

# Fisher® easy-e™ Control Valves



W7957

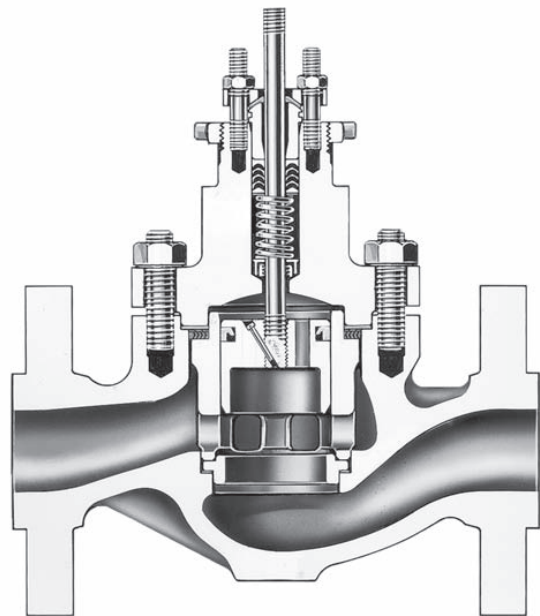
- Valves for general, erosive, cavitating, or noisy applications
- DN 25 to 300 and NPS 1/2 to 24 sizes
- Choice of balanced or unbalanced trim and metal or soft seats
- Temperatures to 538°C
- Pressures to PN 160 and CL900
- ENVIRO-SEAL™ packing systems are available to assist in compliance with environmental emissions requirements
- FIELDVUE™ digital valve controllers offer digital control and remote diagnostics. The traditional proven line of Fisher positioners, controllers, transmitters, and switches also is available.



## The easy-e Valve Family

easy-e valves are rugged, single-port globe, angle, and reverse-acting (push-down-to-open) valves designed for many varied applications. Although there are many variations available, internal trim parts are interchangeable for many different trims, and maintenance procedures are similar. These features reduce spare parts inventory and simplify maintenance training.

**Interchangeable Trim Sizes . . .** Many easy-e valves feature interchangeable, restricted-capacity and full-size trims to meet variable flow demands.



W0451-3

Figure 1. Typical easy-e Globe Valve

**Select from Several Flow Characteristics . . .** In most types, ■ quick-opening, ■ linear, and ■ equal percentage flow characteristics are available.

**Noise-Attenuating Trim . . .** To help reduce aerodynamic noise in gaseous service, Whisper Trim™ cages are available. To minimize liquid cavitation damage, Cavitrol™ III cages are available.



W0958

Quick Opening Cage



W0957

Equal Percentage Cage



W0959

Linear Cage



W0961

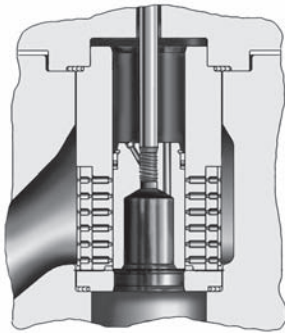
Whisper Trim Cage  
 for Noise Attenuation

Figure 2. Typical Cages

### The easy-e Valve Family (Continued)

**Materials for Sour Service** . . . Materials and manufacturing procedures for compatibility with

NACE MR0103, and MR0175/ISO 15156 are available.



W6962  
**Cavitrol III Trim for Control of Liquid Cavitation**  
(Typical  $F_L$  Coefficients for Two- or Three-Stage Trim is 0.98)

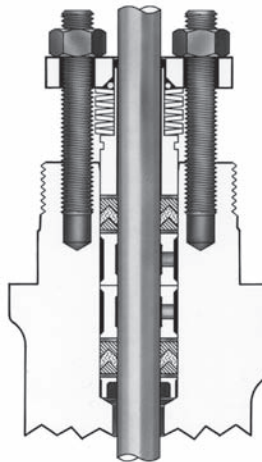


W2629/L  
**Whisper Trim III Cage for Reduction of Noise in Gas, Steam, and Vapor Applications**

Figure 3. Typical Trims

**Protection Against Process Fluid Emissions** . . . Optional ENVIRO-SEAL packing systems provide an improved stem seal to help prevent the loss of

valuable or hazardous process fluids. These live-loaded systems provide long packing life and reliability.



W5803-1\*

**PTFE ENVIRO-SEAL Packing System**

Figure 4. ENVIRO-SEAL Packing

## Actuators

**657 and 667 Pneumatic Diaphragm Actuators . . .** Rugged, heavy-duty spring-return actuators. These actuators are available with a variety of instrument accessories, handwheels, and adjustable travel stops. They can be used for on-off or throttling operation with or without a valve positioner.

**3025 Diaphragm Actuators . . .** Spring-opposed diaphragm actuators. Suitable for travels up to 200 mm (8 inches). Specified as either direct or reverse acting, actuator action can be easily changed on site without need of additional parts. They can be used for on-off or throttling operation of automatic control valves.

**Piston Actuators . . .** ■ 585C size 25 through 130 actuators for high thrust requirements. ■ 585CLS

(long stroke) piston actuators feature high thrust and long travels for very large valves.

## Accessories

**FIELDVUE Digital Valve Controller . . .** The controller is available mounted on actuators.

**Positioners and Transducers . . .** Pneumatic positioners and electro-pneumatic positioners and transducers can be provided with these valves.

**Position Transducers, Solenoid Valves, Limit Switches, and Controllers . . .** Also available.



W1916-2

**657 or 667 Actuator**



W9088

**3025 Actuator**



W9131-1

**585C Actuator**

*Figure 5. Typical Actuators*

## Selecting easy-e Products

Only a few of the more commonly selected product materials, sizes, options, and accessories are covered in this flier.

Contact your nearest sales office (refer to the back cover) for assistance in selecting and sizing these products. More detailed specifications are available on request.

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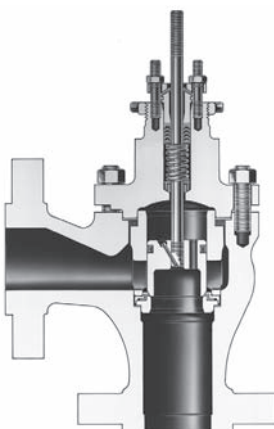
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## Valve Trim and Body Style

Letter Designations Used in this Table ⇒		E: Valve design series T, D, S, and Z: Trim type		U: Large size W: Expanded ends N: Long travel		A: Angle valve style R: Reverse acting (push down to open)		
Application	Trim Type	Fisher Trim Designation	Body Style	Fisher Valve Body	Valve Size	Ratings	Standard Shutoff Class	
Stringent shutoff with process temperatures to 204°C	Balanced, cage-guided with elastomer cage-plug seal and soft or metal seats	T	Globe	ET	DN 25 - 200 NPS 1 - 8	PN 10 - 100 CL125 - 600	Soft seat: V Metal seat: IV (standard) or V (optional)	
			Reverse acting (push-down-to-open)	ETR	DN 25 - 100 NPS 1 - 4			
			Angle	EAT	DN 25 - 150 NPS 1 - 6	PN 10 - 100 CL150 - 600		
			Globe with expanded end connections	EWT	DN 100 x 50 <sup>(1)</sup> (NPS 4 x 2) through NPS 24 x 20	PN 25 - 160 CL300 - 900		
			Globe with expanded end connections and long travel for noise-attenuating trim	EWNT (metal seats only)	DN 200 x 150 and DN 300 x 200 NPS 8 x 6 and 12 x 8	PN 25 - 160 CL300 - 900		IV
			Large globe with long travel	EUT	NPS 12, 16, 20	CL150 - 600		Soft seat: V Metal seat: IV
General applications for process temperatures to 427°C	Balanced, cage-guided with graphite cage-plug seal and metal seats	D	Globe	ED	DN 25 - 200 NPS 1 - 8	PN 10 - 100 CL125 - 600	II	
			Reverse acting (push-down-to-open)	EDR	DN 25 - 100 NPS 1 - 4			
			Angle	EAD	DN 25 - 150 NPS 1 - 6	PN 10 - 100 CL150 - 600		
			Globe with expanded end connections	EWD	DN 100 x 50 (NPS 4 x 2) through NPS 24 x 20	PN 25 - 160 CL300 - 900	Through 12 x 8: II Larger sizes: III	
			Globe with expanded end connections and long travel for noise-attenuating trim	EWND	DN 200 x 150 through DN 300 x 200 NPS 8 x 6 through NPS 12 x 8	PN 25 - 160 CL300 - 900	III	
			Large globe with long travel	EUD	NPS 12, 16, 20	CL150 - 600	III	
General applications for process temperatures to 538°C	Unbalanced, cage-guided without cage-plug seal and with metal or soft seats	S	Globe	ES	DN 25 - 200 NPS 1/2 - 8	PN 10 - 100 CL125 - 600	Metal Seat: IV Soft Seat: VI	
			Angle	EAS	DN 25 - 150 NPS 1 - 6			PN 10 - 100 CL150 - 600
			Globe with expanded end connections	EWS	DN 100 x 50 through DN 300 x 200 NPS 4 x 2 through NPS 12 x 8	PN 25 - 160 CL300 - 900		
Viscous, non-lubricating, or other hard-to-handle fluids with process temperatures to 427°C	Unbalanced cageless, post-guided with metal or soft seals	Z	Globe	EZ	DN 25 - 100 NPS 1/2 - 4	PN 10 - 100 CL125 - 600	Metal Seat: IV Soft Seat: VI	

