



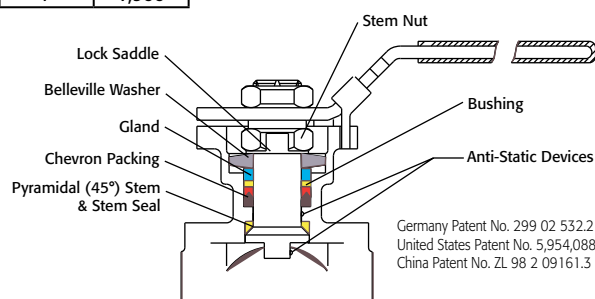
Triac 77 Series Ball Valves feature a high quality 316L investment casting. They are available with sanitary clamp or tube OD ends. Select the cavity filled or non-cavity filled design.

Superior leak protection is accomplished by using a live-loaded packing system featuring Belleville washers and double "V" ring packing. An ISO 5211 mounting pad is provided for easy automation.

VALVE SIZE	VALVE Cv
1/2"	10
3/4"	30
1"	65
1-1/2"	200
2"	410
2-1/2"	600
3"	1,050
4"	1,900

Excellent for:

- Pharmaceutical
- Food and Beverage
- Paint and Solvents
- Viscous Fluids
- Confectionaries



Easy to Automate!

See automated data sheets for pre-sized assemblies



Pneumatic



Electric



Series 77 **Sanitary End** **3-Piece Design**

Sizes 1/2"-4"

800/1000 PSI WOG (by size)

Available in 316L

Cavity Filled and Non-Cavity Filled

Sanitary Clamp Ends or

Tube OD Ends

Tube Pipe Design

Superior Live Loaded Packing

System

ISO 5211 Actuator Mounting Pad

Blowout Proof Stem w/ Dual

Anti-Static Device

Pyramidal Stem Seal Design

Lockable Manual Handle

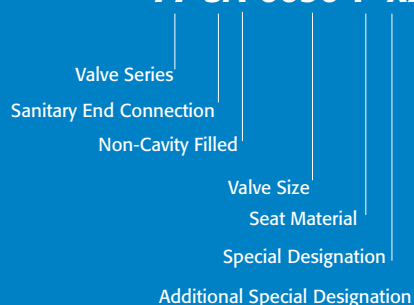
STANDARDS

Design	ANSI/ASME B16.34
End Connections	ANSI/ASME BPE-2019
Pressure Testing	API 598
Mounting	ISO 5211
Marking System for Valves	MSS SP-25, ISO 5209
CE Approval	PED 97/23/EC Module H
Safety Integrity	IEC 61508:2010; SIL 3
Material Certification	EN 10204-3.1 MTR
Quality Assurance	ISO 9001:2015

HOW TO ORDER MANUAL VALVES

SAMPLE PART #

77-SA-0050-P-XX



See part number matrix for itemized options



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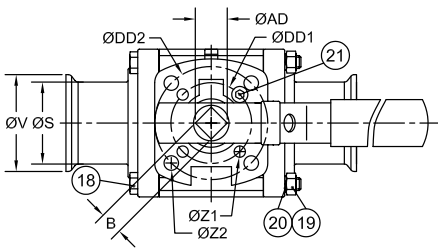
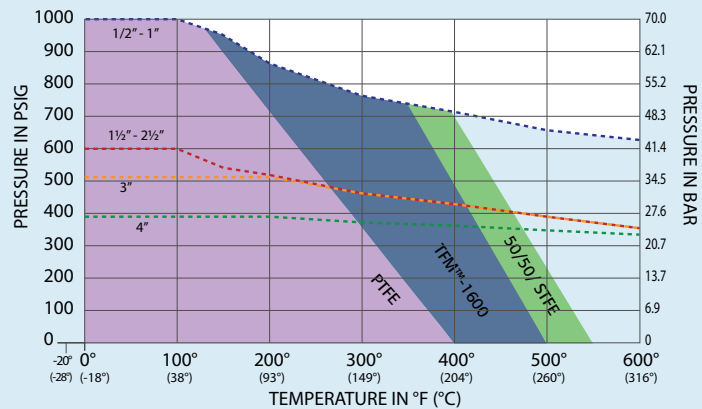
Series 77

