CLEANSCREENSTATE

### Quick Reference

See also:

- Control the Display of Toolbars

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Indicates whether the clean screen state is on or off.

---

0	Off
---	-----

---

1	On
---	----

---

## CLISTATE

### Quick Reference

See also:

- Dock, Resize, and Hide the Command Window

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 1

Indicates whether the Command Line is open or closed.

---

0	Closed
---	--------

---

1	Open
---	------

---



# CLIPBOARD

## Quick Reference

See also:

- Cut, Copy, and Paste with the Clipboard

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Indicates the status of the Clipboard. The setting is stored as a bitcode using the sum of the following values:

---

0	Nothing available
1	ASCII text format available
2	AutoCAD LT format available
4	Windows metafile format available

---

For information about using CLIPBOARD in a DIESEL expression, see DIESEL Expressions in Macros in the *Customization Guide*.

# CMDACTIVE

## Quick Reference

See also:

- Enter Commands on the Command Line

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** Varies

Indicates whether an ordinary command, transparent command, script, or dialog box is active.

The setting is stored as a bitcode using the sum of the following values:

---

0	No active command
1	Ordinary command is active
2	Transparent command is active
4	Script is active
8	Dialog box is active
16	DDE is active
32	AutoLISP is active (only visible to an ObjectARX-defined command)
64	ObjectARX command is active

---

## CMDDIA

### Quick Reference

**See also:**

- Modify Leaders Using Grips

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls the display of the In-Place Text Editor for the LEADER and QLEADER commands.

---

0	Off
1	On

---

# CMDINPUTHISTORYMAX

## Quick Reference

See also:

- Enter Commands on the Command Line

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 20

Sets the maximum number of previous input values that are stored for a prompt in a command.

Display of the history of user input is controlled by the [INPUTHISTORYMODE](#) system variable.

# CMDNAMES

## Quick Reference

See also:

- Enter Commands on the Command Line

(Read-only)

**Type:** String  
**Saved in:** Not-saved  
**Initial value:** ""

Displays the names of the active and transparent commands.

For example, LINE'ZOOM indicates that the ZOOM command is being used transparently during the LINE command.

The following is a simple example that demonstrates how to use DIESEL to display the current command at the status line.

Command: modemacro

New value for MODEMACRO, or . for none <"">: \$(getvar, cmdnames)

## CMLEADERSTYLE

### Quick Reference

See also:

- Work with Leader Styles

**Type:** String

**Saved in:** Drawing

**Initial value:** Standard

Sets the name of the current multileader style.

## CONSTRAINTBARMODE

### Quick Reference

See also:

- Apply or Remove Geometric Constraints

**Type:** Bitcode

**Saved in:** Registry

**Initial value:** 4095

Controls the display of geometrical constraints on constraint bars.

---

1	Horizontal
2	Vertical
4	Perpendicular
8	Parallel
16	Tangent
32	Smooth
64	Coincident

---

128	Concentric
256	Colinear
512	Symmetric
1024	Equal
2048	Fix

For example, set CONSTRAINTBARMODE to 12 (8+4) to display parallel and perpendicular constraints on the constraint bars.

Set CONSTRAINTBARMODE to 4095 to display constraint bars for all constraint types.

## CONSTRAINTNAMEFORMAT

### Quick Reference

See also:

- Apply Dimensional Constraints

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 2

Controls the text format for dimensional constraints.

0	Name (for example, Width)
1	Value (for example, 4.0000)
2	Expression (for example, width = 4.0000)

**NOTE** The CONSTRAINTNAMEFORMAT system variable is also applicable to the block constraint parameters in the Block Editor.

# CONSTRAINTRELAX

## Quick Reference

See also:

- Work with AutoCAD Drawings in AutoCAD LT

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Indicates whether constraints are enforced or relaxed when editing an object.

---

0	Maintains constraints
---	-----------------------

---

1	Relaxes constraints
---	---------------------

---

Use this system variable when you run scripts and want to relax any constraints.

# CONSTRAINTSOLVEMODE

## Quick Reference

See also:

- Modify Objects with Geometric Constraints Applied

**Type:** Bitcode

**Saved in:** Registry

**Initial value:** 1

Controls constraint behavior when applying or editing constraints.

---

0	Does not retain the size of the geometry when a constraint is applied or modified
---	---

---

1	Retains the size of the geometry when a constraint is applied or modified
---	---

---

When the CONSTRAINTSOLVEMODE is set to 0, resizing a constrained line may result in unpredictable behavior.

## CONTENTEXPLORERSTATE

### Quick Reference

See also:

- Content Explorer
- DesignCenter

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** Varies

Indicates whether the Content Explorer window is open or closed.

---

0	Closed
---	--------

---

1	Open
---	------

---

## COORDS

### Quick Reference

See also:

- Overview of Coordinate Entry

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls the format and update frequency of coordinates on the status line.

---

0	The absolute coordinates of your pointing device is updated only when you specify points
---	--

---

1	The absolute coordinates of your pointing device is updated continuously
2	The absolute coordinates of your pointing device is updated continuously except when a point, distance, or angle is requested. In that case, relative polar coordinates are displayed instead of X and Y. The Z values always display as absolute coordinates.
3	The absolute coordinates (WCS) of your pointing device is updated continuously with the latitude and longitude coordinate values of the geographic location.

## COPYMODE

### Quick Reference

See also:

- Copy Objects

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 0

Controls whether the COPY command repeats automatically.

0	Sets the COPY command to repeat automatically
1	Sets the COPY command to create a single copy

## CPLOTSTYLE

### Quick Reference

See also:

- Overview of Plot Styles



**Type:** String  
**Saved in:** Drawing  
**Initial value:** ByColor

Controls the current plot style for new objects.

If the current drawing you are working in is in color-dependent mode, CPLOTSTYLE is read-only and has a value of BYCOLOR. If the current drawing is in named plot styles mode, CPLOTSTYLE can be set to the following values (BYLAYER is the default):

"BYLAYER"

"BYBLOCK"

"NORMAL"

"USER DEFINED"

To convert the current drawing to use named or color-dependent plot styles, use CONVERTPSTYLES.

## CROSSINGAREACOLOR

### Quick Reference

See also:

- Customize Object Selection

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 100

Controls the color of the selection area during crossing selection.

The valid range is 1 to 255. The [SELECTIONAREA](#) on page 1650 system variable must be on.

## CTAB

### Quick Reference

See also:

- Set Model Space Viewports

**Type:** String

**Saved in:** Drawing

**Initial value:** Model

Returns the name of the current layout in the drawing.

Provides a means for the user to determine which layout is active.

## CTABLESTYLE

### Quick Reference

See also:

- Work with Table Styles

**Type:** String

**Saved in:** Drawing

**Initial value:** Standard

Sets the name of the current table style.

## CURSORSIZE

### Quick Reference

See also:

- Set Up the Drawing Area

**Type:** Integer

**Saved in:** Registry

**Initial value:** 5

Determines the size of the crosshairs as a percentage of the screen size.

Valid settings range from 1 to 100 percent. When set to 100, the crosshairs are full-screen and the ends of the crosshairs are never visible. When less than 100, the ends of the crosshairs may be visible when the cursor is moved to one edge of the screen.

## CVPORT

### Quick Reference

**See also:**

- Select and Use the Current Viewport

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 2

Displays the identification number of the current viewport.

You can change this value, which changes the current viewport, if the following conditions are met:

- The identification number you specify is that of an active viewport.
- A command in progress has not locked cursor movement to that viewport.
- Tablet mode is off.



## DATALINKNOTIFY

### Quick Reference

See also:

- Link a Table to External Data

**Type:** Integer

**Saved in:** Registry

**Initial value:** 2

Controls the notification for updated or missing data links.

---

0	Disables data link update notification.
1	Enables data link notification. Notifies you that external data is linked to the current drawing by displaying the data link icon in the lower-right corner of the application window (the notification area of the status bar tray). Will not display balloon message notifications.
2	Enables data link notification and balloon message notifications. Notifies you that external data is linked to the current drawing as in 1 above. Also displays a data link file change notification in the area of the drawing where the data link requires updating.

---

# DATE

## Quick Reference

See also:

- Obtain General Drawing Information

(Read-only)

**Type:** Real

**Saved in:** Not-saved

**Initial value:** Varies

Stores the current date and time in Modified Julian Date format.

This value is represented as a Modified Julian Date (MJD), which is the Julian day number and decimal fraction of a day in the format:

<Julian day number>.<Decimal fraction of a day>

The Modified Julian Date, conventionally called UT1, is a worldwide scientific standard that assigns day numbers beginning at an essentially arbitrary date and time of 12:00 a.m. on 1 January 4713 B.C. (B.C.E.). With this system, 4 July 1997 at 2:29:58 p.m. corresponds to 2450634.60387736, and 1 January 1998 at 12:00 noon corresponds to 2450815.50000000.

You can compute differences in date and time by subtracting the numbers returned by DATE. To compute the seconds since midnight from the value returned by DATE, multiply the decimal fraction in DATE by 86400 seconds.

Because your computer clock provides the date and time, the DATE system variable returns a true Julian date only if the system clock is set to UTC/Zulu (Greenwich Mean Time). TDCREATE and TDUPDATE have the same format as DATE, but their values represent the creation time and last update time of the current drawing.

# DBLCLKEDIT

## Quick Reference

See also:

- Overview of Double Click Actions

■ Modify Objects

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls the double click editing behavior in the drawing area.

Double click actions can be customized using the Customize User Interface (CUI) Editor.

The system variable can accept the values of On and Off in place of 1 and 0.

---

0	Disabled
---	----------

---

1	Enabled
---	---------

---

## DBMOD

### Quick Reference

See also:

■ Save a Drawing

(Read-only)

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 0

Indicates the drawing modification status.

The setting is stored as a bitcode using the sum of the following values:

---

1	Object database modified
---	--------------------------

---

4	Database variable modified
---	----------------------------

---

8	Window modified
---	-----------------

---

16	View modified
----	---------------

---

32	Field modified
----	----------------

---

The DBMOD value is reset to 0 when you save the drawing.

## DCTCUST

### Quick Reference

See also:

- Check Spelling

**Type:** String

**Saved in:** Registry

**Initial value:** Varies

Displays the path and file name of the current custom spelling dictionary.

## DCTMAIN

### Quick Reference

See also:

- Check Spelling

**Type:** String

**Saved in:** Registry

**Initial value:** Varies by country/region

Displays the three letter keyword for the current main spelling dictionary.

You can specify a default main spelling dictionary using the SETVAR command.

When prompted for a new value for DCTMAIN, you can enter one of the keywords below. Depending on the language version of the program, not all dictionaries may be available.

---

Keyword	Language name
enu	American English
eng	British English (ise)

---



enc	Canadian English
cat	Catalan
csy	Czech
dan	Danish
nld	Dutch (primary)
fin	Finnish
fra	French (accented capitals)
frc	French (unaccented capitals)
deu	German (post-reform)
deo	German (pre-reform)
ita	Italian
nor	Norwegian (Bokmal)
ptb	Portuguese (Brazilian)
ptg	Portuguese (Iberian)
rus	Russian
esp	Spanish
sve	Swedish

## DEFLPLSTYLE

### Quick Reference

See also:

- Overview of Plot Styles

**Type:** String  
**Saved in:** Registry  
**Initial value:** ByColor

Specifies the default plot style for all layers in a drawing when opening a drawing that was created in a release prior to AutoCAD 2000, or for Layer 0 when creating a new drawing from scratch without using a drawing template.

When the drawing is opened and [PSTYLEPOLICY](#) is set to 1 (color-dependent plot style mode), DEFLPLSTYLE is read-only and has a value of "BYCOLOR." If PSTYLEPOLICY is set to 0 (named plot style mode) when the drawing is opened, DEFLPLSTYLE is writable and has a default value of "NORMAL."

To convert the current drawing to use named or color-dependent plot styles, use CONVERTPSTYLES.

## DEFPLSTYLE

### Quick Reference

See also:

- Overview of Plot Styles

**Type:** String  
**Saved in:** Registry  
**Initial value:** ByColor

Specifies the default plot style for new objects in a drawing when opening a drawing that was created in a release prior to AutoCAD 2000, or when creating a new drawing from scratch without using a drawing template.

When the drawing is opened and [PSTYLEPOLICY](#) is set to 1 (color-dependent plot style mode), DEFPLSTYLE is read-only and has a value of "BYCOLOR." If

PSTYLEPOLICY is set to 0 (named plot style mode), DEFPLSTYLE is writable and has a default value of "BYLAYER."

To convert the current drawing to use named or color-dependent plot styles, use CONVERTPSTYLES.

## DELOBJ

### Quick Reference

See also:

- Create and Combine Areas (Regions)

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 3

Controls whether geometry used to create other objects is retained or deleted.

---

0	All defining geometry is retained.
---	------------------------------------

---

Non-zero integer values from -3 to 3	Deletes objects used to create other objects. This setting applies to options in commands such as REGION, SPLINE, SPLINEDIT, and PEDIT. The range of non-zero values is there to maintain AutoCAD compatibility.
--------------------------------------	--

---

## DGNFRAME

### Quick Reference

See also:

- Hide and Show Underlay Frames

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0

Determines whether DGN underlay frames are visible or plotted in the current drawing.

The **FRAME** system variable overrides the DGNFRAME setting. Use the DGNFRAME system variable after the FRAME system variable to reset the DGN frame settings.

---

0	The DGN underlay frame is not displayed or plotted. The frame temporarily reappears during selection preview or object selection.
1	The DGN underlay frame is displayed and plotted.
2	The DGN underlay frame is displayed but not plotted.

---

## DGNIMPORTMAX

### Quick Reference

See also:

- Import MicroStation DGN Files

**Type:** Real  
**Saved in:** Registry  
**Initial value:** 10000000

Sets the maximum number of elements that are translated when importing a DGN file.

This limit prevents the program from running out of memory and suspending when importing large DGN files.

---

0	Turns off the limit.
>0	Sets the limit for the number of elements.

---

# DGNIMPORTMODE

## Quick Reference

See also:

- Import MicroStation DGN Files

**Type:** Integer

**Saved in:** User-settings

**Initial value:** 0

Controls the default behavior of the DGNIMPORT command.

---

0	Imports the DGN file in a new drawing file.
1	Imports the DGN file into the currently open drawing and ignores duplicate named objects.
2	Imports the DGN file into the currently open drawing and adds a prefix to all named objects with the DGN file-name.

---

# DGNMAPPINGPATH

## Quick Reference

See also:

- Import MicroStation DGN Files

(Read-only)

**Type:** String

**Saved in:** Registry

**Initial value:** Varies

Specifies the location of the dgnsetups.ini file where DGN mapping setups are stored.

---

**NOTE** You can set the location of the dgnsetups.ini file in [Files tab \(Options dialog box\)](#).

---

## DGNOSNAP

### Quick Reference

See also:

- Use Object Snaps with Underlays

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Determines whether object snapping is active for geometry in DGN underlays that are attached to the drawing.

The [UOSNAP](#) system variable overrides the DGNOSNAP setting.

---

0	Turns off object snapping for geometry in all DGN underlay attachments in the drawing
1	Turns on object snapping for geometry in all DGN underlay attachments in the drawing

---

## DIASTAT

### Quick Reference

See also:

- Switch Between Dialog Boxes and the Command Line

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Stores the exit method of the most recently used dialog box.

---

0	Cancel
1	OK

---

---

**NOTE** The DIASTAT system variable does not apply to standard file selection dialog boxes, such as the Select File and the Save Drawing As dialog boxes.

---

## DIGITIZER

### Quick Reference

See also:

- Draw Freehand Sketches

(Read-only)

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Identifies digitizers connected to the system.

---

1	Integrated touch
2	External touch
4	Integrated pen
8	External pen
16	Multiple input
128	Input devices are ready

---

## DIMADEC

### Quick Reference

See also:

- Create Angular Dimensions

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Controls the number of precision places displayed in angular dimensions.

---

-1	Angular dimensions display the number of decimal places specified by DIMDEC.
----	--

---

0-8	Specifies the number of decimal places displayed in angular dimensions (independent of DIMDEC)
-----	--

---

## DIMALT

### Quick Reference

See also:

- Control the Display of Dimension Units

**Type:** Switch

**Saved in:** Drawing

**Initial value:** Off

Controls the display of alternate units in dimensions.

See also DIMALTD, DIMALTF, DIMALTTD, DIMALTTZ, DIMALTZ, and DIMAPOST.

---

Off	Disables alternate units
-----	--------------------------

---

On	Enables alternate units
----	-------------------------

---

## DIMALTD

### Quick Reference

See also:

- Control the Display of Dimension Units



**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 2 (imperial) or 3 (metric)  
Controls the number of decimal places in alternate units.

If DIMALT is turned on, DIMALTD sets the number of digits displayed to the right of the decimal point in the alternate measurement.

## DIMALTF

### Quick Reference

See also:

- Control the Display of Dimension Units

**Type:** Real  
**Saved in:** Drawing  
**Initial value:** 25.4000 (imperial) or 0.0394 (metric)  
Controls the multiplier for alternate units.

If DIMALT is turned on, DIMALTF multiplies linear dimensions by a factor to produce a value in an alternate system of measurement. The initial value represents the number of millimeters in an inch.

## DIMALTRND

### Quick Reference

See also:

- Control the Display of Dimension Units

**Type:** Real  
**Saved in:** Drawing  
**Initial value:** 0.0000  
Rounds off the alternate dimension units.

## DIMALTTD

### Quick Reference

**See also:**

- Control the Display of Dimension Units

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 2 (imperial) or 3 (metric)

Sets the number of decimal places for the tolerance values in the alternate units of a dimension.

## DIMALTTZ

### Quick Reference

**See also:**

- Control the Display of Dimension Units

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Controls suppression of zeros in tolerance values.

---

0	Suppresses zero feet and precisely zero inches
---	--

---

1	Includes zero feet and precisely zero inches
---	--

---

2	Includes zero feet and suppresses zero inches
---	---

---

3	Includes zero inches and suppresses zero feet
---	---

To suppress leading or trailing zeros, add the following values to one of the preceding values:

---

4	Suppresses leading zeros
---	--------------------------

---

## DIMALTU

### Quick Reference

See also:

- Control the Display of Dimension Units

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 2

Sets the units format for alternate units of all dimension substyles except Angular.

---

1	Scientific
2	Decimal
3	Engineering
4	Architectural (stacked)
5	Fractional (stacked)
6	Architectural
7	Fractional
8	Microsoft Windows Desktop (decimal format using Control Panel settings for decimal separator and number grouping symbols)

---

# DIMALTZ

## Quick Reference

See also:

- Control the Display of Dimension Units

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Controls the suppression of zeros for alternate unit dimension values.

DIMALTZ values 0-3 affect feet-and-inch dimensions only.

---

0	Suppresses zero feet and precisely zero inches
1	Includes zero feet and precisely zero inches
2	Includes zero feet and suppresses zero inches
3	Includes zero inches and suppresses zero feet
4	Suppresses leading zeros in decimal dimensions (for example, 0.5000 becomes .5000)
8	Suppresses trailing zeros in decimal dimensions (for example, 12.5000 becomes 12.5)
12	Suppresses both leading and trailing zeros (for example, 0.5000 becomes .5)

---

# DIMANNO

## Quick Reference

See also:

- Create Annotative Dimensions and Tolerances

(Read-only)

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Indicates whether or not the current dimension style is annotative.

---

0	Nonannotative
---	---------------

---

1	Annotative
---	------------

---

## DIMAPOST

### Quick Reference

See also:

- Control the Display of Dimension Units

**Type:** String

**Saved in:** Drawing

**Initial value:** ""

Specifies a text prefix or suffix (or both) to the alternate dimension measurement for all types of dimensions except angular.

For instance, if the current units are Architectural, DIMALT is on, DIMALTF is 25.4 (the number of millimeters per inch), DIMALTD is 2, and DIMAPOST is set to "mm", a distance of 10 units would be displayed as 10"[254.00mm].

To turn off an established prefix or suffix (or both), set it to a single period (.).

## DIMARCSYM

### Quick Reference

See also:

- Create Arc Length Dimensions

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0  
Controls display of the arc symbol in an arc length dimension.

---

0	Places arc length symbols before the dimension text
1	Places arc length symbols above the dimension text
2	Suppresses the display of arc length symbols

---

## DIMASSOC

### Quick Reference

See also:

- Associative Dimensions

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 2  
Controls the associativity of dimension objects and whether dimensions are exploded.

---

0	Creates exploded dimensions. There is no association between the various elements of the dimension. The lines, arcs, arrowheads, and text of a dimension are drawn as separate objects.
1	Creates non-associative dimension objects. The elements of the dimension are formed into a single object. If one of the definition points of the dimension moves, the dimension is updated.
2	Creates associative dimension objects. The elements of the dimension are formed into a single object, and one or more definition points of the dimension are coupled with association points on geometric objects. If the asso-

---

ciation point on the geometric object moves, the dimension location, orientation, and value are updated.

---

DIMASSOC is not stored in a dimension style.

Drawings saved in a format previous to AutoCAD 2002 retain the setting of the DIMASSOC system variable. When the drawing is reopened in AutoCAD 2002 or later, the dimension associativity setting is restored.

## DIMASZ

### Quick Reference

See also:

- Customize Arrowheads

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.1800 (imperial) or 2.5000 (metric)

Controls the size of dimension line and leader line arrowheads. Also controls the size of hook lines.

Multiples of the arrowhead size determine whether dimension lines and text should fit between the extension lines. DIMASZ is also used to scale arrowhead blocks if set by DIMBLK. DIMASZ has no effect when DIMTSZ is other than zero.

## DIMATFIT

### Quick Reference

See also:

- Fit Dimension Text Within Extension Lines

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 3

Determines how dimension text and arrows are arranged when space is not sufficient to place both within the extension lines.

---

0	Places both text and arrows outside extension lines
1	Moves arrows first, then text
2	Moves text first, then arrows
3	Moves either text or arrows, whichever fits best

---

A leader is added to moved dimension text when DIMTMOVE is set to 1.

## DIMAUNIT

### Quick Reference

See also:

- Create Angular Dimensions

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Sets the units format for angular dimensions.

---

0	Decimal degrees
1	Degrees/minutes/seconds
2	Gradians
3	Radians

---



# DIMAZIN

## Quick Reference

See also:

- Suppress Zeros in Dimensions

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Suppresses zeros for angular dimensions.

---

0	Displays all leading and trailing zeros
1	Suppresses leading zeros in decimal dimensions (for example, 0.5000 becomes .5000)
2	Suppresses trailing zeros in decimal dimensions (for example, 12.5000 becomes 12.5)
3	Suppresses leading and trailing zeros (for example, 0.5000 becomes .5)

---

# DIMBLK

## Quick Reference

See also:

- Customize Arrowheads

**Type:** String

**Saved in:** Drawing

**Initial value:** ""

Sets the arrowhead block displayed at the ends of dimension lines.

To return to the default, closed-filled arrowhead display, enter a single period (.). Arrowhead block entries and the names used to select them in the New,

Modify, and Override Dimension Style dialog boxes are shown below. You can also enter the names of user-defined arrowhead blocks.

---

**NOTE** Annotative blocks cannot be used as custom arrowheads for dimensions or leaders.

---

---

" " closed filled

---

"\_DOT" dot

---

"\_DOTS-  
MALL" dot small

---

"\_DOTB-  
LANK" dot blank

---

"\_ORI-  
GIN" origin indicator

---

"\_ORI-  
GIN2" origin indicator 2

---

"\_OPEN" open

---

"\_OPEN90" right angle

---

"\_OPEN30" open 30

---

"\_CLOSED" closed

---

"\_SMALL" dot small blank

---

"\_NONE" none

---

"\_OB-  
LIQUE" oblique

---

"\_BOX-  
FILLED" box filled

---

"\_BOXB-  
LANK" box

---

"\_CLOSED-  
BLANK" closed blank

---

"\_DATUM-  
FILLED" datum triangle filled

---

"\_DATUM-  
LANK" datum triangle

---

"\_INTEG-  
RAL" integral

---

"\_ARCHTICK" architectural tick

---

## DIMBLK1

### Quick Reference

See also:

- Customize Arrowheads

**Type:** String

**Saved in:** Drawing

**Initial value:** ""

Sets the arrowhead for the first end of the dimension line when DIMSAH is on.

To return to the default, closed-filled arrowhead display, enter a single period (.). For a list of arrowheads, see DIMBLK.

---

**NOTE** Annotative blocks cannot be used as custom arrowheads for dimensions or leaders.

---

## DIMBLK2

### Quick Reference

See also:

- Customize Arrowheads

**Type:** String

**Saved in:** Drawing

**Initial value:** ""

Sets the arrowhead for the second end of the dimension line when DIMSAH is on.

To return to the default, closed-filled arrowhead display, enter a single period (.). For a list of arrowhead entries, see DIMBLK.

---

**NOTE** Annotative blocks cannot be used as custom arrowheads for dimensions or leaders.

---

## DIMCEN

### Quick Reference

See also:

- Create Radial Dimensions

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0900 (imperial) or 2.5000 (metric)

Controls drawing of circle or arc center marks and centerlines by the DIMCENTER, DIMDIAMETER, and DIMRADIUS commands.

For DIMDIAMETER and DIMRADIUS, the center mark is drawn only if you place the dimension line outside the circle or arc.

---

0	No center marks or lines are drawn
---	------------------------------------

---

<0	Centerlines are drawn
----	-----------------------

---

>0          Center marks are drawn

---

The absolute value specifies the size of the center mark or centerline.

The size of the centerline is the length of the centerline segment that extends outside the circle or arc. It is also the size of the gap between the center mark and the start of the centerline.

The size of the center mark is the distance from the center of the circle or arc to the end of the center mark.

## DIMCLRD

### Quick Reference

See also:

- Control Dimension Lines

**Type:**            Integer  
**Saved in:**        Drawing  
**Initial value:** 0

Assigns colors to dimension lines, arrowheads, and dimension leader lines.

Also controls the color of leader lines created with the LEADER command. Color numbers are displayed in the Select Color dialog box. For BYBLOCK, enter 0. For BYLAYER, enter 256.

## DIMCLRE

### Quick Reference

See also:

- Override a Dimension Style

**Type:**            Integer  
**Saved in:**        Drawing  
**Initial value:** 0

Assigns colors to extension lines, center marks, and centerlines.

Color numbers are displayed in the Select Color dialog box. For BYBLOCK, enter 0. For BYLAYER, enter 256.

## DIMCLRT

### Quick Reference

See also:

- Control the Appearance of Dimension Text

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Assigns colors to dimension text.

The color can be any valid color number.

## DIMCONSTRAINTICON

### Quick Reference

**Type:** Bitcode

**Saved in:** Registry

**Initial value:** 3

Displays the lock icon next to the text for dimensional constraints.

0	Does not display the lock icon next to the text for dimensional constraints
1	Displays the icon for dynamic constraints
2	Displays the icon for annotational constraints
3	Displays the icon for dynamic and annotational constraints

## DIMDEC

### Quick Reference

See also:

- Control the Display of Dimension Units

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 4 (imperial) or 2 (metric)

Sets the number of decimal places displayed for the primary units of a dimension.

The precision is based on the units or angle format you have selected. Specified value is applied to angular dimensions when [DIMADEC](#) on page 1437 is set to -1.

## DIMDLE

### Quick Reference

See also:

- Control Dimension Lines

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Sets the distance the dimension line extends beyond the extension line when oblique strokes are drawn instead of arrowheads.

## DIMDLI

### Quick Reference

See also:

- Control Dimension Lines

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.3800 (imperial) or 3.7500 (metric)

Controls the spacing of the dimension lines in baseline dimensions.

Each dimension line is offset from the previous one by this amount, if necessary, to avoid drawing over it. Changes made with DIMDLI are not applied to existing dimensions.

## DIMDSEP

### Quick Reference

See also:

- Control the Display of Dimension Units

**Type:** Single-character

**Saved in:** Drawing

**Initial value:** . (imperial) or , (metric)

Specifies a single-character decimal separator to use when creating dimensions whose unit format is decimal.

When prompted, enter a single character at the Command prompt. If dimension units is set to Decimal, the DIMDSEP character is used instead of the default decimal point. If DIMDSEP is set to NULL (default value, reset by entering a period), the decimal point is used as the dimension separator.



## DIMEXE

### Quick Reference

See also:

- Control Extension Lines

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.1800 (imperial) or 1.2500 (metric)

Specifies how far to extend the extension line beyond the dimension line.

## DIMEXO

### Quick Reference

See also:

- Control Extension Lines

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0625 (imperial) or 0.6250 (metric)

Specifies how far extension lines are offset from origin points.

With fixed-length extension lines, this value determines the minimum offset.

## DIMFRAC

### Quick Reference

See also:

- Control the Display of Fractions

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Sets the fraction format when DIMLUNIT is set to 4 (Architectural) or 5 (Fractional).

---

0	Horizontal stacking
1	Diagonal stacking
2	Not stacked (for example, 1/2)

---

## DIMFXL

### Quick Reference

See also:

- Control Extension Lines

**Type:** Real  
**Saved in:** Drawing  
**Initial value:** 1.0000

Sets the total length of the extension lines starting from the dimension line toward the dimension origin.

## DIMFXLON

### Quick Reference

See also:

- Control Extension Lines

**Type:** Switch  
**Saved in:** Drawing  
**Initial value:** Off

Controls whether extension lines are set to a fixed length.

When DIMFXLON is on, extension lines are set to the length specified by DIMFXL.

# DIMGAP

## Quick Reference

See also:

- Control the Location of Dimension Text

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0900 (imperial) or 0.6250 (metric)

Sets the distance around the dimension text when the dimension line breaks to accommodate dimension text.

Also sets the gap between annotation and a hook line created with the LEADER command. If you enter a negative value, DIMGAP places a box around the dimension text.

DIMGAP is also used as the minimum length for pieces of the dimension line. When the default position for the dimension text is calculated, text is positioned inside the extension lines only if doing so breaks the dimension lines into two segments at least as long as DIMGAP. Text placed above or below the dimension line is moved inside only if there is room for the arrowheads, dimension text, and a margin between them at least as large as DIMGAP:  $2 * (DIMASZ + DIMGAP)$ .

# DIMJOGANG

## Quick Reference

See also:

- Create Radial Dimensions

**Type:** Real

**Saved in:** Drawing

**Initial value:** 45

Determines the angle of the transverse segment of the dimension line in a jogged radius dimension.

Jogged radius dimensions are often created when the center point is located off the page. Valid settings range is 5 to 90.

## DIMJUST

### Quick Reference

See also:

- Control the Location of Dimension Text

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Controls the horizontal positioning of dimension text.

---

0	Positions the text above the dimension line and center-justifies it between the extension lines
1	Positions the text next to the first extension line
2	Positions the text next to the second extension line
3	Positions the text above and aligned with the first extension line
4	Positions the text above and aligned with the second extension line

---

## DIMLDRBLK

### Quick Reference

See also:

- Overview of Leader Objects

**Type:** String

**Saved in:** Drawing

**Initial value:** ""

Specifies the arrow type for leaders.

To return to the default, closed-filled arrowhead display, enter a single period (.). For a list of arrowhead entries, see [DIMBLK](#) on page 1447.

---

**NOTE** Annotative blocks cannot be used as custom arrowheads for dimensions or leaders.

---

## DIMLFAC

### Quick Reference

**See also:**

- Set the Scale for Dimensions

**Type:** Real

**Saved in:** Drawing

**Initial value:** 1.0000

Sets a scale factor for linear dimension measurements.

All linear dimension distances, including radii, diameters, and coordinates, are multiplied by DIMLFAC before being converted to dimension text. Positive values of DIMLFAC are applied to dimensions in both model space and paper space; negative values are applied to paper space only.

DIMLFAC applies primarily to nonassociative dimensions (DIMASSOC set 0 or 1). For nonassociative dimensions in paper space, DIMLFAC must be set individually for each layout viewport to accommodate viewport scaling.

DIMLFAC has no effect on angular dimensions, and is not applied to the values held in DIMRND, DIMTM, or DIMTP.

## DIMLIM

### Quick Reference

See also:

- Display Lateral Tolerances

**Type:** Switch

**Saved in:** Drawing

**Initial value:** Off

Generates dimension limits as the default text.

Setting DIMLIM to On turns DIMITOL off.

---

Off	Dimension limits are not generated as default text
-----	--

---

On	Dimension limits are generated as default text
----	--

---

## DIMLTEX1

### Quick Reference

See also:

- Control Extension Lines

**Type:** String

**Saved in:** Drawing

**Initial value:** ""

Sets the linetype of the first extension line.

The value is BYLAYER, BYBLOCK, or the name of a linetype.

## DIMLTEX2

### Quick Reference

See also:

- Control Extension Lines

**Type:** String

**Saved in:** Drawing

**Initial value:** ""

Sets the linetype of the second extension line.

The value is BYLAYER, BYBLOCK, or the name of a linetype.

## DIMLTYPE

### Quick Reference

See also:

- Control Dimension Lines

**Type:** String

**Saved in:** Drawing

**Initial value:** ""

Sets the linetype of the dimension line.

The value is BYLAYER, BYBLOCK, or the name of a linetype.

## DIMLUNIT

### Quick Reference

See also:

- Control the Display of Dimension Units

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 2

Sets units for all dimension types except Angular.

---

1	Scientific
2	Decimal
3	Engineering
4	Architectural (always displayed stacked)
5	Fractional (always displayed stacked)
6	Microsoft Windows Desktop (decimal format using Control Panel settings for decimal separator and number grouping symbols)

---

## DIMLWD

### Quick Reference

**See also:**

- Control Dimension Lines

**Type:** Enum

**Saved in:** Drawing

**Initial value:** -2

Assigns lineweight to dimension lines.

---

-3	Default (the <a href="#">LWDEFAULT</a> value)
-2	BYBLOCK
-1	BYLAYER

---

The integer represents 1/100th of a mm.



# DIMLWE

## Quick Reference

See also:

- Control Extension Lines

**Type:** Enum

**Saved in:** Drawing

**Initial value:** -2

Assigns lineweight to extension lines.

---

-3	Default (the <a href="#">LWDEFAULT</a> value)
----	---

---

-2	BYBLOCK
----	---------

---

-1	BYLAYER
----	---------

---

The integer represents 1/100th of a mm.

# DIMPOST

## Quick Reference

See also:

- Control the Display of Dimension Units

**Type:** String

**Saved in:** Drawing

**Initial value:** None

Specifies a text prefix or suffix (or both) to the dimension measurement.

For example, to establish a suffix for millimeters, set DIMPOST to mm; a distance of 19.2 units would be displayed as 19.2 mm.

If tolerances are turned on, the suffix is applied to the tolerances as well as to the main dimension.

Use <> to indicate placement of the text in relation to the dimension value. For example, enter <>mm to display a 5.0 millimeter radial dimension as "5.0mm". If you entered mm <>, the dimension would be displayed as "mm 5.0". Use the <> mechanism for angular dimensions.

## DIMRND

### Quick Reference

**See also:**

- Round Off Dimension Values

**Type:** Real  
**Saved in:** Drawing  
**Initial value:** 0.0000

Rounds all dimensioning distances to the specified value.

For instance, if DIMRND is set to 0.25, all distances round to the nearest 0.25 unit. If you set DIMRND to 1.0, all distances round to the nearest integer. Note that the number of digits edited after the decimal point depends on the precision set by DIMDEC. DIMRND does not apply to angular dimensions.

## DIMSAH

### Quick Reference

**See also:**

- Customize Arrowheads

**Type:** Switch  
**Saved in:** Drawing  
**Initial value:** Off

Controls the display of dimension line arrowhead blocks.