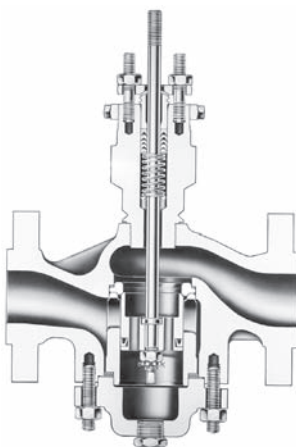
1. End connection size x nominal trim size.

Valve Trim and Body Style (Continued)



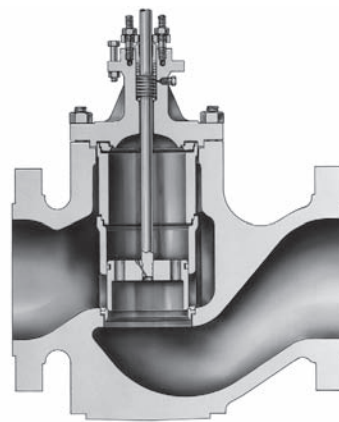
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*Typical Angle Valve*



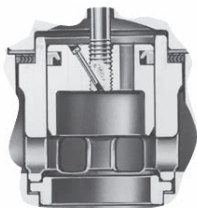
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*Typical Reverse-Acting Valve*



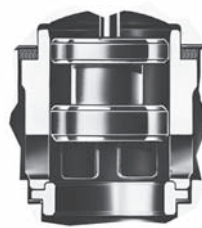
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*Valve with Long Travel and Expanded End Connections*



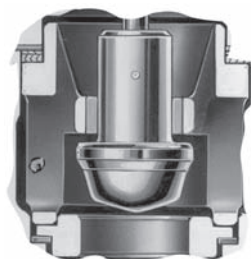
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*ED Trim*



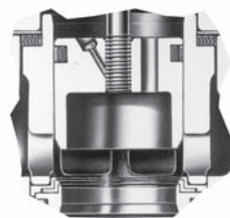
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*ES Trim*



W2966B-1

*EZ Trim*



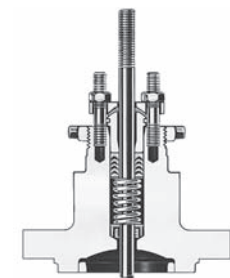
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*ET Trim*

## End Connections and Valve Body Materials

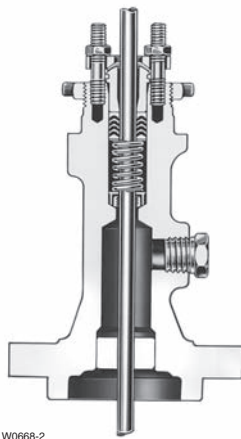
END CONNECTIONS		VALVE SIZE		MATERIALS	NOTES
EN	ASME	DN	NPS		
---	NPT internal CL600 body rating	---	1/2 - 2	WCC steel, CF8M (316 stainless steel), and other steel alloys	Not available in angle valves
PN 10, 16, and 25 raised-face flanged	CL125 flat-face and 250 raised-face flanged	25 - 200	1 - 8	Cast iron	Not available in NPS 1-1/4
PN 16, 25, 40, 63, and 100 raised-face flanged	CL150, 300, and 600 raised-face or ring-type joint flanged	25 - 200	1 - 8	WCC steel, CF8M (316 stainless steel), and other steel alloys	Not available in NPS 1-1/4
PN 16, 25, 40, 63, 100, and 160 raised-face flanged	CL300, 600, or 900 raised-face or ring-type joint flanged	100 x 50 through 300 x 200	4 x 2 <sup>(1)</sup> through 12 x 8	WCC steel, CF8M (316 stainless steel), and other steel alloys	---
---	CL150, 300, and 600 raised-face or ring-type joint flanged	---	12 - 24 and 16 x 12 through 24 x 20	WCC steel, CF8M (316 stainless steel), and other steel alloys	---
---	Socket weld ends (CL600 body rating)	---	1/2 - 2	WCC steel, CF8M (316 stainless steel), and other steel alloys	Not available in angle valves
---	Buttwelding ends	---	1 - 8	WCC steel, CF8M (316 stainless steel), and other steel alloys	Not available in NPS 1-1/4 Available in CL600
		---	4 x 2 through 12 x 8	WCC steel, CF8M (316 stainless steel), and other steel alloys	CL300, 600, or 900
		---	12 through 24 and 16 x 12 through 24 x 20	WCC steel, CF8M (316 stainless steel), and other steel alloys	CL600

1. End connection size x nominal trim size.



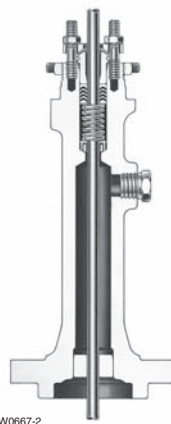
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*Plain Bonnet with Single PTFE V-Ring Packing*



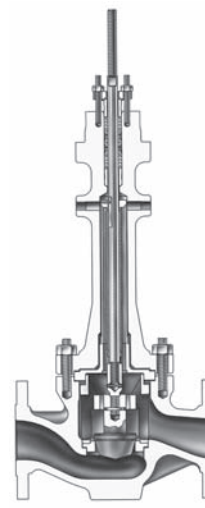
W0668-2

*Style 1 Extension Bonnet*



W0687-2

*Style 2 Extension Bonnet*



W5800-2

*ENVIRO-SEAL Bellows Seal Bonnet*



**Product Flier**

PF51.1:E  
July 2008

**easy-e Valves**

**Valve Plug, Seat Ring, and Cage (Trim) Materials**

VALVE TYPE	BODY MATERIAL	SEAT TYPE	MATERIALS			FISHER TRIM NUMBER <sup>(2)</sup>	NOTES
			Valve Plug	Seat Ring	Cage		
ED, ES, EWD, EWS through DN 300 x 200 <sup>(1)</sup> (NPS 12 x 8 sizes)	Standard for all body materials except CF8M (316 stainless steel)	Metal	S41600 (416 stainless steel) hardened to 38 HRC	Depending on size, S41600 or CA15 (410 stainless steel) both hardened to 38 HRC	S17400 (17-4PH stainless steel) hardened to 40 HRC	1	Trims with alloy 6 hardfacing also are available. For optional ES, EWS soft seat, use trim 29 or 57
	CF8M	Metal	S31600 (316 stainless steel)	S31600	S31600 with electroless nickel coating (ENC)	29	
ET, EWT through DN 300 x 200 (NPS 12 x 8)	Standard for all body materials except CF8M (316 stainless steel)	Soft	S41600 (416 stainless steel) hardened to 38 HRC	S31600	S17400 (17-4PH stainless steel) hardened to 40 HRC	57	Trims with alloy 6 hardfacing also are available. For optional metal seats, use trim1 or 29
	CF8M	Soft	S31600	S31600	S31600 or CF8M with electroless nickel coating (ENC)	29	
EZ	Cast iron and steel	Metal	S41600 hardened	S41600 hardened seat ring with CB7Cu-1 (17-4PH stainless steel) seat ring retainer	---	101	Trims with alloy 6 hardfacing also are available.
	CF8M	Metal	S31600	S31600 with CF8M seat ring retainer	---	129	

1. End connection size x nominal trim size.  
2. Refer to the following pages for pressure and temperature limits of the trim.