3-Piece Sanitary End Ball Valve Tube Pipe Design

With or without cavity filler
240 Grit Internal Polish
Standard (15-20 RA)

Pressure vs. Temperature | Series 77 Body/End Cap/Seat Pressure Ratings

Temp	Pressure			
	1/2" - 1"	1 1/2" - 2 1/2"	3"	4"
-20°	1000	600	507	393
100°	1000	600	507	393
150°	946	539	507	393
200°	861	516	507	393
300°	778	467	467	382
400°	713	429	429	378
500°	665	396	396	352
600°	625	366	366	334



Breakaway Torques for PTFE

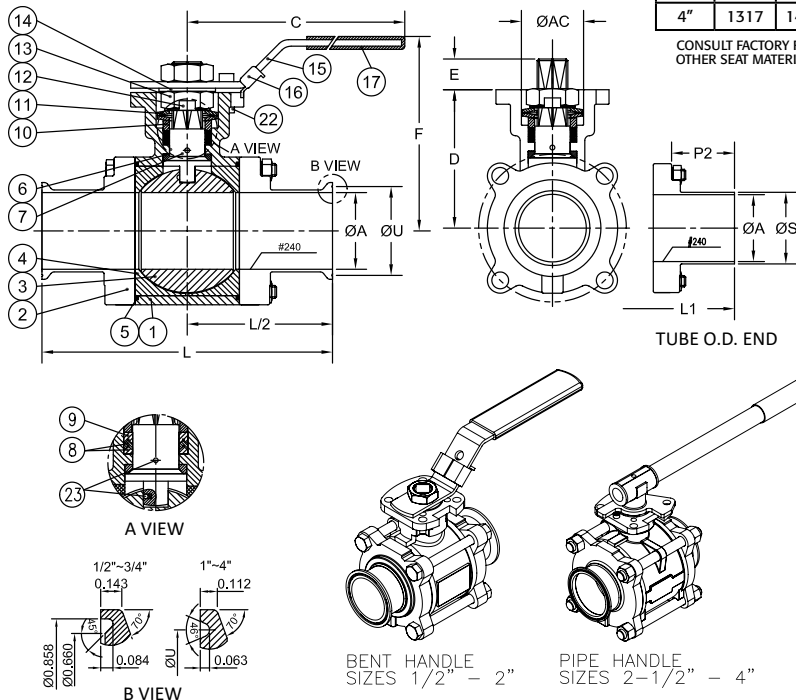
Size	Non-Cavity Filled	Cavity Filled
1/2"	80	95
3/4"	90	100
1"	142	160
1-1/2"	319	410
2"	390	490
2-1/2"	806	1010
3"	921	1075
4"	1317	1400

CONSULT FACTORY FOR OTHER SEAT MATERIALS

MATERIALS LIST

NO.	PART NAME	QTY.	MATERIAL
1	BODY	1	ASTM A351 GRADE CF3M
2	END CAP	2	ASTM A351 GRADE CF3M
3	BALL	1	ASTM A276 GRADE CF3M
4	SEAT	2	PTFE
5	JOINT GASKET	2	PTFE
6	STEM SEAL	1	PTFE
7	STEM	1	ASTM A276 SS 316L
8	GLAND PACKING	1	PTFE
9	GLAND WASHER	1	RTFE
10	GLAND BUSHING	1	AISI 304
11	BELLEVILLE WASHER	2	AISI 301
12	LOCK SADDLE	1	AISI 304
13	STEM NUT	2	AISI 304
14	STEM WASHER	1	AISI 304
15	HANDLE	1	AISI 304
16	HANDLE LOCK	1	AISI 304
17	HANDLE SLEEVE	1	VINYL
18	BODY BOLT	#	**
19	BODY BOLT NUT	&	##
20	WASHER	&	AISI 304
21	STOP BOLT	1	AISI 304
22	BOLT NUT	1	AISI 304
23	ANTI-STATIC DEVICE	2	AISI 316