---

Off	Use arrowhead blocks set by DIMBLK
On	Use arrowhead blocks set by DIMBLK1 and DIMBLK2

---

# DIMSCALE

## Quick Reference

See also:

- Set the Scale for Dimensions

**Type:** Real

**Saved in:** Drawing

**Initial value:** 1.0000

Sets the overall scale factor applied to dimensioning variables that specify sizes, distances, or offsets.

Also affects the leader objects with the LEADER command.

Use [MLEADERSCALE](#) to scale multileader objects created with the [MLEADER](#) command.

---

0.0 A reasonable default value is computed based on the scaling between the current model space viewport and paper space. If you are in paper space or model space and not using the paper space feature, the scale factor is 1.0.

---

>0 A scale factor is computed that leads text sizes, arrowhead sizes, and other scaled distances to plot at their face values.

---

DIMSCALE does not affect measured lengths, coordinates, or angles.

Use DIMSCALE to control the overall scale of dimensions. However, if the current dimension style is , DIMSCALE is automatically set to zero and the dimension scale is controlled by the [CANNOSCALE](#) system variable. DIMSCALE cannot be set to a non-zero value when using annotative dimensions.

# DIMSD1

## Quick Reference

See also:

- Control Dimension Lines

**Type:** Switch  
**Saved in:** Drawing  
**Initial value:** Off

Controls suppression of the first dimension line and arrowhead.

When turned on, suppresses the display of the dimension line and arrowhead between the first extension line and the text.

---

Off	First dimension line is not suppressed
-----	--

---

On	First dimension line is suppressed
----	------------------------------------

---

## DIMSD2

### Quick Reference

See also:

- Control Dimension Lines

**Type:** Switch  
**Saved in:** Drawing  
**Initial value:** Off

Controls suppression of the second dimension line and arrowhead.

When turned on, suppresses the display of the dimension line and arrowhead between the second extension line and the text.

---

Off	Second dimension line is not suppressed
-----	---

---

On	Second dimension line is suppressed
----	-------------------------------------

---

## DIMSE1

### Quick Reference

See also:

- Control Extension Lines

**Type:** Switch  
**Saved in:** Drawing  
**Initial value:** Off  
Suppresses display of the first extension line.

---

Off Extension line is not suppressed

---

On Extension line is suppressed

---

## DIMSE2

### Quick Reference

See also:

- Control Extension Lines

**Type:** Switch  
**Saved in:** Drawing  
**Initial value:** Off  
Suppresses display of the second extension line.

---

Off Extension line is not suppressed

---

On Extension line is suppressed

---

## DIMSOXD

### Quick Reference

See also:

- Control Dimension Lines

**Type:** Switch  
**Saved in:** Drawing  
**Initial value:** Off

Suppresses arrowheads if not enough space is available inside the extension lines.

---

Off	Arrowheads are not suppressed
-----	-------------------------------

---

On	Arrowheads are suppressed
----	---------------------------

---

If not enough space is available inside the extension lines and DIMTIX is on, setting DIMSOXD to On suppresses the arrowheads. If DIMTIX is off, DIMSOXD has no effect.

## DIMSTYLE

### Quick Reference

See also:

- Apply a New Dimension Style to Existing Dimensions

(Read-only)

**Type:** String

**Saved in:** Drawing

**Initial value:** Standard (imperial) or ISO-25 (metric)

Stores the name of the current dimension style.

This system variable has the same name as a command. Use the SETVAR command to access this system variable. The DIMSTYLE system variable is read-only; to change the current dimension style, use the DIMSTYLE command.

## DIMTAD

### Quick Reference

See also:

- Control the Location of Dimension Text

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0 (imperial) or 1 (metric)

Controls the vertical position of text in relation to the dimension line.

---

0	Centers the dimension text between the extension lines.
1	Places the dimension text above the dimension line except when the dimension line is not horizontal and text inside the extension lines is forced horizontal (DIMTIH = 1). The distance from the dimension line to the baseline of the lowest line of text is the current DIMGAP value.
2	Places the dimension text on the side of the dimension line farthest away from the defining points.
3	Places the dimension text to conform to Japanese Industrial Standards (JIS).
4	Places the dimension text below the dimension line.

---

## DIMTDEC

### Quick Reference

**See also:**

- Display Lateral Tolerances

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 4 (imperial) or 2 (metric)

Sets the number of decimal places to display in tolerance values for the primary units in a dimension.

This system variable has no effect unless DIMTOL is set to On. The default for DIMTOL is Off.

## DIMTFAC

### Quick Reference

See also:

- Set the Scale for Dimensions

**Type:** Real

**Saved in:** Drawing

**Initial value:** 1.0000

Specifies a scale factor for the text height of fractions and tolerance values relative to the dimension text height, as set by DIMTXT.

For example, if DIMTFAC is set to 1.0, the text height of fractions and tolerances is the same height as the dimension text. If DIMTFAC is set to 0.7500, the text height of fractions and tolerances is three-quarters the size of dimension text.

## DIMTFILL

### Quick Reference

See also:

- Control the Appearance of Dimension Text

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Controls the background of dimension text.

---

0	No background
1	The background color of the drawing
2	The background specified by DIMTFILLCLR

---



# DIMTFILLCLR

## Quick Reference

See also:

- Control the Appearance of Dimension Text

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Sets the color for the text background in dimensions.

Color numbers are displayed in the Select Color dialog box. For BYBLOCK, enter 0. For BYLAYER, enter 256.

# DIMTIH

## Quick Reference

See also:

- Control the Location of Dimension Text

**Type:** Switch

**Saved in:** Drawing

**Initial value:** On (imperial) or Off (metric)

Controls the position of dimension text inside the extension lines for all dimension types except Ordinate.

---

Off	Aligns text with the dimension line
-----	-------------------------------------

---

On	Draws text horizontally
----	-------------------------

---

# DIMTIX

## Quick Reference

See also:

- Fit Dimension Text Within Extension Lines

**Type:** Switch

**Saved in:** Drawing

**Initial value:** Off

Draws text between extension lines.

---

Off	For linear and angular dimensions, dimension text is placed inside the extension lines if there is sufficient room.
-----	---

---

On	Draws dimension text between the extension lines even if it would ordinarily be placed outside those lines. For radius and diameter dimensions, DIMTIX on always forces the dimension text outside the circle or arc.
----	---

---

# DIMTM

## Quick Reference

See also:

- Display Lateral Tolerances

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Sets the minimum (or lower) tolerance limit for dimension text when DIMTOL or DIMLIM is on.

DIMTM accepts signed values. If DIMTOL is on and DIMTP and DIMTM are set to the same value, a tolerance value is drawn.

If DIMTM and DIMTP values differ, the upper tolerance is drawn above the lower, and a plus sign is added to the DIMTP value if it is positive.

For DIMTM, the program uses the negative of the value you enter (adding a minus sign if you specify a positive number and a plus sign if you specify a negative number).

## DIMTMOVE

### Quick Reference

See also:

- Modify Dimension Text

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Sets dimension text movement rules.

---

0	Moves the dimension line with dimension text
1	Adds a leader when dimension text is moved
2	Allows text to be moved freely without a leader

---

## DIMTOFL

### Quick Reference

See also:

- Fit Dimension Text Within Extension Lines

**Type:** Switch

**Saved in:** Drawing

**Initial value:** Off (imperial) or On (metric)

Controls whether a dimension line is drawn between the extension lines even when the text is placed outside.

For radius and diameter dimensions, a dimension line is drawn inside the circle or arc when the text, arrowheads, and leader are placed outside.

---

Off	Does not draw dimension lines between the measured points when arrowheads are placed outside the measured points
On	Draws dimension lines between the measured points even when arrowheads are placed outside the measured points

---

## DIMTOH

### Quick Reference

See also:

- Fit Dimension Text Within Extension Lines

**Type:** Switch

**Saved in:** Drawing

**Initial value:** On (imperial) or Off (metric)

Controls the position of dimension text outside the extension lines.

---

Off	Aligns text with the dimension line
-----	-------------------------------------

---

On	Draws text horizontally
----	-------------------------

---

## DIMTOL

### Quick Reference

See also:

- Display Lateral Tolerances

**Type:** Switch

**Saved in:** Drawing

**Initial value:** Off

Appends tolerances to dimension text.  
Setting DIMTOL to on turns DIMLIM off.

## DIMTOLJ

### Quick Reference

See also:

- Display Lateral Tolerances

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1 (imperial) or 0 (metric)

Sets the vertical justification for tolerance values relative to the nominal dimension text.

This system variable has no effect unless DIMTOL is set to On. The default for DIMTOL is Off.

---

0	Bottom
---	--------

---

1	Middle
---	--------

---

2	Top
---	-----

---

## DIMTP

### Quick Reference

See also:

- Set the Scale for Dimensions

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Sets the maximum (or upper) tolerance limit for dimension text when DIMTOL or DIMLIM is on.

DIMTP accepts signed values. If DIMTOL is on and DIMTP and DIMTM are set to the same value, a tolerance value is drawn.

If DIMTM and DIMTP values differ, the upper tolerance is drawn above the lower and a plus sign is added to the DIMTP value if it is positive.

## DIMTSZ

### Quick Reference

See also:

- Customize Arrowheads

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Specifies the size of oblique strokes drawn instead of arrowheads for linear, radius, and diameter dimensioning.

---

0	Draws arrowheads.
>0	Draws oblique strokes instead of arrowheads. The size of the oblique strokes is determined by this value multiplied by the DIMSCALE value.

---

## DIMTVP

### Quick Reference

See also:

- Control the Location of Dimension Text

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Controls the vertical position of dimension text above or below the dimension line.

The DIMTVP value is used when DIMTAD is off. The magnitude of the vertical offset of text is the product of the text height and DIMTVP. Setting DIMTVP to 1.0 is equivalent to setting DIMTAD to on. The dimension line splits to accommodate the text only if the absolute value of DIMTVP is less than 0.7.

## DIMTXSTY

### Quick Reference

See also:

- Control the Appearance of Dimension Text

**Type:** String

**Saved in:** Drawing

**Initial value:** Standard

Specifies the text style of the dimension.

## DIMTXT

### Quick Reference

See also:

- Control the Appearance of Dimension Text

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.1800 (imperial) or 2.5000 (metric)

Specifies the height of dimension text, unless the current text style has a fixed height.

## DIMTXTDIRECTION

### Quick Reference

See also:

- Control the Appearance of Dimension Text

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Specifies the reading direction of the dimension text.

---

0	Displays dimension text in a Left-to-Right reading style
---	--

---

1	Displays dimension text in a Right-to-Left reading style
---	--

---

## DIMTZIN

### Quick Reference

See also:

- Display Lateral Tolerances

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0 (imperial) or 8 (metric)

Controls the suppression of zeros in tolerance values.

Values 0-3 affect feet-and-inch dimensions only.

---

0	Suppresses zero feet and precisely zero inches
---	--

---

1	Includes zero feet and precisely zero inches
---	--

---

2	Includes zero feet and suppresses zero inches
---	---

---

3	Includes zero inches and suppresses zero feet
---	---

---



4	Suppresses leading zeros in decimal dimensions (for example, 0.5000 becomes .5000)
8	Suppresses trailing zeros in decimal dimensions (for example, 12.5000 becomes 12.5)
12	Suppresses both leading and trailing zeros (for example, 0.5000 becomes .5)

## DIMUPT

### Quick Reference

See also:

- Control the Location of Dimension Text

**Type:** Switch

**Saved in:** Drawing

**Initial value:** Off

Controls options for user-positioned text.

Off	Cursor controls only the dimension line location
On	Cursor controls both the text position and the dimension line location

## DIMZIN

### Quick Reference

See also:

- Suppress Zeros in Dimensions

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0 (imperial) or 8 (metric)  
Controls the suppression of zeros in the primary unit value.

Values 0-3 affect feet-and-inch dimensions only:

---

0	Suppresses zero feet and precisely zero inches
1	Includes zero feet and precisely zero inches
2	Includes zero feet and suppresses zero inches
3	Includes zero inches and suppresses zero feet
4	Suppresses leading zeros in decimal dimensions (for example, 0.5000 becomes .5000)
8	Suppresses trailing zeros in decimal dimensions (for example, 12.5000 becomes 12.5)
12	Suppresses both leading and trailing zeros (for example, 0.5000 becomes .5)

---

## DISPSILH

### Quick Reference

See also:

- Hide Lines or Shade 3D Objects

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Controls display of silhouette edges of 3D solid objects in a 2D Wireframe or 3D Wireframe visual style.

This system variable applies to displaying AutoCAD 3D solid objects in AutoCAD LT.

---

0	Off. Do not display silhouette edges
---	--------------------------------------

---

1 On. Display silhouette edges

---

When turned on, DISPSILH also suppresses the mesh displayed when using the HIDE command with SHADEMODE set to 2D wireframe.

Use the REGEN command to display the results.

## DISTANCE

### Quick Reference

See also:

- Obtain Distances, Angles, and Point Locations

(Read-only)

**Type:** Real

**Saved in:** Not-saved

**Initial value:** 0.0000

Stores the distance computed by the DIST command.

## DONUTID

### Quick Reference

See also:

- Draw Donuts

**Type:** Real

**Saved in:** Not-saved

**Initial value:** 0.5000

Sets the default for the inside diameter of a donut.

## DONUTOD

### Quick Reference

**See also:**

- Draw Donuts

**Type:** Real

**Saved in:** Not-saved

**Initial value:** 1.0000

Sets the default for the outside diameter of a donut.

The value must be nonzero. If DONUTID is larger than DONUTOD, the two values are swapped by the next command.

## DRAGMODE

### Quick Reference

**See also:**

- Set Up the Drawing Area

**Type:** Integer

**Saved in:** Registry

**Initial value:** 2

Controls the display of objects being dragged.

This system variable has the same name as a command. Use the SETVAR command to access this system variable.

When it is on, the image of an object is displayed as you drag it to another location. With some computer configurations, dragging can be time-consuming. Use DRAGMODE to suppress dragging.

---

0	Does not display an outline of the object as you drag it
1	Displays the outline of the object as you drag it only if you enter <b>drag</b> at the Command prompt after selecting the object to drag

---

2 Auto; always displays an outline of the object as you drag it

---

## DRAGP1

### Quick Reference

See also:

- Set Up the Drawing Area

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 5000

When hardware acceleration is used, controls how many vectors the system draws when you drag objects within a 2D viewport before it checks for a new input sample from the mouse.

A larger number results in more graphical vectors being displayed as objects are dragged. For best performance, it is recommended that you use hardware acceleration rather than software acceleration. DRAGP1 has no effect when dragging objects in a 3D viewport.

## DRAGP2

### Quick Reference

See also:

- Set Up the Drawing Area

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 10

When software acceleration is used, controls how many vectors the system draws when you drag objects within a 2D viewport before it checks for a new input sample from the mouse.

A larger number results in more graphical vectors being displayed as objects are dragged. For best performance, it is recommended that you use hardware acceleration rather than software acceleration. DRAGP2 has no effect when dragging objects in a 3D viewport.

## DRAWORDERCTL

### Quick Reference

See also:

- Control How Overlapping Objects Are Displayed

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 3

Controls the default display behavior of overlapping objects when they are created or edited.

---

0	Turns off the default draw order of overlapping objects: after objects are edited, regardless of their draw order, the objects are displayed on top until a drawing is regenerated (REGEN) or reopened. This setting also turns off draw order inheritance: new objects that are created from another object using the commands listed below are not assigned the draw order of the original object. Use this setting to improve the speed of editing operations in large drawings. The commands that are affected by inheritance are BREAK, FILLET, HATCH, HATCHEDIT, EXPLODE, TRIM, JOIN, PEDIT, and OFFSET.
1	Turns on the default draw order of objects: after objects are edited, they are automatically displayed according to the correct draw order.
2	Turns on draw order inheritance: new objects created from another object using the commands listed above are assigned the draw order of the original object.
3	Provides full draw order display. Turns on the correct draw order of objects, and turns on draw order inheritance.

---

---

**NOTE** Full draw order display may slow some editing operations.

---

## DRSTATE

### Quick Reference

**See also:**

- Recover from a System Failure

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** Varies

Indicates whether the Drawing Recovery Manager window is open or closed.

---

0	Closed
---	--------

---

1	Open
---	------

---

## DTEXTED

### Quick Reference

**See also:**

- Create Single-Line Text

**Type:** Integer

**Saved in:** Registry

**Initial value:** 2

Specifies the user interface displayed for editing single-line text.

Obsolete command. Replaced by the [TEXTED](#) on page 1681 system variable.

## DWFFRAME

### Quick Reference

See also:

- Hide and Show Underlay Frames

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 2

Determines whether DWF or DWFX underlay frames are visible or plotted in the current drawing.

The [FRAME](#) system variable overrides the DWFFRAME setting. Use the DWFFRAME system variable after the FRAME system variable to reset the DWF frame settings

---

0	The DWF or DWFX underlay frame is not visible and it is not plotted. The frame temporarily reappears during selection preview or object selection.
1	Displays and plots the DWF or DWFX underlay frame.
2	Displays but does not plot the DWF or DWFX underlay frame.

---

## DWFOSNAP

### Quick Reference

See also:

- Use Object Snaps with Underlays

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1



Determines whether object snapping is active for geometry in DWF or DWFX underlays that are attached to the drawing.

The **UOSNAP** system variable overrides the DWFOSNAP setting.

---

0	Object snapping is disabled for geometry in all DWF or DWFX underlay attachments in the drawing
1	Object snapping is enabled for geometry in all DWF or DWFX underlay attachments in the drawing

---

## DWGCHECK

### Quick Reference

See also:

- Open a Drawing

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Checks drawings for potential problems when opening them.

---

0	If a drawing that you try to open has a potential problem, you are warned before the drawing is opened.
1	If a drawing that you try to open has a potential problem, or if it was saved by an application other than one released by Autodesk or based on RealDWG, you are warned before the drawing is opened.
2	If a drawing that you try to open has a potential problem, you are notified at the Command prompt.
3	If a drawing that you try to open has a potential problem, you are notified at the Command prompt. If the drawing has a potential problem and the drawing was saved by an application other than one released by Autodesk or based on RealDWG, you are warned before the drawing is opened.

---

## DWGCODEPAGE

### Quick Reference

**See also:**

- Use Text Fonts for International Work

(Read-only)

**Type:** String

**Saved in:** Not-saved

**Initial value:** Varies

Stores the same value as SYSCODEPAGE (for compatibility reasons).

## DWGNAME

### Quick Reference

**See also:**

- Save a Drawing

(Read-only)

**Type:** String

**Saved in:** Not-saved

**Initial value:** Drawing1.dwg

Stores the name of the current drawing.

If a new drawing has not been saved yet, DWGNAME defaults to *Drawing1.dwg*. Additional new drawings are named *Drawing2.dwg*, *Drawing3.dwg*, and so on.

The location of the saved drawing file is stored in [DWGPREFIX](#) on page 1489.

## DWGPREFIX

### Quick Reference

**See also:**

- Save a Drawing

(Read-only)

**Type:** String

**Saved in:** Not-saved

**Initial value:** Varies

Stores the drive and folder prefix for the drawing.

## DWGTITLED

### Quick Reference

**See also:**

- Save a Drawing

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Indicates whether the current drawing has been named.

---

0	Drawing has not been named
---	----------------------------

---

1	Drawing has been named
---	------------------------

---

## DYNCONSTRAINTMODE

### Quick Reference

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Displays hidden dimensional constraints when constrained objects are selected.

---

0	Keeps constraints hidden when an object is selected
---	---

---

1	Displays hidden constraints when dimensionally constrained objects are selected
---	---

---

**NOTE** This system variable takes effect when dynamic constraints are hidden (see [DCDISPLAY](#) on page 271).

---

## DYNDIGRIP

### Quick Reference

**See also:**

- Use Dynamic Input

**Type:** Bitcode

**Saved in:** Registry

**Initial value:** 31

Controls which dynamic dimensions are displayed during grip stretch editing.

The DYNDIVIS system variable must be set to 2, which displays all dynamic dimensions.

The setting is stored as a bitcode using the sum of the following values:

---

0	None
1	Resulting dimension
2	Length change dimension
4	Absolute angle dimension
8	Angle change dimension

---

The DYNMODE system variable turns Dynamic Input features on and off.

## DYNDIVIS

### Quick Reference

See also:

- Use Dynamic Input

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls how many dynamic dimensions are displayed during grip stretch editing.

DYNDIGRIP controls which dynamic dimensions are displayed during grip stretch editing.

0	Only the first dynamic dimension in the cycle order
1	Only the first two dynamic dimensions in the cycle order
2	All dynamic dimensions, as controlled by the DYNDIGRIP system variable

The DYNMODE system variable turns Dynamic Input features on and off.

## DYNINFOTIPS

### Quick Reference

See also:

- Use Object Grips

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether tips are displayed for using Shift and Ctrl when editing with grips.

When dynamic input is turned on and you select a grip, a tip at the cursor lists the available grip options that you can cycle through using Shift or Ctrl..

---

0	Hide the Shift and Ctrl tips
1	Display the Shift and Ctrl tips

---

This setting is on the Dynamic Input tab in the [Drafting Settings dialog box](#).

## DYNMODE

### Quick Reference

**See also:**

- Use Dynamic Input

**Type:** Integer

**Saved in:** Registry

**Initial value:** 3

Turns Dynamic Input features on and off.

When all features are on, the context governs what is displayed.

When DYNMODE is set to a negative value, the Dynamic Input features are not turned on, but the setting is stored. Press the Dynamic Input button in the status bar to set DYNMODE to the corresponding positive value.

---

0	All Dynamic Input features, including dynamic prompts, off
1	Pointer input on
2	Dimensional input on
3	Both pointer input and dimensional input on

---

If dynamic prompts are on (DYNPROMPT is set to 1), they are displayed when DYNMODE is set to 1, 2, or 3.

When dimensional input is turned on (DYNMODE = 2 or 3), the program switches to pointer input when you enter a comma or an angle bracket (<), or when you select multiple grip points.

When DYNMODE is set to 1, 2, or 3, you can turn off all features temporarily by holding down the temporary override key, F12.

Settings are on the Dynamic Input tab in the [Drafting Settings dialog box](#).

## DYNPICOORDS

### Quick Reference

See also:

- Use Dynamic Input

**Type:** Switch  
**Saved in:** Registry  
**Initial value:** 0

Controls whether pointer input uses relative or absolute format for coordinates.

---

0	Relative
---	----------

---

1	Absolute
---	----------

---

The DYNMODE system variable turns Dynamic Input features on and off.

## DYNPIFORMAT

### Quick Reference

See also:

- Use Dynamic Input

**Type:** Switch

**Saved in:** Registry

**Initial value:** 0

Controls whether pointer input uses polar or Cartesian format for coordinates.

This setting applies only to a second or next point.

---

0	Polar
---	-------

---

1	Cartesian
---	-----------

---

The DYNMODE system variable turns Dynamic Input features on and off.

## DYNPIVIS

### Quick Reference

**See also:**

- Use Dynamic Input

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls when pointer input is displayed.

---

0	Only when you type at a prompt for a point
---	--

---

1	Automatically at a prompt for a point
---	---------------------------------------

---

2	Always
---	--------

---

The DYNMODE system variable turns Dynamic Input features on and off.



# DYNPROMPT

## Quick Reference

See also:

- Use Dynamic Input

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls display of prompts in Dynamic Input tooltips.

---

0	Off
---	-----

---

1	On
---	----

---

The DYNMODE system variable turns Dynamic Input features on and off. When DYNMODE is set to 0 (off), prompts are not displayed regardless of the DYNPROMPT setting.

# DYNTOOLTIPS

## Quick Reference

See also:

- Use Dynamic Input

**Type:** Switch  
**Saved in:** Registry  
**Initial value:** 1

Controls which tooltips are affected by tooltip appearance settings.

---

0	Only Dynamic Input value fields
---	---------------------------------

---

1	All drafting tooltips
---	-----------------------

---



## EDGEMODE

### Quick Reference

See also:

- Trim or Extend Objects

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls how the TRIM and EXTEND commands determine cutting and boundary edges.

---

0	Uses the selected edge without any extensions
1	Extends or trims the selected object to an imaginary extension of the cutting or boundary edge

---

Lines, arcs, elliptical arcs, rays, and polylines are objects eligible for natural extension. The natural extension of a line or ray is an unbounded line (xline), an arc is a circle, and an elliptical arc is an ellipse. A polyline is broken down into its line and arc components, which are extended to their natural boundaries.

## ELEVATION

### Quick Reference

**See also:**

- Overview of the User Coordinate System (UCS)

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Stores the current elevation of new objects relative to the current UCS.

## ERHIGHLIGHT

### Quick Reference

**See also:**

- Attach Drawing References (Xrefs)

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether reference names or reference objects are highlighted when their counterparts are selected in the External References palette or in the drawing window.

---

0	Referenced objects are not highlighted.
---	---

---

1	Referenced objects are highlighted.
---	-------------------------------------

---

# ERSTATE

## Quick Reference

See also:

- Attach Drawing References (Xrefs)

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** Varies

Indicates whether the External References palette is open or closed.

---

0	Closed
---	--------

---

1	Open
---	------

---

# EXEDIR

## Quick Reference

See also:

- Set Interface Options

(Read-only)

**Type:** String

**Saved in:** Not-saved

**Initial value:** Varies

Displays the folder path of the AutoCAD LT executable file.

## EXPERT

### Quick Reference

See also:

- Switch Between Dialog Boxes and the Command Line

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Controls whether certain prompts are issued.

---

0	Issues all prompts normally.
1	Suppresses "About to regen, proceed?" and "Really want to turn the current layer off?" (-LAYER)
2	Suppresses the preceding prompts and "Block already defined. Redefine it?" (-BLOCK) and "A drawing with this name already exists. Overwrite it?" (SAVE or WBLOCK).
3	Suppresses the preceding prompts and those issued by the LINETYPE Command prompt (-LINETYPE) if you try to load a linetype that's already loaded or create a new linetype in a file that already defines that linetype.
4	Suppresses the preceding prompts and those issued by UCS Save and VPORTS Save if the name you supply already exists.
5	Suppresses the prompt, "That name is already in Use, re-define it?" issued by the -DIMSTYLE Save option when you supply the name of an existing dimension style. Suppresses the same prompt issued by the <a href="#">-SCALELISTEDIT Add</a> option.

---

# EXPLMODE

## Quick Reference

See also:

- Disassemble a Block Reference (Explode)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 1

Controls whether the EXPLODE command supports nonuniformly scaled (NUS) blocks.

---

0	Does not explode NUS blocks
---	-----------------------------

---

1	Explodes NUS blocks
---	---------------------

---

# EXPORTEPLOTFORMAT

## Quick Reference

See also:

- Export DWF and DWFx Files

**Type:** Integer

**Saved in:** User-settings

**Initial value:** 2

Sets the default electronic file output type: PDF, DWF, or DWFx.

---

0	PDF
---	-----

---

1	DWF
---	-----

---

2	DWFx
---	------

---

## EXPORTMODELSPACE

### Quick Reference

See also:

- Work with Model Space and Paper Space

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Specifies what part of the drawing to export to a DWF, DWFx, or PDF file from Model space

---

0	Display
---	---------

---

1	Extents
---	---------

---

2	Window
---	--------

---

## EXPORTPAPERSPACE

### Quick Reference

See also:

- Work with Model Space and Paper Space

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Specifies what part of the drawing to export to a DWF, DWFx, or PDF file from paper space.

---

0	Current Layout
---	----------------

---

1	All Layouts
---	-------------

---



# EXPORTPAGESETUP

## Quick Reference

See also:

- Export DWF and DWFx Files

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0

Specifies whether to export to a DWF, DWFx, or PDF file with the current page setup.

---

0 **Current** - Exports the file using the DWG's current page setup. When this is set to 0, the Page Setup combo box in the Export to DWF/PDF panel of the Ribbon's Output tab displays **Current**.

---

1 **Override** - Exports the file and allows you to override the DWG's current page setup. When this is set to 1, the Page Setup combo box in the Export to DWF/PDF panel of the Ribbon's Output tab displays **Override**.  
You can override plot options such as page size and orientation in the Page Setup Override dialog box.

---

# EXTMAX

## Quick Reference

See also:

- Pan or Zoom a View

(Read-only)

**Type:** 3D-point  
**Saved in:** Drawing  
**Initial value:** Varies

Stores the upper-right point of the drawing extents.

Expands outward as new objects are drawn; shrinks only with ZOOM All or ZOOM Extents. Reported in world coordinates for the current space.

## EXTMIN

### Quick Reference

**See also:**

- Pan or Zoom a View

(Read-only)

**Type:** 3D-point

**Saved in:** Drawing

**Initial value:** Varies

Stores the lower-left point of the drawing extents.

Expands outward as new objects are drawn; shrinks only with ZOOM All or ZOOM Extents. Reported in world coordinates for the current space.

## EXTNAMES

### Quick Reference

**See also:**

- Resolve Name Conflicts in External References

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1

Sets the parameters for named object names (such as linetypes and layers) stored in definition tables.

---

0	Uses AutoCAD LT Release 14 parameters, which limit names to 31 characters in length. Names can include the letters A to Z, the numerals 0 to 9, and the special characters dollar sign (\$), underscore (_), and hyphen (-).
---	--

---

- 1 Uses AutoCAD 2000 (and later releases) parameters. Names can be up to 255 characters in length, and can include the letters A to Z, the numerals 0 to 9, spaces, and any special characters not used by the operating system and AutoCAD LT for other purposes.
-



# F System Variables

# 33

## FACETRES

### Quick Reference

See also:

- Add Simple Shading to 3D Objects

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.5000

Adjusts the smoothness of shaded objects and objects with hidden lines removed.

Valid values are from 0.01 to 10.0.

When you use the 3DPRINT command, the FACETRES system variable is set to 10.

## FIELDDISPLAY

### Quick Reference

See also:

- Work with AutoCAD Drawings in AutoCAD LT

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether fields are displayed with a gray background.

The background is not plotted.

---

0	Fields are displayed with no background
1	Fields are displayed with a gray background

---

## FIELDVAL

### Quick Reference

See also:

- Update Fields

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 31

Controls how fields are updated.

The setting is stored as a bitcode using the sum of the following values:

---

0	Not updated
1	Updated on open
2	Updated on save
4	Updated on plot
8	Updated on use of ETRANSMIT
16	Updated on regeneration

---

**NOTE** The Date field is updated by UPDATEFIELD, but it is not updated automatically based on the setting of the FIELDVAL system variable.

---

# FILEDIA

## Quick Reference

See also:

- Switch Between Dialog Boxes and the Command Line

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Suppresses display of file navigation dialog boxes.

---

0	Does not display dialog boxes. You can still request a file dialog box to appear by entering a tilde (~) in response to the command's prompt.
1	Displays dialog boxes. However, if a script is active, an ordinary prompt is displayed.

---

# FILLETRAD

## Quick Reference

See also:

- Create Fillets

**Type:** Real  
**Saved in:** Drawing  
**Initial value:** 0.0000

Stores the current fillet radius for 2D objects.

If you use the [FILLET](#) on page 518 command to change the radius of a 2D fillet, the value of this system variable changes to match.

## FILLETRAD3D

### Quick Reference

**See also:**

- Fillet a Surface
- Modify Edges on 3D Objects

**Type:** Real

**Saved in:** Drawing

**Initial value:** 1.0000

Stores the current fillet radius for 3D objects.

Stores the default radius for 3D solid and surface fillets created with the FILLETEDGE and SURFFILLET commands. If you change the radius while using the FILLETEDGE or SURFFILLET commands, the FILLETRAD system variable does **not** update to this new value.

## FILLMODE

### Quick Reference

**See also:**

- Control the Display of Polylines, Hatches, Gradient Fills, Lineweights, and Text

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1

Specifies whether hatches and fills, 2D solids, and wide polylines are filled in.

---

0	Objects are not filled
---	------------------------

---

1	Objects are filled
---	--------------------

---



# FONTALT

## Quick Reference

See also:

- Substitute Fonts

**Type:** String

**Saved in:** Registry

**Initial value:** simplex.shx

Specifies the alternate font to be used when the specified font file cannot be located.

When a drawing file with a defined text style is opened and an alternate font is not specified, the Alternate Font dialog box is displayed.

# FONTMAP

## Quick Reference

See also:

- Substitute Fonts

**Type:** String

**Saved in:** Registry

**Initial value:** acadlt.fmp

Specifies the font mapping file to be used.

A font mapping file contains one font mapping per line; the original font used in the drawing and the font to be substituted for it are separated by a semicolon (;). For example, to substitute the Times TrueType font for the Roman font, the line in the mapping file would read as follows:

```
romanc.shx;times.ttf
```

If FONTMAP does not point to a font mapping file, if the FMP file is not found, or if the font file name specified in the FMP file is not found, the font defined in the style is used. If the font in the style is not found, a font is substituted according to the substitution rules.

FONTMAP only works with text created through the MTEXT command.

## FRAME

### Quick Reference

**See also:**

- Hide and Show Underlay Frames
- Show and Hide Raster Image Boundaries
- Update Referenced Drawing Attachments

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 3

Controls the display of frames for all images, underlays, and clipped xrefs.

The FRAME setting overrides the individual [IMAGEFRAME](#), [DWFFRAME](#), [PDFFRAME](#), [DGNFRAME](#), and [XCLIPFRAME](#) settings.

---

0	The frame is not visible and it is not plotted. The frame temporarily reappears during selection preview or object selection.
1	Displays and plots the frame.
2	Displays but does not plot the frame.
3	The individual setting varies for all external references in the current drawing (images, underlays, and clipped xrefs all have different frame settings).

---

# FRAMESELECTION

## Quick Reference

### See also:

- Clip External References and Blocks
- Hide and Show Underlay Frames
- Show and Hide Raster Image Boundaries

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether the frame of an image, underlay, or clipped xref can be selected.

---

0 Hidden frames cannot be selected.

---

1 Hidden frames can be selected.

---

---

**NOTE** The [PREVIEWFILTER](#) on page 1622 system variable may prevent the frame from redisplaying during selection preview, but the frame can still be selected.

---

# FULLPLOTPATH

## Quick Reference

### See also:

- Print or Plot Drawings

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether the full path of the drawing file is sent to the plot spooler.

---

0 Sends the drawing file name only

---

1 Sends the full path of the drawing file

---

## GEOLATLONGFORMAT

### Quick Reference

See also:

- Specify the Geographic Location of a Drawing

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls the format of the latitude or longitude values in the Geographic Location dialog box, and the coordinate status bar in Geographic mode.

---

0	Latitude and longitude format is decimal degrees (DD)
1	Latitude and longitude format is degrees minutes seconds (DMS)

---

# GEOMARKERVISIBILITY

## Quick Reference

See also:

- Specify the Geographic Location of a Drawing

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1

Controls the visibility of geographic markers.

---

0	Geographic marker is not visible
---	----------------------------------

---

1	Geographic marker is visible
---	------------------------------

---

# GFANG

## Quick Reference

See also:

- Choose a Hatch Pattern or Fill

**Type:** Real

**Saved in:** Not-saved

**Initial value:** 0

Specifies the angle of a gradient fill.

Valid values range from 0 to less than 360 (degrees). Negative values and values equal to or greater than 360 are accepted, but they are converted to the equivalent value between 0 and 360.

## GFCLR1

### Quick Reference

**See also:**

- Choose a Hatch Pattern or Fill

**Type:** String

**Saved in:** Not-saved

**Initial value:** "Blue"

Specifies the color for a one-color gradient fill or the first color for a two-color gradient fill.

Valid values include the following:

- AutoCAD Color Index (ACI): integer values from 1 to 255, or a color name from the first seven colors
- True Colors: RGB or HSL values from 000 to 255 in the form "RGB:130,200,240"
- Color Books: Text from standard color books, guides, or sets, for example "DIC COLOR GUIDE(R)\$DIC 43"

## GFCLR2

### Quick Reference

**See also:**

- Choose a Hatch Pattern or Fill

**Type:** String

**Saved in:** Not-saved

**Initial value:** "Yellow"

Specifies the second color for a two-color gradient fill.