**Bonnets**

Bonnet Style	Valve Type or Size	Packing Material	In-Body Process Temperature Range, °C	Notes
Plain	All types and sizes	PTFE V-Ring	-18 to 232	These in-body process temperatures assume an ambient temperature of 21°C. When using any packing at low process temperatures, an extension bonnet might be needed to prevent valve stem frost. Frost can damage the packing.
		PTFE/composition	-18 to 232	
		Graphite ribbon/filament	-18 to maximum limit shown in other tables	
Style 1 extension	Globe and angle only; not available for EUD, EUT or 16 x 12 or larger EW	PTFE V-ring	-46 to -18 and above 232	
		PTFE/Composition		
		Graphite ribbon/filament		
Style 2 extension	Globe and angle only; not available for EUD, EUT, EWN, or 16 x 12 or larger EW	PTFE V-ring	-101 to -18 and above 232	
		PTFE/Composition		
		Graphite ribbon/filament		
ENVIRO-SEAL bellows seal bonnet	Available only on globe and angle valves through DN 100 and DN 200 x 100 (NPS 4 and 8 x 4)	For exceptional stem sealing capabilities with PTFE or graphite standard packing or with ENVIRO-SEAL packing system	Contact your nearest sales office	

## Other Valve Parts

PART	VALVE TYPE OR SIZE	MATERIALS		TEMPERATURE RANGE, °C	NOTES
Body-to-bonnet bolting	All sizes and types except as listed below	<b>Use for Body Material:</b>	<b>Cap Screws, Stud, or Nut Material</b>	---	---
		Cast iron	Steel SAE GR 5 cap screws	-29 to 232	Specify lubricated nuts for temperatures greater than 232°C
		WCC, C5, and WC9 steel	SA-193-B7 steel studs SA-194-2H steel nuts	-29 to 427	
		CF8M	SA-193-B7 steel studs SA-194-2H steel nuts	-48 to 427	
			SA-193-B8M stainless steel studs (strain hardened) SA-194-8M stainless steel nuts	-198 to 427	
		SA-193B8M stainless steel studs (annealed) SA-194-8M stainless steel nuts	The lower limit is -198; other valve parts determine the upper limit	---	
Packing (also refer to the bonnet selection table)	All types (see notes for exceptions)	PTFE V-ring		-40 to 232	---
		PTFE/composition		-73 to 232	
		Graphite ribbon/filament in oxidizing service		-198 to 371	
		Graphite ribbon/filament in non-oxidizing service		-198 to 538	
		ENVIRO-SEAL and HIGH-SEAL packing systems with PTFE, duplex, Kalrez, or graphite packing		Temperature limits vary with pressure and fugitive emissions standards; contact your nearest sales office for information	
Flat gaskets	EZ	S31600 stainless steel / graphite		-198 to 593	Limit to 427°C in oxidizing service
		PTFE-coated N04400		-73 to 149	---
	All sizes and types except EZ	S31600/graphite in oxidizing service		-198 to 593	Limit to 427°C in oxidizing service
		PTFE-coated N04400		-73 to 149	---
Spiral-wound gasket	All	N06600 nickel alloy 600 / graphite (flexible graphite) standard		-198 to 593	---
		N04400 nickel alloy		-73 to 232	
Soft seat disc	ES, ET, EUT, EWS, EWT, EZ	PTFE		-73 to 204	---
Piston ring for ED type trim	ED and EWD	Graphite in oxidizing service		-46 to 427	---
		Graphite in non-oxidizing service		-46 to 482	---
Seal ring for ET type trim	ET, EWT (up to DN 300 x 200 or NPS 12 x 8 sizes)	Carbon-filled PTFE seal ring with fluorocarbon backup ring		-18 to 204	Do not use fluorocarbon with ammonia, steam, or hot water
		Carbon-filled PTFE seal ring with ethylene-propylene backup ring		-40 to 232	Do not use ethylene-propylene with petroleum-based fluids or other hydrocarbons
		Spring-loaded PTFE seal ring with N07750 spring and stainless steel backup ring and retaining ring		-73 to 232	---

**657 and 667 Pneumatic Diaphragm Actuators**

These heavy-duty actuators feature spring-return action and a variety of operation options and actuator-mounted accessories.

The actuator can be used for on-off or throttling service, with or without a positioner.

With a push-down-to-close valve, the 657 is air to close, and the 667 is air to open.

**Options . . .** ■ Adjustable travel stop, ■ top-mounted handwheel, and ■ side-mounted manual actuator.

**Specifications . . .** Refer to the following table and the actuator-valve selection tables.

**Accessories . . .** Refer to the following pages for ■ pneumatic and electro-pneumatic valve positioners, ■ FIELDVUE digital valve controllers, and other accessories



W0363-1

Figure 6. 657 and 667 Actuator

*657 and 667 Actuator Specifications*

ACTUATOR SIZE	NOMINAL OPERATING PRESSURE RANGES		MAXIMUM CASING PRESSURE, BAR		MAXIMUM ALLOWABLE THRUST, N	AMBIENT TEMPERATURES, °C	MATERIALS	APPROXIMATE WEIGHT, kg	
	Bar	Psig	657	667				657	667
30	0.2 to 1.0 or 0.4 to 2.0	3 to 15 or 6 to 30	9.6	7.6	10 231	Nitrile: -40 to 82 Silicone: -50 to 149	<b>Diaphragm:</b> Nitrile (standard) or Silicone (Optional) <b>Yoke:</b> Cast iron  <b>Diaphragm Plate:</b> Aluminum, cast iron, or steel (depending on size)  <b>Other Major Metal Parts:</b> steel or cast iron with brass seal bushing	16	15
34			5.2	6.2				22	22
40			5.2	6.2	12 010			23	23
45			4.1	5.2	25 132			37	41
46			3.4	4.5	33 584			49	55
50			4.1	5.2	25 131			42	43
60			3.4	4.5	30 246			53	55
70			4.5	4.1	39 142			107	115
80			4.1	4.1	63 392			234	284
100			7.9	7.9	200 160			346	544

## 3025 Diaphragm Actuators

These heavy-duty spring-opposed actuators can be specified as either direct (air-to-close) or reverse (air-to-open). Actuator action can be easily changed on site without need of additional parts.

The actuator can be used for on-off or throttling operation of automatic control valves.

**Options . . .** ■ Side-mounted gear handwheel, ■ Oversize signal connections.

**Specifications . . .** Refer to the following table.

**Accessories . . .** Refer to the following table.

### 3025 Actuator Specifications

<b>Features</b>
Long travel, up to 200 mm (8 inches)
<b>Style</b>
Spring-opposed pneumatic diaphragm
<b>Typical Maximum Thrust, Newtons (Varies with Operating Pressure, Spring, and Construction)</b>
<b>Air to Close, Size P900: 76 310</b>
<b>Air to Open, Size P900: 61 150</b>
<b>Accessories</b>
FIELDVUE digital valve controllers, handwheels, transducers, position transmitters, air relays, volume boosters, switching valves, lockable valves, limit switches, and solenoid valves are available for actuator mounting.

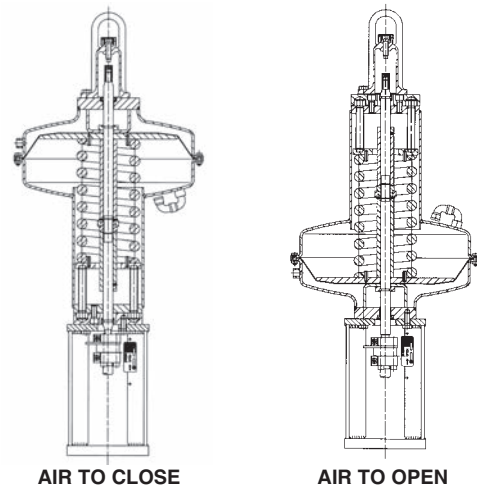


Figure 7. 3025 Actuator

## FIELDVUE Digital Valve Controller

FIELDVUE digital valve controllers are communicating, microprocessor-based controllers that convert a current signal to a pressure signal to operate the actuator. Through digital communications, the controller gives easy access to actuator-valve information that is critical to operation.

Refer to following tables for FIELDVUE controller specifications.

**AMS ValveLink™ Software . . .** AMS ValveLink Software allows easy access to the information available from FIELDVUE digital valve controllers. The software provides diagnostic information such as dynamic error band and step response on easy-to-interpret screens. Tests can be run while the valve is operating, without disrupting the process. Access to diagnostics is through the 375 Field Communicator or a personal computer using AMS ValveLink Software.



W8755

Figure 8. FIELDVUE DVC2000 Digital Valve Controller

**Options (contact your sales office for details on product specific options) . . .**

- HART®,
- FOUNDATION™ fieldbus, ■ remote mounting,
- stainless steel housing, ■ Safety Instrumented System (SIS) applications, ■ Natural gas applications, ■ Performance Diagnostics,
- extreme temperatures, and ■ low bleed relay.

## Approvals Available

Not all approvals are available on all FIELDVUE products. Contact your sales office for specific approvals.