FOR 1/2"-3" - 4 PCS ; FOR 4" - 6 PCS
& FOR 1/2"-2" - 4 PCS ; FOR 2-1/2"-3" - 8 PCS; FOR 4" - 12 PCS
**FOR 1/2"-2" - ASTM A193 GRADE B8; FOR 2-1/2"-4" - ISO 3506-1 A2-70
FOR 1/2"-2" - ASTM A194 GRADE 8; FOR 2-1/2"-4" - ISO 3506-2 A2-70



BENT HANDLE
SIZES 1/2" - 2"

PIPE HANDLE
SIZES 2-1/2" - 4"

DIMENSIONS (IN)

SIZE	A	B	C	D	DD1	DD2	E	F	L	L1	P2	S	U	V	Z1	Z2	AC	AD	(LBS)	ISO 5211
1/2"	0.37	0.354	5.47	1.66	1.417	1.654	0.25	3.03	3.51	5.50	1.92	0.50	-	0.99	0.24	0.24	0.92	0.430	1.5	F03/F04
3/4"	0.62	0.354	5.47	1.89	1.417	1.654	0.27	3.27	4.00	5.75	1.96	0.75	-	0.99	0.24	0.24	0.92	0.430	1.8	F03/F04
1"	0.87	0.433	6.50	2.23	1.654	1.969	0.44	3.74	4.51	6.25	2.00	1.00	1.71	1.99	0.24	0.28	1.14	0.563	2.7	F04/F05
1-1/2"	1.37	0.551	8.47	3.05	1.969	2.756	0.56	5.00	5.52	7.50	2.23	1.50	1.71	1.99	0.28	0.34	1.54	0.744	7.0	F05/F07
2"	1.87	0.551	8.47	3.35	1.969	2.756	0.56	5.28	6.26	8.50	2.46	2.00	2.20	2.52	0.28	0.34	1.54	0.744	9.8	F05/F07
2-1/2"	2.37	0.669	11.81	4.28	2.756	4.016	0.67	6.54	6.85	9.75	2.55	2.50	2.78	3.05	0.34	0.47	2.07	0.885	19.6	F07/F10
3"	2.87	0.669	14.57	4.63	2.756	4.016	0.71	6.93	7.61	10.50	2.69	3.00	3.28	3.58	0.34	0.47	2.07	0.885	25.9	F07/F10
4"	3.83	0.748	14.57	5.22	2.756	4.016	0.67	7.48	8.90	12.50	3.14	4.00	4.34	4.68	0.34	0.47	2.07	0.885	47.4	F07/F10

Tube O.D. according to ASME BPE 2019



Pneumatic Double Acting Automated Ball Valve Package

**Series 77
Sanitary End
3-Piece Ball Valve**

Sizes 1/2"-4"

800/1000 PSI WOG (by size)

Available in 316L

Cavity Filled and Non-Cavity Filled

Sanitary Clamp Ends or
Tube OD Ends

Tube Pipe Design

Superior Live Loaded Packing
System

Blowout Proof Stem w/
Dual Anti-Static Devices

PTFE Seats standard

Pyramidal Stem Seal Design

STANDARDS

Design	ANSI/ASME B16.34
End Connections	ANSI/ASME BPE-2019
Pressure Testing	API 598
Mounting	ISO 5211
Marking System for Valves	MSS SP-25, ISO 5209
CE Approval	PED 97/23/EC Module H
Safety Integrity	IEC 61508:2010; SIL 3
Material Certification	EN 10204-3.1 MTR
Quality Assurance	ISO 9001:2015