Valid values include the following:

- AutoCAD Color Index (ACI): integer values from 1 to 255, or a color name from the first seven colors

- True Colors: RGB or HSL values from 000 to 255 in the form "RGB:130,200,240"
- Color Books: Text from standard color books, guides, or sets, for example "DIC COLOR GUIDE(R)\$DIC 43"

## GFCLRLUM

### Quick Reference

See also:

- Choose a Hatch Pattern or Fill

**Type:** Real  
**Saved in:** Not-saved  
**Initial value:** 1.0000

Controls the tint or shade level in a one-color gradient fill.

A tint gradient transitions toward white and a shade gradient transitions toward black. Valid values range from 0.0 (darkest) to 1.0 (lightest).

## GFCLRSTATE

### Quick Reference

See also:

- Choose a Hatch Pattern or Fill

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 0

Specifies whether a gradient fill uses one color or two colors.

---

0	Two-color gradient fill
---	-------------------------

---

1	One-color gradient fill
---	-------------------------

---



# GFNAME

## Quick Reference

See also:

- Choose a Hatch Pattern or Fill

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 1

Specifies the pattern of a gradient fill.

---

1	Linear
2	Cylindrical
3	Inverted cylindrical
4	Spherical
5	Hemispherical
6	Curved
7	Inverted spherical
8	Inverted hemispherical
9	Inverted curved

---

# GFSHIFT

## Quick Reference

See also:

- Choose a Hatch Pattern or Fill

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 0

Specifies whether the pattern in a gradient fill is centered or is shifted up and to the left.

---

0	Centered
1	Shifted up and to the left

---

## GLOBALOPACITY

### Quick Reference

See also:

- Set Up the Drawing Area
- [Transparency Dialog Box](#) on page 888

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 100

Controls transparency level for all palettes.

---

0	Fully transparent
100	Fully opaque

---

Enter a value from 0-100 to set the transparency level.

This system variable determines the default setting for the [Transparency dialog box > Disable all window transparency \(global\) option](#) on page 889.

# GRIDDISPLAY

## Quick Reference

See also:

- Adjust Grid and Grid Snap

**Type:** Bitcode

**Saved in:** Drawing

**Initial value:** 2

Controls the display limits of the grid.

The setting is stored as a bitcode using the sum of the following values:

---

0	Restricts the grid to the area specified by the LIMITS command
1	Does not restrict the grid to the area specified by the LIMITS command
2	Turns on adaptive grid display, which limits the density of the grid when zoomed out
4	If the grid is set to adaptive display and when zoomed in, generates additional, more closely spaced grid lines in the same proportion as the intervals of the major grid lines

---

**NOTE** Setting 4 is ignored unless setting 2 is specified.

---

# GRIDMAJOR

## Quick Reference

See also:

- Adjust Grid and Grid Snap

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 5

Controls the frequency of major grid lines compared to minor grid lines.

Valid values range from 1 to 100.

Grid lines are displayed when SHADEMODE is set to Hidden.

## GRIDMODE

### Quick Reference

**See also:**

- Adjust Grid and Grid Snap

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1

Specifies whether the grid is turned on or off.

---

0	Turns the grid off
---	--------------------

---

1	Turns the grid on
---	-------------------

---

## GRIDSTYLE

### Quick Reference

**See also:**

- Adjust Grid and Grid Snap

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls the style of grid displayed for 2D model space, Block Editor, 3D parallel projection, 3D perspective projection, and Sheet and Layout tabs.

The setting is stored as an integer using the sum of the following values:

---

0	Displays lined grid for 2D model space, Block Editor, 3D parallel projection, 3D perspective projection, and Sheet and Layout.
1	Displays dotted grid for 2D model space.
2	Displays dotted grid for Block Editor.
4	Displays dotted grid for Sheet and Layout.

---

## GRIDUNIT

### Quick Reference

See also:

- Adjust Grid and Grid Snap

**Type:** 2D-point

**Saved in:** Drawing

**Initial value:** 0.5000,0.5000 (imperial) or 10,10 (metric)

Specifies the grid spacing (X and Y) for the current viewport.

## GRIPBLOCK

### Quick Reference

See also:

- Control Grips in Blocks
- [Selection Tab \(Options Dialog Box\)](#) on page 869

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls the display of grips in blocks.

---

0	Assigns a grip only to the insertion point of the block
1	Assigns grips to objects within the block

---

## GRIPCOLOR

### Quick Reference

See also:

- Use Object Grips
- [Selection Tab \(Options Dialog Box\)](#) on page 869

**Type:** Integer  
**Saved in:** Registry

**Initial value:** 150

Controls the color of unselected grips.

The valid range is 1 to 255.

## GRIPCONTOUR

### Quick Reference

See also:

- Use Object Grips

**Type:** Integer  
**Saved in:** Registry

**Initial value:** 251

Controls the color of the grip contour.

The valid range is 1 to 255.

## GRIPDYNCOLOR

### Quick Reference

**See also:**

- [Work with Dynamic Blocks in Drawings](#)

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 140

Controls the color of custom grips for dynamic blocks.

The valid range is 1 to 255.

## GRIPHOT

### Quick Reference

**See also:**

- [Use Object Grips](#)
- [Selection Tab \(Options Dialog Box\)](#) on page 869

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 12

Controls the color of selected grips.

The valid range is 1 to 255.

## GRIPHOVER

### Quick Reference

**See also:**

- [Use Object Grips](#)

- [Selection Tab \(Options Dialog Box\)](#) on page 869

**Type:** Integer

**Saved in:** Registry

**Initial value:** 11

Controls the fill color of an unselected grip when the cursor pauses over it.

The valid range is 1 to 255.

## GRIPMULTIFUNCTIONAL

### Quick Reference

See also:

- [Choose a Method to Modify Objects](#)
- [Modify Objects Using Grips](#)

**Type:** Bitcode

**Saved in:** Registry

**Initial value:** 3

Specifies the access methods for multi-functional grip options.

---

0	Multi-functional grip options are not available
1	Multi-functional grip options can be accessed by pressing Ctrl to change grip behavior (Ctrl-cycling)
2	Multi-functional grip options can be accessed via the grip menu displayed when you hover over a grip
3	Multi-functional grip options can be accessed with both Ctrl-cycling and the grip menu

---



# GRIPOBJLIMIT

## Quick Reference

See also:

- Use Object Grips
- [Selection Tab \(Options Dialog Box\)](#) on page 869

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 100

Suppresses the display of grips when the selection set includes more than the specified number of objects.

The valid range is 0 to 32,767. For example, when set to 1, grips are suppressed when more than one object is selected. When set to 0, grips are always displayed.

# GRIPS

## Quick Reference

See also:

- Use Object Grips
- [Selection Tab \(Options Dialog Box\)](#) on page 869

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 2

Controls the display of grips on selected objects.

---

0	Hides grips
1	Displays grips
2	Displays additional midpoint grips on polyline segments

---

To adjust the size of the grips and the effective selection area used by the cursor when you snap to a grip, use GRIPSIZE.

## GRIPSIZE

### Quick Reference

See also:

- Use Object Grips
- [Selection Tab \(Options Dialog Box\)](#) on page 869

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 5

Sets the size of the grip box in pixels.

The valid range is 1 to 255.

## GRIPTIPS

### Quick Reference

See also:

- Use Object Grips
- [Selection Tab \(Options Dialog Box\)](#) on page 869
- Choose a Method to Modify Objects
- Modify Objects with Multi-functional Grips

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls the display of grip tips when the cursor hovers over grips on dynamic blocks and custom objects that support grip tips.

---

0 Turns off the display of grip tips.

---

1 Turns on the display of grip tips.

---

## GROUPDISPLAYMODE

### Quick Reference

See also:

- Select Objects in Groups

**Type:** Integer

**Saved in:** Registry

**Initial value:** 2

Controls the display and grips on groups, when group selection is on.

---

0	Displays grips on all objects in the selected group
1	Displays a single grip at the center of the grouped objects
2	Displays the group bounding box with a single grip at the center

---

Group selection is enabled by setting the [PICKSTYLE](#) on page 1612 system variable to 1 or 3.



# H System Variables

# 35

## HALOGAP

### Quick Reference

See also:

- Add Simple Shading to 3D Objects

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0

Specifies a gap to be displayed where an object is hidden by another object.

The value is specified as a percent of one unit and is independent of the zoom level.

A haloed line is shortened at the point where it is hidden when HIDE or the Hidden option of SHADEMODE are used. The halo gap can also be set in the [Hidden Line Settings dialog box](#), Halo Gap Percentage area.

## HANDLES

### Quick Reference

See also:

- Overview of Command Scripts

(Read-only)

**Type:** Integer

**Saved in:** Drawing

**Initial value:** On

Reports whether object handles can be accessed by applications.

Because handles can no longer be turned off, has no effect except to preserve the integrity of scripts.

## HELPPREFIX

### Quick Reference

**See also:**

- Set Up the Drawing Area
- [Files Tab \(Options Dialog Box\)](#) on page 842

**Type:** String

**Saved in:** Registry

**Initial value:** Varies

Sets the file path for the Help system.

This system variable determines the default setting in the [Options dialog box > Files tab > Help and Miscellaneous File Names option > Help Location option](#) on page 843.

## HIDEPRECISION

### Quick Reference

**See also:**

- Hide Lines or Shade 3D Objects

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Controls the accuracy of hides and shades.

Hides can be calculated in double precision or single precision. Setting HIDEPRECISION to 1 produces more accurate hides by using double precision, but this setting also uses more memory and can affect performance, especially when hiding solids.

---

0	Single precision; uses less memory
1	Double precision; uses more memory

---

The HIDEPRECISION setting can also be set in the [Hidden Line Settings dialog box](#), Hide Precision area.

## HIDETEXT

### Quick Reference

See also:

- Hide Lines in 3D Objects

**Type:** Switch

**Saved in:** Drawing

**Initial value:** On

Specifies whether text objects created by the TEXT or MTEXT command are processed during a HIDE command.

---

Off	Text is not hidden and does not hide other objects
On	Text is hidden but does not hide other objects

---

HIDETEXT can also be set in the [Hidden Line Settings dialog box](#).

## HIGHLIGHT

### Quick Reference

See also:

- Customize Object Selection

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 1  
Controls object highlighting; does not affect objects selected with grips.

---

0 Turns off object selection highlighting

---

1 Turns on object selection highlighting

---

## HPANG

### Quick Reference

See also:

- Overview of Hatch Patterns and Fills

**Type:** Real  
**Saved in:** Not-saved  
**Initial value:** 0.0000  
Sets the angle for new hatch patterns.

## HPANNOTATIVE

### Quick Reference

See also:

- Overview of Scaling Annotations

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0  
Controls whether a new hatch pattern is annotative.

---

0 Nonannotative

---

1 Annotative

---



# HPASSOC

## Quick Reference

See also:

- Specify Hatch and Fill Areas

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls whether hatches and fills are associative.

---

0	Hatches and fills are not associated with their defining boundary objects
1	Hatches and fills are associated with their defining boundary objects and are updated when the boundary objects change

---

# HPBACKGROUNDCOLOR

## Quick Reference

See also:

- Set Property Overrides for Hatches and Fills

**Type:** String  
**Saved in:** Drawing  
**Initial value:** None

Controls the background color for hatch patterns.

Valid values include the following:

- "None" or "." for no background color
- AutoCAD Color Index (ACI): integer values from 1 to 255, or a color name from the first seven colors

- True Colors: RGB or HSL values from 000 to 255 in the form "RGB:130,200,240"
- Color Books: Text from standard color books, guides, or sets, for example "DIC COLOR GUIDE(R)\$DIC 43"

## HPBOUND

### Quick Reference

See also:

- Specify Hatch and Fill Areas

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 1

Controls the object type created by HATCH and BOUNDARY.

---

0	Creates a region
---	------------------

---

1	Creates a polyline
---	--------------------

---

A polyline or region object is created only if the HPBOUNDRETAIN system variable is turned on.

## HPBOUNDRETAIN

### Quick Reference

See also:

- Specify Hatch and Fill Areas

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0

Controls whether boundary objects are created for new hatches and fills.

---

0	Does not create boundary objects
1	Creates boundary objects according to the HPBOUND system variable

---

## HPCOLOR

### Quick Reference

**See also:**

- Set Property Overrides for Hatches and Fills

**Type:** String

**Saved in:** Drawing

**Initial value:** use current

Sets a default color for new hatches.

Valid values include the following:

- "." to use the current color set in the CECOLOR system variable
- ByLayer or ByBlock
- AutoCAD Color Index (ACI): integer values from 1 to 255, or a color name from the first seven colors
- True Colors: RGB or HSL values from 000 to 255 in the form "RGB:130,200,240"
- Color Books: Text from standard color books, guides, or sets, for example "DIC COLOR GUIDE(R)\$DIC 43"

Values other than the "." (use current) value override the current color (CECOLOR).

## HPDLGMODE

### Quick Reference

See also:

- Overview of Hatch Patterns and Fills

**Type:** Integer  
**Saved in:** User-settings  
**Initial value:** 2

Controls the display of the Hatch and Gradient dialog box and the Hatch Edit dialog box.

---

0	Hatch and Gradient dialog box is not displayed for HATCH and GRADIENT unless Settings is entered at the Command prompt
1	Hatch and Gradient dialog box is displayed for HATCH and GRADIENT
2	Hatch and Gradient dialog box is not displayed for HATCH and GRADIENT when the ribbon is active (RIBBONSTATE = 1). When the ribbon is inactive (RIBBONSTATE = 0), the Hatch and Gradient dialog box is displayed.

---

## HPDOUBLE

### Quick Reference

See also:

- Choose a Hatch Pattern or Fill

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 0

Specifies hatch pattern doubling for user-defined patterns.

Doubling specifies a second set of lines drawn at 90 degrees to the original lines.

---

0	Turns off hatch pattern doubling
1	Turns on hatch pattern doubling

---

## HPDRAWORDER

### Quick Reference

See also:

- Set Property Overrides for Hatches and Fills

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 3

Controls the draw order of hatches and fills.

Controls whether hatch and fill objects are displayed in front or behind all other objects, or in front or behind their associated boundaries.

---

0	None. The hatch or fill is not assigned a draw order.
1	Send to back. The hatch or fill is sent to the back of all other objects.
2	Bring to front. The hatch or fill is brought to the front of all other objects.
3	Send behind boundary. The hatch or fill is sent behind the hatch's boundary objects.
4	Bring in front of boundary. The hatch or fill is brought in front of the hatch's boundary objects.

---

## HPGAPTOL

### Quick Reference

See also:

- Specify Hatch and Fill Areas

**Type:** Real  
**Saved in:** Registry  
**Initial value:** 0.0000

Treats a set of objects that almost enclose an area as a closed hatch boundary.

The default value, 0, specifies that the objects enclose the area, with no gaps. Enter a value, in drawing units, from 0 to 5000 to set the maximum size of gaps that can be ignored when the objects serve as a hatch boundary.

## HPINHERIT

### Quick Reference

See also:

- Modify Hatch Alignment, Scale, and Rotation

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0

Controls whether to inherit the hatch origin when using the Inherit Properties option in HATCH and HATCHEDIT.

---

0	The hatch origin is taken from HPORIGIN
1	The hatch origin is taken from the source hatch object

---

# HPISLANDDETECTION

## Quick Reference

See also:

- Specify Hatch and Fill Areas

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1

Controls how islands within the hatch boundary are treated.

---

0	Normal. Hatches islands within islands.
1	Outer. Hatches only areas outside of islands.
2	Ignore. Hatches everything within the boundaries.

---

An island is an enclosed area within the area to be hatched.

# HPISLANDDETECTIONMODE

## Quick Reference

See also:

- Specify Hatch and Fill Areas

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1

Controls whether internal closed boundaries, called islands, are detected.

---

0	Off .
1	On (recommended). Hatches or ignores islands according to HPISLANDDETECTION.

---

## HPLAYER

### Quick Reference

**See also:**

- Set Property Overrides for Hatches and Fills

**Type:** String

**Saved in:** Drawing

**Initial value:** use current

Specifies a default layer for new hatches and fills.

Values other than the "." (use current) value override the current layer (CELAYER).

## HPMAXAREAS

### Quick Reference

**See also:**

- Control the Scale of Hatch Patterns

**Type:** Real

**Saved in:** Registry

**Initial value:** 100

Sets the maximum number of enclosed areas that a single hatch object can have and still automatically switch between solid and pattern hatches during zoom operations.

Valid values are from 0 to 10,000,000.



## HPMAXLINES

### Quick Reference

**See also:**

- Control the Scale of Hatch Patterns

**Type:** Real

**Saved in:** Registry

**Initial value:** 1000000

Sets the maximum number of hatch lines that are generated in a hatch operation.

Valid values are from 100 to 10,000,000.

## HPNAME

### Quick Reference

**See also:**

- Choose a Hatch Pattern or Fill

**Type:** String

**Saved in:** Not-saved

**Initial value:** ANSI31 (imperial) or ANGLE (metric)

Sets the default hatch pattern name.

Valid names can contain up to 34 characters without spaces. The value "" indicates that there is no default. Enter a period (.) to reset HPNAME to the default value.

## HPOBJWARNING

### Quick Reference

See also:

- Control the Scale of Hatch Patterns

**Type:** Integer

**Saved in:** Registry

**Initial value:** 10000

Sets the number of hatch boundary objects that can be selected before displaying a warning message.

The maximum value can vary, but is significantly larger than 100000000 (one hundred million).

## HPORIGIN

### Quick Reference

See also:

- Control the Hatch Origin Point

**Type:** 2D-point

**Saved in:** Drawing

**Initial value:** 0.0000,0.0000

Sets the hatch origin point for new hatch patterns relative to the current user coordinate system.

## HPORIGINMODE

### Quick Reference

See also:

- Control the Hatch Origin Point

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls how the default hatch origin point is determined.

---

0	Uses HPORIGIN
1	Uses the bottom-left corner of the rectangular extents of the hatch boundaries
2	Uses the bottom-right corner of the rectangular extents of the hatch boundaries
3	Uses the top-right corner of the rectangular extents of the hatch boundaries
4	Uses the top-left corner of the rectangular extents of the hatch boundaries
5	Uses the center of the rectangular extents of the hatch boundaries

---

## HPQUICKPREVIEW

### Quick Reference

See also:

- Specify Hatch and Fill Areas

**Type:** Switch

**Saved in:** User-settings

**Initial value:** 1

Controls whether a hatch preview is displayed when specifying a hatch area.

---

0 or OFF	No preview
1 or ON	Quick preview

---

## HPQUICKPREVTIMEOUT

### Quick Reference

See also:

- Specify Hatch and Fill Areas

**Type:** Integer

**Saved in:** Registry

**Initial value:** 2

Sets the maximum time for a hatch preview to generate before the preview is automatically cancelled.

If the specified duration is reached, and the preview is not complete, the preview is cancelled, but the command remains active.

The duration is measured in seconds. Valid values range from 1 to 300.

---

**NOTE** The [HPQUICKPREVIEW](#) on page 1545 system variable controls whether a preview is generated when using the [HATCH](#) on page 545 command.

---

## HPSCALE

### Quick Reference

See also:

- Control the Scale of Hatch Patterns

**Type:** Real

**Saved in:** Not-saved

**Initial value:** 1.0000

Sets the hatch pattern scale factor.

## HPSEPARATE

### Quick Reference

See also:

- Specify Hatch and Fill Areas

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls whether a single hatch object or separate hatch objects are created when operating on several closed boundaries.

---

0	A single hatch object is created
---	----------------------------------

---

1	Separate hatch objects are created
---	------------------------------------

---

## HPSPACE

### Quick Reference

See also:

- Control the Scale of Hatch Patterns

**Type:** Real

**Saved in:** Not-saved

**Initial value:** 1.0000

Sets the hatch pattern line spacing for user-defined patterns.

## HPTRANSPARENCY

### Quick Reference

See also:

- Set Property Overrides for Hatches and Fills

**Type:** String

**Saved in:** Drawing

**Initial value:** use current

Sets the default transparency for new hatches and fills.

Valid values include “use current” (or “.”), ByLayer, ByBlock, and integer values from 0 to 90. The higher the value, the more transparent the hatch.

Values other than “use current” or “.” override the current transparency ([CETRANSPARENCY](#) on page 1410).

Changing this value does not affect existing hatch objects.

## HYPERLINKBASE

### Quick Reference

See also:

- Use a Hyperlink to Access a File or a Web Page

**Type:** String

**Saved in:** Drawing

**Initial value:** ""

Specifies the path used for all relative hyperlinks in the drawing.

If no value is specified, the drawing path is used for all relative hyperlinks.

## IMAGEFRAME

### Quick Reference

See also:

- Show and Hide Raster Image Boundaries

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 1

Controls whether image frames are displayed and plotted.

The [FRAME](#) system variable overrides the IMAGEFRAME setting. Use the IMAGEFRAME system variable after the FRAME system variable to reset the image frame settings.

---

0	The image frame is not displayed or plotted. The frame temporarily reappears during selection preview or object selection.
1	Displays and plots the image frame.
2	Displays but does not plot the image frame.

---

## IMAGEHLT

### Quick Reference

See also:

- Improve the Display Speed of Raster Images

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls whether the entire raster image or only the raster image frame is highlighted.

---

0	Highlights only the raster image frame
---	--

---

1	Highlights the entire raster image
---	------------------------------------

---

## INDEXCTL

### Quick Reference

See also:

- Work with Layer and Spatial Indexes

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Controls whether layer and spatial indexes are created and saved in drawing files.

To receive the maximum benefit of demand loading, it is recommended that you save any drawings that are used as xrefs with layer and spatial indexes

---

0	No indexes are created
---	------------------------

---

1	Layer index is created
---	------------------------

---



2	Spatial index is created
<hr/>	
3	Layer and spatial indexes are created
<hr/>	

## INETLOCATION

### Quick Reference

**See also:**

- Get Started with Internet Access

**Type:** String

**Saved in:** Registry

**Initial value:** <http://www.autodesk.com/acltuser>

Stores the Internet location used by the BROWSER command and the Browse the Web dialog box.

## INPUTHISTORYMODE

### Quick Reference

**See also:**

- Shortcut Menus
- The Command Line Window

**Type:** Bitcode

**Saved in:** Registry

**Initial value:** 15

Controls the content and location of the user input history.

The setting is stored as a bitcode using the sum of the following values:

0	No history of recent input is displayed.
<hr/>	
1	History of recent input is displayed at the command line or in a dynamic prompt tooltip. Access with the Up Arrow

and Down Arrow keys at the Command prompt, or at an input prompt.

---

2	History of recent input for the current <i>command</i> is displayed in the shortcut menu under Recent Input.
4	History of recent input for all <i>commands</i> in the current session is displayed in the shortcut menu under Recent Input.
8	Markers for recent input of point locations are displayed. Use the arrow keys at the Command prompt for specifying a point location.

---

## INSBASE

### Quick Reference

See also:

- Insert Blocks

**Type:** 3D-point

**Saved in:** Drawing

**Initial value:** 0.0000,0.0000,0.0000

Stores the insertion base point set by BASE, which gets expressed as a UCS coordinate for the current space.

## INSNAME

### Quick Reference

See also:

- Insert Blocks

**Type:** String

**Saved in:** Not-saved

**Initial value:** ""

Sets a default block name for the INSERT command.

The name must conform to symbol naming conventions. Returns "" if no default is set. Enter a period (.) to set no default.

## INSUNITS

### Quick Reference

**See also:**

- Insert Blocks

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1 (imperial) or 4 (metric)

Specifies a drawing-units value for automatic scaling of blocks, images, or xrefs when inserted or attached to a drawing.

---

**NOTE** The INSUNITS setting is ignored when inserting blocks into a drawing.

---

0	Unspecified (No units)
1	Inches
2	Feet
3	Miles
4	Millimeters
5	Centimeters
6	Meters
7	Kilometers
8	Microinches
9	Mils

10	Yards
11	Angstroms
12	Nanometers
13	Microns
14	Decimeters
15	Dekameters
16	Hectometers
17	Gigameters
18	Astronomical Units
19	Light Years
20	Parsecs

## INSUNITSDEFSOURCE

### Quick Reference

See also:

- Insert Blocks

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Sets source content units value when INSUNITS is set to 0.

Valid range is 0 to 20.

---

0	Unspecified (No units)
1	Inches

---

2	Feet
3	Miles
4	Millimeters
5	Centimeters
6	Meters
7	Kilometers
8	Microinches
9	Mils
10	Yards
11	Angstroms
12	Nanometers
13	Microns
14	Decimeters
15	Dekameters
16	Hectometers
17	Gigameters
18	Astronomical Units
19	Light Years
20	Parsecs

# INSUNITSDEFTARGET

## Quick Reference

See also:

- Insert Blocks

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Sets target drawing units value when INSUNITS is set to 0.

Valid range is 0 to 20.

---

0	Unspecified (No units)
---	------------------------

---

1	Inches
---	--------

---

2	Feet
---	------

---

3	Miles
---	-------

---

4	Millimeters
---	-------------

---

5	Centimeters
---	-------------

---

6	Meters
---	--------

---

7	Kilometers
---	------------

---

8	Microinches
---	-------------

---

9	Mils
---	------

---

10	Yards
----	-------

---

11	Angstroms
----	-----------

---

12	Nanometers
----	------------

---

13	Microns
----	---------

---

14	Decimeters
15	Dekameters
16	Hectometers
17	Gigameters
18	Astronomical Units
19	Light Years
20	Parsecs

## INTELLIGENTUPDATE

### Quick Reference

See also:

- Set Interface Options

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 20

Controls the graphics refresh rate.

The default value is 20 frames per second. If you encounter problems related to graphics generation or timing, turn off the variable by setting it to 0. INTELLIGENTUPDATE works by suppressing the graphics update until the timer expires. Subsequent updates reset the timer.

## INTERSECTIONCOLOR

### Quick Reference

See also:

- Add Simple Shading to 3D Objects

Controls the color of polylines at the intersection of 3D surfaces when the visual style is set to 2D Wireframe.

Value 0 designates entity color ByBlock, value 256 designates entity color ByLayer, and value 257 designates entity color ByEntity. Values 1-255 designate an AutoCAD Color Index (ACI) color.

An intersection polyline is what displays as the face-to-face intersection of 3D surfaces when the HIDE command is used or the SHADEMODE command is set to Hidden.

The INTERSECTIONCOLOR setting is visible only if INTERSECTIONDISPLAY is turned on and if the [HIDE](#) on page 584 command is used.

The INTERSECTIONCOLOR setting can also be specified in the [Hidden Line Settings dialog box](#), Face Intersections area, Color control.

## INTERSECTIONDISPLAY

### Quick Reference

See also:

- Add Simple Shading to 3D Objects

**Type:** Switch

**Saved in:** Drawing

**Initial value:** Off

Controls the display of polylines at the intersection of 3D surfaces when the visual style is set to 2D Wireframe.

---

Off	Turns off the display of intersection polylines
-----	---

---

On	Turns on the display of intersection polylines
----	--

---

An intersection polyline displays at the face-to-face intersection of 3D surfaces when the HIDE command is used or the SHADEMODE command is set to Hidden.

The INTERSECTIONDISPLAY setting can also be set in the [Hidden Line Settings dialog box](#), Face Intersections area, Display Intersections check box.



# ISAVEBAK

## Quick Reference

See also:

- Set Interface Options

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Improves the speed of incremental saves, especially for large drawings.

ISAVEBAK controls the creation of a backup file (BAK). In the operating system, copying the file data to create a BAK file for large drawings takes a major portion of the incremental save time.

---

0	No BAK file is created (even for a full save)
1	A BAK file is created

---

**WARNING** In some cases (such as a power failure in the middle of a save), it's possible that drawing data can be lost.

---

# ISAVEPERCENT

## Quick Reference

See also:

- Set Up the Drawing Area

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 50

Determines the amount of wasted space tolerated in a drawing file.

The value of ISAVEPERCENT is an integer between 0 and 100. The default value of 50 means that the estimate of wasted space within the file does not exceed 50 percent of the total file size. Wasted space is eliminated by periodic

full saves. When the estimate exceeds 50 percent, the next save will be a full save. This resets the wasted space estimate to 0. If ISAVEPERCENT is set to 0, every save is a full save.

## ISOLINES

### Quick Reference

See also:

- Create Solids

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 4

Specifies the number of contour lines displayed on the curved surfaces of 3D solids.

Valid settings range from 0 to 2047.

# L System Variables

# 37

## LARGEOBJECTSUPPORT

### Quick Reference

See also:

- Save a Drawing

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 0

Controls large object size limit support when you open and save drawings.

---

0	Use legacy object size limits from AutoCAD LT 2009 and prior
---	--

---

1	Use AutoCAD LT 2010 object size limits
---	--

---

## LASTANGLE

### Quick Reference

See also:

- Draw Arcs

(Read-only)

**Type:** Real

**Saved in:** Not-saved

**Initial value:** 0.0000

Stores the end angle of the last arc entered relative to the XY plane of the current UCS for the current space.

## LASTPOINT

### Quick Reference

See also:

- Overview of Coordinate Entry

**Type:** 3D-point

**Saved in:** Not-saved

**Initial value:** 0.0000,0.0000,0.0000

Stores the last point specified, expressed as UCS coordinates for the current space.

You can reference the last point specified by entering the @ symbol at a point prompt. This is equivalent to entering @0,0,0.

## LATITUDE

### Quick Reference

See also:

- Specify the Geographic Location of a Drawing

**Type:** Real

**Saved in:** Drawing

**Initial value:** 37.7950

Specifies the latitude of the drawing model in decimal format.

The default is the latitude of San Francisco, California. The valid range is -90 to +90. Positive values represent north latitudes.

This value is affected by the settings of the LUPREC system variable.

This value is not affected by the settings of the AUNITS and AUPREC system variables.

## LAYEREVAL

### Quick Reference

See also:

- Use New Layer Notification
- [LAYEREVALCTL](#) on page 1564
- [LAYERNOTIFY](#) on page 1566

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Specifies whether the layer list is evaluated for new layers when added to the drawing or to attached xrefs.

The setting is stored in an integer using one of the following values:

---

0	Off
1	Detects when new xref layers have been added in the drawing
2	Detects when new layers have been added in the drawing and xrefs

---

**NOTE** [LAYEREVALCTL](#) overrides the [LAYEREVAL](#) and [LAYERNOTIFY](#) setvars when [LAYEREVALCTL](#) = 0. It acts like a global off (but not a global on). There is no effect even if [LAYEREVALCTL](#) is turned on if [LAYERNOTIFY](#) = 0 or [LAYEREVAL](#) = 0. [LAYEREVALCTL](#) must be set to 1 for [LAYERNOTIFY](#) and [LAYEREVAL](#) to function correctly.

---

# LAYEREVALCTL

## Quick Reference

### See also:

- Use New Layer Notification
- [LAYEREVAL](#) on page 1563
- [LAYERNOTIFY](#) on page 1566

**Type:** Integer  
**Saved in:** User-settings  
**Initial value:** 1

Controls the overall Unreconciled New Layer filter list in Layer Properties Manager which is evaluated for new layers.

This system variable also affects whether the new layer notification is displayed or not.

---

0	Disables the evaluation and notification of new layers
1	Enables the evaluation of new layers on LAYEREVAL settings in DWG file

---

**NOTE** LAYEREVALCTL overrides the [LAYEREVAL](#) and [LAYERNOTIFY](#) setvars when LAYEREVALCTL = 0. It acts like a global off (but not a global on). There is no effect even if LAYEREVALCTL is turned on if LAYERNOTIFY = 0 or LAYEREVAL = 0. LAYEREVALCTL must be set to 1 for LAYERNOTIFY and LAYEREVAL to function correctly.

---

# LAYERFILTERALERT

## Quick Reference

### See also:

- Filter and Sort the List of Layers

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 2

Deletes excessive layer filters to improve performance.

When a drawing has 100 or more layer filters, and the number of layer filters exceeds the number of layers, LAYERFILTERALERT provides a method for deleting layer filters to improve performance.

---

0	Off
1	When the Layer Manager is opened, deletes all layer filters; no message is displayed
2	When the Layer Manager is opened, displays a message that states the problem, recommends deleting all filters, and offers a choice: "Do you want to delete all layer filters now?"
3	When the drawing is opened, displays a message that states the problem and offers to display a dialog box where you can choose which filters to delete

---

## LAYERMANAGERSTATE

### Quick Reference

See also:

- Change Layer Settings and Layer Properties

(Read-only)

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** Varies

Indicates whether the Layer Properties Manager is open or closed.

---

0	Closed
1	Open

---

# LAYERNOTIFY

## Quick Reference

### See also:

- Use New Layer Notification
- [LAYEREVAL](#) on page 1563
- [LAYERNOTIFY](#) on page 1566

**Type:** Bitcode

**Saved in:** Drawing

**Initial value:** 0

Specifies when an alert displays when unreconciled new layers are found.

---

0	Off
1	Plot
2	Open
4	Load/Reload/Attach for xrefs
8	Restore layer state
16	Save
32	Insert

---

**NOTE** [LAYEREVALCTL](#) overrides the [LAYEREVAL](#) and [LAYERNOTIFY](#) setvars when [LAYEREVALCTL](#) = 0. It acts like a global off (but not a global on). There is no effect even if [LAYEREVALCTL](#) is turned on if [LAYERNOTIFY](#) = 0 or [LAYEREVAL](#) = 0. [LAYEREVALCTL](#) must be set to 1 for [LAYERNOTIFY](#) and [LAYEREVAL](#) to function correctly.

---



# LAYLOCKFADECTL

## Quick Reference

See also:

- Use Layers to Manage Complexity

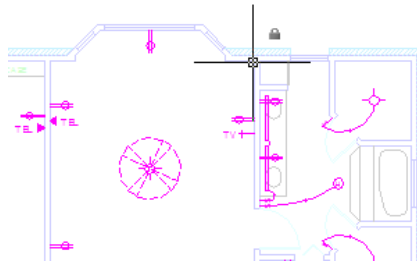
**Type:** Integer

**Saved in:** Registry

**Initial value:** 50

Controls the amount of fading for objects on locked layers.

Fades the objects on locked layers to contrast them with objects on unlocked layers and reduces the visual complexity of a drawing. Objects on locked layers are still visible for reference and for object snapping.



The range for controlling the fading for objects on locked layers is from -90 to 90.

---

0	Locked layers are not faded
>0	When the value is positive, controls the percent of fading up to 90 percent
<0	When the value is negative, locked layers are not faded, but the value is saved for switching to that value by changing the sign

---

**NOTE** The fading value is limited to 90 percent to avoid confusion with layers that are turned off or frozen.

---

## LAYOUTCREATEVIEWPORT

### Quick Reference

See also:

- Work on a Named Layout

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether a viewport is created automatically on each new layout added to a drawing.

---

0	Newly created layouts do not include any viewports.
---	---

---

1	A single layout viewport is created with each new layout.
---	---

---

## LIMCHECK

### Quick Reference

See also:

- Adjust Grid and Grid Snap

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Controls the creation of objects outside the grid limits.

---

0	Objects can be created outside the limits
---	---

---

1	Objects cannot be created outside the limits
---	--

---

# LIMMAX

## Quick Reference

See also:

- Adjust Grid and Grid Snap

**Type:** 2D-point

**Saved in:** Drawing

**Initial value:** 12.0000,9.0000 (imperial) or 420.0000,297.0000 (metric)

Stores the upper-right grid limits for the current space, expressed as world coordinates.

LIMMAX is read-only when paper space is active and the paper background or printable area is displayed.