Explosion proof, Division 2, Dust-Ignition proof, Intrinsic Safety, Non-incendive



Explosion proof, Non-incendive, Dust-Ignition proof, Intrinsic Safety

ATEX Flameproof, Type n, Intrinsic Safety

IECEX Flameproof, Type n, Intrinsic Safety



Flameproof, Intrinsic Safety



Flameproof, Intrinsic Safety

**DVC2000 Electrical Housing:** Designed to meet IP66 (FM--approval pending for other agencies) NEMA 4X (approval pending). Contact your sales office for information on pending approvals.

**DVC6000 and DVC6000f Electrical Housing:** Meets NEMA 4X, CSA Type 4X, IEC 60529 IP66

**Natural Gas Approved:** DVC6000 and DVC6000f are single-seal approved for use with natural gas. Contact your sales office for specific agency approval information.



W7957

Figure 9. FIELDVUE DVC6000 Digital Valve Controller on a 657 or 667 Actuator

## FIELDVUE Digital Valve Controller (Continued)

*Digital Valve Controller Electrical Specifications (HART instruments only)*

ELECTRICAL INPUT						REVERSE POLARITY PROTECTION
Point-to-Point Connection					Multi-Drop Connection (DVC6000 Only)	
Analog Input Signal	Minimum Control Current	Minimum Current without Microprocessor Restart	Maximum Voltage	Overcurrent Protection	Instrument Power	
4 to 20 mA DC nominal	4.0 mA	3.5 mA	30 VDC	Input circuit limits current to prevent internal damage	11 to 30 VDC at approximately 8 mA	No damage occurs from reversal of loop current

*Digital Valve Controller Electrical Specifications (FOUNDATION fieldbus Communication only)*

COMMUNICATION PROTOCOL	POWER REQUIREMENTS			
	Voltage Level	Maximum Current	Reverse Polarity Protection	Termination
FOUNDATION fieldbus registered device Physical Layer Type(s): 121—Low-power signaling, bus-powered, Entity Model I.S. 511—Low-power signaling, bus-powered, FISCO I.S.	9 to 32 volts	18 mA	Device is not polarity sensitive	Bus must be properly terminated per ISA SP50 guidelines

**Valve Positioners**

**3582 and 3582i Valve Positioners (for 657 and 667 Actuators)**

The 3582 pneumatic and 3582i electro-pneumatic valve positioners are accurate, efficient positioners for use with 657 and 667 actuators.

The field-proven design is fast to respond to input signal changes and is able to withstand the vibrations of most plants.

**Options . . .** ■ Gauges and ■ bypass valve for direct-acting positioners using full input signal range.

**Approvals Available**

**Electrical Classification (Applies to the 3582i)**



Intrinsic Safety, Explosion proof, Type n  
Dust-Ignition proof, DIV 2,



Intrinsic Safety, Explosion proof, Type n,  
Non-incendive, Dust-Ignition proof,

**ATEX** Intrinsic Safety, Type n, Explosion proof  
(Gas Atmospheres Only)

**SAA** Intrinsic Safety, Flameproof, Type n

W5500

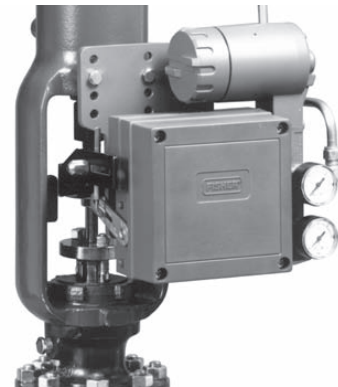
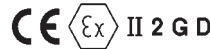


Figure 10. 3582 and 3582i Valve Positioners

**Hazardous Area Classifications (Applies to the 3582)**

3582 Series valve positioners comply with the requirements of ATEX Group II Category 2 Gas and Dust



*3582 and 3582i Positioner Specifications*

Input Signal		Supply Pressure	Input Bellows Rating	Operative Temperature	Weight	Connections
<b>3582</b>						
0.2 to 1.0 or 0.4 to 2.0 bar	3 to 15 or 6 to 30 psig	0.3 bar above the actuator requirement up to 3.4 bar maximum (do not exceed actuator pressure rating)	2.4 bar	-40 to 71°C	2.5 kg	<b>Pressure and Vent Connections:</b> 1/4 NPT internal
<b>3582i</b>						
4 to 20 mA constant current with 30 VDC maximum compliance voltage; equivalent circuit is 120 ohms shunted by three 5.6 V zener diodes		0.3 bar above the actuator requirement up to 3.4 bar maximum (do not exceed actuator pressure rating)	---	-40 to 71°C	3.6 kg	<b>Pressure and Vent Connections:</b> 1/4 NPT internal <b>Conduit:</b> 1/2 NPT internal

*3582 and 3582i Capacities and Housing*

SUPPLY PRESSURE, BAR	SUPPLY AIR DEMAND, Nm <sup>3</sup> /h	AIR CONSUMPTION, Nm <sup>3</sup> /h		HOUSING
		3582	3582i	
1.4	4.7	0.38	0.42	CSA Type 3 Encl., NEMA 3, IP54 per IEC 60529; Mount instrument with vent on the side or the bottom if weatherproofing is a concern.
2.0	7.0	0.48	0.53	
2.4	8.1	0.54	0.59	

## Other Accessories

**67CFR Filter-Regulator . . .** The 67CFR provides constantly controlled supply pressure to actuator accessories system. This regulator features an internal filter and limited-capacity internal relief,

allowing partial reduction of downstream pressure. Also featured is an integral check valve option that allows the actuated valve to fail to a desired safe position when inlet pressure is lost.

### 67CFR Filter-Regulator Specifications

OUTLET PRESSURE SETTINGS		MAXIMUM INLET PRESSURE (BODY RATING) BAR	MAXIMUM DIAPHRAGM PRESSURE, BAR	TEMPERATURE CAPABILITIES	CONNECTIONS	MAXIMUM FLOW COEFFICIENT, C <sub>v</sub>	WEIGHT, kg
Bar	Psig						
0 to 1.4 0 to 2.4 0 to 4.1 0 to 8.6	0 to 20 0 to 35 0 to 60 0 to 125	17.2	3.4 over outlet setting	Nitrile diaphragm and plug: -29 to 82°C fluorocarbon diaphragm, plug and PVDF, SST, or Glass Filter: -18 to 149°C	Inlet and Outlet: 1/4 NPT internal Vent: Drilled hole or 1/4 NPT internal	0.36	0.5

**546, 646, 846, or i2P-100 Electro-Pneumatic Transducers . . .** These transducers convert a standard 4 to 20 mA DC signal to a proportional pneumatic signal. The 846 and i2P-100 transducers incorporate an explosive fluid process seal to meet safety regulations for use with natural gas as the pneumatic supply.

**2625 Volume Booster . . .** The volume booster can be used in conjunction with a positioner to increase actuator stroking speed.

### Approvals Available

Not all approvals are available on all accessories. Contact your sales office for specific approvals.



Explosion proof, Division 2, Dust-Ignition proof, Intrinsic Safety



Explosion proof, Intrinsic Safety, Non-incendive, Dust-Ignition proof

ATEX Intrinsic Safety, Flameproof, and Type n

IECEx Intrinsic Safety, Flameproof, and Type n

GOST Intrinsic Safety, Flameproof, and Type n

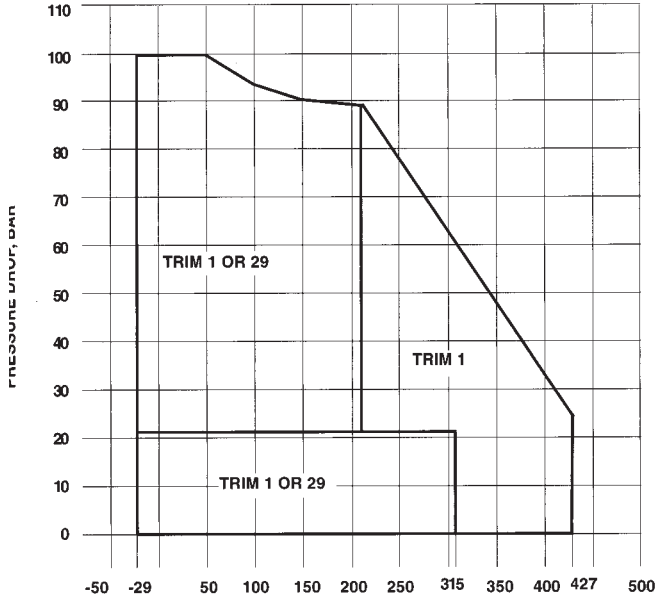
**C1 Pneumatic Controller . . .** The controller can sense pressure, differential pressure or vacuum and send pneumatic control signal to an adjacent valve or other control element.