DIMENSIONS (IN) NON-CAVITY FILLED

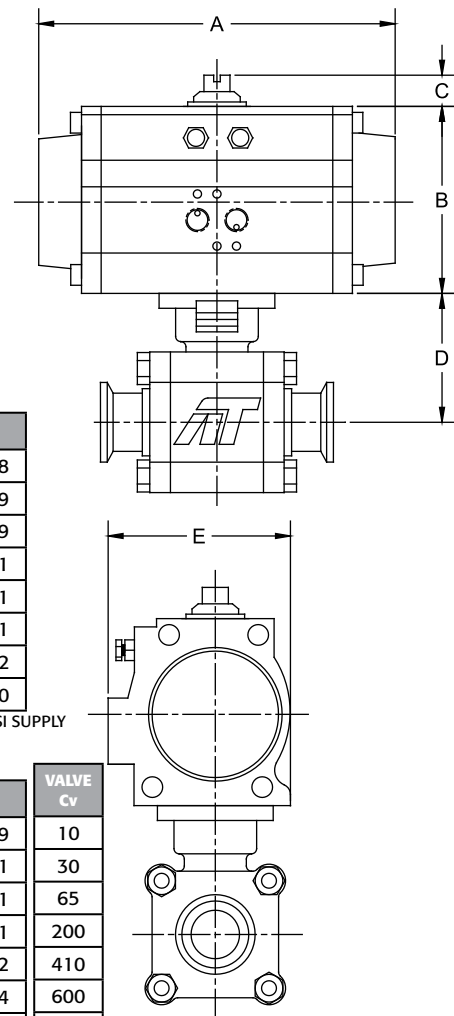
VALVE SIZE	A	B	C	D	E
1/2"	5.98	2.76	0.79	1.66	2.58
3/4"	7.95	3.43	0.79	1.89	3.29
1"	7.95	3.43	0.79	2.23	3.29
1-1/2"	9.29	4.49	0.79	3.05	4.41
2"	9.29	4.49	0.79	3.35	4.41
2-1/2"	9.29	4.49	0.79	4.28	4.41
3"	10.87	4.88	0.79	4.63	4.82
4"	11.46	5.28	0.79	5.22	5.20

DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY

CAVITY FILLED

VALVE SIZE	A	B	C	D	E	VALVE Cv
1/2"	7.95	3.43	0.79	1.66	3.29	10
3/4"	9.29	4.49	0.79	1.89	4.41	30
1"	9.29	4.49	0.79	2.23	4.41	65
1-1/2"	9.29	4.49	0.79	3.05	4.41	200
2"	10.87	4.88	0.79	3.35	4.82	410
2-1/2"	13.90	6.18	0.79	4.28	6.04	600
3"	13.90	6.18	0.79	4.63	6.04	1,050
4"	15.16	6.93	1.18	5.22	6.69	1,900

DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY



**SERIES 77
Sanitary Ends**

NON-CAVITY FILLED

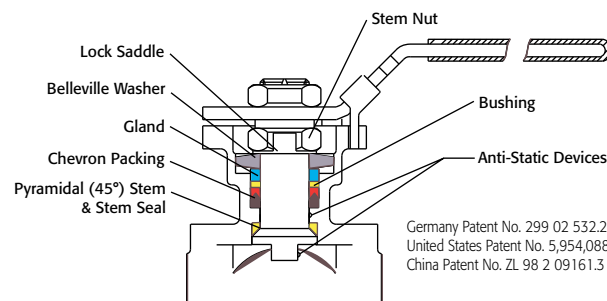
SIZED FOR 80 psi AIR SUPPLY	
SIZE	MODEL
1/2"	77-C1-050/TR1D-XX
3/4"	77-C1-075/2R2D-XX
1"	77-C1-100/2R2D-XX
1-1/2"	77-C1-150/2R3D-XX
2"	77-C1-200/2R3D-XX
2-1/2"	77-C1-250/2R3D-XX
3"	77-C1-300/2R4D-XX
4"	77-C1-400/2R5D-XX

SIZED FOR 60 psi AIR SUPPLY	
SIZE	MODEL
1/2"	77-C1-050/TR1D-XX
3/4"	77-C1-075/2R2D-XX
1"	77-C1-100/2R2D-XX
1-1/2"	77-C1-150/2R3D-XX
2"	77-C1-200/2R3D-XX
2-1/2"	77-C1-250/2R3D-XX
3"	77-C1-300/2R4D-XX
4"	77-C1-400/2R5D-XX