# LIMMIN

## Quick Reference

See also:

- Adjust Grid and Grid Snap

**Type:** 2D-point

**Saved in:** Drawing

**Initial value:** 0.0000,0.0000

Stores the lower-left grid limits for the current space, expressed as a world coordinate.

LIMMIN is read-only when paper space is active and the paper background or printable area is displayed.

## LOCALE

### Quick Reference

**See also:**

- Specify Search Paths and File Locations
- Organize Program and Support Files

(Read-only)

**Type:** String

**Saved in:** Not-saved

**Initial value:** Varies by country/region

Displays a code that indicates the current locale.

This code appears as a three-letter abbreviation returned by the Windows GetLocaleInfo function using the LOCALE\_SABBREVLANGNAME constant.

## LOCALROOTPREFIX

### Quick Reference

**See also:**

- Overview of File Organization

(Read-only)

**Type:** String

**Saved in:** Registry

**Initial value:** Varies

Stores the full path to the root folder where local customizable files were installed.

The *Template* and *Textures* folders are in this location, and you can add any customizable files that you do not want to roam on the network. See [ROAMABLEROOTPREFIX](#) on page 1644 for the location of the roamable files.

# LOCKUI

## Quick Reference

See also:

- Specify the Behavior of Dockable Windows

**Type:** Bitcode

**Saved in:** Registry

**Initial value:** 0

Locks the position and size of toolbars and dockable windows such as DesignCenter and the Properties palette.

Locked toolbars and windows can still be opened and closed and items can be added and deleted. To unlock them temporarily, hold down Ctrl.

A lock icon in the status bar tray indicates whether toolbars and windows are locked. Right-click the icon to display locking options.

The setting is stored as a bitcode using the sum of the following values:

0	Toolbars and windows not locked
1	Docked toolbars locked
2	Docked or anchored windows locked
4	Floating toolbars locked
8	Floating windows locked

# LOGFILEMODE

## Quick Reference

See also:

- Set Interface Options

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Specifies whether the contents of the command history are written to a log file.

---

0	Log file is not maintained
---	----------------------------

---

1	Log file is maintained
---	------------------------

---

## LOGFILENAME

### Quick Reference

See also:

- Set Interface Options

(Read-only)

**Type:** String

**Saved in:** Drawing

**Initial value:** Varies

Specifies the path and name of the command history log file for the current drawing.

The initial value varies depending on the name of the current drawing and the installation folder.

## LOGFILEPATH

### Quick Reference

See also:

- Set Interface Options

**Type:** String

**Saved in:** Registry

**Initial value:** Varies

Specifies the path for the command history log files for all drawings in a session.

You can also specify the path by using the `OPTIONS` command. The initial value is based on the installation folder.

## LONGITUDE

### Quick Reference

See also:

- Specify the Geographic Location of a Drawing

**Type:** Real  
**Saved in:** Drawing  
**Initial value:** -122.3940

Specifies the longitude of the drawing model in decimal format.

The default is the longitude of San Francisco, California. The valid range is -180 to +180. Positive values represent east longitudes.

This value is affected by the settings of the `LUPREC` system variable.

This value is not affected by the settings of the `AUNITS` and `AUPREC` system variables.

## LTSCALE

### Quick Reference

See also:

- Control Linetype Scale

**Type:** Real  
**Saved in:** Drawing  
**Initial value:** 1.0000

Sets the global linetype scale factor.

The linetype scale factor cannot equal zero. This system variable has the same name as a command. Use the SETVAR command to access this system variable.

## LUNITS

### Quick Reference

See also:

- Set the Unit Format Conventions

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 2

Sets linear units.

---

1	Scientific
2	Decimal
3	Engineering
4	Architectural
5	Fractional

---

## LUPREC

### Quick Reference

See also:

- Set the Unit Format Conventions

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 4

Sets the display precision for linear units and coordinates.



However, the internal precision of distance, area, and volume values, and linear coordinates is always maintained, regardless of the display precision. LUPREC does not affect the display precision of dimension text (see [DIMSTYLE](#) on page 361).

Valid values are integers from 0 to 8.

## LWDEFAULT

### Quick Reference

See also:

- Overview of Lineweights

**Type:** Enum  
**Saved in:** Registry  
**Initial value:** 25

Sets the value for the default lineweight.

The default lineweight can be set to any valid lineweight value in hundredths of millimeters, including: 0, 5, 9, 13, 15, 18, 20, 25, 30, 35, 40, 50, 53, 60, 70, 80, 90, 100, 106, 120, 140, 158, 200, and 211.

All values must be entered in hundredths of millimeters. (Multiply a value by 2540 to convert values from inches to hundredths of millimeters.)

## LWDISPLAY

### Quick Reference

See also:

- Display Lineweights

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** OFF

Controls whether the lineweights of objects are displayed.

This setting is controlled separately for model space and for all paper space layouts.

---

OFF      Lineweights are not displayed

---

ON      Lineweights are displayed

---

## LWUNITS

### Quick Reference

**See also:**

- Display Lineweights

**Type:**          Integer

**Saved in:**      Registry

**Initial value:** 1

Controls whether lineweight units are displayed in inches or millimeters.

---

0          Inches

---

1          Millimeters

---

# M System Variables

# 38

## MAXACTVP

### Quick Reference

See also:

- Turn Layout Viewports On or Off

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 64

Sets the maximum number of viewports that can be active at one time in a layout.

MAXACTVP has no effect on the number of viewports that are plotted.

## MAXSORT

### Quick Reference

See also:

- Work with Blocks

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1000

Sets the maximum number of symbol names or block names sorted by listing commands.

If the total number of items exceeds this value, no items are sorted.

The value of MAXSORT is an integer between 0 and 32767.

## MAXTOUCHES

### Quick Reference

See also:

- Draw Freehand Sketches

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Identifies the number of touch points supported by connected digitizers.

## MBUTTONPAN

### Quick Reference

See also:

- Pointing Device Buttons

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls the behavior of the third button or wheel on the pointing device.

---

0	Supports the action defined in the customization file
---	---

---

1	Supports panning when you hold and drag the button or wheel
---	---

---

# MEASUREINIT

## Quick Reference

See also:

- Overview of Starting a New Drawing

**Type:** Integer

**Saved in:** Registry

**Initial value:** Varies by country/region

Controls whether a drawing you start from scratch uses imperial or metric default settings.

Specifically, MEASUREINIT controls which hatch pattern and linetype files are used. The *Drawing1.dwg* that opens when you start the program is a drawing that is started from scratch.

---

0	Imperial; uses the hatch pattern file and linetype file designated by the ANSIHatch and ANSILinetype registry settings
1	Metric; uses the hatch pattern file and linetype file designated by the ISOHatch and ISOLinetype registry settings

---

# MEASUREMENT

## Quick Reference

See also:

- Overview of Starting a New Drawing

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0 (imperial) or 1 (metric)

Controls whether the current drawing uses imperial or metric hatch pattern and linetype files.

---

0	Imperial; uses the hatch pattern file and linetype file designated by the ANSIHatch and ANSILinetype registry settings
1	Metric; uses the hatch pattern file and linetype file designated by the ISOHatch and ISOLinetype registry settings

---

## MENUBAR

### Quick Reference

See also:

- Access the Classic Menu Bar

Controls the display of the menu bar.

---

0	Hides the menu bar
1	Displays the menu bar

---

## MENUECHO

### Quick Reference

See also:

- Create Macros

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Sets menu echo and prompt control bits.

The value is the sum of the following:

---

1	Suppresses echo of menu items (^P in a menu item toggles echoing)
2	Suppresses display of system prompts during menu
4	Disables ^P toggle of menu echoing
8	Displays input/output strings; debugging aid for DIESEL macros

---

## MIRRHATCH

### Quick Reference

See also:

- Mirror Objects

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Controls how MIRROR reflects hatch patterns.

---

0	Retains hatch pattern direction
1	Mirrors the hatch pattern direction

---

## MIRRTEXT

### Quick Reference

See also:

- Mirror Objects

**Type:** Integer

**Saved in:** Drawing  
**Initial value:** 0  
Controls how MIRROR reflects text.

---

0 Retains text direction

---

1 Mirrors the text

---

## MLEADERSCALE

### Quick Reference

**See also:**

- Modify Leaders Using Grips

**Type:** Real  
**Saved in:** Drawing  
**Initial value:** 1.0000

Sets the overall scale factor applied to multileader objects.

Use [DIMSCALE](#) to scale leader objects created with the [LEADER](#) command.

---

0.0 A reasonable default value is computed based on the scaling between the current model space viewport and paper space. If you are in paper space or model space and not using the paper space feature, the scale factor is 1.0.

---

>0 A scale factor is computed that leads text sizes, arrowhead sizes, and other scaled distances to plot at their face values.

---

MLEADERSCALE does not affect measured lengths, coordinates, or angles.

When MLEADERSCALE is set to 0, and the current multileader style is not , the overall multileader scale of multileader objects created in paper space viewports is determined by the viewport scale. When the current multileader style is annotative, the MLEADERSCALE value is set to 0. Changes to the MLEADERSCALE value are ignored and the value is reset to 0.



# MODEMACRO

## Quick Reference

### See also:

- Overview of the MODEMACRO System Variable

**Type:** String

**Saved in:** Not-saved

**Initial value:** ""

Displays a text string on the status line, such as the name of the current drawing, time/date stamp, or special modes.

Use MODEMACRO to display a string of text, or use special text strings written in the DIESEL macro language to have the macro evaluated from time to time and base the status line on user-selected conditions.

# MSLTSCALE

## Quick Reference

### See also:

- Display Annotative Objects

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1

Scales linetypes displayed on the model tab by the

---

0	Linetypes displayed on the Model tab are not scaled by the annotation scale
---	---

---

1	Linetypes displayed on the Model tab are scaled by the annotation scale
---	---

---

---

**NOTE** MSLTSCALE is set to 0 when you open drawings created in AutoCAD LT 2007 and earlier.

---

## MSMSTATE

### Quick Reference

**See also:**

- Overview of Using Markups for Design Review

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** Varies

Indicates whether the Markup Set Manager is open or closed.

---

0	Closed
---	--------

---

1	Open
---	------

---

## MSOLESCALE

### Quick Reference

**See also:**

- Overview of Importing OLE Objects into Drawings

**Type:** Real

**Saved in:** Drawing

**Initial value:** 1.0000

Controls the size of an OLE object with text that is pasted into model space.

MSOLESCALE controls only the initial size. If the scale factor value is changed, existing OLE objects in the drawing are not affected.

A positive number scales by value. Zero (0) scales by the DIMSCALE value.

# MTEXTCOLUMN

## Quick Reference

See also:

- Create and Edit Columns in Multiline Text

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 2

Sets the default column setting for an mtext object.

---

0	No column.
1	Dynamic columns with auto height.
2	Dynamic column with manual height.

---

# MTEXTED

## Quick Reference

See also:

- Overview of Using an Alternate Text Editor

**Type:** String  
**Saved in:** Registry  
**Initial value:** "Internal"

Sets the application for editing multiline text objects.

You can specify a different text editor for the MTEXT command. If you set MTEXTED to internal or to null (.), the In-Place Text Editor is displayed. If you set MTEXTED to "OldEditor", the Multiline Text Editor is displayed. If you specify a path and the name of the executable file for another text editor or word processor, that path and file name instead are displayed instead.

Text editors other than the internal one show the formatting codes in paragraph text.

## MTEXTFIXED

### Quick Reference

See also:

- Overview of Multiline Text

**Type:** Integer

**Saved in:** Registry

**Initial value:** 2

Sets the display size and orientation of multiline text in a specified text editor.

If MTEXTED is set to “Internal”, multiline text is displayed in the In-Place Text Editor, and the setting of MTEXTFIXED has the following results:

---

0 or 1	Displays the In-Place Text Editor and the text within it at the size, position, and rotation of the multiline text object in the drawing.
2	Displays the In-Place Text Editor and the text within it at the size, position, and rotation of the multiline text object in the drawing. Text that would otherwise be difficult to read (if it is very small, very large, or is rotated) is displayed at a legible size and is oriented horizontally so that you can easily read and edit it.

---

## MTEXTTOOLBAR

### Quick Reference

See also:

- Overview of Multiline Text

**Type:** Integer

**Saved in:** User-settings

**Initial value:** 2

Controls the display of the Text Formatting toolbar.

---

0	The Text Formatting toolbar is never displayed.
1	The Text Formatting toolbar is displayed upon selection of an MTEXT object.
2	The Text Formatting toolbar does not display when the ribbon is on.

---

## MTJIGSTRING

### Quick Reference

See also:

- Overview of Multiline Text

**Type:** String  
**Saved in:** Registry  
**Initial value:** "abc"

Sets the content of the sample text displayed at the cursor location when the MTEXT command is started.

The text string is displayed in the current text size and font. You can enter any string of up to ten letters or numbers or enter a period (.) to display no sample text.

## MYDOCUMENTSPREFIX

### Quick Reference

See also:

- Specify Search Paths and File Locations

(Read-only)  
**Type:** String  
**Saved in:** Registry

**Initial value:** Varies

Stores the full path to the My Documents folder for the user currently logged on.

## NAVBARDISPLAY

### Quick Reference

See also:

- Use Navigation Bar

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls the display of the navigation bar in all viewports.

---

0	Navigation bar is not displayed
---	---------------------------------

---

1	Navigation bar is displayed
---	-----------------------------

---





## O System Variables

# 40

### OBJECTISOLATIONMODE

#### Quick Reference

See also:

- Control the Display of Objects

**Type:** Integer

**Saved in:** User-settings

**Initial value:** 0

Controls whether hidden objects remain hidden between drawing sessions.

OBJECTISOLATIONMODE controls whether objects that are hidden using the [ISOLATEOBJECTS](#) on page 629 or [HIDEOBJECTS](#) on page 586 command remain hidden after saving and reopening the drawing.

---

0	Isolated/hidden objects are temporary for current drawing session
---	---

---

1	Isolated/hidden objects persist between drawing sessions
---	--

---

# OBSCUREDOLOR

## Quick Reference

See also:

- Add Simple Shading to 3D Objects

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 257

Specifies the color of obscured lines.

Value 0 designates ByBlock, value 256 designates ByLayer, and value 257 designates ByEntity. Values 1-255 designate an AutoCAD Color Index (ACI).

An obscured line is a hidden line made visible by changing its color and linetype and is visible only when the HIDE or SHADEMODE commands are used.

The OBSCUREDOLOR setting is visible only if the OBSCUREDLTTYPE system variable is turned on by setting it to a value other than 0.

The obscured color can also be set in the [Hidden Line Settings dialog box](#), Obscured Lines area, Color pull-down menu.

# OBSCUREDLTTYPE

## Quick Reference

See also:

- Add Simple Shading to 3D Objects

**Type:** Integer

**Saved in:** Drawing













**Initial value:** 0

Specifies the linetype of obscured lines.

The obscured linetype can also be set in the [Hidden Line Settings dialog box](#), Obscured Lines area, Linetype pull-down menu.

An obscured line is a hidden line made visible by changing its color and linetype and is visible only when the HIDE or SHADEMODE commands are used.

Obscured linetypes are independent of zoom level, unlike regular linetypes. The linetype values are defined as follows:

0	Off	
1	Solid	
2	Dashed	
3	Dotted	
4	Short Dash	
5	Medium Dash	
6	Long Dash	
7	Double Short Dash	
8	Double Medium Dash	
9	Double Long Dash	
10	Medium Long Dash	
11	Sparse Dot	

## OFFSETDIST

### Quick Reference

See also:

- Offset an Object

**Type:** Real  
**Saved in:** Not-saved  
**Initial value:** -1.0000  
Sets the default offset distance.

---

<0	Offsets an object through a specified point
----	---

---

0	Sets the default offset distance
---	----------------------------------

---

## OFFSETGAPTYPE

### Quick Reference

See also:

- Offset an Object

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 0

Controls how potential gaps between segments are treated when polylines are offset.

---

0	Extends line segments to their projected intersections.
---	---

---

1	Fillets line segments at their projected intersections. The radius of each arc segment is equal to the offset distance.
---	---

---

2	Chamfers line segments at their projected intersections. The perpendicular distance from each chamfer to its cor-
---	---

responding vertex on the original object is equal to the offset distance.

---

## OLEFRAME

### Quick Reference

See also:

- Edit OLE Objects in Drawings

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 2

Controls whether a frame is displayed and plotted on all OLE objects in the drawing.

The frame on an OLE object must be displayed in order for grips to be visible.

---

0	Frame is not displayed and not plotted
---	--

---

1	Frame is displayed and is plotted
---	-----------------------------------

---

2	Frame is displayed but is not plotted
---	---------------------------------------

---

## OLEHIDE

### Quick Reference

See also:

- Overview of Importing OLE Objects into Drawings

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls the display and plotting of OLE objects.

---

0	All OLE objects are visible and plot
1	OLE objects are visible and plot in paper space only
2	OLE objects are visible and plot in model space only
3	No OLE objects are visible or plot

---

## OLEQUALITY

### Quick Reference

See also:

- Overview of Importing OLE Objects into Drawings

**Type:** Integer

**Saved in:** Registry

**Initial value:** 3

Sets the default plot quality for OLE objects.

With OLEQUALITY, you can assign the plot quality for OLE objects to 0 (monochrome), 1 (low graphics), or 2 (high graphics).

When OLEQUALITY is set to 3, the quality level is assigned automatically based on the type of object. For example, spreadsheets and tables are set to monochrome, color text and pie charts are set to low graphics, and photographs are set to high graphics.

The following table define the value of the plot quality for OLE objects.

---

0	Monochrome
1	Low graphics
2	High graphics
3	Automatically Select

---

# OLESTARTUP

## Quick Reference

See also:

- Overview of Importing OLE Objects into Drawings

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0

Controls whether the source application of an embedded OLE object loads when plotting.

Loading the OLE source application may improve the plot quality.

---

0	Does not load the OLE source application
1	Loads the OLE source application when plotting

---

# OPENPARTIAL

## Quick Reference

See also:

- Open a Drawing

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls whether a drawing file can be worked on before it is fully open.

Two conditions must be met for this system variable to have an effect. The drawing must have been saved with paper space displayed (TILEMODE is set to 0), and the INDEXCTL system variable must be set to a non-zero value.

---

0	Legacy behavior: A drawing must be fully opened before work can begin on it
---	---

---

1 Work can begin on the visible portions of a drawing before it is fully open

---

## OPMSTATE

### Quick Reference

See also:

- Display and Change the Properties of Objects

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Indicates whether the Properties palette is open, closed, or hidden.

---

0 Closed

---

1 Open

---

2 Auto-hide: Open but only the title bar is displayed when the cursor moves off the palette

---

## ORTHOMODE

### Quick Reference

See also:

- Use Orthogonal Locking (Ortho Mode)

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Constrains cursor movement to the perpendicular.



When ORTHOMODE is turned on, the cursor can move only horizontally or vertically relative to the UCS and the current grid rotation angle

---

0	Turns off Ortho mode
1	Turns on Ortho mode

---

## OSMODE

### Quick Reference

See also:

- Use Object Snaps

**Type:** Integer

**Saved in:** Registry

**Initial value:** 4133

Sets running object snaps

The setting is stored as a bitcode using the sum of the following values:

---

0	NONe
1	ENDpoint
2	MIDpoint
4	CENter
8	NODE
16	QUAdrAnt
32	INTersection
64	INSertion
128	PERpendicular
256	TANGent

---

512	NEArest
1024	Clears all object snaps
2048	APParent Intersection
4096	EXTension
8192	PARallel

To specify more than one object snap, enter the sum of their values. For example, entering 3 specifies the Endpoint (bitcode 1) and Midpoint (bitcode 2) object snaps. Entering 16383 specifies all object snaps.

## OSNAPCOORD

### Quick Reference

**See also:**

- Set Visual Aids for Object Snaps (AutoSnap)

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 2

Controls whether coordinates entered on the command line will override running object snaps.

---

0	Running object snap settings override keyboard coordinate entry
1	Keyboard entry overrides object snap settings
2	Keyboard entry overrides object snap settings except in scripts

---

# OSNAPNODELEGACY

## Quick Reference

See also:

- Change Multiline Text

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 0

Controls whether the Node object snap can be used to snap to multiline text objects.

The number and location of nodes on a multiline text object snap depends on the vertical and horizontal justification of the multiline text object.

---

0	Node object snap can be used with multiline text objects
1	Node object snap ignores multiline text objects

---

# OSOPTIONS

## Quick Reference

See also:

- Use Object Snaps

**Type:** Bitcode  
**Saved in:** Registry  
**Initial value:** 1

Automatically suppresses object snaps on hatch objects.

---

0	Object snaps operate on hatch objects, and on geometry with negative Z values when using a dynamic UCS
1	Object snaps ignore hatch objects

---



# P System Variables

# 41

## PALETTEOPAQUE

### Quick Reference

See also:

- Set Up the Drawing Area
- [Transparency Dialog Box](#) on page 888

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 0

Controls whether palettes can be made transparent.

When transparency is available and turned on, you can use the Transparency option on the shortcut menu to set a different degree of transparency for the current palette or for all palettes.

When transparency is unavailable or turned off, all palettes are opaque. Transparency is unavailable when palettes or windows are docked, when transparency is not supported by the current operating system, or when a hardware accelerator is enabled.

---

0	Transparency is turned off
1	Transparency is turned on

---

2	Transparency is turned off and is not supported by the hardware and/or operating system
<hr/>	
3	Transparency is turned on, but is not supported by the hardware and/or operating system
<hr/>	

Available settings depend whether hardware acceleration is enabled. When hardware acceleration is enabled, setting 2 and 3 are available; when disabled, setting 0 and 1 are available.

This system variable determines the default setting in the [Transparency dialog box > General section > How transparent should the palette be? option](#) on page 888.

## PAPERUPDATE

### Quick Reference

See also:

- Set Paper Size

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 0

Controls the display of a warning dialog box when attempting to print a layout with a paper size different from the paper size specified by the default for the plotter configuration file.

0	Displays a warning dialog box if the paper size specified in the layout is not supported by the plotter
<hr/>	
1	Sets paper size to the configured paper size of the plotter configuration file
<hr/>	

# PDFFRAME

## Quick Reference

See also:

- Hide and Show Underlay Frames

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 1

Determines whether the PDF underlay frame is visible.

The [FRAME](#) system variable overrides the PDFFRAME setting. Use the PDFFRAME system variable after the FRAME system variable to reset the PDF frame settings.

---

0	The PDF underlay frame is not displayed or plotted. The frame temporarily reappears during selection preview or object selection.
1	Displays and plots the PDF underlay frame.
2	Displays but does not plot the PDF underlay frame.

---

# PDFOSNAP

## Quick Reference

See also:

- Use Object Snaps with Underlays

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Determines whether object snapping is active for geometry in PDF underlays that are attached to the drawing.

The [UOSNAP](#) system variable overrides the PDFOSNAP setting.

---

0	Object snapping is disabled for geometry in all PDF underlay attachments in the drawing
1	Object snapping is enabled for geometry in all PDF underlay attachments in the drawing

---

## PDMODE

### Quick Reference

**See also:**

- [Divide an Object into Equal Segments](#)

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0

Controls how point objects are displayed.

For information about values to enter, see the [POINT](#) on page 1009 command.

## PDSIZE

### Quick Reference

**See also:**

- [Divide an Object into Equal Segments](#)

**Type:** Real  
**Saved in:** Drawing  
**Initial value:** 0.0000

Sets the display size for point objects.

---

0	Creates a point at 5 percent of the drawing area height
>0	Specifies an absolute size

---



<0 Specifies a percentage of the viewport size

---

## PEDITACCEPT

### Quick Reference

See also:

- Modify Polylines

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Suppresses display of the Object Selected Is Not a Polyline prompt in PEDIT.

The prompt is followed by “Do you want it to turn into one?” Entering y converts the selected object to a polyline. When the prompt is suppressed, the selected object is automatically converted to a polyline.

---

0	The prompt is displayed
---	-------------------------

---

1	The prompt is suppressed
---	--------------------------

---

## PELLIPSE

### Quick Reference

See also:

- Draw Ellipses

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Controls the ellipse type created with ELLIPSE.

---

0	Creates a true ellipse object.
---	--------------------------------

---

## PERIMETER

### Quick Reference

**See also:**

- Obtain Area and Mass Properties Information

(Read-only)

**Type:**            Real

**Saved in:**        Not-saved

**Initial value:** 0.0000

Stores the last perimeter value computed by the AREA or LIST command.

## PERSPECTIVE

### Quick Reference

**See also:**

- Work with AutoCAD Drawings in AutoCAD LT

**Type:**            Integer

**Saved in:**        Drawing

**Initial value:** Varies

Specifies whether the current viewport displays a perspective view.

In AutoCAD LT, you can only turn off perspective in a drawing created with an AutoCAD-based application; you cannot turn perspective back on.

---

**NOTE** PERSPECTIVE is set to 0 when the drawing file or DXF file is saved to a file format earlier than AutoCAD LT 2007.

---

# PERSPECTIVECLIP

## Quick Reference

See also:

- Define a Perspective Projection (DVIEW)

**Type:** Real  
**Saved in:** Registry  
**Initial value:** 5.0000

Determines the location of eyepoint clipping.

The value determines where the eye point clipping occurs as a percentage. Values can range between 0.01 and 10.0. If you select a small value, the z-values of objects will be compressed at the target view and beyond. If you select a value such as 0.5%, the clipping will appear very close to the eyepoint of the view. In some extreme cases it might be appropriate to use 0.1%, but it is recommended to change the setting to a higher value such as 5%.

# PICKADD

## Quick Reference

See also:

- Select Multiple Objects

**Type:** Integer  
**Saved in:** User-settings  
**Initial value:** 2

Controls whether subsequent selections replace the current selection set or add to it.

---

0 Turns off PICKADD. The objects most recently selected become the selection set. Previously selected objects are removed from the selection set. Add more objects to the selection set by pressing SHIFT while selecting.

---

1	Turns on PICKADD. Each object selected, either individually or by windowing, is added to the current selection set. To remove objects from the set, press SHIFT while selecting.
2	Turns on PICKADD. Each object selected, either individually or by windowing, is added to the current selection set. To remove objects from the set, press SHIFT while selecting. Keeps objects selected after the <a href="#">SELECT</a> on page 1107 command ends.

## PICKAUTO

### Quick Reference

**See also:**

- Select Multiple Objects

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls automatic windowing for object selection.

---

0	Window selection is disabled.
1	Selects a clicked object or begins a selection window (for either a window or crossing selection) when the cursor is not on an object.
2	Selects a clicked object or begins a selection window whether the cursor is on an object or not.

For PICKAUTO settings 0 and 1, object selection occurs when the mouse button is pressed. For PICKAUTO setting 2, object selection occurs when the mouse button is released.

# PICKBOX

## Quick Reference

See also:

- Select Objects Individually

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 3

Sets the object selection target height, in pixels.

---

**NOTE** When PICKBOX is set to 0, selection previewing of objects is not available.

---

# PICKDRAG

## Quick Reference

See also:

- Select Multiple Objects

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 2

Controls the method of drawing a selection window.

- 
- |   |  |
|---|--|
| 0 | Create a selection window using two points. Click once to begin a selection window, click again to complete the selection. |
| 1 | Create a selection window clicking and dragging. Release the mouse button to complete the selection.                       |
| 2 | Create a selection window using either of the methods above.   |
-

# PICKFIRST

## Quick Reference

See also:

- Customize Object Selection

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether you select objects before (noun-verb selection) or after you issue a command.

---

0	Turns off PICKFIRST; you select objects after you issue a command
---	---

---

1	Turns on PICKFIRST; you select objects before you issue a command
---	---

---

# PICKSTYLE

## Quick Reference

See also:

- Select Objects in Groups

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls the use of group selection and associative hatch selection.

---

0	No group selection or associative hatch selection
---	---

---

1	Group selection
---	-----------------

---

2	Associative hatch selection
---	-----------------------------

---

## PLATFORM

### Quick Reference

See also:

- Set Interface Options

(Read-only)

**Type:** String

**Saved in:** Not-saved

**Initial value:** Varies

Indicates which platform is in use.

## PLINECONVERTMODE

### Quick Reference

See also:

- Modify Splines

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Specifies the fit method used in converting splines to polylines.

---

0	Polylines are created with linear segments
---	--

---

1	Polylines are created with arc segments
---	---

---

## PLINEGEN

### Quick Reference

See also:

- Display Linetypes on Short Segments and Polylines

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Sets how linetype patterns generate around the vertices of a 2D polyline.

Does not apply to polylines with tapered segments.

---

0	Generates polylines to start and end with a dash at each vertex
---	---

---

1	Generates the linetype in a continuous pattern around the vertices of the polyline
---	--

---

## PLINETYPE

### Quick Reference

See also:

- Draw Polylines

**Type:** Integer

**Saved in:** Registry

**Initial value:** 2

Specifies whether optimized 2D polylines are used.

PLINETYPE controls both the creation of new polylines with the PLINE command and the conversion of existing polylines in drawings from previous releases.

---

0	Polylines in older drawings are not converted when opened; PLINE creates old-format polylines
---	---

---



1 Polylines in older drawings are not converted when opened; PLINE creates optimized polylines

---

2 Polylines in AutoCAD Release 14 or older drawings are converted when opened; PLINE creates optimized polylines

---

For more information on the two formats, see the CONVERT command.

PLINETYPE also controls the polyline type created with the following commands: BOUNDARY (when object type is set to Polyline), DONUT, PEDIT (when selecting a line or arc), and POLYGON.

## PLINEWID

### Quick Reference

See also:

- Draw Polylines

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Stores the default polyline width.

## PLOTOFFSET

### Quick Reference

See also:

- Adjust the Plot Offset of a Layout

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls whether the plot offset is relative to the printable area or to the edge of the paper.

---

0	Sets the plot offset relative to the printable area.
1	Sets the plot offset relative to the edge of the paper

---

## PLOTROTMODE

### Quick Reference

See also:

- Select a Printer or Plotter

**Type:** Integer

**Saved in:** Registry

**Initial value:** 2

Controls the orientation of plots.

---

0	Rotates the effective plotting area so the corner with the Rotation icon aligns with the paper at the lower left for 0, top left for 90, top right for 180, and lower right for 270. X and Y origin offsets are calculated relative to the lower-left corner.
1	Aligns the lower-left corner of the effective plotting area with the lower-left corner of the paper.
2	Works the same as 0 value except that the X and Y origin offsets are calculated relative to the rotated origin position.

---

# PLOTTRANSPARENCYOVERRIDE

## Quick Reference

See also:

- Work with Object Properties

**Type:** Integer

**Saved in:** User-settings

**Initial value:** 1

Controls whether object transparency is plotted.

---

0	Does not plot object transparency
1	Uses the setting specified in the Page Setup or the Plot dialog boxes
2	Plots object transparency

---

Setting the PLOTTRANSPARENCYOVERRIDE system variable to 0 or 2 overrides the Plot Transparency option in the Page Setup or the Plot dialog boxes.

---

**WARNING** Because this system variable can affect global plot performance, it is strongly advised that you leave the value set to 1 and manage plot transparency when plotting.

---

# POINTCLOUDDENSITY

## Quick Reference

See also:

- Work with AutoCAD Drawings in AutoCAD LT

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 15

Controls the number of points displayed at once for all point clouds in the drawing view.

The system variable value is a percentage of 1,500,000, which is the maximum number of points that can exist in a drawing, regardless of the number of point clouds attached to a single drawing.

For example, if the system variable is set to 1, a maximum of 15,000 points is displayed at one time, even if there are multiple point clouds displayed on the screen. The 15,000 points are evenly distributed between the viewable point clouds.

## POLARADDANG

### Quick Reference

See also:

- Use Polar Tracking and PolarSnap

**Type:** String  
**Saved in:** Registry  
**Initial value:** ""

Stores additional angles for polar tracking and polar snap.

You can add up to 10 angles. Each angle can be separated with semicolons (;). The AUNITS system variable sets the format for display of angles. Unlike POLARANG, POLARADDANG angles do not result in multiples of their values.

The bit value for the POLARMODE system variable must have 4 turned on for POLARADDANG to have an effect.

When using fractions of an angle, set the AUPREC system variable (angular precision) to a higher value. Otherwise, the POLARADDANG value will be rounded off.

## POLARANG

### Quick Reference

See also:

- Use Polar Tracking and PolarSnap

**Type:** Real

**Saved in:** Registry

**Initial value:** 90

Sets the polar angle increment.

Values are 90, 45, 30, 22.5, 18, 15,10, and 5.

## POLARDIST

### Quick Reference

See also:

- Use Polar Tracking and PolarSnap

**Type:** Real

**Saved in:** Registry

**Initial value:** 0.0000

Sets the snap increment when the SNAPTYPE is set to 1 (PolarSnap).

## POLARMODE

### Quick Reference

See also:

- Use Polar Tracking and PolarSnap

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls settings for polar and object snap tracking.

The setting is stored as a bitcode using the sum of the following values:

Polar angle measurements

---

0	Measure polar angles based on current UCS (absolute)
---	--

---

1	Measure polar angles from selected objects (relative)
---	---

---

Object snap tracking

---

0	Track orthogonally only
---	-------------------------

---

2	Use polar tracking settings in object snap tracking
---	---

---

Use additional polar tracking angles

---

0	No
---	----

---

4	Yes
---	-----

---

Acquire object snap tracking points

---

0	Acquire automatically
---	-----------------------

---

8	Press SHIFT to acquire
---	------------------------

---

## POLYSIDES

### Quick Reference

**See also:**

- Draw Rectangles and Polygons

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 4

Sets the default number of sides for the POLYGON command.

The range is 3 to 1024.

## PREVIEWEFFECT

### Quick Reference

See also:

- Customize Object Selection

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 2

Specifies the visual effect used for previewing selection of objects.

---

0	Dashed lines (the default display for selected objects)
---	---

---

1	Thickened lines
---	-----------------

---

2	Dashed and thickened lines
---	----------------------------

---

## PREVIEWFACEEFFECT

### Quick Reference

See also:

- Customize Object Selection

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Specifies the visual effect used for previewing selection of face subobjects.

---

0	No highlight effect for face
---	------------------------------

---

1	Highlight face with texture fill
---	----------------------------------

---

## PREVIEWFILTER

### Quick Reference

See also:

- Customize Object Selection

**Type:** Bitcode

**Saved in:** Registry

**Initial value:** 7

Excludes specified object types from selection previewing.

The setting is stored as a bitcode using the sum of the following values:

---

0	Excludes nothing
1	Excludes objects on locked layers
2	Excludes objects in xrefs
4	Excludes tables
8	Excludes multiline text objects
16	Excludes hatch objects
32	Excludes objects in groups

---

## PROJMODE

### Quick Reference

See also:

- Trim or Extend Objects

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1



Sets the current Projection mode for trimming or extending.

---

0	True 3D mode (no projection)
1	Project to the <i>XY</i> plane of the current UCS
2	Project to the current view plane

---

## PROPOBJLIMIT

### Quick Reference

See also:

- Display and Change the Properties of Objects

**Type:** Integer  
**Saved in:** User-settings  
**Initial value:** 25000

Limits the number of objects that can be changed at one time with the Properties and Quick Properties palettes.

The valid range is 0 - 32767. If the limit is exceeded, the property fields in the palettes will be grayed out.

---

**NOTE** A similar limit on ribbon property controls and ribbon contextual tabs is stored independently by the [RIBBONCONTEXTSELLIM](#) on page 1642 system variable.

---

## PROXYGRAPHICS

### Quick Reference

See also:

- Work with Custom and Proxy Objects

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 1

Specifies whether images of proxy objects are saved in the drawing.

---

0	Does not save image with the drawing; a bounding box is displayed instead
1	Saves image with the drawing

---

## PROXYNOTICE

### Quick Reference

See also:

- Work with Custom and Proxy Objects

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Displays a notice when a proxy is created.

