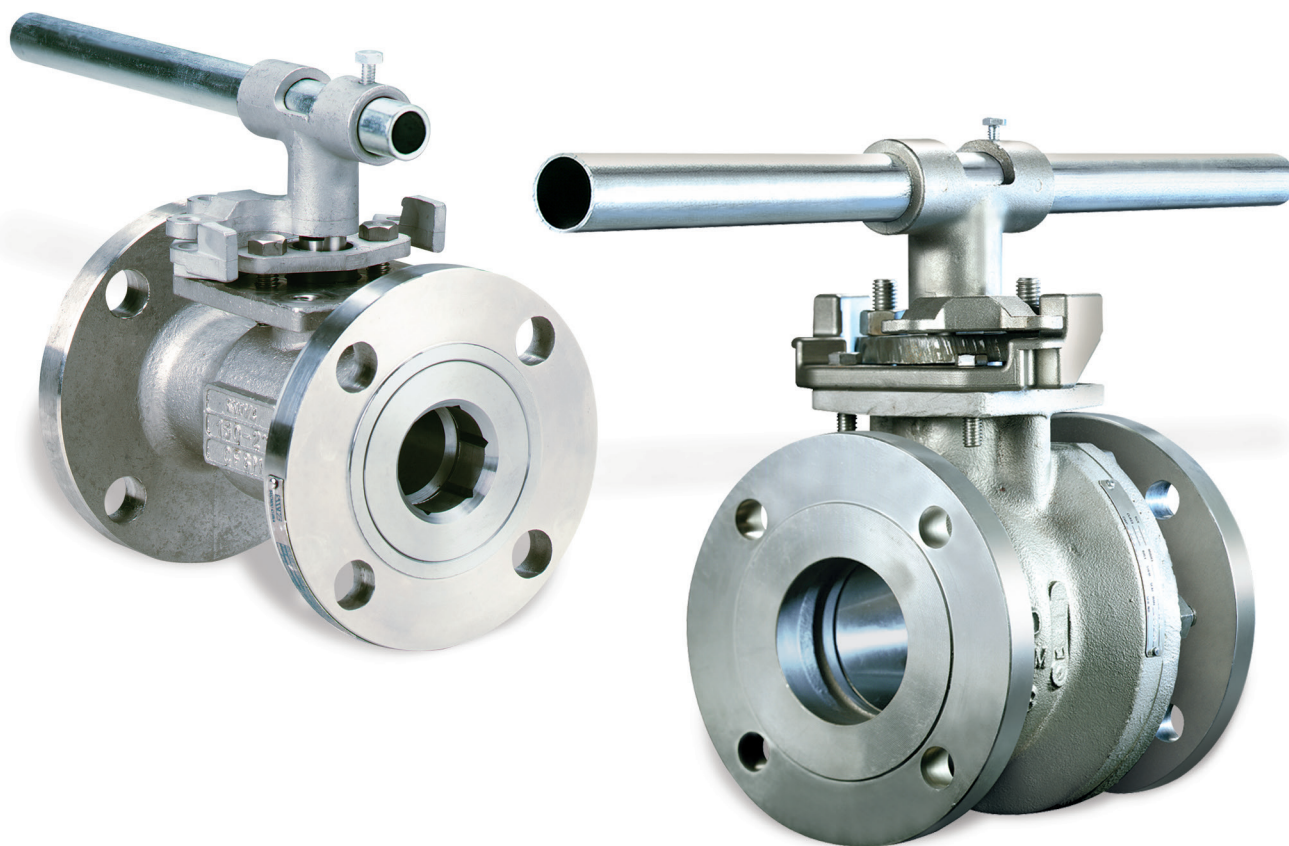


Contromatics

Flanged Floating Ball Valves



Contromatics Flanged Floating Ball Valves

Contromatics Flanged Floating Ball Valves are a prime example of reliability, performance, manufacturing and superior engineering techniques at work. Featuring a unibody or two-piece bolted design.

General Design Features

- NACE MR0175/ISO 15156
(Stainless Steel Ball/Stem Configuration)
- Blowout Proof Stem
- Actuator Mounting Pad (4 Bolt Machined)
- API 607 4th Edition *
- 316SS Ball/Stem Standard
- Full Rated Bi-Directional Dead End Service
- Antistatic Device
- Integral Seat Lip
- Lockable Handle
- Graphite or PTFE Packing
- 1/8" oversize raised face portion is provided for the ANSI B16.5 pipe flanges to prevent the crushing of gasket

*Not applicable to PTFE packed valves.