CAVITY FILLED

SIZED FOR 80 psi AIR SUPPLY	
SIZE	MODEL
1/2"	77-CF-050/2R2D-XX
3/4"	77-CF-075/2R3D-XX
1"	77-CF-100/2R3D-XX
1-1/2"	77-CF-150/2R3D-XX
2"	77-CF-200/2R4D-XX
2-1/2"	77-CF-250/2R6D-XX
3"	77-CF-300/2R6D-XX
4"	77-CF-400/2R7D-XX

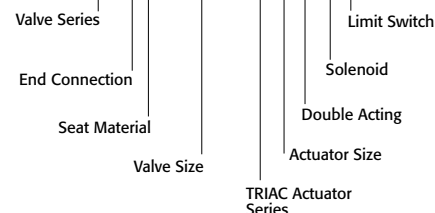
SIZED FOR 60 psi AIR SUPPLY	
SIZE	MODEL
1/2"	77-CF-050/2R2D-XX
3/4"	77-CF-075/2R3D-XX
1"	77-CF-100/2R3D-XX
1-1/2"	77-CF-150/2R3D-XX
2"	77-CF-200/2R4D-XX
2-1/2"	77-CF-250/2R6D-XX
3"	77-CF-300/2R6D-XX
4"	77-CF-400/2R7D-XX



Germany Patent No. 299 02 532.2
United States Patent No. 5,954,088
China Patent No. ZL 98 2 09161.3

SAMPLE PART #

77-CF-150/2R3D-XX



See valve part number matrix for complete part number and options.

OPTIONS

DESCRIPTION	SUFFIX	DESCRIPTION	SUFFIX
Type 4 Solenoid	(A)	Type 4 Limit Switch (2) spdt	(A)
Type 7 Solenoid	(B)	Type 7 Limit Switch (2) spdt	(B)
Intrinsically Safe Solenoid	(C)	Intrinsically Safe Limit Switch	(C)

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Other options available - call for details
Actuators are sized based on clean/clear fluid.



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Pneumatic Spring Return Automated Ball Valve Package

Series 77
Sanitary End
3-Piece Ball Valve

Sizes 1/2"-4"

800/1000 PSI WOG (by size)

Available in 316L

Cavity Filled and Non-Cavity Filled

Sanitary Clamp Ends or
Tube OD Ends

Tube Pipe Design

Superior Live Loaded Packing
System

Blowout Proof Stem w/
Dual Anti-Static Devices

PTFE Seats standard

Pyramidal Stem Seal Design

STANDARDS

Design	ANSI/ASME B16.34
End Connections	ANSI/ASME BPE-2019
Pressure Testing	API 598
Mounting	ISO 5211
Marking System for Valves	MSS SP-25, ISO 5209
CE Approval	PED 97/23/EC Module H
Safety Integrity	IEC 61508:2010; SIL 3
Material Certification	EN 10204-3.1 MTR
Quality Assurance	ISO 9001:2015



DIMENSIONS (IN)

NON-CAVITY FILLED

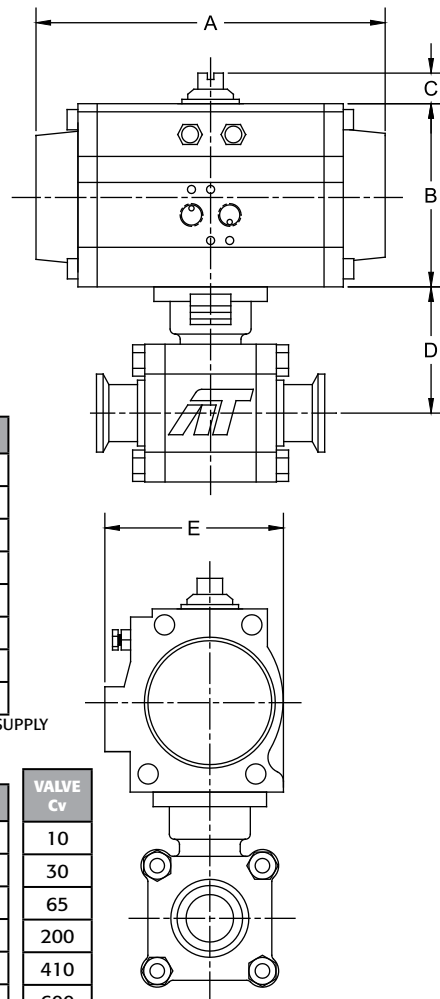
VALVE SIZE	A	B	C	D	E
1/2"	7.95	3.43	0.79	1.66	3.29
3/4"	9.29	4.49	0.79	1.89	4.41
1"	9.29	4.49	0.79	2.23	4.41
1-1/2"	9.29	4.49	0.79	3.05	4.41
2"	10.87	4.88	0.79	3.35	4.69
2-1/2"	11.46	5.28	0.79	4.28	4.82
3"	13.90	6.18	0.79	4.63	5.20
4"	13.90	6.18	0.79	5.22	6.04

DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY

CAVITY FILLED

VALVE SIZE	A	B	C	D	E	VALVE Cv
1/2"	9.29	4.49	0.79	1.66	4.41	10
3/4"	9.29	4.49	0.79	1.89	4.41	30
1"	9.29	4.49	0.79	2.23	4.41	65
1-1/2"	10.87	4.88	0.79	3.05	4.82	200
2"	11.46	5.28	0.79	3.35	5.20	410
2-1/2"	15.16	6.93	1.18	4.28	6.69	600
3"	15.16	6.93	1.18	4.63	6.69	1,050
4"	22.68	9.17	1.18	5.22	8.43	1,900

DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY



SERIES 77 Sanitary Ends

NON-CAVITY FILLED

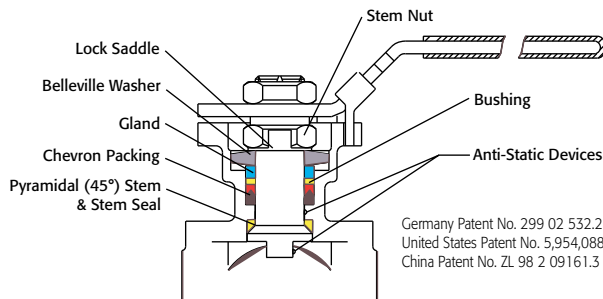
SIZED FOR 80 psi AIR SUPPLY	
SIZE	MODEL
1/2"	77-C1-050/2R2S-XX
3/4"	77-C1-075/2R3S-XX
1"	77-C1-100/2R3S-XX
1-1/2"	77-C1-150/2R3S-XX
2"	77-C1-200/2R4S-XX
2-1/2"	77-C1-250/2R6S-XX
3"	77-C1-300/2R6S-XX
4"	77-C1-400/2R7S-XX

SIZED FOR 60 psi AIR SUPPLY	
SIZE	MODEL
1/2"	77-C1-050/2R2S-XX
3/4"	77-C1-075/2R3S-XX
1"	77-C1-100/2R3S-XX
1-1/2"	77-C1-150/2R3S-XX
2"	77-C1-200/2R4S-XX
2-1/2"	77-C1-250/2R6S-XX
3"	77-C1-300/2R6S-XX
4"	77-C1-400/2R7S-XX

CAVITY FILLED

SIZED FOR 80 psi AIR SUPPLY	
SIZE	MODEL
1/2"	77-CF-050/2R3S-XX
3/4"	77-CF-075/2R3S-XX
1"	77-CF-100/2R3S-XX
1-1/2"	77-CF-150/2R4S-XX
2"	77-CF-200/2R5S-XX
2-1/2"	77-CF-250/2R7S-XX
3"	77-CF-300/2R7S-XX
4"	77-CF-400/2R9S-XX