A proxy is created when you open a drawing containing custom objects created by an application that is not present. A proxy is also created when you issue a command that unloads a custom object's parent application.

---

0	No proxy warning is displayed
1	Proxy warning is displayed

---

## PROXYSHOW

### Quick Reference

See also:

- Work with Custom and Proxy Objects

**Type:** Integer

**Saved in:** Registry

**Initial value: 1**

Controls the display of proxy objects in a drawing.

---

0	Proxy objects are not displayed
1	Graphic images are displayed for all proxy objects
2	Only the bounding box is displayed for all proxy objects

---

## PROXYWEBSEARCH

### Quick Reference

**See also:**

- Work with Custom and Proxy Objects

**Type:** Integer**Saved in:** Registry**Initial value:** 0

Specifies how the program checks for object enablers.

Object enablers allow you to display and use custom objects. PROXYWEBSEARCH is also controlled with the Live Enabler options on the System tab of the Options dialog box.

---

0	Prevents checking for object enablers
1	Checks for object enablers only if a live Internet connection is present

---

# PSLTSCALE

## Quick Reference

See also:

- Scale Linetypes in Layout Viewports

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1

Controls the linetype scaling of objects displayed in paper space viewports.

---

0 No special linetype scaling. Linetype dash lengths are based on the drawing units of the space (model or paper) in which the objects were created. Scaled by the global LTSCALE factor.

---

1 Viewport scaling governs linetype scaling. If TILEMODE is set to 0, dash lengths are based on paper space drawing units, even for objects in model space. In this mode, viewports can have varying magnifications, yet display linetypes identically. For a specific linetype, the dash lengths of a line in a viewport are the same as the dash lengths of a line in paper space. You can still control the dash lengths with LTSCALE

---

When you change PSLTSCALE or use a command such as ZOOM with PSLTSCALE set to 1, objects in viewports are not automatically regenerated with the new linetype scale. Use the REGEN or REGENALL command to update the linetype scales in each viewport.

# PSTYLEMODE

## Quick Reference

See also:

- Overview of Plot Styles

(Read-only)

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 1

Indicates whether the current drawing is in a Color-Dependent or Named Plot Style mode.

---

0	Uses named plot style tables in the current drawing
1	Uses color-dependent plot style tables in the current drawing

---

## PSTYLEPOLICY

### Quick Reference

See also:

- Overview of Plot Styles

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls the plot style mode, Color-Dependent or Named, that is used when opening a drawing that was created in a release prior to AutoCAD 2000 or when creating a new drawing from scratch without using a drawing template.

---

0	Drawing is set to use named plot styles. The plot style for new objects is set to the default defined in DEFPLSTYLE. The plot style for new layers is set to the default defined in DEFLPLSTYLE.
1	Drawing is set to use color-dependent plot styles. The plot style for an object is based on the object's color.

---

## PUBLISHALLSHEETS

### Quick Reference

See also:

- Overview of Publishing

**Type:** Integer

**Saved in:** User-settings

**Initial value:** 1

Specifies whether to load the contents of the active document or of all open documents in the Publish dialog box.

---

0	Only the current document's contents (layouts and/or model space) are automatically loaded in the publish list
---	--

---

1	The contents (layouts and/or model space) of all open AutoCAD documents are automatically loaded in the publish list
---	--

---

## PUBLISHCOLLATE

### Quick Reference

See also:

- Publish, Transmit, and Archive Sheet Sets

**Type:** Integer

**Saved in:** User-settings

**Initial value:** 1

Controls whether plotting a sheet set, multi-sheet plot file, or plot spool file can be interrupted by other plot jobs.

Publishing sheets as a single job requires a plot driver that supports the multi-sheet plotting or printing option.

- 
- |   |   |
|---|---|
| 0 | A published sheet set is processed one sheet at a time. Separate PLT files are created for each sheet. If the sheet set is published, the sheets might be interleaved with other plot jobs. |
| 1 | A published sheet set is processed as a single job. A multi-sheet PLT file is created. If the sheet set is published, it is never interleaved with other plot jobs.                         |
- 

## PUBLISHHATCH

### Quick Reference

See also:

- Publish an Electronic Drawing Set

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether hatch patterns published to DWF or DWFX format are treated as a single object when they are opened in Autodesk Impression.

- 
- |   |  |
|---|--|
| 0 | Treats hatch pattern components as separate objects when published to a DWF or DWFX format |
| 1 | Treats hatch pattern components as a single object when published to a DWF or DWFX format  |
- 

**NOTE** Autodesk Impression uses this information to improve performance when handling DWF or DWFX files that contain hatches. This variable only affects drawings published to the DWF or DWFX format. It does not affect drawings plotted to the DWF or DWFX format.

---

# PUCSBASE

## Quick Reference

See also:

- Overview of the User Coordinate System (UCS)

**Type:** String

**Saved in:** Drawing

**Initial value:** ""

Stores the name of the UCS that defines the origin and orientation of orthographic UCS settings in paper space only.



# Q System Variables

# 42

## QCSTATE

### Quick Reference

See also:

- Overview of QuickCalc

**Type:** Integer

**Saved in:** Drawing

**Initial value:** Varies

Indicates whether the QuickCalc calculator is open or closed.

---

0	Closed
---	--------

---

1	Open
---	------

---

## QPLOCATION

### Quick Reference

See also:

- Display and Change the Properties of Objects

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Sets the location for the Quick Properties palette.

---

0	The Quick Properties palette is displayed relative to the location of the cursor
1	The Quick Properties palette is displayed in a fixed location that is independent of the cursor

---

## QPMODE

### Quick Reference

See also:

- Display and Change the Properties of Objects

**Type:** Integer

**Saved in:** Registry

**Initial value:** -1

Controls whether the Quick Properties palette is displayed when objects are selected.

---

0	Turns off the display of the Quick Properties palette for all objects when they are selected in the drawing area
1	Turns on the display of the Quick Properties palette for all objects when they are selected in the drawing area
2	Turns on the display of Quick Properties palette, but only for objects that are supported in the Customize User Interface (CUI) editor for displaying quick properties when they are selected in the drawing area

---

**NOTE** When this system variable is set to a negative number, the feature is turned off but the value is retained. To use this feature, the PICKFIRST system variable must be set to 1 (on).

---

## QTEXTMODE

### Quick Reference

**See also:**

- Control the Display of Polylines, Hatches, Gradient Fills, Lineweights, and Text

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Controls how text is displayed.

---

0	Turns off Quick Text mode; displays characters
---	--

---

1	Turns on Quick Text mode; displays a box in place of text
---	---

---

## QVDRAWINGPIN

### Quick Reference

**See also:**

- Switch Between Open Drawings

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls the default display state of preview images of drawings.

---

0	Displays preview images of drawings in an unpinned state
---	--

---

1	Displays preview images of drawings in a pinned state
---	---

---

# QVLAYOUTPIN

## Quick Reference

See also:

- Switch Between Layouts in the Current Drawing

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls the default display state of preview images of model space and layouts in a drawing.

---

0	Displays preview images of model space and layouts in a drawing in an unpinned state
---	--

---

1	Displays preview images of model space and layouts in a drawing in a pinned state
---	---

---

# R System Variables

# 43

## RASTERDPI

### Quick Reference

See also:

- Plot to Raster File Formats

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 300

Controls paper size and plot scaling when changing from dimensional to dimensionless output devices, or vice versa.

Converts millimeters or inches to pixels, or vice versa. Accepts an integer between 100 and 32,767 as a valid value.

## RASTERPERCENT

### Quick Reference

See also:

- Plot to Raster File Formats

**Type:** Integer  
**Saved in:** Registry

**Initial value:** 20

Sets the maximum percentage of available virtual memory that is allowed for plotting a raster image.

## RASTERPREVIEW

### Quick Reference

**See also:**

- Save a Drawing

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether BMP preview images are saved with the drawing.

---

0	No preview image is created
---	-----------------------------

---

1	Preview image created
---	-----------------------

---

## RASTERTHRESHOLD

### Quick Reference

**See also:**

- Plot to Raster File Formats

**Type:** Integer

**Saved in:** Registry

**Initial value:** 20

Specifies a raster threshold in megabytes.

If the plotted raster image exceeds this threshold, the availability of system memory is checked. The plot is aborted if the image is too big for the available memory.

# RECOVERAUTO

## Quick Reference

See also:

- Repair a Damaged Drawing File

**Type:** Bitcode

**Saved in:** Registry

**Initial value:** 0

Controls the display of recovery notifications before or after opening a damaged drawing file.

---

0	Displays a task dialog to recover damaged files while opening a drawing that needs recovery. The task dialog interrupts any running scripts.
1	Automatically recovers the damaged files, opens the drawing, and displays a task dialog with the information of the recovered files. If a script is running, the task dialog is suppressed.
2	Automatically recovers the damaged files and opens the drawing without displaying any task dialog. The information of the recovered files is displayed at the command prompt.

---

# RECOVERYMODE

## Quick Reference

See also:

- Recover from a System Failure

**Type:** Integer

**Saved in:** Registry

**Initial value:** 2

Controls whether drawing recovery information is recorded after a system failure.

---

0	Recovery information is not recorded, the Drawing Recovery window does not display automatically after a system failure, and any recovery information in the system registry is removed
1	Recovery information is recorded, but the Drawing Recovery window does not display automatically after a system failure
2	Recovery information is recorded, and the Drawing Recovery window displays automatically in the next session after a system failure

---

## REFEDITNAME

### Quick Reference

See also:

- Edit Selected Objects in Referenced Drawings and Blocks

(Read-only)

**Type:** String

**Saved in:** Not-saved

**Initial value:** ""

Displays the name of the reference being edited.

## REGENMODE

### Quick Reference

See also:

- Control the Display of Polylines, Hatches, Gradient Fills, Lineweights, and Text



**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 1

Controls automatic regeneration of the drawing.

---

0 Prevents automatic regeneration for commands such as DRAWORDER

---

1 Allows automatic regeneration for certain commands

---

## REMEMBERFOLDERS

### Quick Reference

See also:

- Open a Drawing

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls the default path displayed in standard file selection dialog boxes.

---

0 Restores the behavior of AutoCAD 2000 and previous releases. When you start the program by double-clicking a shortcut icon, if a Start In path is specified in the icon properties, that path is used as the default for all standard file selection dialog boxes.

---

1 The default path in each standard file selection dialog box is the last path used in that dialog box. The Start In folder specified for the AutoCAD shortcut icon is not used.

---

# REPORTERROR

## Quick Reference

### See also:

- Recover from a System Failure

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether an error report can be sent to Autodesk if the program closes unexpectedly.

Error reports help Autodesk diagnose problems with the software.

---

0	The Error Report message is not displayed, and no report can be sent to Autodesk.
---	---

---

1	The Error Report message is displayed, and an error report can be sent to Autodesk.
---	---

---

An error report can be sent through the operating system if REPORTERROR is set to 0 and the operating system supports error reporting.

# RIBBONBGLOAD

## Quick Reference

### See also:

- Display and Organize the Ribbon

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether ribbon tabs are loaded into memory by a background process during idle processor time.

Loading the contents of all ribbon tabs in a workspace into memory significantly improves the speed in which ribbon tabs display when you click on them. The memory used is no more than if you opened each tab in the workspace individually.

---

0	Loads the contents of ribbon tabs into memory only when needed.
1	Loads the contents of ribbon tabs into memory during idle processor time.

---

## RIBBONCONTEXTSELECT

### Quick Reference

**See also:**

- Display and Organize the Ribbon

**Type:** Integer  
**Saved in:** User-settings  
**Initial value:** 1

Controls how ribbon contextual tabs are displayed when you single- or double-click an object.

---

0	When an object or selection set is single- or double-clicked, focus is not automatically switched to ribbon contextual tabs defined in contextual tab states.
1	When an object or selection set is single-clicked, focus is switched to the first ribbon contextual tab defined in contextual tab states.
2	When an object or selection set is double-clicked, focus is switched to the first ribbon contextual tab defined in contextual tab states.

---

## RIBBONCONTEXTSELLIM

### Quick Reference

**See also:**

- Display and Organize the Ribbon

**Type:** Integer  
**Saved in:** User-settings  
**Initial value:** 2500

Limits the number of objects that can be changed at one time with the ribbon property controls or a contextual tab.

The valid range is 0 to 32767. When set to 0, the limit is turned off. If the limit is exceeded, the ribbon property controls and panels will be grayed out.

Selecting a large number of objects and changing them with the Properties panel or a contextual tab on the ribbon can result in slow response time. This system variable prevents such an occurrence, especially on a computer with limited memory.

---

**NOTE** The Properties and Quick Properties palettes are not affected by this system variable, but are limited by the [PROOBJLIMIT](#) on page 1623 system variable.

---

## RIBBONDOCKEDHEIGHT

### Quick Reference

**See also:**

- Display and Organize the Ribbon

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 100

Determines whether the horizontally docked ribbon is set to the height of the current tab or a predetermined height.

The valid range is from 0 to 500. When set to 0, the ribbon will always size itself to the height of the selected tab. When set to any value between 1 to 500, the ribbon will always be that number of pixels high.

## RIBBONICONRESIZE

### Quick Reference

See also:

- Display and Organize the Ribbon
- Create Custom Images for Commands

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether to resize icons on the ribbon to standard sizes.

---

0	Images are not resized; they are displayed based on their actual dimensions
1	Images are resized to fit; small images are resized to 16x16 pixels and large images are resized to 32x32 pixels

---

## RIBBONSELECTMODE

### Quick Reference

See also:

- Display and Organize the Ribbon

**Type:** Integer

**Saved in:** User-settings

**Initial value:** 1

Determines whether a pickfirst selection set remains selected after a ribbon contextual tab is invoked and the command is completed.

---

0	The pickfirst selection set does not remain selected after a command is executed from a ribbon contextual tab.
---	--

---

**NOTE** There may be exceptions for some commands.

---

1	The pickfirst selection set remains selected after a command is executed from a ribbon contextual tab.
---	--

---

## RIBBONSTATE

### Quick Reference

See also:

- Overview of the Ribbon

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 1

Indicates whether the ribbon palette is open or closed.

---

0	Closed
---	--------

---

1	Open
---	------

---

## ROAMBLEROOTPREFIX

### Quick Reference

See also:

- Overview of File Organization

(Read-only)

**Type:** String  
**Saved in:** Registry  
**Initial value:** Varies

Stores the full path to the root folder where roamable customizable files were installed.

If you are working on a network that supports roaming, when you customize files that are in your roaming profile they are available to you regardless of which machine you are currently using.

These files are stored in the product folder under the Application Data folder; for example, "*c:\Documents and Settings\username\Application Data\productname\version\language*".

## ROLLOVEROPACITY

### Quick Reference

See also:

- Set Up the Drawing Area
- [Transparency Dialog Box](#) on page 888

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 100

Controls the transparency of a palette while the cursor moves over the palette.

---

0	Fully transparent
---	-------------------

---

100	Fully opaque
-----	--------------

---

Enter a value from 0-100 to set the transparency level.

This system variable determines the default setting in the [Transparency dialog box > Rollover section > How transparent should the palette be on mouse-over? option](#) on page 888.

## ROLLOVERTIPS

### Quick Reference

See also:

- Set Interface Options

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls the display of rollover tooltips when the cursor hovers over an object.

The content in tooltips can be customized in the Customize User Interface (CUI) Editor.

---

0	Object rollover tooltips are not displayed
---	--

---

1	Object rollover tooltips are displayed
---	--

---

## RTDISPLAY

### Quick Reference

See also:

- Pan or Zoom a View

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls the display of raster images and OLE objects during Realtime ZOOM or PAN.

---

0	Displays raster image and OLE content
---	---------------------------------------

---

1	Displays outline only
---	-----------------------

---



# S System Variables

# 44

## SAVEFIDELITY

### Quick Reference

See also:

- Save a Drawing
- Save with Visual Fidelity for Annotative Objects

**Type:** Bitcode

**Saved in:** Registry

**Initial value:** 1

Controls whether the drawing is saved with visual fidelity.

The setting is stored as a bitcode using the sum of the following values:

---

0	Saved without visual fidelity.
1	Annotation objects assigned annotative scales are saved to separate layers for each scale used. Only affects drawings when saving to AutoCAD LT 2007 or earlier file formats.

---

## SAVEFILE

### Quick Reference

**See also:**

- Set Up the Drawing Area

(Read-only)

**Type:** String

**Saved in:** Registry

**Initial value:** Varies

Stores the current automatic save file name.

## SAVEFILEPATH

### Quick Reference

**See also:**

- Set Up the Drawing Area

**Type:** String

**Saved in:** Registry

**Initial value:** Varies

Specifies the path to the directory for all automatic save files for the current session.

You can also change the path in the Options dialog box.

## SAVENAME

### Quick Reference

**See also:**

- Obtain General Drawing Information

(Read-only)

**Type:** String

**Saved in:** Not-saved

**Initial value:** ""

Displays the file name and directory path of the most recently saved drawing.

## SAVETIME

### Quick Reference

See also:

- Set Up the Drawing Area

**Type:** Integer

**Saved in:** Registry

**Initial value:** 10

Sets the automatic save interval, in minutes.

---

0	Turns off automatic saving.
>0	Saves the drawing at intervals specified by the nonzero integer automatically

---

The value of SAVETIME is an integer between 0 and 600.

The SAVETIME timer starts as soon as you make a change to a drawing. It is reset and restarted by a manual QSAVE, SAVE, or SAVEAS. The current drawing is saved to the path specified by the SAVEFILEPATH system variable. The file name is stored in the SAVEFILE system variable.

## SCREENSIZE

### Quick Reference

See also:

- Switch Between Model and Named Layouts

(Read-only)

**Type:** 2D-point

**Saved in:** Not-saved

**Initial value:** Varies

Stores current viewport size in pixels (X and Y).

## SELECTIONANNODISPLAY

### Quick Reference

See also:

- Display Annotative Objects

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether alternate scale representations are temporarily displayed in a dimmed state when an annotative object is selected.

---

0	Off
---	-----

---

1	On
---	----

---

The dimming intensity is controlled by the [XFADECTL](#) system variable.

## SELECTIONAREA

### Quick Reference

See also:

- Customize Object Selection

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls the display of effects for selection areas.

Selection areas are created by the Window, Crossing, WPolygon, and CPolygon options of [SELECT](#) on page 1107.

---

0	Off
1	On

---

## SELECTIONAREAOPACITY

### Quick Reference

**See also:**

- [Customize Object Selection](#)

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 25

Controls the transparency of the selection area during window and crossing selection.

The valid range is 0 to 100. The lower the setting, the more transparent the area. A value of 100 makes the area opaque. The [SELECTIONAREA](#) on page 1650 system variable must be on.

## SELECTIONCYCLING

### Quick Reference

**See also:**

- [Select Objects Individually](#)
- [Use 3D Subobject Grips](#)
- [Modify 3D Subobjects](#)

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 2

Turns selection cycling on and off.

---

0	Off
1	On (the list dialog does not display)
2	On (the list dialog displays the selected objects that you can cycle through)

---

## SELECTIONPREVIEW

### Quick Reference

See also:

- Customize Object Selection

**Type:** Bitcode

**Saved in:** Registry

**Initial value:** 3

Controls the display of selection previewing.

Objects are highlighted when the pickbox cursor rolls over them. This selection previewing indicates that the object would be selected if you clicked. The setting is stored as a bitcode using the sum of the following values:

---

0	Off
1	On when no commands are active
2	On when a command prompts for object selection

---

# SELECTSIMILARMODE

## Quick Reference

See also:

- Select Objects by Properties

**Type:** Bitcode

**Saved in:** User-settings

**Initial value:** 130

Controls which properties must match for an object of the same type to be selected with SELECTSIMILAR.

The default value is 130. Objects of the same type are considered similar if they are on the same layer, and, for referenced objects, have the same name.

The setting is stored as a bitcode using the sum of the following values:

0	Object type
1	Color
2	Layer
4	Linetype
8	Linetype scale
16	Lineweight
32	Plot style
64	Object style (such as text styles, dimension styles, and table styles)
128	Name (for referenced objects, such as blocks, xrefs, and images)

# SETBYLAYERMODE

## Quick Reference

See also:

- Display and Change the Properties of Objects

**Type:** Integer

**Saved in:** Registry

**Initial value:** 255

Controls which properties are selected for the SETBYLAYER command.

The setting is stored as an integer using the sum of the following values:

---

0	No properties are selected
1	Color property
2	Linetype property
4	Lineweight property
8	Material property
16	Plot Style property
32	Changes ByBlock to ByLayer
64	Includes blocks when changing ByBlock to ByLayer
128	Transparency property

---

# SHADEGE

## Quick Reference

See also:

- Add Simple Shading to 3D Objects



**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 3  
Controls the shading of edges.

---

0	Faces shaded, edges not highlighted
1	Faces shaded, edges drawn in background color
2	Faces not filled, edges in object color
3	Faces in object color, edges in background color

---

## SHADEDIF

### Quick Reference

See also:

- Add Simple Shading to 3D Objects

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 70  
Sets the ratio of diffuse reflective light to ambient light.

The ratio is a percentage of diffuse reflective light when [SHADEDGE](#) on page 1654 is set to 0 or 1.

## SHORTCUTMENU

### Quick Reference

See also:

- Set Up the Drawing Area

**Type:** Integer  
**Saved in:** Registry

**Initial value:** 11

Controls whether Default, Edit, and Command mode shortcut menus are available in the drawing area.

The setting is stored as a bitcode using the sum of the following values:

---

0	Disables all Default, Edit, and Command mode shortcut menus.
1	Enables Default mode shortcut menus.
2	Enables Edit mode shortcut menus.
4	Enables Command mode shortcut menus whenever a command is active.
8	Enables Command mode shortcut menus only when command options are currently available at the Command prompt.
16	Enables the display of a shortcut menu when the right button on the pointing device is held down long enough

---

**NOTE** When this system variable is set to a value greater than 15, the [SHORTCUTMENUDURATION](#) on page 1656 system variable determines the length of time that the right button on the pointing device must be held down to display a shortcut menu.

---

## SHORTCUTMENUDURATION

### Quick Reference

**See also:**

- Set Up the Drawing Area

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 250

Specifies how long the right button on a pointing device must be pressed to display a shortcut menu in the drawing area.

The value is expressed in milliseconds, and the valid range is 100 to 10,000.

If the right button is held down for the same or longer duration than the value of this system variable, a shortcut menu is displayed.

If the right button is held down for a shorter duration, the result is the same as if you press the Enter or Return key.

---

**NOTE** The [SHORTCUTMENU](#) on page 1655 system variable must be set to a value greater than 15 for this system variable to take effect.

---

## SHOWLAYERUSAGE

### Quick Reference

See also:

- Overview of Layers

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Displays icons in the Layer Properties Manager to indicate whether layers are in use.

Setting this system variable to Off improves performance in the Layer Properties Manager.

---

0	Off
---	-----

---

1	On
---	----

---

## SHOWPAGESETUPFORNEWLAYOUTS

### Quick Reference

See also:

- Use a Page Setup to Specify Plot Settings

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Specifies whether the Page Setup Manager is displayed when a new layout is created.

---

0	Do not display the Page Setup Manager when a new layout is created
---	--

---

1	Display the Page setup Manager when a new layout is created
---	---

---

## SIGWARN

### Quick Reference

**See also:**

- View Digital Signature Details

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether a warning is presented when a file with an attached digital signature is opened.

If the system variable is on and you open a file with a valid signature, the digital signature status is displayed. If the variable is off and you open a file, the digital signature status is displayed only if a signature is invalid. You can set the variable using the Display Digital Signature Information option on the Open and Save tab of the Options dialog box.

---

0	Warning is not presented if a file has a valid signature
---	--

---

1	Warning is presented
---	----------------------

---

# SKETCHINC

## Quick Reference

See also:

- Draw Freehand Sketches

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.1000 (imperial) or 1.0000 (metric)

Sets the record increment for the SKETCH command.

# SKPOLY

## Quick Reference

See also:

- Draw Freehand Sketches

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Determines whether the SKETCH command generates lines, polylines, or splines.

---

0	Generates lines
---	-----------------

---

1	Generates polylines
---	---------------------

---

2	Generates splines
---	-------------------

---

## SKTOLERANCE

### Quick Reference

See also:

- Draw Freehand Sketches

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.5

Determines how closely the spline fits to the freehand sketch.

Valid values are between 0 and 1.

## SNAPANG

### Quick Reference

See also:

- Adjust Grid and Grid Snap

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Sets the snap and grid rotation angle for the current viewport relative to the current UCS.

When SNAPANG is set to a value other than 0, the lined grid will not display.

## SNAPBASE

### Quick Reference

See also:

- Adjust Grid and Grid Snap

**Type:** 2D-point  
**Saved in:** Drawing  
**Initial value:** 0.0000,0.0000

Sets the snap and grid origin point for the current viewport relative to the current UCS.

## SNAPISOPAIR

### Quick Reference

See also:

- Set Isometric Grid and Snap

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0

Controls the isometric plane for the current viewport.

---

0	Left
1	Top
2	Right

---

## SNAPMODE

### Quick Reference

See also:

- Adjust Grid and Grid Snap

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0

Turns the Snap mode on and off.

---

0	Snap off
1	Snap on for the current viewport

---

## SNAPSTYL

### Quick Reference

See also:

- Adjust Grid and Grid Snap

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Sets the snap style for the current viewport.

---

0	Standard (rectangular snap)
1	Isometric snap

---

## SNAPTYPE

### Quick Reference

See also:

- Adjust Grid and Grid Snap

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Sets the type of snap for the current viewport.

---

0	Grid, or standard snap.
---	-------------------------

---



1 PolarSnap. Snaps along polar angle increments. Use PolarSnap with polar and object snap tracking.

---

## SNAPUNIT

### Quick Reference

**See also:**

- Adjust Grid and Grid Snap

**Type:** 2D-point

**Saved in:** Drawing

**Initial value:** 0.5000,0.5000 (imperial) or 10.0000,10.0000 (metric)

Sets the snap spacing for the current viewport.

If SNAPSTYL is set to 1, the X value of SNAPUNIT is adjusted automatically to accommodate the isometric snap.

Changes to this system variable are not reflected in the grid until the display is refreshed.

## SORTENTS

### Quick Reference

**See also:**

- Control How Overlapping Objects Are Displayed

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 127

Controls object sorting in support of draw order for several operations.

The setting is stored as a bitcode using the sum of the following values:

---

0 Turns off all object sorting

---

1	Sorts for object selection
2	Sorts for object snaps
4	Obsolete, has no effect
8	Obsolete, has no effect
16	Sorts for REGEN commands
32	Sorts for plotting
64	Obsolete, has no effect

## SPLDEGREE

### Quick Reference

See also:

- Modify Polylines

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 3

Stores the last-used degree setting for splines and sets the default degree setting for the SPLINE command when specifying control vertices.

Enter a value from 1 to 5.

---

**NOTE** SPLDEGREE defaults to 3 when AutoCAD LT starts.

---

# SPLFRAME

## Quick Reference

### See also:

- Overview of Creating Meshes

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Controls the display of helixes and smoothed mesh objects.

- 
- |   |   |
|---|---|
| 0 | <ul style="list-style-type: none"><li>■ Does not display the control polygon for helixes.</li><li>■ Displays smoothed mesh objects if they have been smoothed.</li><li>■ Does not display the invisible edges of 3D faces or polyface meshes.</li></ul> |
|---|---|

- 
- |   |  |
|---|--|
| 1 | <ul style="list-style-type: none"><li>■ Displays the control polygon for helixes.</li><li>■ Displays unsmoothed mesh objects, even if they have been smoothed.</li><li>■ Displays the edges of 3D faces and polyface meshes.</li></ul> |
|---|--|
- 

# SPLINESEGS

## Quick Reference

### See also:

- Modify Polylines

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 8

Sets the number of line segments to be generated for each spline-fit polyline generated by the Spline option of the PEDIT command.

Enter a non-zero integer between -32768 to 32767. If you set SPLINESEGS to a negative value, segments are generated using the absolute value of the setting

and then a fit-type curve is applied to those segments. Fit-type curves use arcs as the approximating segments. Using arcs yields a smoother generated curve when few segments are specified, but the curve can take longer to generate.

## SPLINETYPE

### Quick Reference

See also:

- Modify Polylines

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 6

Sets the type of curve generated by the Spline option of the PEDIT command.

---

5	Quadratic B-spline
---	--------------------

---

6	Cubic B-spline
---	----------------

---

## SPLKNOTS

### Quick Reference

See also:

- Modify Splines

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Stores the default knot option for the SPLINE command when specifying fit points.

---

0	Chord distance
---	----------------

---

1	Square root of chord distance
---	-------------------------------

---

2 Uniform distance

---

**NOTE** SPLKNOTS always defaults to 0 when AutoCAD LT starts.

---

## SPLMETHOD

### Quick Reference

See also:

- Draw Splines

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 0

Stores whether the default method used for the SPLINE command is fit points or control vertices.

---

0	Create splines using fit points
1	Create splines using control vertices

---

**NOTE** SPLMETHOD always defaults to 0 when AutoCAD LT starts.

---

## SPLPERIODIC

### Quick Reference

See also:

- Draw Splines

**Type:** Integer  
**Saved in:** User-settings  
**Initial value:** 1

Controls whether closed splines and NURBS surfaces are generated with periodic properties to maintain the smoothest continuity at the closure point or seam.

---

0	Creates closed splines and NURBS surfaces with the method used in AutoCAD LT 2011 and earlier releases.
1	Creates periodic closed splines and closed NURBS surfaces, for the smoothest (C2) continuity. (Recommended)

---

## SSFOUND

### Quick Reference

See also:

- Publish, Transmit, and Archive Sheet Sets

(Read-only)

**Type:** String

**Saved in:** Not-saved

**Initial value:** ""

Displays the sheet set path and file name if a search for a sheet set is successful.

SSLOCATE must be set to 1 and the drawing file must be open for a successful search.

## SSLOCATE

### Quick Reference

See also:

- Create and Modify Sheets

**Type:** Integer

**Saved in:** User-settings

**Initial value:** 1

Controls whether the sheet set associated with a drawing is located and opened when the drawing is opened.

---

0	Does not open a drawing's sheet set with the drawing
1	Opens a drawing's sheet set with the drawing

---

SSMAUTOOPEN and SSLOCATE must both be set to 1 to open a sheet set automatically in the Sheet Set Manager.

## SSMAUTOOPEN

### Quick Reference

See also:

- Create and Modify Sheets

**Type:** Integer  
**Saved in:** User-settings  
**Initial value:** 1

Controls the display behavior of the Sheet Set Manager when a drawing associated with a sheet is opened.

---

0	Does not open the Sheet Set Manager automatically
1	Opens the Sheet Set Manager automatically

---

SSMAUTOOPEN and SSLOCATE must both be set to 1 to open a sheet set automatically in the Sheet Set Manager.

## SSMPOLLTIME

### Quick Reference

See also:

- Create and Modify Sheets

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 60

Controls the time interval between automatic refreshes of the status data in a sheet set.

The SSMPLLTIME timer sets the time in seconds between automatic refreshes of the status data of sheets in a sheet set. Valid values are 20-600. The SSM SHEETSTATUS system variable must be set to 2 for the timer to operate.

## SSMSHEETSTATUS

### Quick Reference

See also:

- Create and Modify Sheets

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 2

Controls how the status data in a sheet set is refreshed.

The status data for sheets in the current sheet set includes whether a sheet is locked and whether a sheet is missing (or found in an unexpected location). This status data can be updated automatically for all sheets.

To refresh the sheet set manually, use the Refresh Sheet Status button on the Sheet List tab of the Sheet Set Manager.

---

0	Do not automatically refresh the status data in a sheet set
1	Refresh the status data when the sheet set is loaded or updated
2	Refresh the status data when the sheet set is loaded or updated, or at a time interval set by SSMPLLTIME

---



## SSMSTATE

### Quick Reference

See also:

- Create a Sheet Set

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** Varies

Indicates whether the Sheet Set Manager window is open or closed.

---

0	Closed
---	--------

---

1	Open
---	------

---

## STARTUP

### Quick Reference

See also:

- Overview of Starting a New Drawing

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls what displays when the application is started, or when a new drawing is opened.

Controls whether the Create New Drawing dialog box is displayed when a new drawing is started with NEW or QNEW. Also controls whether the Startup dialog box is displayed when the application is started.

If the **FILEDIA** system variable is set to 0, file dialog boxes are not displayed.

---

0	Displays the Select Template dialog box, or uses a default drawing template file set in the Options dialog box, on the Files tab.
1	Starts without opening a drawing template file, and displays the Startup or the Create New Drawing dialog box.
2	Starts without opening a drawing template file. If available in the application a custom dialog box is displayed.

---

## STATUSBAR

### Quick Reference

See also:

- Status Bars

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls the display of the application and drawing status bars.

---

0	Hides both the application and drawing status bars
1	Displays only the application status bar
2	Displays both the application and drawing status bars
3	Displays only the drawing status bar

---

# SYSCODEPAGE

## Quick Reference

### See also:

- Use Text Fonts for International Work

(Read-only)

**Type:** String

**Saved in:** Not-saved

**Initial value:** Varies

Indicates the system code page, which is determined by the operating system.

To change the code page, see Help for your operating system.



# T System Variables

# 45

## TABLEINDICATOR

### Quick Reference

See also:

- Create and Modify Tables

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls the display of row numbers and column letters when the In-Place Text Editor is open for editing a table cell.

---

0	Off
---	-----

---

1	On
---	----

---

## TABLETOOLBAR

### Quick Reference

See also:

- Create and Modify Tables

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 2  
Controls the display of the Table toolbar.

---

0	The Table toolbar is never displayed.
1	The Table toolbar is displayed upon selection of a table cell.
2	The Table toolbar is not displayed when the ribbon is turned on.

---

## TABMODE

### Quick Reference

See also:

- Digitizing Tablets

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 0  
Controls the use of the tablet.

For more information on using and configuring a tablet, see the TABLET command.

---

0	Off
1	On

---

# TARGET

## Quick Reference

**See also:**

- Define a 3D View with Coordinate Values or Angles

(Read-only)

**Type:** 3D-point

**Saved in:** Drawing

**Initial value:** 0.0000,0.0000,0.0000

Stores the location (as a UCS coordinate) of the target point for the current viewport.

# TBSHOWSHORTCUTS

## Quick Reference

**See also:**

- Toolbars

**Type:** String

**Saved in:** Registry

**Initial value:** yes

Specifies whether shortcuts that use the Ctrl and Alt keys are displayed in the tooltips on toolbars.

---

no	Display shortcut keys
yes	Do not display shortcut keys

---

## TDCREATE

### Quick Reference

**See also:**

- Add Identifying Information to Drawings

(Read-only)

**Type:** Real

**Saved in:** Drawing

**Initial value:** Varies

Stores the local time and date the drawing was created.

## TDINDWG

### Quick Reference

**See also:**

- Add Identifying Information to Drawings

(Read-only)

**Type:** Real

**Saved in:** Drawing

**Initial value:** Varies

Stores the total editing time, which is the total elapsed time between saves of the current drawing.

The format is:

<number of days>.<decimal fraction of a day>

To compute the number of seconds, multiply the decimal fraction in TDINDWG by 86400 seconds.



## TDUCREATE

### Quick Reference

**See also:**

- Add Identifying Information to Drawings

(Read-only)

**Type:** Real

**Saved in:** Drawing

**Initial value:** Varies

Stores the universal time and date that the drawing was created.

## TDUPDATE

### Quick Reference

**See also:**

- Add Identifying Information to Drawings

(Read-only)

**Type:** Real

**Saved in:** Drawing

**Initial value:** Varies

Stores the local time and date of the last update/save.