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Size Range & Design Availability

Size (in.)	Class/Configuration	
	150	300
1/2 RP	■	■
3/4 RP	■	■
1 RP	■	■
1 FP	▲	▲
1 1/2 RP	■	■
1 1/2 FP	▲	▲
2 RP	■	■
2 FP	▲	▲
2 1/2 RP	■	—
3 RP	■	■

■ Unibody ▲ Split Body

Size (in.)	Class/Configuration	
	150	300
3 FP	▲	▲
4 RP	■	■
4 FP	▲	▲
6 RP	■	■
6 FP	▲	▲
8 RP	▲	▲
8 FP	▲	▲
10 RP	▲	—
10 FP	▲	—

Applicable Standards

API-American Petroleum Institute

Std. 598 Valve inspection and test.

Std. 607 Fire test for soft seated quarter-turn valves.

ASME/ANSI-American National Standard

B16.5 Steel pipe flanges and flanged fittings.

B16.10 Face-to-face and end-to-end dimensions of ferrous valves.

B16.34 Steel valves- Flanged and butt welding ends.

B31.3 Chemical plant and petroleum refinery piping.

EC-European Community

CE Marked (P.E.D. 97/23/EC)*

ISO-International Organization for Standardization

ISO 9001: Quality systems-Model for quality assurance
2000 in design/development, production, installation and servicing.

ISO 15156 Materials for use in H₂S containing environments in oil and gas production.

MSS-Manufacturers Standardization Society

SP 6 Std. finishes for contact faces of pipe flanges and connecting - end flanges of valves and fittings.

SP 25 Standard marking system for valves, fittings, flanges and unions.

SP 55 Quality standard for steel castings-visual method.

NACE-National Assoc. of Corrosion Engineers

MR0175 Sulfide stress cracking resistant metallic materials for oilfield equipment.

*P.O.A. consult factory.

Contromatics Flanged Floating Ball Valves

How To Order

Code numbers fully describe a valve. They are made up of size and figure designations based upon the following code:

Example: 2" Carbon Steel, Reduced Port, Class 150, 316SS Ball and Stem, PTFE Seats and Seals. 316SS Trim and Stainless Lever Locking Handle are Standard.

2"		1	50	1	—	2	1	2	A	—	X	—	X	—	X
1		2	3	4		5	6	7	8		9		10		11

1 • Size

1/2" - 10"	Reduced Port (Unibody Design through 6")
1" - 10"	Full Port 2-Piece

2 • Body Material

1	Carbon Steel, WCB
2	Stainless Steel, CF8M

3 • Port

50	Reduced Port Unibody (8" 2-Piece Body)
80	Full Port 2-Piece

4 • ANSI Class

1	ANSI Class 150
3	ANSI Class 300

5 • Seat Material

2	Uniseal™
4	Mineral Filled PTFE
7	PEEK™

6 • Packing

1	PTFE V-Ring
6	Graphite (FS Option)

7 • Ball & Stem

2	316 Stainless Steel
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8 • Operator Options

Blank	Bare Shaft
A	Lever Locking Handle
C	Oval Locking Handle (1 1/2" & Larger)
OVL	Oval Locking Handle (1/2" RP-1" RP)
K	Gear Operator
H	Extended Locking
HOV	Extended Oval Locking

9 • Options

FS	Firesafe to API 607 4th Edition
AD	Assembled Dry
V	Vented Ball
G	Grounded Ball & Stem