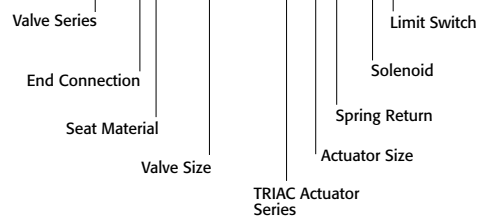
SIZED FOR 60 psi AIR SUPPLY	
SIZE	MODEL
1/2"	77-CF-050/2R3S-XX
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1"	77-CF-100/2R3S-XX
1-1/2"	77-CF-150/2R4S-XX
2"	77-CF-200/2R5S-XX
2-1/2"	77-CF-250/2R7S-XX
3"	77-CF-300/2R7S-XX
4"	77-CF-400/2R9S-XX



Germany Patent No. 299 02 532.2
United States Patent No. 5,954,088
China Patent No. ZL 98 2 09161.3

SAMPLE PART #

77-C1-050/2R2S-XX



See valve part number matrix for complete part number and options.

OPTIONS

DESCRIPTION	SUFFIX	DESCRIPTION	SUFFIX
Type 4 Solenoid	(A)	Type 4 Limit Switch (2) spdt	(A)
Type 7 Solenoid	(B)	Type 7 Limit Switch (2) spdt	(B)
Intrinsically Safe Solenoid	(C)	Intrinsically Safe Limit Switch	(C)

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Other options available - call for details
Actuators are sized based on clean/clear fluid.

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Electric Automated Ball Valve Package

Series 77
Sanitary End
3-Piece Ball Valve

Sizes 1/2"-4"

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Available in 316L

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DIMENSIONS (IN)

NON-CAVITY FILLED

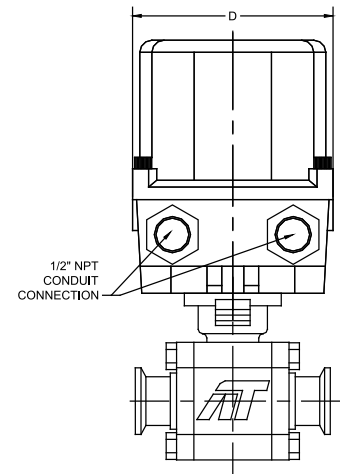
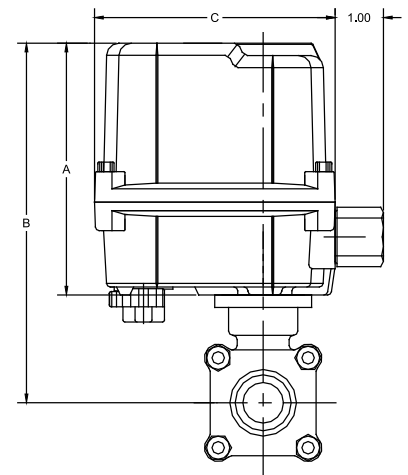
VALVE SIZE	A	B	C	D
1/2"	5.24	6.90	4.94	4.08
3/4"	5.24	7.13	4.94	4.08
1"	5.24	7.47	4.94	4.08
1-1/2"	5.24	8.29	4.94	4.08
2"	9.25	12.60	10.16	6.69
2-1/2"	10.55	14.83	13.31	9.02
3"	10.55	15.18	13.31	9.02
4"	10.55	15.77	13.31	9.02

DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY

CAVITY FILLED

VALVE SIZE	A	B	C	D	VALVE Cv
1/2"	5.24	6.90	4.94	4.08	10
3/4"	5.24	7.13	4.94	4.08	30
1"	5.24	7.47	4.94	4.08	65
1-1/2"	5.24	8.29	4.94	4.08	200
2"	9.25	12.60	10.16	6.69	410
2-1/2"	10.55	14.83	13.31	9.02	600
3"	10.55	15.18	13.31	9.02	1,050
4"	10.55	15.77	13.31	9.02	1,900