## TDUSRTIMER

### Quick Reference

**See also:**

- Add Identifying Information to Drawings

(Read-only)

**Type:** Real

**Saved in:** Drawing  
**Initial value:** Varies  
Stores the user-elapsed timer.

## TDUUPDATE

### Quick Reference

**See also:**

- Add Identifying Information to Drawings

(Read-only)

**Type:** Real  
**Saved in:** Drawing  
**Initial value:** Varies  
Stores the universal time and date of the last update or save.

## TEMPOVERRIDES

### Quick Reference

**See also:**

- Override Object Snap Settings

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1  
Turns temporary override keys on and off.

A temporary override key is a key that you can hold down to temporarily turn on or turn off one of the drawing aids that are set in the Drafting Settings dialog box; for example, Ortho mode, object snaps, or Polar mode.

---

0	Off
1	On

---

# TEXTED

## Quick Reference

See also:

- Change Single-Line Text

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 2

Specifies the user interface displayed for editing single-line text.

---

0	Displays the In-Place Text Editor when creating or editing single-line text.
1	Displays the Edit Text dialog box when editing single-line text.
2	Displays the In-Place Text Editor when creating or editing single-line text. Repeats the command automatically.

---

# TEXTFILL

## Quick Reference

See also:

- Use TrueType Fonts

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls the filling of TrueType fonts while plotting.

---

0	Displays text as outlines
1	Displays text as filled images

---

## TEXTOUTPUTFILEFORMAT

### Quick Reference

See also:

- Share Drawing Files Internationally

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Provides Unicode options for log files.

---

0	ANSI format
---	-------------

---

1	UTF-8 (Unicode)
---	-----------------

---

2	UTF-16LE (Unicode)
---	--------------------

---

3	UTF-16BE (Unicode)
---	--------------------

---

## TEXTQLTY

### Quick Reference

See also:

- Use TrueType Fonts

Sets the resolution tessellation fineness of text outlines.

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 50

Sets the resolution tessellation fineness of text outlines for TrueType fonts while plotting. 0 represents no effort to refine the smoothness of the text; 100 represents a maximum effort to smooth text characters. Lower values decrease resolution and increase plotting speed. Higher values increase resolution and decrease plotting speed.

Sets the resolution of TrueType fonts while plotting. Use integer values from 0 to 100. Lower values decrease resolution and increase plotting speed. Higher values increase resolution and decrease plotting speed.

## TEXTSIZE

### Quick Reference

See also:

- Set Text Height

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.2000 (imperial) or 2.5000 (metric)

Sets the default height for new text objects drawn with the current text style.

TEXTSIZE has no effect if the current text style has a fixed height.

## TEXTSTYLE

### Quick Reference

See also:

- Overview of Text Styles

**Type:** String

**Saved in:** Drawing

**Initial value:** Standard

Sets the name of the current text style.

## THICKNESS

### Quick Reference

See also:

- Add 3D Thickness to Objects

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Sets the current 3D thickness.

## TILEMODE

### Quick Reference

See also:

- Set Model Space Viewports

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1

Makes the Model tab or the last layout tab current.

---

0	Makes the last active layout tab (paper space) active
---	---

---

1	Makes the Model tab active
---	----------------------------

---

## TIMEZONE

### Quick Reference

See also:

- Overview of Geographic Location

**Type:** Enum  
**Saved in:** Drawing  
**Initial value:** -8000

Sets the time zone for the sun in the drawing.

The values in the table are expressed as hours and minutes away from Greenwich Mean Time. The geographic location you set also sets the time zone. If the time zone is not accurate, you can correct it in the Geographic Location dialog box or set the TIMEZONE system variable.

-12000	International Date Line West
-11000	Midway Island, Samoa
-10000	Hawaii
-9000	Alaska
-8000	Pacific Time (US & Canada), Tijuana
-7000	Arizona
-7000	Chihuahua, La Paz, Mazatlan
-7000	Mountain Time (US & Canada)
-7001	Arizona
-7002	Mazatlan
-6000	Central America
-6001	Central Time (US & Canada)
-6002	Guadalajara, Mexico City, Monterrey
-6003	Saskatchewan
-5000	Eastern Time (US & Canada)
-5001	Indiana (East)
-5002	Bogota, Lima, Quito

-4000	Atlantic Time (Canada)
-4001	Caracas, La Paz
-4002	Santiago
-3300	Newfoundland
-3000	Brasilia
-3001	Buenos Aires, Georgetown
-3002	Greenland
-2000	Mid-Atlantic
-1000	Azores
-1001	Cape Verde Is.
0	Universal Coordinated Time
1	Greenwich Mean Time
2	Casablanca, Monrovia
+1000	Amsterdam, Berlin, Bern, Rome, Stockholm
+1001	Brussels, Madrid, Copenhagen, Paris
+1002	Belgrade, Bratislava, Budapest, Ljubljana, Prague
+1003	Sarajevo, Skopje, Warsaw, Zagreb
+1004	West Central Africa
+2000	Athens, Beirut, Istanbul, Minsk
+2001	Bucharest
+2002	Cairo
+2003	Harare, Pretoria



+2004	Helsinki, Kyiv, Sofia, Tallinn, Vilnius
+2005	Jerusalem
+3000	Moscow, St. Petersburg, Volograd
+3001	Kuwait, Riyadh
+3002	Baghdad
+3003	Nairobi
+3300	Tehran
+4000	Abu Dhabi, Muscat
+4001	Baku, Tbilisi, Yerevan
+4300	Kabul
+5000	Ekaterinburg
+5001	Islamabad, Karachi, Tashkent
+5300	Chennai, Kolkata, Mumbai, New Delhi
+5450	Kathmandu
+6000	Almaty, Novosibirsk
+6001	Astana, Dhaka
+6002	Sri Jayawardenepura
+6300	Rangoon
+7000	Bangkok, Hanoi, Jakarta
+7001	Krasnoyarsk
+8000	Beijing, Chongqing, Hong Kong, Urumqi
+8001	Kuala Lumpur, Singapore

+8002	Taipei
+8003	Irkutsk, Ulaan Bataar
+8004	Perth
+9000	Osaka, Sapporo, Tokyo
+9001	Seoul
+9002	Yakutsk
+9300	Adelaide
+9301	Darwin
+10000	Canberra, Melbourne, Sydney
+10001	Guam, Port Moresby
+10002	Brisbane
+10003	Hobart
+10004	Vladivostok
+11000	Magadan, Solomon Is., New Caledonia
+12000	Auckland, Wellington
+12001	Fiji, Kamchatka, Marshall Is.
+13000	Nuku'alofa

# TOOLTIPMERGE

## Quick Reference

See also:

- Set Interface Options

**Type:** Switch

**Saved in:** Registry

**Initial value:** 0

Combines drafting tooltips into a single tooltip.

The appearance of the merged tooltip is controlled by the settings in the Tooltip Appearance dialog box.

---

0	Off
---	-----

---

1	On
---	----

---

# TOOLTIPS

## Quick Reference

See also:

- Set Interface Options

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls the display of tooltips on the ribbon, toolbars, and other user interface elements.

---

0	Turns off the display of tooltips
---	-----------------------------------

---

1	Turns on the display of tooltips
---	----------------------------------

---

## TOOLTIPSIZ

### Quick Reference

#### See also:

- Other Tool Locations

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Sets the display size for drafting tooltips, and for automatic completion text at the Command prompt.

Valid range is -3 to 6. Greater values result in larger drafting tooltips, and larger automatic completion text at the Command prompt. Negative values represent smaller sizes than the default.

## TOOLTIPTRANSPARENCY

### Quick Reference

#### See also:

- Other Tool Locations

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Sets the transparency for drafting tooltips.

Valid range is 0 to 100. When a value of 0 is used, the drafting tooltip is fully opaque. The greater the value entered, the more transparent the drafting tooltip will appear.

## TPSTATE

### Quick Reference

See also:

- Customize Tool Palettes

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** Varies

Indicates whether the Tool Palettes window is open or closed.

---

0	Closed
---	--------

---

1	Open
---	------

---

## TRACEWID

### Quick Reference

See also:

- Draw Lines

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0500 (imperial) or 1.0000 (metric)

Sets the default trace width.

Obsolete

The TRACE command and TRACEWID system variable have been removed from the product.

# TRACKPATH

## Quick Reference

See also:

- Use Polar Tracking and PolarSnap

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls the display of polar and object snap tracking alignment paths.

---

0	Displays full-screen polar and object snap tracking paths
---	---

---

1	Displays full-screen polar tracking path; displays object snap tracking path only between the alignment point and the From point to the cursor location
---	---

---

2	Displays full-screen object snap tracking path; does not display polar tracking path
---	--

---

3	Does not display polar tracking path; displays object snap tracking path only between the alignment point and the From point to the cursor location
---	---

---

# TRANSPARENCYDISPLAY

## Quick Reference

See also:

- Control the Display Properties of Certain Objects

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether the object transparency is displayed.

---

0	Object transparency is not displayed
1	Object transparency is displayed

---

## TRAYICONS

### Quick Reference

See also:

- Update Referenced Drawing Attachments

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls whether a tray is displayed on the status bar.

---

0	Does not display a tray
1	Displays a tray

---

## TRAYNOTIFY

### Quick Reference

See also:

- Update Referenced Drawing Attachments

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls whether service notifications are displayed in the status bar tray.

---

0	Does not display notifications
---	--------------------------------

---

## TRAYTIMEOUT

### Quick Reference

**See also:**

- Update Referenced Drawing Attachments

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 0

Controls the length of time (in seconds) that service notifications are displayed.

Valid values are 0 to 10.

## TREEDEPTH

### Quick Reference

**See also:**

- Work with Layer and Spatial Indexes

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 3020

Specifies the maximum depth, that is, the number of times the tree-structured spatial index can divide into branches.

- 
- 0 Suppresses the spatial index entirely, eliminating the performance improvements it provides in working with large drawings. This setting assures that objects are always processed in database order.
-



>0	Turns on spatial indexing. An integer of up to five digits is valid. The first three digits refer to model space, and the remaining two digits refer to paper space.
<0	Treats model space objects as 2D (Z coordinates are ignored), as is always the case with paper space objects. Such a setting is appropriate for 2D drawings and makes more efficient use of memory without loss of performance

---

**NOTE** You cannot use TREEDEPTH transparently.

---

## TREEMAX

### Quick Reference

**See also:**

- Work with Layer and Spatial Indexes

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 10000000

Limits memory consumption during drawing regeneration by limiting the number of nodes in the spatial index (oct-tree).

By imposing a fixed limit with TREEMAX, you can load drawings created on systems with more memory than your system and with a larger TREEDEPTH than your system can handle. These drawings, if left unchecked, have an oct-tree large enough to eventually consume more memory than is available to your computer. TREEMAX also provides a safeguard against experimentation with inappropriately high TREEDEPTH values.

The initial default for TREEMAX is 10000000 (10 million), a value high enough to effectively disable TREEMAX as a control for TREEDEPTH. The value to which you should set TREEMAX depends on your system's available RAM. You get about 15,000 oct-tree nodes per megabyte of RAM.

If you want an oct-tree to use up to, but no more than, 2 megabytes of RAM, set TREEMAX to 30000 (2 x 15,000). If the program runs out of memory allocating oct-tree nodes, restart, set TREEMAX to a smaller number, and try loading the drawing again.

The program might occasionally run into the limit you set with TREEMAX. Follow the resulting prompt instructions. Your ability to increase TREEMAX depends on your computer's available memory.

## TRIMMODE

### Quick Reference

See also:

- Create Chamfers

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls whether selected edges for chamfers and fillets are trimmed.

---

0	Leaves selected edges intact
1	Trims selected edges to the endpoints of chamfer lines and fillet arcs

---

## TSPACEFAC

### Quick Reference

See also:

- Specify the Line Spacing Within Multiline Text

**Type:** Real  
**Saved in:** Not-saved  
**Initial value:** 1.0000

Controls the multiline text line-spacing distance measured as a factor of text height.

Valid values are 0.25 to 4.0.

# TSPACETYPE

## Quick Reference

See also:

- Specify the Line Spacing Within Multiline Text

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Controls the type of line spacing used in multiline text.

At Least adjusts line spacing based on the tallest characters in a line. Exactly uses the specified line spacing, regardless of individual character sizes.

---

1	At Least
---	----------

---

2	Exactly
---	---------

---

# TSTACKALIGN

## Quick Reference

See also:

- Create Stacked Characters Within Multiline Text

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 1

Controls the vertical alignment of stacked text.

---

0	Bottom aligned
---	----------------

---

1	Center aligned
---	----------------

---

2	Top aligned
---	-------------

---

# TSTACKSIZE

## Quick Reference

See also:

- Create Stacked Characters Within Multiline Text

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 70

Controls the percentage of stacked text fraction height relative to selected text's current height.

Valid values are from 25 to 125.

# U System Variables

# 46

## UCS2DDISPLAYSETTING

### Quick Reference

See also:

- The UCS Icon
- Use Coordinates and Coordinate Systems (UCS)

**Type:** Integer  
**Saved in:** Registry

**Initial value:** 1

Displays the UCS icon when the 2D Wireframe visual style is current.

---

0	Off. The UCS icon is not displayed when the 2D Wireframe visual style is current.
1	On. The UCS icon is displayed when the 2D Wireframe visual style is current.

---

**NOTE** The [UCSICON](#) on page 1271 command must also be set to ON to display the UCS icon.

---

## UCSAXISANG

### Quick Reference

See also:

- Work with the User Coordinate System (UCS)

**Type:** Integer

**Saved in:** Registry

**Initial value:** 90

Stores the default angle when rotating the UCS around one of its axes using the X, Y, or Z option of the UCS command.

Its value must be entered as an angle in degrees (valid values are: 5, 10, 15, 18, 22.5, 30, 45, 90, 180).

## UCSBASE

### Quick Reference

See also:

- Overview of the User Coordinate System (UCS)

**Type:** String

**Saved in:** Drawing

**Initial value:** ""

Stores the name of the UCS that defines the origin and orientation of orthographic UCS settings.

Valid values include any named UCS.

# UCSFOLLOW

## Quick Reference

See also:

- Overview of the User Coordinate System (UCS)

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0

Generates a plan view whenever you change from one UCS to another.

The UCSFOLLOW setting is saved separately for each viewport. If UCSFOLLOW is on for a particular viewport, a plan view is generated in that viewport whenever you change coordinate systems.

Once the new UCS has been established, you can use PLAN, VIEW, or VPOINT to change the view of the drawing. It will change to a plan view again the next time you change coordinate systems.

---

0	UCS does not affect the view
1	Any UCS change causes a change to the plan view of the new UCS in the current viewport

---

The setting of UCSFOLLOW is maintained separately for paper space and model space and can be accessed in either, but the setting is ignored while in paper space (it is always treated as if set to 0). Although you can define a non-world UCS in paper space, the view remains in plan view to the world coordinate system.

# UCSICON

## Quick Reference

See also:

- Control the Display of the User Coordinate System Icon

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 3

Displays the UCS icon for the current viewport or layout.

This system variable has the same name as a command. Use the SETVAR command to access this system variable.

The setting is stored as a bitcode using the sum of the following values:

---

0	No icon is displayed
1	On; the icon is displayed in the lower-left corner of the current viewport or layout
2	Origin; if the icon is on, the icon is displayed at the UCS origin, if possible

---

The setting of this system variable is viewport and layout specific.

## UCSNAME

### Quick Reference

**See also:**

- Overview of the User Coordinate System (UCS)

(Read-only)

**Type:** String

**Saved in:** Drawing

Stores the name of the current coordinate system for the current viewport in the current space.

Returns a null string if the current UCS is unnamed.



# UCSORG

## Quick Reference

See also:

- Overview of the User Coordinate System (UCS)

(Read-only)

**Type:** 3D-point

**Saved in:** Drawing

**Initial value:** 0.0000,0.0000,0.0000

Stores the origin point of the current coordinate system for the current viewport in the current space.

This value is always stored as a world coordinate.

# UCSORTHO

## Quick Reference

See also:

- Overview of the User Coordinate System (UCS)

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Determines whether the related orthographic UCS setting is restored automatically when an orthographic view is restored.

---

0	Specifies that the UCS setting remains unchanged when an orthographic view is restored
---	--

---

1	Specifies that the related orthographic UCS setting is restored automatically when an orthographic view is restored
---	---

---

## UCSSELECTMODE

### Quick Reference

See also:

- Overview of the User Coordinate System (UCS)

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether the UCS icon can be selected and manipulated with grips.

---

0	The UCS icon is not selectable.
---	---------------------------------

---

1	The UCS icon is selectable.
---	-----------------------------

---

## UCSVIEW

### Quick Reference

See also:

- Save and Restore Views

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Determines whether the current UCS is saved with a named view.

---

0	Does not save current UCS with a named view
---	---

---

1	Saves current UCS whenever a named view is created
---	--

---

# UCSXDIR

## Quick Reference

### See also:

- Overview of the User Coordinate System (UCS)

(Read-only)

**Type:** 3D-point

**Saved in:** Drawing

**Initial value:** 1.0000,0.0000,0.0000

Stores the X direction of the current UCS for the current viewport in the current space.

The setting of this system variable is viewport specific.

# UCSYDIR

## Quick Reference

### See also:

- Overview of the User Coordinate System (UCS)

(Read-only)

**Type:** 3D-point

**Saved in:** Drawing

**Initial value:** 0.0000,1.0000,0.0000

Stores the Y direction of the current UCS for the current viewport in the current space.

The setting of this system variable is viewport specific.

# UNDOCTL

## Quick Reference

**See also:**

- Correct Mistakes

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 53

Indicates the state of the Auto, Control, and Group options of the UNDO command.

The setting is stored as a bitcode using the sum of the following values:

0	UNDO is turned off
1	UNDO is turned on
2	Only one command can be undone
4	Auto is turned on
8	A group is currently active
16	Zoom and pan operations are grouped as a single action
32	Layer property operations are grouped as a single action

# UNDOMARKS

## Quick Reference

**See also:**

- Correct Mistakes

(Read-only)

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** 0

Stores the number of marks placed in the UNDO control stream by the Mark option.

The Mark and Back options are not available if a group is currently active.

## UNITMODE

### Quick Reference

See also:

- Specify Units and Unit Formats

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0

Controls the display format for units.

By default, the format for displaying measured values differs slightly from the format used for entering them. (You cannot include spaces when entering measured values.)

---

0	Displays fractional, feet-and-inches, and surveyor's angles in "report" format using spaces as delimiters
1	Displays fractional, feet-and-inches, and surveyor's angles in "input" format without including spaces and, in some cases, substituting dashes for spaces

---

## UOSNAP

### Quick Reference

See also:

- Use Object Snaps with Underlays

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 1

Determines whether object snapping is active for geometry in DWF, DWFX, PDF, and DGN underlays that are attached to the drawing.

UOSNAP overrides the [DWFOSNAP](#), [PDFOSNAP](#), and [DGNOSNAP](#) settings. Conversely, you can override the UOSNAP setting for DWF, DWFX, PDF, and DGN underlays by issuing the necessary DWFOSNAP, PDFOSNAP, or DGNOSNAP system variables.

---

0	Object snapping is disabled for geometry in all underlay attachments in the drawing
1	Object snapping is enabled for geometry in all underlay attachments in the drawing
2	The individual setting varies for all underlays in the current drawing: DWF, DWFX and DGN.

---

## UPDATETHUMBNAIL

### Quick Reference

**See also:**

- Set Interface Options

**Type:** Bitcode  
**Saved in:** Drawing  
**Initial value:** 15

Controls updating of the thumbnail previews for views and layouts.

The setting is stored as a bitcode using the sum of the following values:

---

0	Does not update previews
1	Updates previews for model space views
2	Updates previews for layout views

---

4	Updates previews for layouts
8	Updates previews when layouts or views are created, modified, or restored
16	Updates previews when the drawing is saved

## USERI1-5

### Quick Reference

See also:

- DIESEL Expressions in Macros

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 0

Provides storage and retrieval of integer values.

There are five system variables: USERI1, USERI2, USERI3, USERI4, and USERI5.

## USERNAME

### Quick Reference

See also:

- Set Interface Options

**Type:** String  
**Saved in:** Registry  
**Initial value:** Varies

Specifies the user name.

This system variable is initially set by the Windows login information.

## USERR1-5

### Quick Reference

**See also:**

- DIESEL Expressions in Macros

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Provides storage and retrieval of real numbers.

There are five system variables: USERR1, USERR2, USERR3, USERR4, and USERR5.



# V System Variables

# 47

## VERSION

### Quick Reference

See also:

- Set Interface Options

(Read-only)

**Type:** String

**Saved in:** Registry

**Initial value:** Varies

Stores the AutoCAD LT version.

## VIEWCTR

### Quick Reference

See also:

- Pan or Zoom a View

(Read-only)

**Type:** 3D-point

**Saved in:** Drawing

**Initial value:** Varies

Stores the center of view in the current viewport.  
Expressed as a UCS coordinate.

## VIEWDIR

### Quick Reference

See also:

- Change to a View of the XY Plane

(Read-only)

**Type:** 3D-vector

**Saved in:** Drawing

**Initial value:** 0.0000,0.0000,1.0000

Stores the viewing direction in the current viewport, expressed in UCS coordinates.

This describes the camera point as a 3D offset from the target point.

## VIEWMODE

### Quick Reference

See also:

- Save and Restore Views

(Read-only)

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Stores the View mode for the current viewport.

The setting is stored as a bitcode using the sum of the following values:

---

0	Turned off.
1	Perspective view active.

---

2	Front clipping on
4	Back clipping on.
8	UCS Follow mode on.
16	Front clip not at eye. If on, the front clip distance (FRONTZ) determines the front clipping plane. If off, FRONTZ is ignored, and the front clipping plane is set to pass through the camera point (vectors behind the camera are not displayed). This flag is ignored if the front-clipping bit (2) is off.

## VIEWSIZE

### Quick Reference

See also:

- Save and Restore Views

(Read-only)

**Type:** Real

**Saved in:** Drawing

**Initial value:** Varies

Stores the height of the view displayed in the current viewport, measured in drawing units.

## VIEWTWIST

### Quick Reference

See also:

- Rotate Views in Layout Viewports

(Read-only)

**Type:** Real

**Saved in:** Drawing

**Initial value:** 0.0000

Stores the view rotation angle for the current viewport measured relative to the WCS.

## VISRETAIN

### Quick Reference

**See also:**

- Attach Drawing References (Xrefs)

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1

Controls the properties of xref-dependent layers.

Controls visibility, color, linetype, lineweight, and plot styles.

---

0 The layer table, as stored in the reference drawing (xref), takes precedence. Changes made to xref-dependent layers in the current drawing are valid in the current session only and are not saved with the drawing. When the current drawing is reopened, the layer table is reloaded from the reference drawing, and the current drawing reflects all of those layer property settings.

---

1 Xref-dependent layer changes made in the current drawing take precedence. Layer settings are saved with the current drawing's layer table and persist from session to session.

---

## VPLAYEROVERRIDES

### Quick Reference

**See also:**

- Override Layer Properties in Viewports

(Read-only)

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 0

Indicates if there are any layers with viewport (VP) property overrides for the current layout viewport.

---

0	Current viewport does not have any associated layer property overrides
---	--

---

1	Current viewport has associated layer property overrides
---	--

---

## VPLAYEROVERRIDESMODE

### Quick Reference

See also:

- Override Layer Properties in Viewports

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether layer property overrides for layout viewports are displayed and plotted.

---

0	Layer property overrides are not displayed in layout viewports or plotted
---	---

---

1	Layer property overrides are displayed in layout viewports and plotted
---	--

---

## VPMAXIMIZEDSTATE

### Quick Reference

See also:

- Access Model Space from a Layout Viewport

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 0

Indicates whether the viewport is maximized or not.

The maximized viewport state is canceled if you start the PLOT command.

---

0	Not maximized
---	---------------

---

1	Maximized
---	-----------

---

## VPROTATEASSOC

### Quick Reference

See also:

- Rotate Views in Layout Viewports

**Type:** Integer

**Saved in:** Registry

**Initial value:** 1

Controls whether the view within a viewport is rotated with the viewport when the viewport is rotated.

---

0	When a viewport is rotated, the view inside is not rotated.
---	---

---

1	When a viewport is rotated, the view inside is rotated to match the rotation of the viewport.
---	---

---

---

**NOTE** After rotating a viewport, VPROTATEASSOC is set to 0 for a new viewport created in the same layout.

---

## VSMAX

### Quick Reference

**See also:**

- Save and Restore Model Layout Viewport Arrangements

(Read-only)

**Type:** 3D-point

**Saved in:** Drawing

**Initial value:** Varies

Stores the upper-right corner of the current viewport's virtual screen.

Expressed as a UCS coordinate.

## VSMIN

### Quick Reference

**See also:**

- Save and Restore Model Layout Viewport Arrangements

(Read-only)

**Type:** 3D-point

**Saved in:** Drawing

**Initial value:** Varies

Stores the lower-left corner of the current viewport's virtual screen.

Expressed as a UCS coordinate.

## VTDURATION

### Quick Reference

See also:

- Set Interface Options

**Type:** Integer

**Saved in:** Registry

**Initial value:** 750

Sets the duration of a smooth view transition, in milliseconds.

The valid range is 0 to 5000.

## VTENABLE

### Quick Reference

See also:

- Set Interface Options

**Type:** Integer

**Saved in:** Registry

**Initial value:** 3

Controls when smooth view transitions are used.

Smooth view transitions can be on or off for panning and zooming, for changes of view angle, or for scripts. The valid range is 0 to 7.

Setting	For pan/zoom	For rotation	For scripts
0	Off	Off	Off
1	On	Off	Off
2	Off	On	Off
3	On	On	Off



Setting	For pan/zoom	For rotation	For scripts
4	Off	Off	On
5	On	Off	On
6	Off	On	On
7	On	On	On

## VTFPS

### Quick Reference

See also:

- Set Interface Options

**Type:** Integer

**Saved in:** Registry

**Initial value:** 7

Sets the minimum speed of a smooth view transition, in frames per second.

When a smooth view transition cannot maintain this speed, an instant transition is used. The valid range is 1 to 30.



# W System Variables

# 48

## WHIPARC

### Quick Reference

See also:

- Draw Curved Objects

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls whether the display of circles and arcs is smooth.

---

0	Circles and arcs are not smooth, but rather are displayed as a series of vectors
---	--

---

1	Circles and arcs are smooth, displayed as true circles and arcs
---	---

---

## WINDOWAREACOLOR

### Quick Reference

See also:

- Customize Object Selection

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 150

Controls the color of the transparent selection area during window selection.

The valid range is 1 to 255. [SELECTIONAREA](#) on page 1650 must be on.

## WMFBKGND

### Quick Reference

**See also:**

- Edit Referenced Drawings

**Type:** Integer  
**Saved in:** Not-saved  
**Initial value:** Off

Controls the background display when objects are inserted in Windows metafile (WMF) format.

The objects may be inserted using any of the following methods:

- Output to a Windows metafile using WMFOUT
- Copied to the Clipboard and pasted as a Windows metafile
- Dragged as a Windows metafile

---

Off	The background color is transparent. The foreground color depends on the setting of WMFFOREGND.
-----	---

---

On	The background color is the same as the current background color in the drawing, whether in model space or in a layout. The foreground color remains unchanged.
----	---

---

# WMFFOREGND

## Quick Reference

See also:

- Edit Referenced Drawings

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** Off

Controls the assignment of the foreground color when objects are inserted in Windows metafile (WMF) format.

The objects may be inserted using any of the following methods:

- Output to a Windows metafile using WMFOUT
- Copied to the Clipboard and pasted as a Windows metafile
- Dragged as a Windows metafile

WMFFOREGND applies only when WMFBKGND is set to Off.

---

Off	The foreground and background colors are swapped if necessary to ensure that the foreground color is darker than the background color
-----	---

---

On	The foreground and background colors are swapped if necessary to ensure that the foreground color is lighter than the background color
----	--

---

# WORKSPACELABEL

## Quick Reference

See also:

- Application Status Bar

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls whether to display the name of the current workspace in the status bar.

---

0	Hides the workspace name
1	Displays the workspace name

---

## WORLDUCS

### Quick Reference

See also:

- Overview of the User Coordinate System (UCS)

(Read-only)

**Type:** Integer

**Saved in:** Not-saved

**Initial value:** 1

Indicates whether the UCS is the same as the WCS.

---

0	UCS differs from the WCS
1	UCS matches the WCS

---

## WORLDVIEW

### Quick Reference

See also:

- Define a 3D View with Coordinate Values or Angles

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1

Determines whether input to the DVIEW and VPOINT commands is relative to the WCS (default) or the current UCS.

---

0	UCS remains unchanged
1	UCS changes to the WCS for the duration of the command; the command input is relative to the current UCS

---

## WSAUTOSAVE

### Quick Reference

See also:

- Create Task-Based Workspaces
- [Workspace Settings Dialog Box](#) on page 1341

**Type:** Switch

**Saved in:** Registry

**Initial value:** 0

Saves changes you made to a workspace when you switch to another work space.

---

0	Autosave on
1	Autosave off

---

This system variable determines the default setting in the [Workspace Settings dialog box > When Switching Workspaces](#) section on page 1342.

## WSCURRENT

### Quick Reference

See also:

- Create Task-Based Workspaces

**Type:** String

**Saved in:** Not-saved

**Initial value:** Varies

Returns the current workspace name at the Command prompt and sets a workspace to current.



# X System Variables

# 49

## XCLIPFRAME

### Quick Reference

See also:

- Update Referenced Drawing Attachments

**Type:** Integer  
**Saved in:** Drawing  
**Initial value:** 2

Determines whether xref clipping boundaries are visible or plotted in the current drawing.

The [FRAME](#) system variable overrides the XCLIPFRAME setting. Use the XCLIPFRAME system variable after the FRAME system variable to reset the clipped xref frame settings

---

0	The frame is not visible and it is not plotted. The frame temporarily reappears during selection preview or object selection.
1	The clipped xref frame is displayed and plotted
2	The clipped xref frame is displayed but not plotted

---

# XDWGFADECTL

## Quick Reference

See also:

- Attach Drawing References (Xrefs)

**Type:** Integer

**Saved in:** Registry

**Initial value:** 70

Controls the dimming for all DWG xref objects.

The valid XDWGFADECTL system variable value is between -90 and 90. When XDWGFADECTL is set to a negative value, the Xref Fading feature is not turned on, but the setting is stored.

---

0	DWG xref objects are not faded.
>0	When the value is positive, controls the percent of fading up to 90 percent.
<0	When the value is negative, xref objects are not faded, but the value is saved for switching to that value by changing the sign.

---

# XEDIT

## Quick Reference

See also:

- Update Referenced Drawing Attachments

**Type:** Integer

**Saved in:** Drawing

**Initial value:** 1

Controls whether the current drawing can be edited in-place when being referenced by another drawing.

---

0	Can't use in-place reference editing
1	Can use in-place reference editing

---

## XFADECTL

### Quick Reference

See also:

- Attach Drawing References (Xrefs)

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 50

Controls the amount of fading within a reference being edited in place. This setting affects only the objects that are not being edited in the reference.

Valid values are from 0 to 90.

Also controls the fading intensity percentage of alternate object representations that display in a dimmed state, such as alternate scale representations of objects.

SELECTIONANNODISPLAY controls whether or not alternate scale representations of annotative objects are displayed.

## XLOADCTL

### Quick Reference

See also:

- Work with Demand Loading in Large Drawings

**Type:** Integer  
**Saved in:** Registry

**Initial value:** 2

Turns xref demand-loading on and off, and controls whether it opens the referenced drawing or a copy.

---

0	Turns off demand-loading; the entire drawing is loaded.
1	Turns on demand-loading. Referenced drawings are kept open and locked.
2	Turns on demand-loading. Copies of referenced drawings are opened and locked; referenced drawings are not locked

---

When XLOADCTL is set to 2, a copy of each referenced drawing file is stored in the folder specified by the XLOADPATH system variable or the temporary files folder (set in the Options dialog box).

Additionally, xrefs load faster when you work across a network: the performance enhancement is most pronounced when you open drawings with many xrefs.

## XLOADPATH

### Quick Reference

**See also:**

- Set Paths for Temporary Xref File Copies

**Type:** String

**Saved in:** Registry

**Initial value:** Varies

Creates a path for storing temporary copies of demand-loaded xref files.

For more information, see [XLOADCTL](#) on page 1729.

# XREFCTL

## Quick Reference

See also:

- Track External Reference Operations (Log File)

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 0

Controls whether external reference log (XLG) files are created.

---

0	Does not write log files
---	--------------------------

---

1	Writes log files
---	------------------

---

# XREFNOTIFY

## Quick Reference

See also:

- Update Referenced Drawing Attachments

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 2

Controls the notification for updated or missing xrefs.

---

0	Disables xref notification
---	----------------------------

---

1	Enables xref notification. Notifies you that xrefs are attached to the current drawing by displaying the xref icon in the status bar tray. When you open a drawing, alerts you to missing xrefs by displaying the xref icon with a yellow alert symbol (!).
---	---

---

- 2 Enables xref notification and balloon messages. Displays the xref icon as in 1 above. Also displays balloon messages in the same area when xrefs are modified. The number of minutes between checking for modified xrefs is controlled by the environment variable XNOTIFYTIME.
- 

## XREFTYPE

### Quick Reference

**See also:**

- Nest and Overlay Referenced Drawings

**Type:** Integer

**Saved in:** Registry

**Initial value:** 0

Controls the default reference type when attaching or overlaying an external reference.

---

0	Attachment is the default
---	---------------------------

---

1	Overlay is the default
---	------------------------

---

# Z System Variables

# 50

## ZOOMFACTOR

### Quick Reference

See also:

- Pointing Device Buttons

**Type:** Integer  
**Saved in:** Registry  
**Initial value:** 60

Controls how much the magnification changes when the mouse wheel moves forward or backward.

Accepts an integer between 3 and 100 as a valid value. The higher the number, the more the change.

## ZOOMWHEEL

### Quick Reference

See also:

- Pointing Device Buttons

**Type:** Integer  
**Saved in:** Registry

**Initial value:** 0

Toggles the direction of transparent zoom operations when you scroll the middle mouse wheel.

---

0	Moves wheel forward zooms in; moving wheel backwards zooms out.
---	---

---

1	Move wheel forward zooms out; moving wheel backwards zooms in.
---	--

---




## Attach Digital Signatures

### Quick Reference

See also:

- Overview of Digital Signatures

Attaches a digital signature to files.

 **Menu:** Start menu (Windows) ► Programs ► Autodesk ► AutoCAD LT  
► Attach Digital Signatures

The [Attach Digital Signatures dialog box](#) is displayed.

## Attach Digital Signatures Dialog Box

### Quick Reference

See also:

- Overview of Digital Signatures

Selects the files for attachment of digital signatures.

**Files to Be Signed**

Lists the names of the files to be signed, the folder in which each file resides, and the current status of the file.

**Add Files**

Opens the Select File dialog box, where you select the files for digital signature.

**Search Folders**

Opens the Search Folders dialog box, where you can search for files in the folder you specify.

**Remove**

Removes selected files from the Files to Be Signed list.

**Clear List**

Removes all files from the Files to Be Signed list.

**Number of Files to Sign**

Displays the number of files that the Attach Digital Signatures program will attempt to sign.

**Select a Digital ID (Certificate)**

Displays a list of digital IDs that you can use to sign files. Includes information about the organization or individual to whom the digital ID was issued, the digital ID vendor who issued the digital ID, and when the digital ID expires.

**Signature Information**

Provides a list of time services you can use to add a time stamp to your digital signature, the status of the time server connection, and a Comments area (to include information relevant to the digital signature or to the files you are signing).

**Get Time Stamp From**

Provides a list of time servers you can use to time stamp your digital signature and includes the connection status of the time server.