10 • Design Options

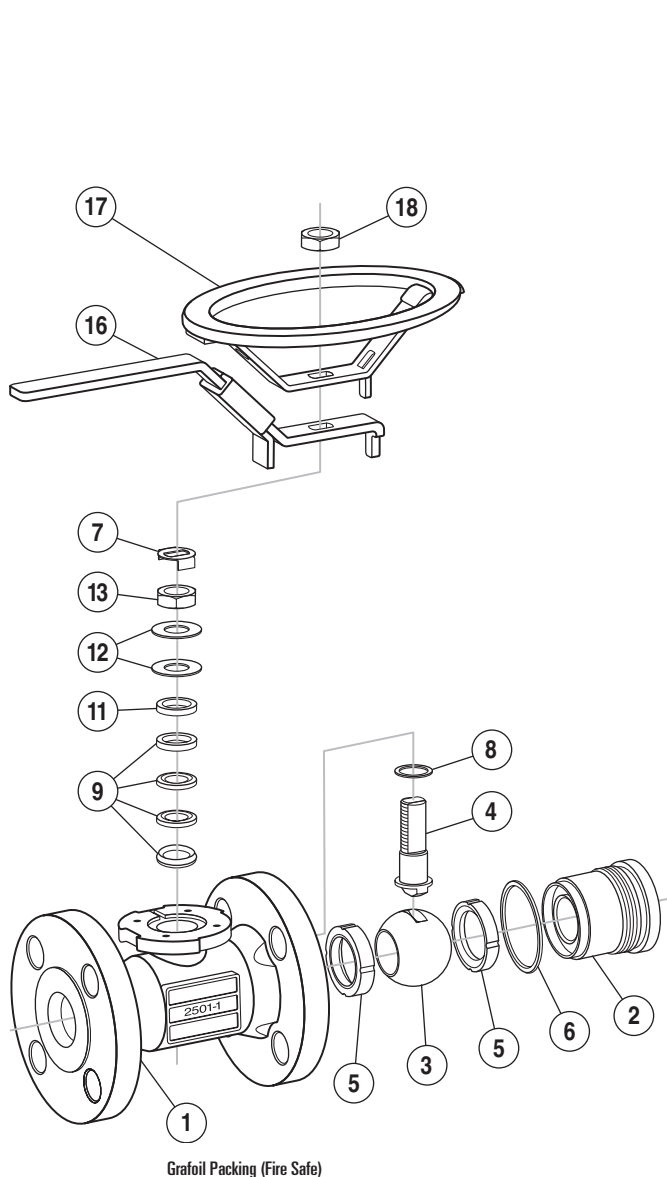
S1	Live Loaded Stem Packing (1 1/2" & Larger)
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11 • Model Revision

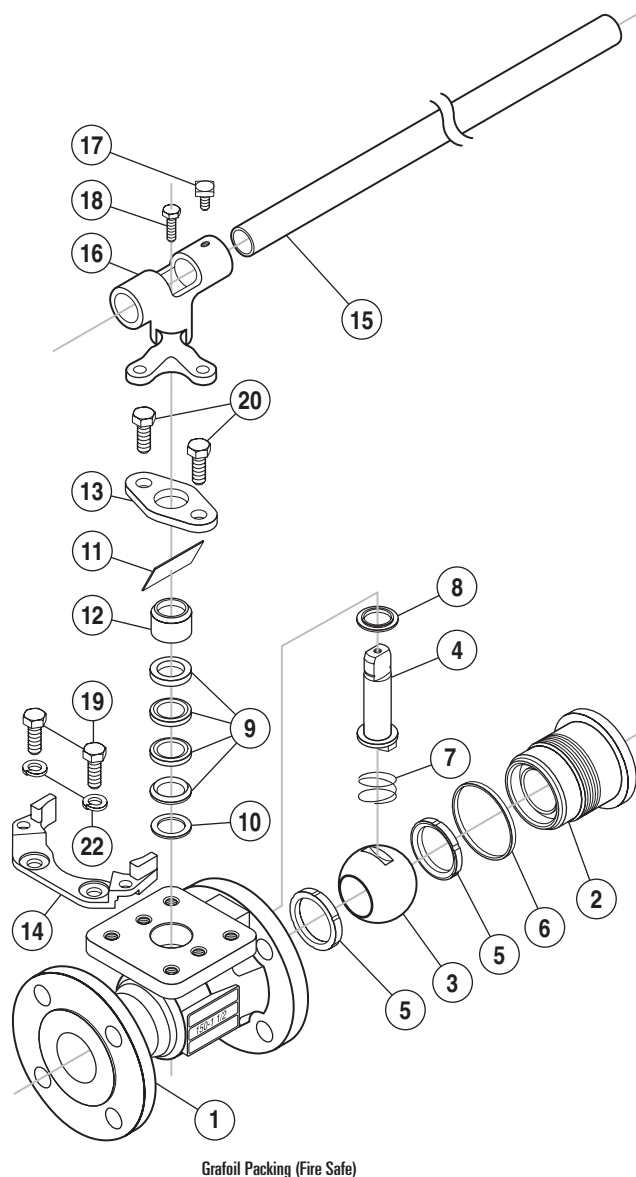
M2	Current Model
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*P.O.A. consult factory.