**Others . . .** ■ High-pressure supply pressure regulators, ■ proximity switches, ■ microswitches, ■ solenoid valves, ■ signal volume boosters and ■ pneumatic pressure transmitters.

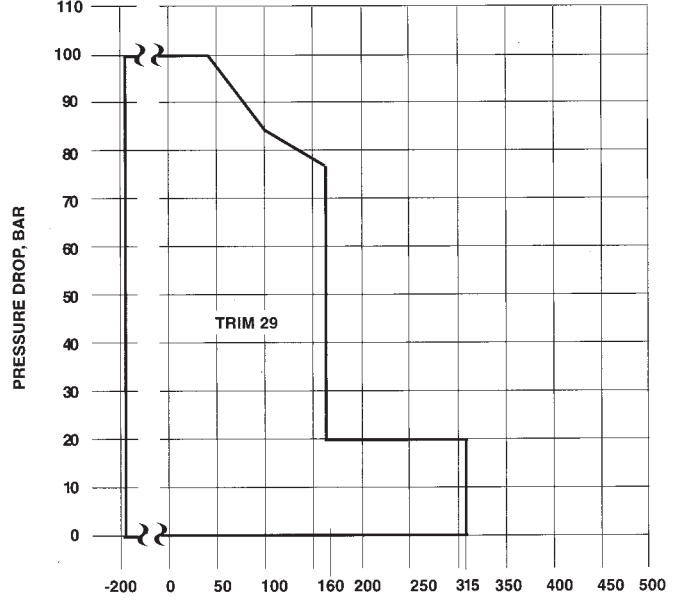
Contact your nearest sales office for more information.



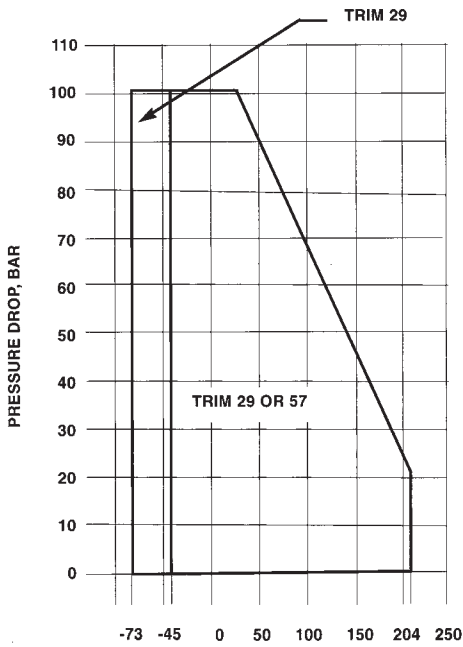
**Trim Material Pressure/Temperature Capabilities for Valve Sizes through DN 300 x 200 (NPS 12 x 8) for ED, ES, and ET Trim**



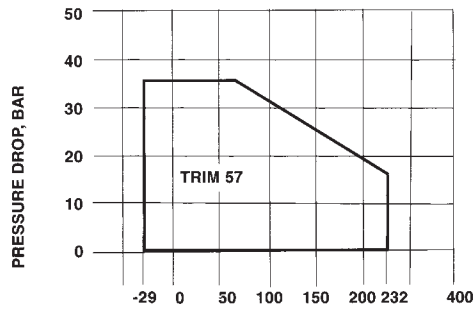
TEMPERATURE, °C  
WCC STEEL VALVES



TEMPERATURE, °C  
CF8M (316 STAINLESS STEEL) VALVES



TEMPERATURE, °C  
SOFT SEATS



TEMPERATURE, °C  
CAST IRON VALVES

## Trim Material Pressure/Temperature Capabilities for EZ Trim

### *EZ Trim Temperature Capabilities*

BODY MATERIAL	FISHER TRIM NUMBER	VALVE SIZE		TEMPERATURE, °C	NOTES
		DN	NPS		
Cast iron	101	All	All	-29 to 232	- - -
	129	All	All	-73 to 232	With non-lubricating fluids, limit to 149°C
WCC Steel	101	All	All	-29 to 427	- - -
	129	to 50 80 100	to 2 3 4	-29 to 260 -29 to 371 -29 to 338	With non-lubricating fluids, limit to 149°C
CF8M (316 stainless steel)	101	to 40 50 80 100	to 1-1/2 2 3 4	-29 to 354 -29 to 288 -29 to 216 -12 to 177	- - -
	129	to 40 80 100	to 2 3 4	-198 to 260 -198 to 377 -198 to 371	With non-lubricating fluids, limit to 149°C

ED, ES, and ET Flow Coefficients

FLOW CHARACTERISTIC	VALVE SIZE		MAXIMUM TRAVEL	PORT DIA.	ED AND ET (FLOW DOWN)					ES (FLOW UP)							
					Valve Opening, Percent of Total Travel												
	DN	NPS	mm	mm	10	30	70	100	100	10	30	70	100	100			
Quick Opening					C <sub>V</sub>					F <sub>L</sub>	C <sub>V</sub>					F <sub>L</sub>	
	---	1/2	19	33.3	---	---	---	---	---	4.00	6.22	6.52	6.53	.88			
	---	3/4	19	33.3	---	---	---	---	---	4.94	11.8	14.2	14.2	.83			
	25	1, 1-1/4	19	33.3	4.86	13.4	21.1	22.1	.81	5.24	15.0	21.1	21.4	.89			
	40	1-1/2	19	47.6	7.79	20.5	39.4	44.0	.79	7.60	22.3	38.0	38.0	.94			
	50	2	29	58.7	13.4	39.9	73.7	77.6	.77	14.3	48.6	67.2	67.2	.93			
	65	2-1/2	38	73.0	20.9	58.8	103	109	.81	21.8	66.6	93.1	93.1	.91			
	80	3	38	87.3	27.2	77.9	149	161	.77	23.3	78.3	136	150	.87			
	100	4	51	111.1	37.7	125	238	251	.79	39.0	132	225	235	.89			
	150	6	51	177.8	73.6	232	416	460	.82	89.9	255	418	469	.82			
	200	8	76	203.2	135	434	759	863	.85	156	490	796	875	.85			
					X <sub>T</sub>					---	X <sub>T</sub>					---	
	---	1/2	19	33.3	---	---	---	---	---	.681	.653	.624	.622	---			
	---	3/4	19	33.3	---	---	---	---	---	.576	.605	.534	.534	---			
	25	1, 1-1/4	19	33.3	.556	.724	.566	.556	---	.540	.656	.663	.650	---			
	40	1-1/2	19	47.6	.494	.682	.649	.597	---	.577	.639	.743	.789	---			
	50	2	29	58.7	.605	.737	.641	.623	---	.633	.619	.797	.810	---			
	65	2-1/2	38	73.0	.601	.738	.669	.652	---	.659	.720	.848	.868	---			
	80	3	38	87.3	.626	.745	.619	.577	---	.585	.602	.737	.720	---			
	100	4	51	111.1	.623	.733	.689	.694	---	.642	.714	.769	.780	---			
150	6	51	177.8	.664	.667	.728	.710	---	.572	.601	.681	.700	---				
200	8	76	203.2	.643	.757	.857	.827	---	.520	.654	.818	.774	---				
Linear					C <sub>V</sub>					F <sub>L</sub>	C <sub>V</sub>					F <sub>L</sub>	
	25	1, 1-1/4	19	33.3	3.21	8.18	16.9	20.6	.84	2.27	6.23	15.8	20.1	.89			
	40	1-1/2	19	47.6	4.23	11.8	30.3	39.2	.82	3.56	11.1	26.7	34.9	.92			
	50	2	29	58.7	7.87	24.9	62.0	72.9	.77	8.49	25.9	59.2	65.3	.91			
	65	2-1/2	38	70.3	9.34	35.5	83.6	108	.81	10.4	34.9	73.7	86.5	.93			
	80	3	38	87.3	14.5	52.1	118	148	---	15.3	52.8	112	135	.89			
	100	4	51	111.1	23.3	78.1	181	236	---	23.7	72.9	165	212	.89			
	150	6	51	177.8	46.3	171	367	433	---	55.0	180	341	417	.81			
	200	8	76	203.2	91.4	325	711	846	---	100	330	719	836	.85			
					X <sub>T</sub>					---	X <sub>T</sub>					---	
	25	1, 1-1/4	19	33.3	.340	.494	.610	.636	---	.691	.690	.709	.690	---			
	40	1-1/2	19	47.6	.656	.758	.708	.656	---	.628	.604	.715	.764	---			
	50	2	29	58.7	.641	.728	.683	.638	---	.618	.689	.742	.762	---			
	65	2-1/2	38	70.3	.680	.644	.716	.641	---	.672	.739	.858	.866	---			
	80	3	38	87.3	.671	.697	.707	.620	---	.607	.663	.762	.751	---			
	100	4	51	111.1	.691	.720	.748	.688	---	.553	.644	.743	.791	---			
	150	6	51	177.8	.656	.744	.784	.740	---	.597	.701	.787	.745	---			
	200	8	76	203.2	.651	.677	.823	.807	---	.616	.669	.762	.799	---			
	Equal Percentage					C <sub>V</sub>					F <sub>L</sub>	C <sub>V</sub>					F <sub>L</sub>
		25	1, 1-1/4	19	33.3	.783	2.20	7.83	17.2	.88	.783	1.86	9.54	17.4	.95		
40		1-1/2	19	47.6	1.52	3.87	17.4	35.8	.84	1.54	3.57	17.2	33.4	.94			
50		2	29	58.7	1.66	4.66	25.4	59.7	.85	1.74	4.72	25.0	56.2	.92			
65		2-1/2	38	73.0	3.43	10.8	49.2	99.4	.84	4.05	10.6	45.5	82.7	.93			
80		3	38	87.3	4.32	10.9	66.0	136	.82	4.05	10.0	59.0	121	.89			
100		4	51	111.1	5.85	18.3	125	224	.82	6.56	17.3	103	203	.91			
150		6	51	177.8	12.9	43.3	239	394	.85	13.2	41.1	223	357	.86			
200		8	76	203.2	27.0	105	605	818	.86	25.9	97.8	618	808	.85			
				X <sub>T</sub>					---	X <sub>T</sub>					---		
25		1, 1-1/4	19	33.3	.766	.587	.743	.667	---	.754	.763	.630	.721	---			
40		1-1/2	19	47.6	.780	.716	.690	.679	---	.674	.694	.698	.793	---			
50		2	29	58.7	.827	.774	.702	.687	---	.863	.849	.792	.848	---			
65		2-1/2	38	73.0	.778	.678	.661	.660	---	.747	.745	.783	.878	---			
80		3	38	87.3	.774	.682	.663	.675	---	.768	.761	.754	.757	---			
100		4	51	111.1	.731	.643	.672	.716	---	.722	.739	.718	.822	---			
150		6	51	177.8	.688	.682	.736	.778	---	.723	.767	.808	.816	---			
200		8	76	203.2	.644	.636	.725	.807	---	.825	.681	.735	.827	---			