DIMENSIONS SHOWN ARE FOR ASSEMBLIES SIZED FOR 80 PSI SUPPLY

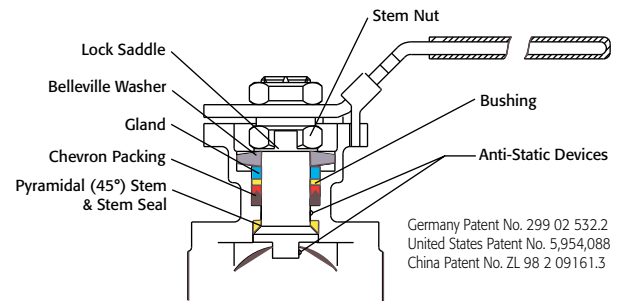


SERIES 77 Sanitary Ends

NON-CAVITY FILLED

ON-OFF	
SIZE	MODEL
1/2"	77-C1-050/WEA1-XX
3/4"	77-C1-075/WEA1-XX
1"	77-C1-100/WEA1-XX
1-1/2"	77-C1-150/WEA1-XX
2"	77-C1-200/WEB1-XX
2-1/2"	77-C1-250/WEC1-XX
3"	77-C1-300/WEC1-XX
4"	77-C1-400/WED1-XX

MODULATING	
SIZE	MODEL
1/2"	77-C1-050/WEA2-XX
3/4"	77-C1-075/WEA2-XX
1"	77-C1-100/WEA2-XX
1-1/2"	77-C1-150/WEA2-XX
2"	77-C1-200/WEB2-XX
2-1/2"	77-C1-250/WEC2-XX
3"	77-C1-300/WEC2-XX
4"	77-C1-400/WED2-XX



Germany Patent No. 299 02 532.2
United States Patent No. 5,954,088
China Patent No. ZL 98 2 09161.3

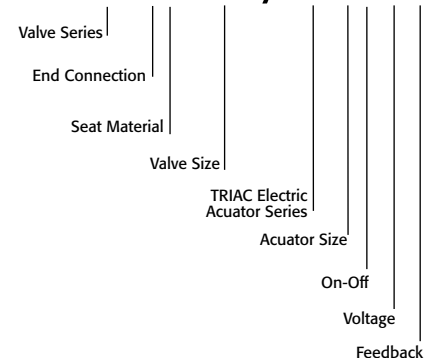
CAVITY FILLED

ON-OFF	
SIZE	MODEL
1/2"	77-CF-050/WEA1-XX
3/4"	77-CF-075/WEA1-XX
1"	77-CF-100/WEA1-XX
1-1/2"	77-CF-150/WEB1-XX
2"	77-CF-200/WEC1-XX
2-1/2"	77-CF-250/WED1-XX
3"	77-CF-300/WEE1-XX
4"	77-CF-400/WEE1-XX

MODULATING	
SIZE	MODEL
1/2"	77-CF-050/WEA2-XX
3/4"	77-CF-075/WEA2-XX
1"	77-CF-100/WEA2-XX
1-1/2"	77-CF-150/WEB2-XX
2"	77-CF-200/WEC2-XX
2-1/2"	77-CF-250/WED2-XX
3"	77-CF-300/WEE2-XX
4"	77-CF-400/WEE2-XX

SAMPLE PART #

77-C1-050/WEA1-XX



OPTIONS	
DESCRIPTION	
24 VAC/24 VDC/220VAC	
Feedback potentiometer	

NOTE: Heater and thermostat standard (2) auxiliary switches standard
Other options available - call for details
Actuators are sized based on clean/clear fluid.

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Valve Options

Various Seat Materials

PTFE, RTFE, 50/50 STFE, 25% CTFE, Delrin, PEEK, UHMWPE, TFM-1600

Operator Options

Quarter-turn Gear Operators
Spring Return "Deadman" Handles
Oval handles, TEE Handles

Specials and Solutions

Steam Jackets
Stem Extensions
V-ported Control Valves
Multi-port Valve Solutions
Fugitive Emissions Bonnets (TSM's)
Oxygen Cleaning
Lockout Brackets
Vented Balls
"No Play" Mounting Kits

• FM Approved Valves and Assemblies



Manual and automated valve assemblies for gas burner management applications and safety shutoff



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Other Products

Special Seats Balls and Seal Designs



Floor Mounted Damper Drives



Fusible Link Assemblies



Lockout Mounting Kits



Special Multi-Port Valves



Steam Jacketed Valves



Limit Switches Mounted on Manual Valves



180° Actuators



Stem Extensions



Dual Valve Assemblies