Contromatics Unibody Component Parts



Grafoil Packing (Fire Safe)



Grafoil Packing (Fire Safe)

Parts List, 1/2" - 1" RP

Part No.	Description
1	Body
2	Seat Retainer
3	Ball
4	Stem
5	Seat
6	Body Seal
7	Stem Nut Lock Washer
8	Thrust Washer

Part No.	Description
9	Packing*
11	Gland Follower
12	Spring Washer
13	Packing Nut
16	Locking Lever Handle
17	Locking Oval Handle
18	Nut, Handle

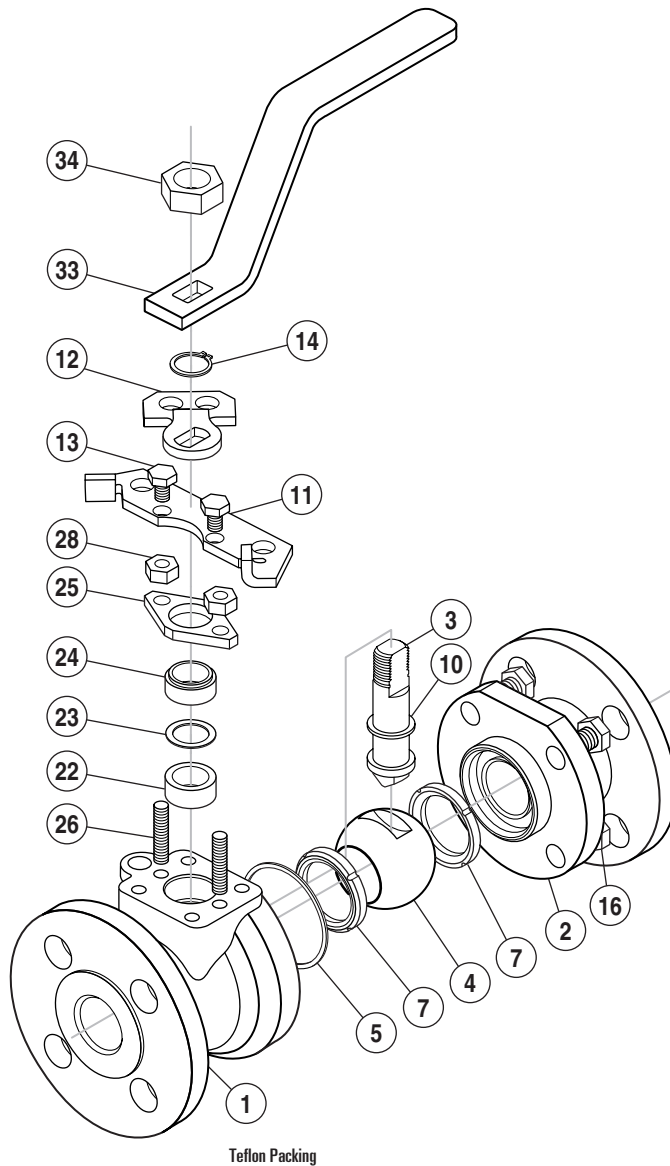
Parts List, 1 1/2" - 6" RP

Part No.	Description
1	Body
2	Seat Retainer
3	Ball
4	Stem
5	Seat
6	Body Seal
7	Ground Spring
8	Thrust Washer
9	Packing*
10	Stem Washer
11	Tape Liner

Part No.	Description
12	Gland Follower
13	Gland Retainer
14	Lock Stop Plate
15	Handle Pipe
16	Locking T-Handle
17	Set Screw, Pipe
18	Screw, Handle
19	Stop Plate Screw
20	Gland Bolt
22	Stop Plate Washer