## EZ Flow Coefficients (Flow Up)

VALVE SIZE		MAXIMUM TRAVEL	PORT DIA.	QUICK OPENING					---	LINEAR				
				Valve Opening, Percent of Total Travel					---	Valve Opening, Percent of Total Travel				
10	30	70	100	100	---	10	30	70	100	100				
DN	NPS	mm	mm	C <sub>V</sub>				F <sub>L</sub>	---	C <sub>V</sub>				F <sub>L</sub>
---	1/2	19	33.3	1.76	4.29	4.44	4.44	.83	---	---	---	---	---	---
---	3/4	19	33.3	3.85	9.40	9.72	9.72	.88	---	---	---	---	---	---
25	1	19	33.3	4.39	14.0	16.8	16.9	.94	---	2.21	5.29	11.1	13.6	.96
40	1-1/2	19	47.6	5.64	20.6	33.4	34.2	.96	---	3.99	11.1	25.8	31.9	.96
50	2	29	58.7	13.0	44.3	58.4	58.6	.94	---	6.08	18.0	42.8	52.4	.95
80	3	38	87.3	30.8	92.4	126	129	.91	---	15.4	43.4	93.8	110	.92
100	4	51	111.1	50.8	159	219	223	.88	---	21.3	57.5	157	209	.89
				X <sub>T</sub>				---	---	X <sub>T</sub>				---
---	1-2	19	33.3	.364	.764	.894	.894	---	---	---	---	---	---	---
---	3/4	19	33.3	.314	.654	.769	.769	---	---	---	---	---	---	---
25	1	19	33.3	.400	.523	.500	.494	---	---	.638	.638	.636	.834	---
40	1-1/2	19	47.6	.623	.726	.861	.848	---	---	.633	.657	.696	.818	---
50	2	29	58.7	.548	.765	.831	.834	---	---	.560	.655	.779	.924	---
80	3	38	87.3	.672	.713	.783	.774	---	---	.622	.692	.758	.888	---
100	4	51	111.1	.733	.724	.809	.835	---	---	.554	.684	.677	.866	---
				EQUAL PERCENTAGE					DN 25 (NPS 1) VALVE WITH MICRO-FORM AND MICRO-FLUTE VALVE PLUG 19 mm TRAVEL EQUAL PERCENTAGE CHARACTERISTIC					
				C <sub>V</sub>				F <sub>L</sub>	PORT DIA.	C <sub>V</sub>				F <sub>L</sub>
DN 25	1	19	33.3	.79	1.80	7.59	13.2	.96	6.4 <sup>(1)</sup>	.075	.175	.641	1.52	.88
DN 40	1-1/2	19	47.6	.80	1.91	9.84	28.1	.97	9.5 <sup>(1)</sup>	.099	.308	1.29	3.07	.89
DN 50	2	29	58.7	1.65	4.30	32.8	53.8	.95	12.7 <sup>(1)</sup>	.133	.492	2.12	4.91	.93
DN 80	3	38	87.3	3.11	9.12	60.4	114	.92	19.1 <sup>(1)</sup>	.276	.965	4.57	8.84	.97
DN 100	4	51	111.1	4.90	13.5	96.7	190	.90	6.4 <sup>(2)</sup>	.0385	.0560	.162	.354	.87
									6.4 <sup>(3)</sup>	.0562	.101	.433	1.07	.90
				X <sub>T</sub>				---	---	X <sub>T</sub>				---
DN 25	1	19	33.3	.641	.598	.646	.886	---	6.4 <sup>(1)</sup>	.804	.658	.596	.647	---
DN 40	1-1/2	19	47.6	.726	.733	.597	.840	---	9.5 <sup>(1)</sup>	.795	.641	.560	.662	---
DN 50	2	29	58.7	.655	.520	.653	.899	---	12.7 <sup>(1)</sup>	.787	.628	.600	.803	---
DN 80	3	38	84.3	.619	.598	.586	.781	---	19.1 <sup>(1)</sup>	.723	.588	.603	.919	---
DN 100	4	51	111.1	.594	.560	.532	.834	---	6.4 <sup>(2)</sup>	.778	.690	.637	.656	---
									6.4 <sup>(3)</sup>	.692	.639	.597	.624	---

1. Micro-Form valve plug.  
2. Micro-Flute valve plug—1 flute.  
3. Micro-Flute valve plug—3 flutes.

## Conversion of Sizing Coefficients

Following are conversions for use with other common sizing equations.

$$K_v = (0.865)C_v$$

$$C_1 = 39.76(\sqrt{X_T})$$

$$C_g = C_v C_1$$

$$K_m = F_L^2$$

$$C_s = 1/20(C_g). \quad C_s \text{ is only applicable for inlet pressures up to 70 bar(a)}$$