**Time Service Status**

Displays the connection status (Successfully Contacted Time Server or Could Not Contact Time Server) of the time service.

**Comment**

Provides a place to include information relevant to the digital signature or to the files you are signing.

**Sign Files**

Attaches a digital signature to every file listed in this dialog box.

## Search Folders Dialog Box

**Quick Reference****See also:**

- Overview of Digital Signatures

Searches for folders that contain files you want to digitally sign.

**Start in Folder**

Enters the name of the folder where you want to begin the search for files you want to sign.

**Include Subfolders**

Searches subfolders of the folder in the Start in Folder box.

**Browse**

Opens the Browse for Folder dialog box, where you can choose a folder to search.

**Search for Files Named**

Searches for the file type you specify.

You can specify DWG and DWT files, as well as EXE and ZIP files generated by eTransmit.

# SLIDELIB

## Quick Reference

See also:

- Create and View Slide Libraries

Compiles slide files listed in an ASCII file into a slide library file.

You can construct slide library (SLB) files from slide (SLD) files by using the SLIDELIB utility program supplied in the main program folder. The following operating system command prompt syntax constructs a slide library:

**`slidelib library [ < slidelist ]`**

where

*library* specifies the slide library file (extension *.slb*) into which the slide files (extension *.sld*) are added. *slidelist* specifies a list of slide files. If you want to specify a file extension, it must be *.sld*.

SLIDELIB reads a list of slide file names. This list is normally supplied by redirecting a list of files (one per line in another file created using a text editor or a user-supplied utility program) to standard input.

The operating system commands shown below will create a *slidelist* file that can be used with SLIDELIB. All the slide files you want to compile into a slide library should be placed in a single directory. At a DOS prompt (version 5.0 or newer), enter the following:

**`dir *.sld /b > mylist`**

This creates the *mylist* file, which you can pass to SLIDELIB. You can also create the *mylist* file with a text editor by listing the slide file names (and paths, if necessary), such as *lobby*, *d:\slides\office*, and *\aec\slides\stairs*. The slide file name, but not the drive and directory information, is saved in the library file. Because only the file name is included, a library can contain slides with the same name from different directories, but only one of the slides can be accessed.

To generate the slide library *mllib* from *mylist*, enter the following:

**`slidelib mllib < mylist`**

This entry creates the file *mllib.slb*, which contains the names and definitions of the slides listed in *mylist*.

---

**WARNING** Do not delete your original slides. SLIDELIB has no provision for updating a slide library once it is created. If you want to add or delete a slide, update the *slidelist* file and re-create the library with SLIDELIB. All the original slides must be present in order to do this.

---



# Index

3DCONFIG command  
  about 3  
  Performance Tuner Log 5  
  Performance Tuning dialog box 4  
3Dconnexion Settings dialog box  
3DPOLY command 7  
3DSELECTIONMODE system  
  variable 1377

## A

ABOUT command 9  
Actions tab (Block Authoring Palettes  
  window) 131  
ADCCLOSE command 10  
ADCENTER command  
  about  
  DesignCenter window 11  
  Search dialog box 15  
ADCNAVIGATE command 18  
ADCSTATE system variable 1380  
Add Angle Value dialog box 1020  
Add Custom Property dialog box 458,  
  1146  
Add Distance Value dialog box 1020  
Add Page Setup dialog box 971  
Add Parameter Properties dialog  
  box 144, 169  
Add Scale dialog box 1100  
Add Scales to Object dialog box 815  
Add-a-Plot-Style-Table wizard 1187  
Add-a-Plotter wizard 992  
Add/Modify FTP Locations dialog  
  box 837  
Additional Format dialog box 1223  
ADDSELECTED command 19  
ADJUST command 21  
Advanced Options dialog box 982  
Advanced Preview Options dialog  
  box 887

Advanced Settings for COM Port dialog  
  box 1007  
Advanced Setup wizard 810  
Advanced tab (Search dialog box) 17  
AFLAGS system variable 1380  
ALIGN command 22  
Alternate Font dialog box 874  
Alternate Units tab (New Dimension Style  
  dialog box) 389  
ANGBASE system variable 1381  
ANGDIR system variable 1381  
ANNOALLVISIBLE system variable 1382  
ANNOAUTOSCALE system variable 1383  
ANNORESET command 24  
Annotation tab (Leader Settings dialog  
  box) 1045  
Annotative Object Scale dialog box 814  
ANNOTATIVEDWG system  
  variable 1383  
ANNOUPDATE command 25  
APBOX system variable 1384  
APERTURE command 25  
APERTURE system variable 1384  
APPLYGLOBALOPACITIES system  
  variable 1385  
APSTATE system variable 1385  
ARC command 26  
Archive - Set Password dialog box 38  
Archive a Sheet Set dialog box 31  
ARCHIVE command  
  about 31  
  Archive - Set Password dialog box 38  
  Archive a Sheet Set dialog box 31  
  Modify Archive Setup dialog box 35  
AREA command 40  
AREA system variable 1386  
ARRAY command 43  
Array Editor ribbon contextual tab 52  
ARRAYCLOSE command 47  
ARRAYEDIT command 48  
ARRAYEDITSTATE system variable 1386  
ARRAYPATH command 54

ARRAYPOLAR command 57  
 ARRAYRECT command 60  
 ARRAYTYPE system variable 1387  
 ATTACH command 63  
 Attach DGN Underlay dialog box 282  
 Attach Digital Signatures dialog box 1735  
 Attach Digital Signatures utility 1735  
 Attach DWF Underlay dialog box 435  
 Attach External Reference dialog box 1344  
 Attach Image dialog box 613  
 Attach PDF Underlay dialog box 934  
 Attachment tab (Leader Settings dialog box) 1048  
 ATTACHURL command 66  
 ATTDEF command 67  
 ATTDIA system variable 1387  
 ATTEDIT command 75  
 ATTEXT command 81  
 ATTIPE system variable 1388  
 ATTIPEDIT command 84  
 ATTMODE system variable 1389  
 ATTMULTI system variable 1389  
 ATTREQ system variable 1390  
 Attribute Definition dialog box 68  
 Attribute Extraction dialog box 82  
 Attribute Order dialog box 114  
 Attribute tab (Edit Attribute dialog box) 109  
 Attribute tab (Enhanced Attribute Editor) 461  
 ATTSYNC command 85  
 AUDIT command  
 AUDITCTL system variable 1390  
 AUNITS system variable 1391  
 AUPREC system variable 1391  
 Auto Publish Options dialog box 89  
 AUTOCOMplete command 87  
 AUTOCOMPLETEDelay system variable 1392  
 AUTOCOMPLETEMODE system variable 1392  
 AUTODWFPUBLISH system variable 1393  
 AUTOMATICPUB system variable 1393

AUTOPUBLISH command 88  
 AUTOSNAP system variable 1394  
 AutoStack Properties dialog box 786

## B

Background Mask dialog box 782  
 BACKGROUNDPLOT system variable 1396  
 BACTION command 91  
 BACTIONBAR command 96  
 BACTIONBARMODE system variable 1396  
 BACTIONCOLOR system variable 1397  
 BACTIONSET command 97  
 BACTIONTOOL command 98  
 Balloon Notification dialog box 890  
 BASE command 104  
 BASSOCIATE command 105  
 BATTMAN command  
   about 106  
   Block Attribute Manager 106  
   Block Attribute Settings dialog box 113  
   Edit Attribute dialog box 108  
 BATTORDER command 114  
 BAUTHORPALETTE command 115  
 BAUTHORPALETTECLOSE command 116  
 BCLOSE command 117  
 BCONSTATUSMODE system variable 1397  
 BCONSTRUCTION command 117  
 BCYCLEORDER command 118  
 BDEPENDENCYHIGHLIGHT system variable 1398  
 BEDIT command  
   about 120  
   Block Editor 127  
   Block Editor ribbon contextual tab 122  
   Edit Block Definition dialog box 121  
 BESETTINGS command 135  
 BGRIPOBJCOLOR system variable 1398  
 BGRIPOBJSIZE system variable 1399  
 BGRIPSET command 138



BHATCH command 139  
 Bind Xrefs/DGN Underlays dialog  
     box 1359  
 BLEND command 139  
 BLIPMODE command 140  
 BLIPMODE system variable 1399  
 Block Attribute Manager  
     about 106  
 Block Attribute Settings dialog box 113  
 Block Authoring Palettes window 127  
 BLOCK command 145  
 Block Definition dialog box 146  
 Block Editor  
     about 127  
     Parameters Manager 921  
 Block Editor ribbon contextual tab (Block  
     Editor) 122  
 Block Editor Settings dialog box 136  
 Block Editor toolbar 128  
 Block Properties Table dialog box 168  
 Block Template Options dialog box 1031  
 BLOCKEDITLOCK system variable 1400  
 BLOCKEDITOR system variable 1400  
 BLOCKICON command 141  
 BLOCKTESTWINDOW system  
     variable 1401  
 BLOOKUPTABLE command  
     about 142  
     Add Parameter Properties dialog  
         box 144  
     Property Lookup Table dialog  
         box 143  
 BMPOUT command 151  
 BOUNDARY command 151  
 Boundary Creation dialog box 152  
 BPARAMETER command 154  
 BPARAMETERCOLOR system  
     variable 1401  
 BPARAMETERFONT system  
     variable 1402  
 BPARAMETERSIZE system variable 1402  
 BPTEXTHORIZONTAL system  
     variable 1403  
 BREAK command 161  
 BROWSER command 164  
 BSAVE command 164  
 BSAVEAS command 165  
 BTABLE command  
     about 166  
     Add Parameter Properties dialog  
         box 169  
     Block Properties Table dialog  
         box 168  
 BTESTBLOCK command 170  
 BTMARKDISPLAY system variable 1403  
 Button Editor dialog box 252  
 Buzzsaw Location Shortcuts dialog  
     box 831  
 BVHIDE command 171  
 BVMODE system variable 1403  
 BVSHOW command 172  
 BVSTATE command  
     about 173  
     New Visibility State dialog box 174  
     Visibility States dialog box 173

**C**

CAL command 177  
 CALCINPUT system variable 1405  
 CANNOSCALE system variable 1406  
 CANNOSCALEVALUE system  
     variable 1406  
 Category Definition dialog box 1059  
 CBARTRANSPARENCY system  
     variable 1407  
 CDATE system variable 1407  
 CECOLOR system variable 1408  
 Cell Border Properties dialog box 1018  
 CELTSCALE system variable 1408  
 CELTYPE system variable 1409  
 CELWEIGHT system variable 1409  
 CENTERMT system variable 1410  
 CETRANSPARENCY system  
     variable 1411  
 CHAMFER command 198  
 CHAMFERA system variable 1411  
 CHAMFERB system variable 1411  
 CHAMFERC system variable 1412  
 CHAMFERD system variable 1412  
 CHAMMODE system variable 1412  
 CHANGE command 200

Change Icon dialog box 822  
 Change to Layer dialog box 679  
 Changes to a Printer Configuration File dialog box 913, 972  
 Check Spelling dialog box 1163  
 Check Spelling Settings dialog box 1165  
 Choose Files to Upload dialog box 1298  
 CHPROP command 203  
 CHSPACE command 205  
 CIRCLE command 206  
 CIRCLERAD system variable 1413  
 CLASSICIMAGE command 208  
 CLASSICKEYS system variable 1413  
 CLASSICLAYER command 209  
 CLASSICXREF command 209  
 CLAYER system variable 1414  
 CLEANSCREENOFF command 211  
 CLEANSCREENON command 210  
 CLEANSCREENSTATE system variable 1414  
 CLIP command 211  
 CLIPBOARD system variable 1415  
 CLISTATE system variable 1415  
 CLOSE command 214  
 CLOSEALL command 215  
 CMDACTIVE system variable 1416  
 CMDDDIA system variable 1417  
 CMDINPUPTHISTORYMAX system variable 1417  
 CMDNAMES system variable 1418  
 CMLEADERSTYLE system variable 1418  
 Color Books tab (Select Color dialog box) 221  
 COLOR command 215  
 Color tab (Modify DGN Mapping Setup dialog box) 317  
 Column Label shortcut menu 650  
 Column Settings dialog box 781  
 Columns menu 780  
 Command Line Window Font dialog box 877  
 COMMANDLINE command 223  
 COMMANDLINEHIDE command 224  
 Compare Dimension Styles dialog box 396  
 Configure LPT Port dialog box 1005  
 Confirm DWF Password dialog box 1032  
 Constraint Settings dialog box 227  
 CONSTRAINTBAR command  
 CONSTRAINTBARMODE system variable 1419  
 CONSTRAINTNAMEFORMAT system variable 1420  
 CONSTRAINTRELAX system variable 1420  
 CONSTRAINTSETTINGS command 226  
 CONSTRAINTSOLVEMODE system variable 1421  
 Content tab (Modify Multileader Style dialog box) 754  
 CONTENTEXPLORER command 229  
 CONTENTEXPLORERCLOSE command 230  
 CONTENTEXPLORERSTATE system variable 1421  
 Conversion Setups dialog box 446  
 Convert dialog box 821  
 CONVERTCTB command 231  
 CONVERTPSTYLES command 232  
 Coordinate Filters command modifier 1369  
 Coordinate System Already Defined dialog box 531  
 COORDS system variable 1422  
 COPY command 235  
 Copy To Layer dialog box 240  
 COPYBASE command 236  
 COPYCLIP command 237  
 COPYHIST command 238  
 COPYLINK command 238  
 COPYMODE system variable 1422  
 COPYTOLAYER command 239  
 CPLOTSTYLE system variable 1423  
 Create a Buzzsaw Location Shortcut dialog box 833  
 Create New Cell Style dialog box 1219  
 Create New Dimension Style dialog box 365  
 Create New Drawing dialog box 804  
 Create New Multileader Style dialog box 757  
 Create New Table Style dialog box 1214

Create Transmittal dialog box  
     about 471  
     Files Table tab 472  
     Files Tree tab 471  
 CROSSINGAREACOLOR system  
     variable 1424  
 CTAB system variable 1424  
 CTABLESTYLE system variable 1424  
 CUI command  
     about 241  
     Button Editor dialog box 252  
     Find and Replace dialog box 255  
     Image Manager dialog box 254  
 CUIEXPORT command 257  
 CUIIMPORT command 257  
 CUILOAD command 258  
 CUIUNLOAD command 260  
 Current Plot Style dialog box 988  
 CURSORSIZE system variable 1425  
 Custom tab (Drawing Properties dialog  
     box) 457  
 CUSTOMIZE command 261  
 Customize dialog box  
     CUSTOMIZE command 262  
 Customize Layer Columns dialog  
     box 662  
 Customize tab (Customize User Interface  
     dialog box) 243  
 Customize User Interface dialog box  
     Customize tab 243  
     Transfer tab 251  
 CUTCLIP command 264  
 CVPORT system variable 1425

**D**

Data Link Manager 266  
 DATALINK command  
     about 265  
     Data Link Manager 266  
     New Excel Data Link dialog box 267  
 DATALINKNOTIFY system variable 1428  
 DATALINKUPDATE command 270  
 Date Modified tab (Find dialog box) 835  
 Date Modified tab (Search dialog box) 17  
 DATE system variable 1428  
 DBLCLKEDIT system variable 1429  
 DBMOD system variable 1430  
 DCDISPLAY command 271  
 DCTCUST system variable 1430  
 DCTMAIN system variable 1432  
 DDEDIT command  
     about 272  
     Edit Attribute Definition dialog  
         box 273  
     Edit Text dialog box 273  
 DDPTYPE command 274  
 DDVPOINT command 276  
 Default Scale List dialog box 891  
 Define Geographic Location dialog  
     box 530  
 DEFPLPSTYLE system variable 1432  
 DEFPLSTYLE system variable 1433  
 DELAY command 278  
 DELCONSTRAINT command 279  
 Delete Duplicate Objects dialog box 896  
 Delete Layers dialog box 641  
 DELOBJ system variable 1433  
 DesignCenter window 11  
 DETACHURL command 279  
 Device and Document Settings tab (Plotter  
     Configuration Editor) 996  
 DGN Mapping Setups dialog box 311  
 DGN Underlay ribbon contextual  
     tab 284  
 DGNADJUST command 280  
 DGNATTACH command  
     about 281  
     Attach DGN Underlay dialog  
         box 282  
     DGN Underlay Ribbon contextual  
         tab 284  
 DGNCLIP command 288  
 DGNEXPORT command 289  
 DGNFRAME system variable 1434  
 DGNIMPORT command 298  
 DGNIMPORTMAX system variable 1435  
 DGNIMPORTMODE system  
     variable 1435  
 DGNLAYERS command 309  
 DGNMAPPING command  
     about 310

DGN Mapping Setups dialog  
     box 311  
 Modify DGN Mapping Setup dialog  
     box 314  
 New Mapping Setup dialog box 313  
 DGNMAPPINGPATH system  
     variable 1436  
 DGNOSNAP system variable 1436  
 DIASTAT system variable 1437  
 Dictionaries dialog box 1167  
 Digital Signature Contents dialog  
     box 1155  
 Digital Signature tab (Security Options  
     dialog box) 1105  
 DIGITIZER system variable 1437  
 DIM and DIM1 commands 320  
 DIMADEC system variable 1438  
 DIMALIGNED command 323  
 DIMALT system variable 1438  
 DIMALTD system variable 1439  
 DIMALTF system variable 1439  
 DIMALTRND system variable 1440  
 DIMALTTD system variable 1440  
 DIMALTTZ system variable 1441  
 DIMALTU system variable 1442  
 DIMALTZ system variable 1442  
 DIMANGULAR command 326  
 DIMANNO system variable 1443  
 DIMAPOST system variable 1443  
 DIMARC command 329  
 DIMARCSYM system variable 1444  
 DIMASSOC system variable 1445  
 DIMASZ system variable 1445  
 DIMATFIT system variable 1446  
 DIMAUNIT system variable 1447  
 DIMAZIN system variable 1447  
 DIMBASELINE command 331  
 DIMBLK system variable 1449  
 DIMBLK1 system variable 1450  
 DIMBLK2 system variable 1450  
 DIMBREAK command 333  
 DIMCEN system variable 1451  
 DIMCENTER command 334  
 DIMCLRD system variable 1451  
 DIMCLRE system variable 1452  
 DIMCLRT system variable 1452  
 DIMCONSTRAINTICON system  
     variable 1453  
 DIMCONTINUE command 335  
 DIMDEC system variable 1453  
 DIMDIAMETER command 337  
 DIMDISASSOCIATE command 339  
 DIMDLE system variable 1454  
 DIMDLI system variable 1454  
 DIMDSEP system variable 1455  
 DIMEDIT command 339  
 Dimension Input Settings dialog  
     box 431  
 Dimension Style Manager  
     about 363  
 Dimensional tab (Constraint Settings  
     dialog box) 228  
 DIMEXE system variable 1455  
 DIMEXO system variable 1455  
 DIMFRAC system variable 1456  
 DIMFXL system variable 1456  
 DIMFXLON system variable 1457  
 DIMGAP system variable 1457  
 DIMINSPECT command 341  
 DIMJOGANG system variable 1458  
 DIMJOGGED command 345  
 DIMJOGLINE command 347  
 DIMJUST system variable 1458  
 DIMLDRBLK system variable 1459  
 DIMLFAC system variable 1460  
 DIMLIM system variable 1460  
 DIMLINEAR command 348  
 DIMLTEX1 system variable 1461  
 DIMLTEX2 system variable 1461  
 DIMLTYPE system variable 1461  
 DIMLUNIT system variable 1462  
 DIMLWD system variable 1463  
 DIMLWE system variable 1463  
 DIMORDINATE command 352  
 DIMOVERRIDE command 354  
 DIMPOST system variable 1464  
 DIMRADIUS command 355  
 DIMREASSOCIATE command 356  
 DIMREGEN command 358  
 DIMRND system variable 1464  
 DIMROTATED command 359  
 DIMSAH system variable 1465

DIMSCALE system variable 1465  
 DIMSD1 system variable 1466  
 DIMSD2 system variable 1466  
 DIMSE1 system variable 1467  
 DIMSE2 system variable 1467  
 DIMSOXD system variable 1468  
 DIMSPACE command 361  
 DIMSTYLE command  
   about 362  
   Compare Dimension Styles dialog  
     box 396  
   Create New Dimension Style dialog  
     box 365  
   Dimension Style Manager 363  
   Modify Dimension Style dialog  
     box 366  
   New Dimension Style dialog  
     box 366  
   Override Dimension Style dialog  
     box 366  
 DIMSTYLE system variable 1468  
 DIMITAD system variable 1469  
 DIMITDEC system variable 1470  
 DIMITEDIT command 400  
 DIMITFAC system variable 1470  
 DIMITFILL system variable 1471  
 DIMITFILLCLR system variable 1471  
 DIMITIH system variable 1472  
 DIMITIX system variable 1472  
 DIMITM system variable 1473  
 DIMITMOVE system variable 1473  
 DIMITOFL system variable 1474  
 DIMITOH system variable 1474  
 DIMITOL system variable 1475  
 DIMITOLJ system variable 1475  
 DIMITP system variable 1476  
 DIMITSZ system variable 1476  
 DIMITVP system variable 1477  
 DIMITXSTY system variable 1477  
 DIMITXT system variable 1478  
 DIMITXTDIRECTION system  
   variable 1478  
 DIMITZIN system variable 1479  
 DIMUPT system variable 1479  
 DIMZIN system variable 1480  
 Direct Distance command modifier 1370  
 Direction Control dialog box 1292  
 Display tab (Options dialog box) 848  
 DISPSILH system variable 1481  
 DIST command 403  
 DISTANCE system variable 1481  
 DIVIDE command 404  
 DLINE command 406  
 DONUT command 407  
 DONUTID system variable 1482  
 DONUTOD system variable 1482  
 DOWNLOADMANAGER command 408  
 Drafting tab (Options dialog box) 866  
 DRAGMODE command 409  
 DRAGMODE system variable 1483  
 DRAGP1 system variable 1483  
 DRAGP2 system variable 1484  
 Drawing Properties dialog box 452  
 Drawing Recovery Manager  
   about 411  
 Drawing Units dialog box 1289  
 Drawing Window Colors dialog box 876  
 DRAWINGRECOVERY command  
   about 410  
   Drawing Recovery Manager 411  
 DRAWINGRECOVERYHIDE  
   command 412  
 DRAWORDER command 413  
 DRAWORDERCTL system variable 1485  
 DRSTATE system variable 1485  
 DSETTINGS command  
   about 414  
   Dimension Input Settings dialog  
     box 431  
   Pointer Input Settings dialog  
     box 430  
   Tooltip Appearance dialog box 432  
 DWF Password dialog box 1032  
 DWF Underlay ribbon contextual  
   tab 438  
 DWFADJUST command 21, 434  
 DWFATTACH command  
   about 435  
   Attach DWF Underlay dialog  
     box 435  
   DWF Underlay ribbon contextual  
     tab 438

- Substitute DWF Name dialog
  - box 437
- DWFCLIP command 441
- DWFFORMAT command 442
- DWFFRAME system variable 1486
- DWFLAYERS command 443
- DWFOSNAP system variable 1487
- DWG Convert dialog box 444
- DWGCHECK system variable 1488
- DWGCODEPAGE system variable 1488
- DWGCONVERT command
  - about 443
  - Conversion Setups dialog box 446
  - DWG Convert dialog box 444
  - Modify Conversion Setup dialog
    - box 448
  - New Conversion Setup dialog
    - box 447
- DWGNAME system variable 1489
- DWGPREFIX system variable 1489
- DWGPROPS command
  - about 451
  - Add Custom Property dialog
    - box 458
  - Drawing Properties dialog box 452
- DWGTITLED system variable 1489
- DXF Options tab (Saveas Options dialog
  - box) 1095
- Dynamic Input tab (Drafting Settings
  - dialog box) 424
- DYNCONSTRAINMODE system
  - variable 1490
- DYNDIGRIP system variable 1491
- DYNDIVIS system variable 1491
- DYNINFOTIPS system variable 1492
- DYNMODE system variable 1493
- DYNPICCOORDS system variable 1493
- DYNPIFORMAT system variable 1494
- DYNPIVIS system variable 1495
- DYNPROMPT system variable 1495
- DYNTOOLTIPS system variable 1495

## E

- E-mail Address tab (Insert Hyperlink dialog
  - box) 593
- EATTEDIT command 459
- EDGEMODE system variable 1498
- Edit a Buzzsaw Location Shortcut dialog
  - box 833
- Edit Attribute Definition dialog box 273
- Edit Attribute dialog box 108
- Edit Attributes dialog box 76
- Edit Block Definition dialog box 121
- Edit Drawing Scales dialog box 1099
- Edit Hyperlink dialog box 594
- Edit Layer State dialog box 672
- Edit Lineweights dialog box 1194
- EDIT PGP command 464
- Edit Reference ribbon contextual
  - tab 1074
- Edit Scale dialog box 1101
- Edit Sheet List Table Settings dialog
  - box 1141
- Edit Text dialog box 273
- ELEV command 465
- ELEVATION system variable 1498
- ELLIPSE command 466
- Enhanced Attribute Editor
  - about 460
- ERASE command 470
- ERHIGHLIGHT system variable 1499
- ERSTATE system variable 1499
- ETRANSMIT command
  - about 471
  - Create Transmittal dialog box 471
  - Modify Transmittal dialog box 474
  - Transmittal - Set Password dialog
    - box 479
  - Transmittal Setups dialog box 473
- EXEDIR system variable 1500
- Existing File or Web Page tab (Insert
  - Hyperlink dialog box) 591
- EXPERT system variable 1501
- EXPLMODE system variable 1501
- EXPLODE command 480
- EXPORT command 482
- Export DGN Settings dialog box 290
- Export Layout to Model Space Drawing
  - dialog box 495
- Export to DWF/PDF Options palette 486
- Export to DWF/PDF ribbon panel 491

EXPORTDWF command  
   about 485  
   Export to DWF/PDF Options palette 486  
   Export to DWF/PDF ribbon panel 491  
   Import Precision Preset dialog box 491  
   New Precision Preset dialog box 491  
   Page Setup Override dialog box 488  
   Precision Presets Manager 489  
   Save as DWF dialog box 485  
 EXPORTDWFx command  
   about 493  
   Save as DWFx dialog box 493  
 EXPORTEPLOTFORMAT system variable 1502  
 EXPORTLAYOUT command 495  
 EXPORTMODELSPACE system variable 1502  
 EXPORTPAGESETUP system variable 1503  
 EXPORTPAPERSPACE system variable 1503  
 EXPORTPDF command  
   about 496  
   Save as PDF dialog box 497  
 EXPORTSETTINGS command 498  
 EXPORTTOAUTOCAD command 499  
 EXTEND command 501  
 External Reference ribbon contextual tab 1347  
 External References palette  
   about 505  
 EXTERNALREFERENCES command 504  
 EXTERNALREFERENCESCLOSE command 512  
 EXTMAX system variable 1504  
 EXTMIN system variable 1504  
 EXTNAMES system variable 1505

**F**

FACETRES system variable 1507  
 FIELD command 513  
 Field dialog box 514  
 Field Update Settings dialog box 883  
 FIELDDISPLAY system variable 1508  
 FIELDEVAL system variable 1509  
 FILEDIA system variable 1509  
 Files tab (Options dialog box) 842  
 Files Table tab (Archive a Sheet Set dialog box) 33  
 Files Table tab (Create Transmittal dialog box) 472  
 Files Tree tab (Archive a Sheet Set dialog box) 32  
 Files Tree tab (Create Transmittal dialog box) 471  
 FILL command 517  
 FILLET command 519  
 FILLETRAD system variable 1510  
 FILLETRAD3D system variable 1510  
 FILLMODE system variable 1511  
 FILTER command 521  
 Find and Replace dialog box (commands) 255  
 Find and Replace dialog box (mtext) 783  
 Find and Replace dialog box (text) 525  
 FIND command 525  
 Find dialog box (OPEN) 834  
 Fit tab (New Dimension Style dialog box) 380  
 FONTALT system variable 1511  
 FONTMAP system variable 1512  
 Form View tab (Plot Style Table Editor) 1190  
 FRAME system variable 1513  
 FRAMESELECTION system variable 1513  
 FROM command modifier 1371  
 FULLPLOTPATH system variable 1514

**G**

General tab (Drawing Properties dialog box) 453  
 General tab (Plot Style Table Editor) 1189  
 General tab (Plotter Configuration Editor) 993  
 Geographic Location dialog box 532

- GEOGRAPHICLOCATION command
  - Coordinate System Already Defined dialog box 531
  - Define Geographic Location dialog box 530
  - Geographic Location dialog box 532
  - Location Already Exists dialog box 531
  - Location Picker dialog box 535
- GEOLATLONGFORMAT system variable 1516
- GEOMARKERVISIBILITY system variable 1516
- Geometric tab (Constraint Settings dialog box) 227
- Geometric Tolerance dialog box 1245
- Get Link dialog box 537
- GETENV command 536
- GETLINK command 537
- GFANG system variable 1517
- GFCLR1 system variable 1517
- GFCLR2 system variable 1518
- GFCLRLUM system variable 1518
- GFCLRSTATE system variable 1519
- GFNAME system variable 1519
- GFSHIFT system variable 1520
- GLOBALOPACITY system variable 1521
- GOTOURL command 538
- GRADIENT command 539
- Gradient tab (Hatch and Gradient dialog box) 553
- GRAPHSCR command 540
- GRID command 540
- GRIDDISPLAY system variable 1521
- GRIDMAJOR system variable 1522
- GRIDMODE system variable 1522
- GRIDSTYLE system variable 1523
- GRIDUNIT system variable 1523
- Grip Colors dialog box 873
- GRIPBLOCK system variable 1524
- GRIPCOLOR system variable 1524
- GRIPCONTOUR system variable 1525
- GRIPDYNCOLOR system variable 1525
- GRIPHOT system variable 1525
- GRIPHOVER system variable 1526

- GRIPMULTIFUNCTIONAL system variable 1527
- GRIPOBJLIMIT system variable 1527
- GRIPS system variable 1528
- GRIPSIZE system variable 1528
- GRIPTIPS system variable 1529
- GROUP command 541
- GROUPDISPLAYMODE system variable 1529
- GROUPEDIT command
  - about 543

## H

- HALOGAP system variable 1531
- HANDLES system variable 1532
- HATCH command
  - about 546
  - Hatch Creation ribbon contextual tab 558
  - Hatch Pattern Palette dialog box 564
- Hatch Creation ribbon contextual tab 558
- Hatch Edit dialog box 573
- Hatch Editor ribbon contextual tab 573
- Hatch Pattern Palette dialog box 564
- Hatch tab (Hatch and Gradient dialog box) 551
- HATCHEDIT command 572
- HATCHGENERATEBOUNDARY command 581
- HATCHSETBOUNDARY command 582
- HATCHSETORIGIN command 583
- HATCHTOBACK command 583
- HELP command 584
- HELPPREFIX system variable 1532
- Hidden Line Settings dialog box 587
- Hidden Message Settings dialog box 889
- HIDEOBJECTS command 586
- HIDEPALETTES command 587
- HIDEPRECISION system variable 1533
- HIDETEXT system variable 1533
- HIGHLIGHT system variable 1534
- HPANG system variable 1534
- HPANNOTATIVE system variable 1535



HPASSOC system variable 1535  
 HPBACKGROUNDCOLOR system variable 1536  
 HPBOUND system variable 1536  
 HPBOUNDRETAIN system variable 1537  
 HPCOLOR system variable 1538  
 HPDLGMODE system variable 1538  
 HPDOUBLE system variable 1539  
 HPDRAWORDER system variable 1540  
 HPGAPTOL system variable 1540  
 HPINHERIT system variable 1541  
 HPISLANDDETECTION system variable 1541  
 HPISLANDDETECTIONMODE system variable 1542  
 HPLAYER system variable 1542  
 HPMAXAREAS system variable 1543  
 HPMAXLINES system variable 1543  
 HPNAME system variable 1544  
 HPOBJWARNING system variable 1544  
 HPORIGIN system variable 1544  
 HPORIGINMODE system variable 1545  
 HPQUICKPREVIEW system variable 1546  
 HPQUICKPREVTIMEOUT system variable 1546  
 HPSCALE system variable 1547  
 HPSEPARATE system variable 1547  
 HPSPACE system variable 1548  
 HPTRANSPARENCY system variable 1548  
 HYPERLINK command  
   about 590  
   Edit Hyperlink dialog box 594  
   Insert Hyperlink dialog box 591  
   Select Place in Document dialog box 595  
 HYPERLINKBASE system variable 1548  
 HYPERLINKOPTIONS command 597

**I**

ID command 599  
 Identity Reference tab (Reference Edit dialog box) 1074  
 IGESIMPORT command 603  
 IGSEXPORT command 600  
 Image Adjust dialog box 610  
 IMAGE command 607  
 Image Manager dialog box 254  
 Image ribbon contextual tab 615  
 IMAGEADJUST command 610  
 IMAGEATTACH command  
   about 613  
   Attach Image dialog box 613  
   Image ribbon contextual tab 615  
 IMAGECLIP command 617  
 IMAGEFRAME system variable 1550  
 IMAGEHLT system variable 1550  
 IMAGEQUALITY command 619  
 IMPORT command 619  
 Import DGN Settings dialog box 299  
 Import Layouts as Sheets dialog box 1136  
 Import Page Setups dialog box 913  
 Import Precision Preset dialog box 491  
 In-Place Text Editor  
   about 763  
 Index Color tab (Select Color dialog box) 217  
 INDEXCTL system variable 1551  
 INETLOCATION system variable 1551  
 InfoCenter Settings dialog box 890  
 INPUTHISTORYMODE system variable 1552  
 INSBASE system variable 1552  
 Insert a Block in a Table Cell dialog box 1243  
 INSERT command 621  
 Insert dialog box 622  
 Insert Hyperlink dialog box 591  
 INSERT Object dialog box 627  
 Insert Sheet List Table dialog box 1137  
 Insert Table dialog box 1201  
 Insertion Cycling Order dialog box 119  
 INSERTOBJ command 627  
 INSNAME system variable 1553  
 Inspection Dimension dialog box 342  
 INSUNITS system variable 1554  
 INSUNITSDEFSOURCE system variable 1556

INSUNITSDEFTARGET system  
 variable 1557  
 INTELLIGENTUPDATE system  
 variable 1557  
 INTERSECTIONCOLOR system  
 variable 1558  
 INTERSECTIONDISPLAY system  
 variable 1559  
 ISAVEBAK system variable 1559  
 ISAVEPERCENT system variable 1560  
 ISOLATEOBJECTS command 629  
 ISOLINES system variable 1560  
 ISOPLANE command 630

## J

JOIN command 633  
 JPGOUT command 635  
 JUSTIFYTEXT command 636

## L

LARGEOBJECTSUPPORT system  
 variable 1561  
 LASTANGLE system variable 1562  
 LASTPOINT system variable 1562  
 LATITUDE system variable 1563  
 LAYCUR command 639  
 LAYDEL command 640  
 LAYER command  
 about 642  
 Customize Layer Columns dialog  
 box 662  
 Edit Layer State dialog box 672  
 Layer Filter Properties dialog  
 box 652  
 Layer Properties Manager 643  
 Layer Settings dialog box 659  
 Layer Transparency dialog box 658  
 Lineweight dialog box 657  
 New Layer State to Save dialog  
 box 671  
 Select Layer States dialog box 674  
 Select Layers to Add to Layer State  
 dialog box 673  
 Select Linetype dialog box 656