* Number of packing ring will vary based on Valve size

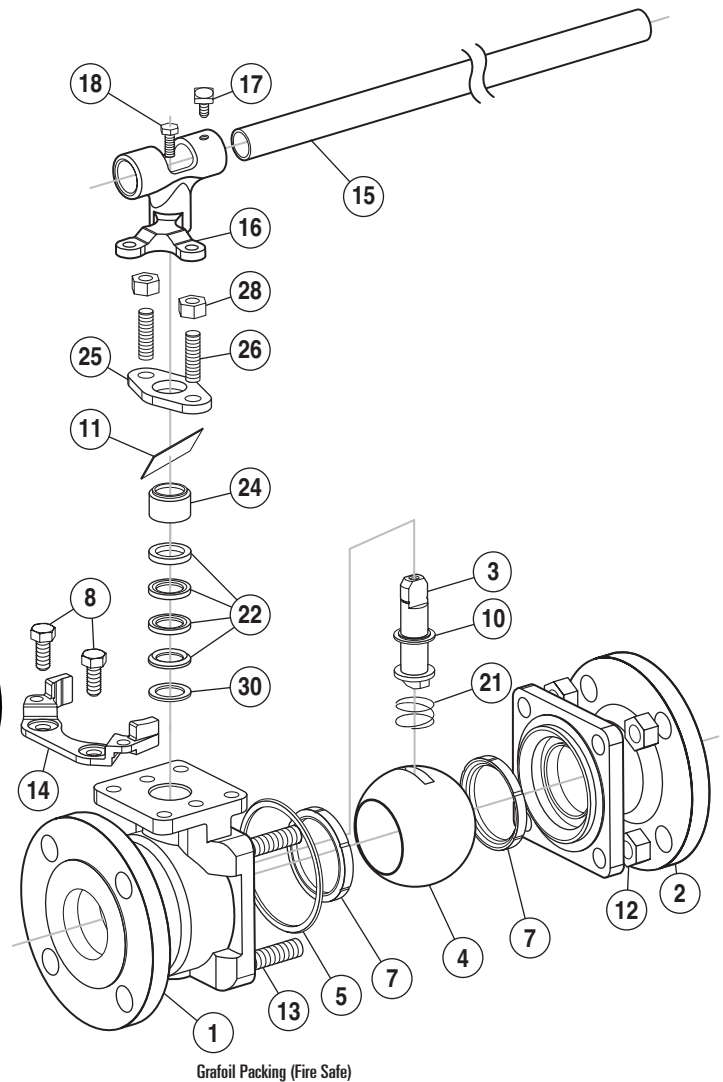
Contromatics Split Body Component Parts



Parts List, 1" FP

Part No.	Description
1	Body
2	Adapter
3	Stem
4	Ball
5	Body Gasket
7	Seat, Delrin
10	Thrust Bearing
11	Stop Plate
12	Locking Stop
13	Screws, Stop Plate

Part No.	Description
14	Retainer
16	Body Screws
22	Teflon® Packing
23	Ground Washer
24	Follower
25	Packing Retainer
26	Packing Studs
28	Packing Nuts
33	Handle
34	Handle Nut



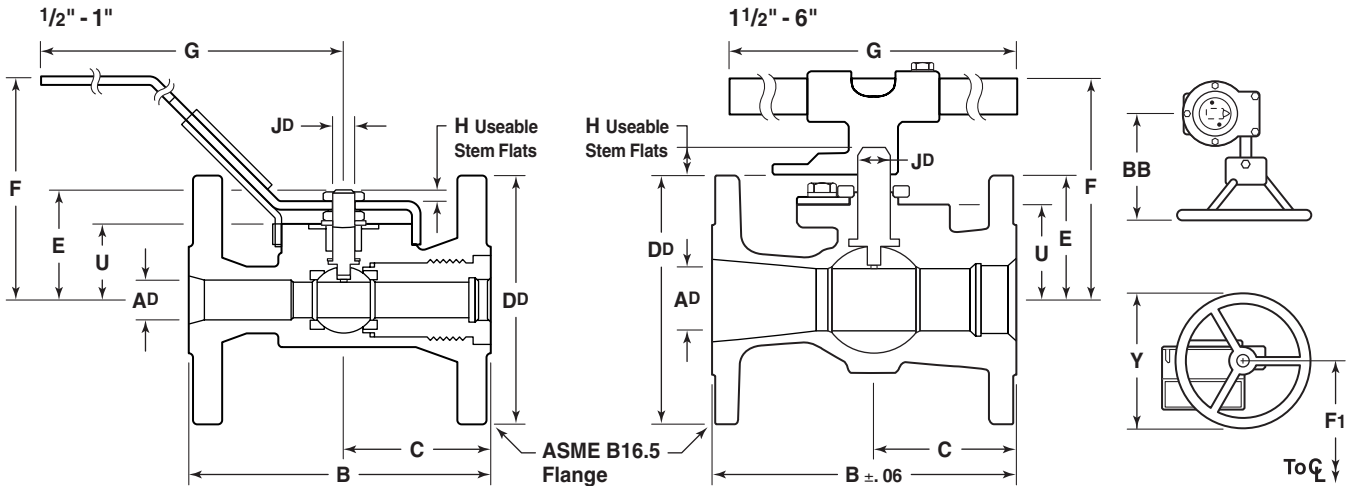
Parts List, 1 1/2" - 10" FP & 8" - 10" RP