EWD, EWS, and EWT Flow Coefficients

FLOW CHARACTERISTIC	VALVE SIZE		MAXIMUM TRAVEL	PORT DIA.	EWD AND EWT (FLOW DOWN)				EWS (FLOW UP)							
					Valve Opening, Percent of Total Travel											
			10				30				70		100			
	DN	NPS	mm	mm	C <sub>v</sub>	F <sub>L</sub>	C <sub>v</sub>	F <sub>L</sub>	C <sub>v</sub>	F <sub>L</sub>	C <sub>v</sub>	F <sub>L</sub>				
Quick Opening	100 x 50	4 x 2	29	58.7	13.8	42.7	105	124	.82	13.7	42.1	101	123	.89		
	150 x 100	6 x 4	51	111.1	40.8	140	306	340	.88	39.4	147	355	382	.88		
	200 x 100	8 x 4	51	111.1	43.2	147	328	379	.89	42.1	149	365	450	.85		
	200 x 150	8 x 6	51	177.8	79.0	247	531	637	.89	79.3	249	606	714	.86		
	300 x 150	12 x 6	51	177.8	80.1	250	621	817	.82	86.1	261	641	874	.79		
	250 x 200	10 x 8	76	203.2	138	468	903	1040	.88	151	471	918	1000	.93		
	300 x 200	12 x 8	76	203.2	149	481	1000	1260	.79	157	480	957	1110	.89		
	400 x 250	16 x 10	152	257.2	234	1220	2080	2230	.79	221	1190	2100	2210	.87		
						X <sub>T</sub>				---	X <sub>T</sub>					
	100 x 50	4 x 2	29	58.7	.571	.662	.714	.693	---	.639	.652	.843	.793	---		
	150 x 100	6 x 4	51	111.1	.577	.612	.793	.818	---	.619	.591	.726	.781	---		
	200 x 100	8 x 4	51	111.1	.629	.631	.809	.817	---	.578	.560	.733	.704	---		
	200 x 150	8 x 6	51	177.8	.544	.578	.759	.705	---	.682	.634	.688	.671	---		
	300 x 150	12 x 6	51	177.8	.515	.613	.715	.782	---	.614	.571	.677	.736	---		
	250 x 200	10 x 8	76	203.2	.665	.651	.741	.787	---	.632	.625	.798	.842	---		
	300 x 200	12 x 8	76	203.2	.687	.727	.744	.636	---	.718	.712	.855	.836	---		
400 x 250	16 x 10	152	257.2	.872	.682	.652	.614	---	.689	.682	.644	.638	---			
Linear						C <sub>v</sub>				F <sub>L</sub>	C <sub>v</sub>					F <sub>L</sub>
	100 x 50	4 x 2	29	58.7	6.80	23.0	70.8	107	.79	6.88	21.5	60.0	96.2	.89		
	150 x 100	6 x 4	51	111.1	21.4	78.7	201	320	.86	26.2	78.4	197	320	.89		
	200 x 100	8 x 4	51	111.1	23.2	80.6	211	340	.82	25.1	78.1	192	328	.89		
	200 x 150	8 x 6	51	177.8	44.0	170	405	617	.88	52.5	182	435	607	.88		
	300 x 150	12 x 6	51	177.8	51.7	176	458	729	.81	57.4	186	441	675	.84		
	250 x 200	10 x 8	76	203.2	95.9	336	798	975	.91	106	315	766	958	.92		
	300 x 200	12 x 8	76	203.2	104	348	907	1160	.80	119	336	795	1050	.89		
	400 x 250	16 x 10	152	257.2	307	834	1680	2020	.82	343	865	1680	2080	.87		
						X <sub>T</sub>				---	X <sub>T</sub>					
	100 x 50	4 x 2	29	58.7	.625	.691	.582	.654	---	.599	.728	.744	.794	---		
	150 x 100	6 x 4	51	111.1	.686	.651	.672	.725	---	.713	.661	.666	.725	---		
	200 x 100	8 x 4	51	111.1	.694	.691	.676	.753	---	.610	.682	.716	.729	---		
	200 x 150	8 x 6	51	177.8	.796	.758	.801	.656	---	.655	.688	.723	.679	---		
	300 x 150	12 x 6	51	177.8	.716	.691	.661	.633	---	.523	.612	.704	.719	---		
	250 x 200	10 x 8	76	203.2	.683	.610	.715	.843	---	.666	.708	.731	.820	---		
300 x 200	12 x 8	76	203.2	.700	.647	.711	.696	---	.678	.811	.809	.836	---			
400 x 250	16 x 10	152	257.2	.676	.670	.702	.671	---	.786	.627	.670	.660	---			
Equal Percentage						C <sub>v</sub>				F <sub>L</sub>	C <sub>v</sub>					F <sub>L</sub>
	100 x 50	4 x 2	29	58.7	2.53	6.66	29.4	82.2	.82	2.40	5.97	26.3	67.5	.90		
	150 x 100	6 x 4	51	111.1	7.34	19.8	108	271	.87	7.18	18.2	100	271	.88		
	200 x 100	8 x 4	51	111.1	8.01	21.1	118	286	.85	8.37	20.0	102	269	.90		
	200 x 150	8 x 6	51	177.8	13.2	45.4	256	508	.91	12.0	36.9	226	478	.92		
	300 x 150	12 x 6	51	177.8	23.6	52.8	248	565	.79	18.6	43.8	231	476	.88		
	250 x 200	10 x 8	76	203.2	32.3	111	635	924	.89	33.9	97.7	568	932	.90		
	300 x 200	12 x 8	76	203.2	28.4	112	687	1090	.81	28.8	102	654	1020	.88		
	400 x 250	16 x 10	152	257.2	126	238	959	2090	.77	63.2	189	837	1780	.83		
						X <sub>T</sub>				---	X <sub>T</sub>					
	100 x 50	4 x 2	29	58.7	.626	.664	.646	.587	---	.751	.781	.732	.777	---		
	150 x 100	6 x 4	51	111.1	.996	.711	.630	.712	---	.794	.775	.718	.694	---		
	200 x 100	8 x 4	51	111.1	.684	.643	.566	.675	---	.761	.716	.701	.704	---		
	200 x 150	8 x 6	51	177.8	.837	.719	.626	.684	---	.733	.874	.773	.727	---		
	300 x 150	12 x 6	51	177.8	.628	.694	.695	.627	---	.661	.824	.764	.788	---		
	250 x 200	10 x 8	76	203.2	.725	.687	.595	.802	---	.836	.894	.699	.760	---		
300 x 200	12 x 8	76	203.2	.666	.667	.664	.663	---	.769	.928	.651	.766	---			
400 x 250	16 x 10	152	257.2	.655	.640	.503	.546	---	.565	.501	.497	.652	---			

## Actuator Selection for Plain Bonnets and Standard Spring-Loaded PTFE Packing

The following tables allow you to select an actuator that will operate the valve at standard actuator pressures.

It is not implied that the selections shown are best for your application. In many cases, a smaller actuator might be satisfactory for lower pressure drops, and higher pressure drops might be possible by using higher actuator pressures. Your sales office can help you with more detailed actuator selection.

- The actuator selections have been made at maximum valve travel using plain bonnets and standard valve stem diameter.

- The selections are valid to 232°C only (204°C for soft-seat constructions). For higher temperatures, your sales office can provide actuator selections for graphite ribbon/filament packing or extension bonnets.

- Actuator force does not exceed maximum allowable stem load of standard 316 stainless steel stem material at 232°C.

- Do not exceed the maximum inlet pressure of the valve (valve body rating) nor the pressure drop limits on pages 17 and 18.

### 657 and 667 Actuators

*ED and EWD Valve: Metal Seat with Class II Shutoff and Flow Down*

<b>Maximum Inlet Pressure:</b> Through EN PN 100 and ASME CL600 <b>Maximum Shutoff Pressure Drop:</b> As shown below unless limited by body pressure-temperature rating or trim capabilities at high temperatures <b>Process Fluid Temperature:</b> With plain bonnet, -18 to 232°C for metal seats <b>Ambient Temperature:</b> -40 to 82°C with standard actuator materials; also refer to temperature limits of accessories			<b>Valve and Bonnet:</b> Cast iron, steel, or stainless steel <b>Trim:</b> Any listed in this flier <b>Gaskets:</b> Any listed in this flier <b>Packing:</b> Single PTFE V-ring <b>Other Valve Parts:</b> Steel or stainless steel			
Valve Size or Nominal Trim Size		Port Diameter, mm	Air to Close (657 Actuator) 0 to 1.2 Bar (0 to 18 psig) Air to Diaphragm Except Where Indicated		Air to Open (667 Actuator) 0 to 1.2 bar (0 to 18 psig) Air to Diaphragm Except Where Indicated	
DN	NPS		Actuator Size	Pressure Drop, Bar	Actuator Size	Pressure Drop, Bar
25	1 or 1-1/4	33.3	30	99.3	30	99.3
40	1-1/2	33.3	30	99.3	30	99.3
		47.6	34	99.3	34	99.3
50	2	33.3	40	99.3	40	99.3
		58.7	40	91.0	40	91.1
65	2-1/2	47.6	40	99.3	40	99.3
		73.0	45	99.3	45	99.3
80	3	58.7	45	99.3	45	99.3
		87.3	45	98.9	45	98.9
100	4	73.0	45	99.3	45	99.3
		111.1	45	83.8	45	41.2
150	6	111.1	50	80.5	70	99.3
		177.8	70	99.3	70	99.3
200	8	203.2	--(1)	99.3(1)	--(1)	99.3(1)

1. Use a size 70 actuator with 0 to 2.4 bar air to diaphragm.

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**657 and 667 Actuators (Continued)**