Layer Filter Properties dialog box 652  
 Layer Properties Manager  
 about 643  
 Layer Settings dialog box 659  
 Layer shortcut menu 651  
 Layer States Manager  
 about 669  
 Layer tab (Modify DGN Mapping Setup  
 dialog box) 315  
 Layer Transparency dialog box 658  
 LAYERCLOSE command 666  
 LAYEREVAL system variable 1564  
 LAYEREVALCTL system variable 1564  
 LAYERFILTERALERT system  
 variable 1565  
 LAYERMANAGERSTATE system  
 variable 1566  
 LAYERNOTIFY system variable 1567  
 LAYERPMODE command 667  
 LAYERSTATE command  
 about 668  
 Layer States Manager 669  
 LayerWalk dialog box 694  
 LAYFRZ command 675  
 LAYISO command 677  
 LAYLCK command 678  
 LAYLOCKFADECTL system  
 variable 1568  
 LAYMCH command 679  
 LAYMCUR command 681  
 LAYMRG command  
 about 682  
 Merge Layers dialog box 682  
 Merge to Layer dialog box 683  
 LAYOFF command 684  
 LAYON command 686  
 LAYOUT command 686  
 Layout Wizard  
 about 688  
 LAYOUTCREATEVIEWPORT system  
 variable 1568  
 LAYOUTWIZARD command 688  
 LAYTHW command 689  
 LAYULK command 690  
 LAYUNISO command 691  
 LAYVPI command 692

LAYWALK command 693  
 LEADER command 696  
 Leader Format tab (Modify Multileader Style dialog box) 752  
 Leader Line & Arrow tab (Leader Settings dialog box) 1047  
 Leader Settings dialog box 1045  
 Leader Structure tab (Modify Multileader Style dialog box) 753  
 LENGTHEN command 699  
 LIMCHECK system variable 1569  
 LIMITS command 701  
 LIMMAX system variable 1569  
 LIMMIN system variable 1570  
 LINE command 703  
 Lines and Arrows tab (New Dimension Style dialog box) 367  
 LINETYPE command  
   about 705  
   Linetype Manager 705  
   Load or Reload Linetypes dialog box 708  
 Linetype Manager  
   about 705  
 Linetype tab (Modify DGN Mapping Setup dialog box) 315  
 Lineweight dialog box 657  
 Lineweight Settings dialog box 714  
 Lineweight tab (Modify DGN Mapping Setup dialog box) 316  
 Links dialog box 820  
 LIST command 710  
 List of Blocks dialog box 1151  
 List View shortcut menu 650  
 Load or Reload Linetypes dialog box 708  
 Load/Unload Customizations dialog box 259  
 LOCALE system variable 1570  
 LOCALROOTPREFIX system variable 1571  
 Location Already Exists dialog box 531  
 Location Picker dialog box 535  
 LOCKUI system variable 1571  
 Log In to Buzzsaw dialog box 832  
 LOGFILEMODE system variable 1572  
 LOGFILENAME system variable 1572

LOGFILEOFF command 711  
 LOGFILEON command 712  
 LOGFILEPATH system variable 1573  
 LONGITUDE system variable 1573  
 LTSCALE command 712  
 LTSCALE system variable 1574  
 LUNITS system variable 1574  
 LUPREC system variable 1575  
 LWDEFAULT system variable 1575  
 LWDISPLAY system variable 1576  
 LWHEIGHT command 713  
 LWUNITS system variable 1576

## M

Manage Cell Content dialog box 1207  
 Manage Cell Styles dialog box 1220  
 Manage Custom Dictionaries dialog box 1168  
 Manage Uploads dialog box 718  
 MANAGEUPLOADS command 717  
 MARKUP command 719  
 Markup Set Manager  
   about 720  
 Markup shortcut menu 721  
 MARKUPCLOSE command 725  
 MASSPROP command 726  
 MATCHCELL command 729  
 MATCHPROP command 730  
 Material Condition dialog box 1250  
 MAXACTVP system variable 1577  
 MAXSORT system variable 1578  
 MAXTOUCHES system variable 1578  
 MBUTTONPAN system variable 1579  
 MEASURE command 734  
 MEASUREGEOM command 736  
 MEASUREINIT system variable 1579  
 MEASUREMENT system variable 1580  
 MENUBAR system variable 1580  
 MENEUECHO system variable 1581  
 Merge Layers dialog box 682  
 Merge to Layer dialog box 683  
 MESSAGES command 740  
 MIRRORHATCH system variable 1581  
 MIRROR command 741  
 MIRRTEXT system variable 1582

MLEADER command 743  
 MLEADERALIGN command 745  
 MLEADERCOLLECT command 746  
 MLEADEREDIT command 748  
 MLEADERSCALE system variable 1583  
 MLEADERSTYLE command  
   about 749  
   Create New Multileader Style dialog  
     box 757  
   Modify Multileader Style dialog  
     box 752  
   Multileader Style Manager 750  
 MODEL command 758  
 Model Views tab (Sheet Set  
   Manager) 1127  
 MODEMACRO system variable 1583  
 Modify Archive Setup dialog box 35  
 Modify Conversion Setup dialog box 448  
 Modify DGN Mapping Setup dialog  
   box 314  
 Modify Dimension Style dialog box 366  
 Modify FTP Locations dialog box 837  
 Modify Multileader Style dialog box 752  
 Modify Table Style dialog box 1215  
 Modify Transmittal dialog box 474  
 More Options tab (Hatch and Gradient  
   dialog box) 555  
 MOVE command 759  
 MREDO command 760  
 MSLIDE command 760  
 MSLTSCALE system variable 1584  
 MSMSTATE system variable 1584  
 MSOLESCALE system variable 1585  
 MSPACE command 761  
 MTEDIT command 762  
 MTEXT command  
   about 762  
   AutoStack Properties dialog box 786  
   Background Mask dialog box 782  
   Column Settings dialog box 781  
   Columns menu 780  
   Find and Replace dialog box 783  
   In-Place Text Editor 763  
   Paragraph dialog box 778  
   Stack Properties dialog box 784

  Text Editor ribbon contextual  
     tab 773  
   Text Formatting toolbar 768  
 MTEXTCOLUMN system variable 1585  
 MTEXTED system variable 1586  
 MTEXTFIXED system variable 1586  
 MTEXTTOOLBAR system variable 1587  
 MTJIGSTRING system variable 1587  
 MTP command modifier 1371  
 Multileader Style Manager 750  
 MULTIPLE command 794  
 MVIEW command 794  
 MYDOCUMENTSPREFIX system  
   variable 1588

## N

Name and Location tab (Find dialog  
   box) 834  
 Named UCSs tab (UCS dialog box) 1276  
 Named Viewports tab (Viewports dialog  
   box) 1321  
 NAVBAR command 799  
 NAVBARDISPLAY system variable 1589  
 NAVSWHEEL command 801  
 NCOPY command 802  
 NEW command  
   about 804  
   Advanced Setup wizard 810  
   Create New Drawing dialog box 804  
   Quick Setup wizard 808  
 New Conversion Setup dialog box 447  
 New Dimension Style dialog box 366  
 New Excel Data Link dialog box 267  
 New Layer State to Save dialog box 671  
 New Mapping Setup dialog box 313  
 New Page Setup dialog box 904  
 New Precision Preset dialog box 491  
 New Sheet dialog box 1132  
 New Sheet Selection dialog box 1148  
 New Table Style dialog box 1215  
 New View dialog box  
   about 1304  
   View Properties tab 1304  
 New Viewports tab (Viewports dialog  
   box)

New Visibility State dialog box 174  
NEWSHEETSET command 812

## O

Object Selection Filters dialog box 522  
Object Snap tab (Drafting Settings dialog box) 420  
Object Snaps command modifier 1372  
OBJECTISOLATIONMODE system variable 1592  
OBJECTSCALE command  
  about 813  
  Add Scales to Object dialog box 815  
  Annotative Object Scale dialog box 814  
OBSCUREDOLOR system variable 1592  
OBSCUREDTYPE system variable 1594  
OFFSET command 817  
OFFSETDIST system variable 1594  
OFFSETGAPTYP system variable 1595  
OLE Text Size dialog box 824  
OLEFRAME system variable 1595  
OLEHIDE system variable 1596  
OLELINKS command  
  about 819  
  Change Icon dialog box 822  
  Convert dialog box 821  
  Links dialog box 820  
OLEQUALITY system variable 1597  
OLESCALE command 823  
OLESTARTUP system variable 1597  
ONLINEDRAWINGS command 825  
OOPS command 825  
Open and Save tab (Options dialog box) 851  
OPEN command  
  about 826  
  Add/Modify FTP Locations dialog box 837  
  Buzzsaw Location Shortcuts dialog box 831  
  Create a Buzzsaw Location Shortcut dialog box 833  
  Edit a Buzzsaw Location Shortcut dialog box 833

Find dialog box 834  
Log In to Buzzsaw dialog box 832  
Select a Buzzsaw Location dialog box 833  
Standard File Selection dialog boxes 827  
Open Reference Files dialog box 1356  
OPENDWFMARKUP command 839  
OPENONLINE command 840  
OPENPARTIAL system variable 1598  
OPENSHEETSET command 840  
OPMSTATE system variable 1598  
OPTIONS command  
  about 841  
  Advanced Preview Options dialog box 887  
  Alternate Font dialog box 874  
  Command Line Window Font dialog box 877  
  Default Scale List dialog box 891  
  Drawing Window Colors dialog box 876  
  Field Update Settings dialog box 883  
  Grip Colors dialog box 873  
  Hidden Message Settings dialog box 889  
  InfoCenter Settings dialog box 890  
  Options dialog box 841  
  Plot Style Table Settings dialog box 879  
  Ribbon Contextual Tab State Options dialog box 886  
  Right-Click Customization dialog box 882  
  Thumbnail Preview Settings dialog box 878  
  Transparency dialog box 888  
  Visual Effect Settings dialog box 884  
Options dialog box 841  
ORTHO command 893  
Orthographic UCS Depth dialog box 1280  
Orthographic UCSs tab (UCS dialog box) 1277  
ORTHOMODE system variable 1599  
OSMODE system variable 1600

- OSNAP command 894
- OSNAPCOORD system variable 1601
- OSNAPNODELEGACY system variable 1601
- OSOPTIONS system variable 1602
- OVERKILL command 895
- Override Dimension Style dialog box 366

## P

- Page Setup dialog box 906
- Page Setup Manager
  - about 902
  - Page Setup dialog box 906
- Page Setup Override dialog box 488
- PAGESETUP command
  - about 901
  - Changes to a Printer Configuration File dialog box 913
  - Import Page Setups dialog box 913
  - New Page Setup dialog box 904
  - Page Setup dialog box 906
  - Page Setup Manager 902
- PALETTEOPAQUE system variable 1604
- PAN command 915
- Pan shortcut menu 917
- PAPERUPDATE system variable 1605
- Paragraph dialog box 778
- Parameter Sets tab (Block Authoring Palettes window) 132
- PARAMETERS command
  - about 918
  - Parameters Manager (Block Editor) 921
  - Parameters Manager (Drawing Editor) 918
- Parameters Manager (Block Editor) 921
- Parameters Manager (Drawing Editor) 918
- Parameters tab (Block Authoring Palette window) 129
- PARAMETERSCLOSE command 925
- Paste Special dialog box 929
- PASTEASHYPERLINK command 925
- PASTEBLOCK command 926

- PASTECLIP command 927
- PASTEORIG command 928
- PASTESPEC command 929
- PCINWIZARD command 930
- PDF Underlay ribbon contextual tab 936
- PDFADJUST command 931
- PDFATTACH command
  - about 932
  - Attach PDF Underlay dialog box 934
  - PDF Underlay ribbon contextual tab 936
- PDFCLIP command 937
- PDFFRAME system variable 1605
- PDFLAYERS command 939
- PDFOSNAP system variable 1606
- PDMODE system variable 1606
- PDSIZE system variable 1607
- PEDIT command 940
- PEDITACCEPT system variable 1607
- PELLIPSE system variable 1608
- Performance Tuner Log 5
- Performance Tuning dialog box 4
- PERIMETER system variable 1608
- PERSPECTIVE system variable 1609
- PERSPECTIVECLIP system variable 1609
- PICKADD system variable 1610
- PICKAUTO system variable 1611
- PICKBOX system variable 1611
- PICKDRAG system variable 1612
- PICKFIRST system variable 1612
- PICKSTYLE system variable 1613
- PKFSTGROUP command 951
- PLAN command 952
- PLATFORM system variable 1613
- PLINE command 954
- PLINECONVERTMODE system variable 1614
- PLINEGEN system variable 1614
- PLINETYPE system variable 1615
- PLINEWID system variable 1615
- Plot and Publish Details dialog box 1309
- Plot and Publish Status Bar Icon shortcut menu 1310
- Plot and Publish tab (Options dialog box) 855

PLOT command  
   about 961  
   Add Page Setup dialog box 971  
   Changes to a Printer Configuration File dialog box 972  
   Plot dialog box 962  
   Plot Job Progress dialog box 973  
   Update PC3 File with New Printer dialog box 973  
 Plot dialog box 962  
 Plot Job Progress dialog box 973  
 Plot Stamp dialog box 979  
 Plot Style Table Editor  
   about 1187  
   Form View tab 1190  
   General tab 1189  
   Table View tab 1190  
 Plot Style Table Settings dialog box 879  
 PLOTOFFSET system variable 1616  
 PLOTROTMODE system variable 1617  
 PLOTSTAMP command  
   about 979  
   Advanced Options dialog box 982  
   Plot Stamp dialog box 979  
   User Defined Fields dialog box 981  
 PLOTSTYLE command  
   about 987  
   Current Plot Style dialog box 988  
   Select Plot Style dialog box 989  
 Plotter Configuration Editor 992  
 PLOTTERMANAGER command  
   about 991  
   Add-a-Plotter wizard 992  
   Advanced Settings for COM dialog box 1007  
   Configure LPT Port dialog box 1005  
   Plotter Configuration Editor 992  
   Settings for COM Port dialog box 1006  
 PLOTTRANSPARENCYOVERRIDE system variable 1617  
 PNGOUT command 1008  
 POINT command 1009  
 Point Style dialog box 275  
 POINTCLOUDDENSITY system variable 1618  
 Pointer Input Settings dialog box 430  
 Polar Tracking tab (Drafting Settings dialog box) 418  
 POLARADDANG system variable 1619  
 POLARANG system variable 1619  
 POLARDIST system variable 1619  
 POLARMODE system variable 1620  
 POLYGON command 1011  
 POLYSIDES system variable 1621  
 Ports tab (Plotter Configuration Editor) 995  
 Precision Presets Manager 489  
 PREVIEW command 1014  
 PREVIEWEFFECT system variable 1621  
 PREVIEWFACEEFFECT system variable 1622  
 PREVIEWFILTER system variable 1622  
 Primary Units tab (New Dimension Style dialog box) 385  
 PROJMODE system variable 1623  
 PROPERTIES command  
   about 1014  
   Add Angle Value dialog box 1020  
   Add Distance Value dialog box 1020  
   Cell Border Properties dialog box 1018  
   Properties palette 1015  
 Properties palette  
   about 1015–1016  
   general properties 1017  
 Properties tab (Edit Attribute dialog box) 112  
 Properties tab (Enhanced Attribute Editor) 463  
 PROPERTIESCLOSE command 1021  
 Property Lookup Table dialog box 143  
 Property Settings dialog box 731  
 PROPOBJLIMIT system variable 1623  
 PROXYGRAPHICS system variable 1624  
 PROXYNOTICE system variable 1624  
 PROXYSHOW system variable 1625  
 PROXYWEBSEARCH system variable 1626  
 PSETUPIN command 1021  
 PSLTSCALE system variable 1626  
 PSPACE command 1022

PSTYLEMODE system variable 1627  
 PSTYLEPOLICY system variable 1628  
 Publish Block Template dialog box 1030  
 PUBLISH command  
     Block Template Options dialog  
         box 1031  
     Confirm DWF Password dialog  
         box 1032  
     DWF Password dialog box 1032  
     Publish Block Template dialog  
         box 1030  
     Publish dialog box 1024  
     Publish Job Progress dialog  
         box 1033  
     Publish Options dialog box 1028  
 Publish dialog box 1024  
 Publish Job Progress dialog box 1033  
 Publish Options dialog box 1028  
 Publish Sheets dialog box 1130  
 Publish to Web wizard 1035  
 PUBLISHALLSHEETS system  
     variable 1628  
 PUBLISHCOLLATE system variable 1629  
 PUBLISHHATCH system variable 1630  
 PUBLISHTOWEB command 1035  
 PUCSBASE system variable 1630  
 PURGE command 1036  
 Purge dialog box 1037

## Q

QCCLOSE command 1041  
 QCSTATE system variable 1631  
 QDIM command 1042  
 QKUNGROUP command 1043  
 QLEADER command  
     about 1043  
     Leader Settings dialog box 1045  
 QNEW command 1050  
 QPLOCATION system variable 1632  
 QPMODE system variable 1633  
 QSAVE command 1050  
 QSELECT command 1051  
 QTEXT command 1054  
 QTEXTMODE system variable 1633

Quick Properties tab (Drafting Settings  
     dialog box) 426  
 Quick Select dialog box 1052  
 Quick Setup wizard 808  
 QuickCalc calculator  
     about 1055  
     Category Definition dialog  
         box 1059  
     Variable Definition dialog box 1058  
 QUICKCALC command 1055  
 QUICKCUI command 1060  
 QUICKPROPERTIES command 1061  
 QUIT command 1061  
 QVDRAWING command 1062  
 QVDRAWINGCLOSE command 1063  
 QVDRAWINGPIN system variable 1634  
 QVLAYOUT command 1063  
 QVLAYOUTCLOSE command 1064  
 QVLAYOUTPIN system variable 1634

## R

RASTERDPI system variable 1635  
 RASTERPERCENT system variable 1636  
 RASTERPREVIEW system variable 1636  
 RASTERTHRESHOLD system  
     variable 1637  
 RAY command 1065  
 Re-initialization dialog box 1082  
 RECOVER command 1067  
 RECOVERALL command  
 RECOVERAUTO system variable 1637  
 RECOVERYMODE system variable 1638  
 RECTANG command 1068  
 REDO command 1070  
 REDRAW command 1071  
 REFCLOSE command 1071  
 REFEDIT command  
     about 1073  
     Edit Reference ribbon contextual  
         tab 1074  
     Reference Edit dialog box 1074  
 REFEDITNAME system variable 1638  
 Reference Edit dialog box 1074  
 REFSET command 1078  
 REGEN command 1079



REGENALL command 1079  
 REGENMODE system variable 1639  
 REGION command 1080  
 REINIT command 1081  
 Reload Linetypes dialog box 708  
 REMEMBERFOLDERS system variable 1640  
 Rename & Renumber Sheet dialog box 1134  
 Rename & Renumber View dialog box 1135  
 RENAME command 1082  
 Rename dialog box 1083  
 Replace tab (Find and Replace dialog box) 255  
 REPORTERROR system variable 1640  
 RESETBLOCK command 1085  
 Resource Drawing Locations dialog box 1146  
 RESUME command 1085  
 REVCLLOUD command 1086  
 REVDATE command 1087  
 REVERSE command 1088  
 RIBBON command 1088  
 Ribbon Contextual Tab State Options dialog box 886  
 RIBBONBGLOAD system variable 1641  
 RIBBONCLOSE command 1089  
 RIBBONCONTEXTSELECT system variable 1642  
 RIBBONCONTEXTSELLIM system variable 1642  
 RIBBONDOCKEDHEIGHT system variable 1643  
 RIBBONICONRESIZE system variable 1643  
 RIBBONSELECTMODE system variable 1644  
 RIBBONSTATE system variable 1644  
 Right-Click Customization dialog box 882  
 ROAMABLEROOTPREFIX system variable 1645  
 ROLLOVEROPACITY system variable 1646  
 ROLLOVERTIPS system variable 1646

ROTATE command 1089  
 RSCRIPT command 1090  
 RTDISPLAY system variable 1646

## S

Save as DWF dialog box 485  
 Save as DWEx dialog box 493  
 Save as PDF dialog box 497  
 Save Block As dialog box 165  
 Save Workspace dialog box 1340  
 SAVEAS command  
   about 1092  
   Saveas Options dialog box 1094  
   Template Options dialog box 1093  
 Saveas Options dialog box 1094  
 SAVEFIDELITY system variable 1648  
 SAVEFILE system variable 1648  
 SAVEFILEPATH system variable 1648  
 SAVENAME system variable 1649  
 SAVETIME system variable 1649  
 SCALE command 1097  
 SCALELISTEDIT command  
   about 1098  
   Add Scale dialog box 1100  
   Edit Drawing Scales dialog box 1099  
   Edit Scale dialog box 1101  
 SCALETEXT command 1103  
 SCREENSIZE system variable 1650  
 SCRIPT command 1104  
 Search dialog box 15  
 Search Folders dialog box 1737  
 Search tabs (Search dialog box) 16  
 Security Options dialog box 1105  
 SECURITYOPTIONS command  
   about 1105  
   Security Options dialog box 1105  
 SEEK command 1106  
 Select a Buzzsaw Location dialog box 833  
 Select Block dialog box 1152  
 Select Color dialog box  
   about 216  
   Color Books tab 221  
   Index Color tab 217  
   True Color tab 219

SELECT command 1107  
 Select Layer States dialog box 674  
 Select Layers to Add to Layer State dialog box 673  
 Select Layout as Sheet Template dialog box 1131  
 Select Linetype dialog box 656  
 Select Place in Document dialog box 595  
 Select Plot Style dialog box 989  
 Select Similar Settings dialog box 1111  
 Selection Cycling tab (Draft settings dialog box) 428  
 Selection Modes command modifier 1373  
 Selection tab (Options dialog box) 869  
 SELECTIONANNODISPLAY system variable 1650  
 SELECTIONAREA system variable 1651  
 SELECTIONAREAOPACITY system variable 1651  
 SELECTIONCYCLING system variable 1652  
 SELECTIONPREVIEW system variable 1653  
 SELECTSIMILAR command 1111  
 SELECTSIMILARMODE system variable 1654  
 SETBYLAYER command 1112  
 SetByLayer Settings dialog box 1113  
 SETBYLAYERMODE system variable 1654  
 SETENV command 1114  
 Settings for COM Port dialog box 1006  
 Settings tab (Reference Edit dialog box) 1075  
 Settings tab (UCS dialog box) 1279  
 SETVAR command 1115  
 SHADE command 1115  
 SHADEDGE system variable 1655  
 SHADEDIF system variable 1655  
 SHADEMODE command 1116  
 SHARE command 1117  
 Share Drawing dialog box 1117  
 Share with Autodesk Seek dialog box 1119  
 SHAREWITHSEEK command 1119  
 Sheet List tab (Sheet Set Manager) 1122  
 Sheet Properties dialog box 1148  
 Sheet Selections dialog box 1149  
 Sheet Set Custom Properties dialog box 1145  
 Sheet Set Manager  
   about 1121  
   Model Views tab 1127  
   Sheet List tab 1122  
   Sheet Views tab 1126  
 Sheet Set Properties dialog box 1143  
 Sheet Views tab (Sheet Set Manager) 1126  
 Sheets tab (Archive a Sheet Set dialog box) 31  
 SHEETSET command  
   about 1120  
   Add Custom Property dialog box 1146  
   Edit Sheet List Table Settings dialog box 1141  
   Import Layouts as Sheets dialog box 1136  
   Insert Sheet List Table dialog box 1137  
   List of Blocks dialog box 1151  
   New Sheet dialog box 1132  
   New Sheet Selection dialog box 1148  
   Publish Sheets dialog box 1130  
   Rename & Renumber Sheet dialog box 1134  
   Rename & Renumber View dialog box 1135  
   Resource Drawing Locations dialog box 1146  
   Select Block dialog box 1152  
   Select Layout as Sheet Template dialog box 1131  
   Sheet Properties dialog box 1148  
   Sheet Selections dialog box 1149  
   Sheet Set Custom Properties dialog box 1145  
   Sheet Set Manager 1121  
   Sheet Set Properties dialog box 1143  
   Subset Properties dialog box 1129

View Category dialog box 1150  
 SHEETSETHIDE command 1153  
 SHORTCUTMENU system variable 1656  
 SHORTCUTMENUDURATION system variable 1657  
 SHOWLAYERUSAGE system variable 1657  
 SHOWPAGESETUPFORNEWLAYOUTS system variable 1658  
 SHOWPALETTES command 1153  
 SIGNVALIDATE command  
   about 1153  
   Digital Signature Contents dialog box 1155  
   Validate Digital Signatures dialog box 1154  
 SIGWARN system variable 1659  
 SKETCH command 1157  
 SKETCHINC system variable 1659  
 SKPOLY system variable 1660  
 SKTOLERANCE system variable 1660  
 SLIDELIB utility 1738  
 Snap and Grid tab (Drafting Settings dialog box) 415  
 SNAP command 1158  
 SNAPANG system variable 1660  
 SNAPBASE system variable 1661  
 SNAPISOPAIR system variable 1661  
 SNAPMODE system variable 1662  
 SNAPSTYL system variable 1662  
 SNAPTYP system variable 1663  
 SNAPUNIT system variable 1663  
 SOLID command  
 SORTENTS system variable 1664  
 SPACETRANS command 1161  
 SPELL command  
   about 1162  
   Check Spelling dialog box 1163  
   Check Spelling Settings dialog box 1165  
   Dictionaries dialog box 1167  
   Manage Custom Dictionaries dialog box 1168  
 SPLDEGREE system variable 1665  
 SPLFRAME system variable 1665  
 SPLINE command 1170  
 SPLINEDIT command 1174  
 SPLINESEGS system variable 1666  
 SPLINETYPE system variable 1666  
 SPLKNOTS system variable 1667  
 SPLMETHOD system variable 1667  
 SPLPERIODIC system variable 1668  
 SSFOUND system variable 1668  
 SSLOCATE system variable 1669  
 SSMAUTOOPEN system variable 1669  
 SSMPLLTIME system variable 1670  
 SSMSTATE system variable 1671  
 Stack Properties dialog box 784  
 Standard File Selection dialog boxes 827  
 STARTUP system variable 1672  
 Statistics tab (Drawing Properties dialog box) 456  
 STATUSBAR system variable 1673  
 STRETCH command 1178  
 STYLE command 1180  
 STYLESMANAGER command  
   about 1186  
   Add-a-Plot-Style-Table wizard 1187  
   Edit Lineweights dialog box 1194  
   Plot Style Table Editor 1187  
 Subset Properties dialog box 1129  
 Subsets and Sheets tab (Insert Sheet List Table Dialog Box) 1140  
 Substitute DWF Name dialog box 437  
 Summary tab (Drawing Properties dialog box) 454  
 Symbol dialog box 1248  
 Symbols and Arrows tab (New Dimension Style dialog box) 371  
 SYSCODEPAGE system variable 1673  
 System tab (Options dialog box) 860  
 SYSWINDOWS command 1197

## T

Table Cell Format dialog box 1222  
 TABLE command  
   about 1200  
   Insert Table dialog box 1201  
   Manage Cell Content dialog box 1207

Table ribbon contextual tab 1204  
 Table Data tab (Insert Sheet List Table  
 Dialog Box) 1139  
 Table ribbon contextual tab 1204  
 Table Style dialog box 1212  
 Table View tab (Plot Style Table  
 Editor) 1190  
 TABLEEDIT command 1211  
 TABLEEXPORT command 1211  
 TABLEINDICATOR system variable 1675  
 TABLESTYLE command  
   about 1212  
   Additional Format dialog box 1223  
   Create New Cell Style dialog  
   box 1219  
   Create New Table Style dialog  
   box 1214  
   Manage Cell Styles dialog box 1220  
   Modify Table Style dialog box 1215  
   New Table Style dialog box 1215  
   Table Cell Format dialog box 1222  
   Table Style dialog box 1212  
 TABLET command 1224  
 TABLETOOLBAR system variable 1676  
 TABMODE system variable 1677  
 TARGET system variable 1677  
 TASKBAR command 1229  
 TBSHOWSHORTCUTS system  
   variable 1678  
 TDCREATE system variable 1678  
 TDINDWG system variable 1679  
 TDUCREATE system variable 1679  
 TDUPDATE system variable 1679  
 TDUSRTIMER system variable 1680  
 TDUUPDATE system variable 1680  
 Template Options dialog box 1093  
 TEMPOVERRIDES system variable 1681  
 TEXT command 1230  
 Text Editor ribbon contextual tab 773  
 Text Editor shortcut menu 764  
 Text Formatting toolbar 768  
 Text Options tab (Edit Attribute dialog  
 box) 110  
 Text Options tab (Enhanced Attribute  
 Editor) 461  
 Text shortcut menu 1234  
 Text Style dialog box 1181  
 Text tab (New Dimension Style dialog  
 box) 375  
 TEXTED system variable 1681  
 TEXTEDIT command 1236  
 TEXTFILL system variable 1682  
 TEXTOUTPUTFILEFORMAT system  
   variable 1682  
 TEXTQLTY system variable 1683  
 TEXTSCR command 1237  
 TEXTSIZE system variable 1683  
 TEXTSTYLE system variable 1684  
 TEXTTOFRONT command 1238  
 THICKNESS system variable 1684  
 Thumbnail Preview Settings dialog  
   box 878  
 TIFOUT command 1239  
 TILEMODE system variable 1684  
 TIME command 1241  
 Timeline dialog box 1242  
 TIMEZONE system variable 1689  
 TINSERT command 1243  
 TOLERANCE command  
   about 1244  
   Geometric Tolerance dialog  
   box 1245  
   Material Condition dialog box 1250  
   Symbol dialog box 1248  
 Tolerances tab (New Dimension Style  
 dialog box) 392  
 Tool Properties dialog box 1256  
 TOOLBAR command 1251  
 TOOLPALETTES command  
   about 1253  
   Tool Properties dialog box 1256  
   View Options dialog box 1255  
 TOOLPALETTECLOSE command 1257  
 Tooltip Appearance dialog box 432  
 TOOLTIPMERGE system variable 1689  
 TOOLTIPS system variable 1690  
 TOOLTIPSIZE system variable 1690  
 TOOLTIPTRANSPARENCY system  
   variable 1691  
 TPNAVIGATE command 1257  
 TPSTATE system variable 1691  
 Tracking command modifier 1372

TRACKPATH system variable 1692  
 Transfer tab (Customize User Interface dialog box) 251  
 Transmittal - Set Password dialog box 479  
 Transmittal Setups dialog box 473  
 TRANSPARENCY command 1258  
 Transparency dialog box 888  
 TRANSPARENCYDISPLAY system variable 1693  
 Tray Settings dialog box 1259  
 TRAYICONS system variable 1693  
 TRAYNOTIFY system variable 1694  
 TRAYSETTINGS command 1258  
 TRAYTIMEOUT system variable 1694  
 Tree View shortcut menu 646  
 TREEDEPTH system variable 1695  
 TREEMAX system variable 1696  
 TRIM command 1260  
 TRIMMODE system variable 1696  
 True Color tab (Select Color dialog box) 219  
 TSPACEFAC system variable 1697  
 TSPACE TYPE system variable 1697  
 TSTACKALIGN system variable 1698  
 TSTACKSIZE system variable 1698

**U**

U command 1265  
 UCS command 1266  
 UCS Details dialog box 1281  
 UCS dialog box 1276  
 UCS Icon dialog box 1274  
 UCS2DDISPLAYSETTING system variable 1700  
 UCSAXISANG system variable 1700  
 UCSBASE system variable 1701  
 UCSFOLLOW system variable 1701  
 UCSICON command 1272  
 UCSICON system variable 1702  
 UCSMAN command  
   about 1275  
   Orthographic UCS Depth dialog box 1280  
   UCS Details dialog box 1281  
   UCS dialog box 1276  
   UCSNAME system variable 1703  
   UCSORG system variable 1703  
   UCSORTHO system variable 1704  
   UCSSELECTMODE system variable 1704  
   UCSVIEW system variable 1705  
   UCSXDIR system variable 1705  
   UCSYDIR system variable 1706  
   ULAYERS command 1282  
   Underlay Layers dialog box 1282  
   UNDO command 1283  
   UNDOCTL system variable 1706  
   UNDOMARKS system variable 1707  
   UNISOLATEOBJECTS command 1288  
   UNITMODE system variable 1707  
   UNITS command  
     about 1289  
     Direction Control dialog box 1292  
     Drawing Units dialog box 1289  
   Unload Customizations dialog box 259  
   UOSNAP system variable 1708  
   Update PC3 File with New Printer dialog box 973  
   UPDATEFIELD command 1294  
   UPDATETHUMBNAIL system variable 1709  
   UPDATETHUMBSNOW command 1295  
   UPLOAD command 1296  
   Upload Drawing dialog box 1296  
   UPLOADFILES dialog box 1297  
   User Defined Fields dialog box 981  
   User Preferences tab (Options dialog box) 863  
   USERI1-5 system variable 1709  
   USERNAME system variable 1710  
   USERR1-5 system variable 1710

**V**

Validate Digital Signatures dialog box 1154  
 Variable Definition dialog box 1058  
 VERSION system variable 1711  
 View Category dialog box 1150  
 VIEW command  
   about 1300

- New View dialog box 1304
- View of This Drawing tab (Insert Hyperlink dialog box) 593
- View Options dialog box 1255
- View Properties tab (New View dialog box) 1304
- View Transitions dialog box 1327
- VIEWCTR system variable 1712
- VIEWDIR system variable 1712
- VIEWGO command 1307
- VIEWMODE system variable 1713
- VIEWPLOTDETAILS command
  - about 1308
  - Plot and Publish Details dialog box 1309
  - Plot and Publish Status Bar Icon shortcut menu 1310
- Viewpoint Presets dialog box 277
- Viewports dialog box 1319
- VIEWRES command 1311
- VIEWSIZE system variable 1713
- VIEWTWIST system variable 1714
- Visibility States dialog box 173
- VISRETAIN system variable 1714
- Visual Effect Settings dialog box 884
- VPCLIP command 1312
- VPLAYER command 1313
- VPLAYEROVERRIDES system variable 1715
- VPLAYEROVERRIDESMODE system variable 1716
- VPMAX command 1316
- VPMAXIMIZEDSTATE system variable 1716
- VPMIN command 1316
- VPOINT command 1317
- VPORTS command 1319
- VPROTATEASSOC system variable 1717
- VSLIDE command 1326
- VSMAX system variable 1717
- VSMIN system variable 1718
- VTDURATION system variable 1718
- VTENABLE system variable 1719
- VTFPS system variable 1719
- VTOPTIONS command 1327

## W

- WBLOCK command 1329
- WHIPARC system variable 1721
- WHOHAS command 1333
- WINDOWAREACOLOR system variable 1722
- WIPEOUT command 1334
- WMF In Options dialog box 1338
- WMFBKGND system variable 1723
- WMFFOREGND system variable 1723
- WMFIN command 1335
- WMFOPTS command 1338
- WMFOUT command 1339
- WORKSPACE command 1339
- Workspace Settings dialog box 1341
- WORKSPACELABEL system variable 1724
- WORLDUCS system variable 1724
- WORLDVIEW system variable 1725
- Write Block dialog box 1330
- WSAUTOSAVE system variable 1725
- WSCURRENT system variable 1726
- WSSAVE command 1340
- WSSETTINGS command 1341

## X

- XATTACH command
  - about 1343
  - Attach External Reference dialog box 1344
  - External Reference ribbon contextual tab 1347
- XBIND command 1348
- Xbind dialog box 1349
- XCLIP command 1351
- XCLIPFRAME system variable 1728
- XDWGFADCTL system variable 1728
- XEDIT system variable 1729
- XFADECTL system variable 1729
- XLINE command 1353
- XLOADCTL system variable 1730
- XLOADPATH system variable 1731
- XOPEN command 1355
- XPLODE command 1357

XREF command 1359  
XREFCTL system variable 1731  
XREFNOTIFY system variable 1732  
XREFTYPE system variable 1732

## **Z**

ZOOM command 1363  
ZOOMFACTOR system variable 1733  
ZOOMWHEEL system variable 1734