*ET and EWT Valve: Flow Down*

<b>Maximum Inlet Pressure:</b> Through EN PN 100 and ASME CL600 <b>Maximum Shutoff Pressure Drop:</b> As shown below unless limited by body pressure-temperature rating or trim capabilities at high temperatures <b>Process Fluid Temperature:</b> With plain bonnet, -18 to 204°C for soft seats and to 232°C for metal seats <b>Ambient Temperature:</b> -40 to 82°C with standard actuator materials; also refer to temperature limits of accessories.			<b>Valve and Bonnet:</b> Cast iron, steel, or stainless steel <b>Trim:</b> Any listed in this flier <b>Gaskets:</b> Any listed in this flier <b>Packing:</b> Single PTFE V-ring <b>Other Valve Parts:</b> Steel or stainless steel							
Valve Size or Nominal Trim Size		Port Diameter, mm	Air to Close (657 Actuator) 0 to 1.2 Bar (0 to 18 psig) Air to Diaphragm Except Where Indicated				Air to Open (667 Actuator) 0 to 1.2 Bar (0 to 18 psig) Air to Diaphragm Except Where Indicated			
			Metal Seat Class IV Shutoff		Soft Seat Class V Shutoff		Class IV Shutoff		Soft Seat Class V Shutoff	
DN	NPS		Actuator Size	Pressure Drop, Bar	Actuator Size	Pressure Drop, Bar	Actuator Size	Pressure Drop, Bar	Actuator Size	Pressure Drop, Bar
25	1 or 1-1/4	33.3	34	99.3	34	99.3	34	99.3	34	99.3
40	1-1/2	33.3	34	99.3	34	99.3	34	99.3	34	99.3
		47.6	34	99.3	34	95.0	34	99.3	34	94.9
50	2	33.3	40	99.3	40	99.3	40	99.3	40	99.3
		58.7	45	99.3	45	99.3	45	99.3	45	99.3
65	2-1/2	47.6	40	99.3	40	92.2	40	99.3	40	92.2
		73.0	45	86.9	45	78.7	45	86.9	45	99.3
80	3	58.7	45	99.3	45	99.3	45	99.3	45	99.3
		87.3	45	61.7	45	59.8	45	61.7	45	59.8
100	4	73.0	45	86.9	45	78.7	45	99.3	45	99.3
		111.1	45	46.7	45	48.6	45	60.9(2)	--(2)	59.2(2)
150	6	177.8	60	99.3	60	92.5	70	99.3	70	99.3
		--(1)	--(1)	49.8(1)	70	65.0	--(1)	99.3(1)	70	65.0
200	8	203.2	--(1)	9.2(1)	--(1)	81.8(1)	--(1)	79.8(1)	--(1)	99.3(1)

1. Use a size 70 actuator with 0 to 2.4 bar (0 to 33 psig) air to diaphragm.  
 2. Use a size 45 actuator with 0 to 2.4 bar (0 to 33 psig) air to diaphragm.

*EZ Valve: Metal Seat (Class IV Shutoff) or PTFE Seat (Class VI Shutoff, and Flow Up)*

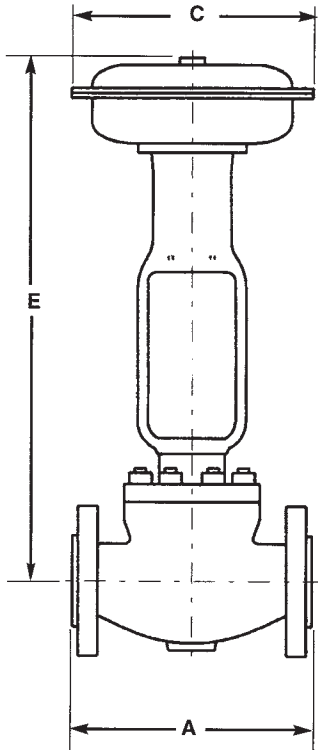
<b>Maximum Inlet Pressure:</b> Through EN PN 100 and ASME CL600 <b>Maximum Shutoff Pressure Drop:</b> As shown below unless limited by body pressure-temperature rating or trim capabilities at high temperatures <b>Process Fluid Temperature:</b> With plain bonnet, -18 to 232°C for soft seats and 232°C for metal seats <b>Ambient Temperature:</b> -40 to 82°C with standard actuator materials; also refer to temperature limits of accessories			<b>Valve and Bonnet:</b> Cast iron, steel, or stainless steel <b>Trim:</b> Any listed in this flier <b>Gaskets:</b> Any listed in this flier <b>Packing:</b> Single PTFE V-ring <b>Other Valve Parts:</b> Steel or stainless steel							
Valve Size		Port Diameter, mm	Air to Close (657 Actuator) 0 to 1.2 Bar (0 to 18 psig) Air to Diaphragm Except Where Indicated				Air to Open (667 Actuator) 0 to 1.2 bar (0 to 18 psig) Air to Diaphragm Except Where Indicated			
DN	NPS		Actuator Size		Pressure Drop, Bar	Actuator Size		Pressure Drop, Bar		
25 and 40	1/2, 3/4, 1 and 1-1/2		6.4	30		99.3	30		99.3	
		9.5	30		99.3	30		99.3		
		12.7	30		99.3	30		99.3		
		19.1	34		76.5	34		76.5		
		25.4	34		34.1	34		40.2		
40	1-1/2	38.1	34		15.4	34		15.4		
50	2	6.4	40		99.3	40		99.3		
		9.5	40		99.3	40		99.3		
		12.7	40		99.3	40		99.3		
		19.1	45		99.3	45		99.3		
		25.4	45		58.3	45		58.3		
		38.1	45		23.4	45		23.4		
80	3	50.8	45		11.8	45		11.8		
		76.2	--(1)		7.1(1)	--(1)		10.1(1)		
100	4	50.8	45		11.8	45		11.8		
		101.6	--(1)		3.2(1)	--(1)		2.7(1)		

1. Use a size 45 actuator with 0 to 2.4 bar (0 to 33 psig) air to diaphragm.

## Typical Valve and Actuator Weight

VALVE SIZE		TYPICAL ACTUATOR SIZE	APPROXIMATE WEIGHT OF VALVE AND ACTUATOR, kg
DN	NPS		
---	1/2 and 3/4	30	25
25	1	30	27
40	1-1/2	30	34
50	2	40	59
65	2-1/2	40	68
80	3	45	95
100	4	45	116
150	6	50	202
200	8	70	523
100 x 50	4x2	40	123
150 x 100	6x4	45	236
200 x 100	8x4	45	316
200 x 150	8x6	50	351
300 x 150	12x6	50	764
250 x 200	10x8	70	859
300 x 200	12x8	70	971

## Typical Dimensions (Plain Bonnet and Standard Stem Diameter)



Face-to-Face Dimensions, A (mm)

VALVE SIZE		EN		ASME		
DN	NPS	PN 16-40	PN 63-100	CL150 Raised Face	CL300 Raised Face	CL600 Raised Face
25	1	160	230	184	197	210
40	1-1/2	200	260	222	235	251
50	2	230	300	254	267	286
65	2-1/2	290	340	276	292	311
80	3	310	380	298	317	337
100	4	350	430	353	368	394
150	6	480	550	451	473	508
200	8	600	650	543	568	613



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**easy-e Valves**

*Dimensions (mm) with 585C Actuators*

VALVE SIZE		ACTUA-TOR SIZE	C	E
DN	NPS			
25	1 and 1-1/4	25	205	480
40	1-1/2	25	205	477
50	2	25 50	205 257	518 668
65	2-1/2	25 50	205 257	540 690
80	3	25 50	205 257	544 694
100	4	25 50	205 257	574 724
150	6	50	257	754

*Dimensions (mm) with 657 and 667 Actuators*

VALVE SIZE		ACTUA-TOR SIZE	C	E	
DN	NPS			657	667
25	1 and 1-1/4	30 34	289 333	567 625	605 700
40	1-1/2	30 34	289 333	564 622	602 697
50	2	40 45	333 406	713 824	759 933
65	2-1/2	40 45	333 406	735 846	781 955
80	3	45	406	850	959
100	4	45	406	880	989
150	6	50	406	973	1035
		60	473	973	1035
		70	536	1091	1184
200	8	70	536	1215	1308

## Ordering Information

*When ordering, please specify . . .*

Application		
Type of Application	Throttling or on-off	
	Reducing or relief	
Controlled Fluid	Include chemical analysis of fluid if possible	
	Specific gravity	
Fluid Temperature		
Inlet Pressures	Minimum	
	Normal	
	Maximum	
Pressure Drops	Minimum flowing	
	Normal flowing	
	Maximum flowing	
	Maximum at shutoff	
Flow	Minimum controlled	
	Normal	
	Maximum	
Maximum Permissible Noise Level, if Critical		
Shutoff Classification Required		
Line Size, Schedule, and End Connection Type		
Valve, Actuator, and Accessories		
From this or other product flier, select your choice wherever a choice is offered. If you cannot find the selection you need, contact your nearest sales office.		

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