Part No.	Description
1	Body
2	Adapter
3	Stem
4	Ball
5	Body Gasket
7	Seat
8	Stop Plate Screw
10	Thrust Washer
11	Tape Liner
12	Nut, Body
13	Stud, Body
14	Lock Stop Plate

Part No.	Description
15	Handle Pipe
16	Locking T-Handle
17	Set Screw, Pipe
18	Screw, Handle
21	Grounding Spring
22	Packing*
24	Gland Follower
25	Packing Gland Retainer
26	Stud Packing
28	Nut Packing
30	Stem Washer

* Number of packing ring will vary based on Valve size

Contromatics Unibody, Dimensional Data (in.), Class 150 & 300



Dimensional Data (in.), 1/2" - 1" & 1 1/2" - 6", Class 150, Reduced Port

Size (in.)	Dimension (in.)													Wt. (lbs.)
	A ^D	B	C	D ^D	E	F	F ₁	G	H	J ^D	U	Y	BB	
1/2	.50	4.25	2.07	3.50	1.58	3.36	—	6.06	.278*	.31	1.07	—	—	3.0
3/4	.66	4.62	2.31	3.88	1.91	3.36	—	7.06	.240	.37	1.27	—	—	4.8
1	.88	5.00	2.30	4.25	2.55	3.64	—	7.06	.330	.5	1.54	—	—	6.2

* For .278 in. usable stem flat, the top jam nut must be removed.

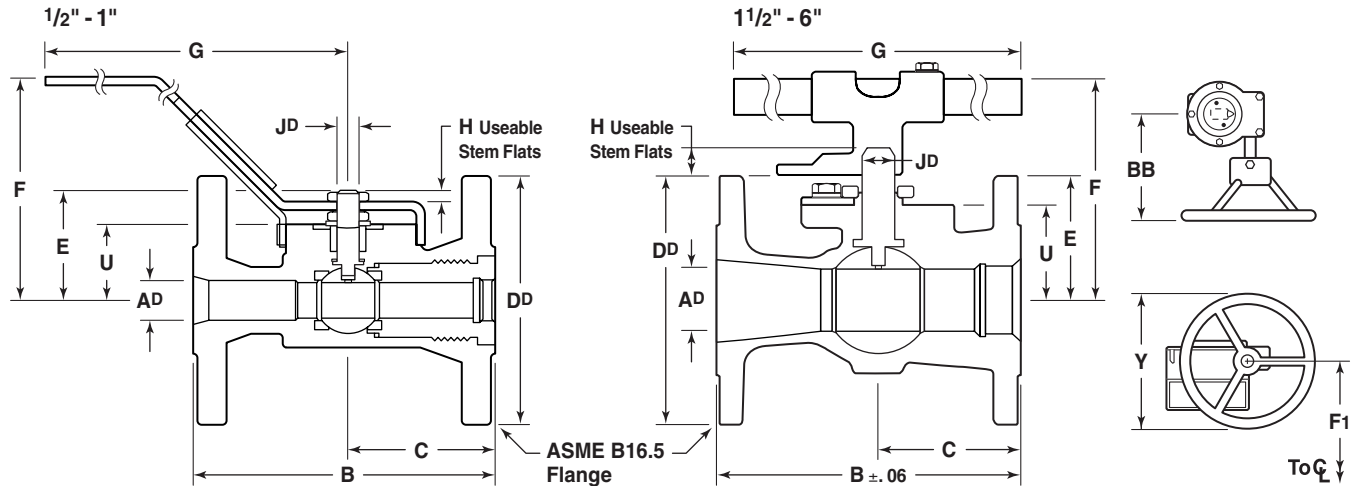
Size (in.)	Dimension (in.)													Wt. (lbs.)
	A ^D	B	C	D ^D	E	F	F ₁	G	H	J ^D	U	Y	BB	
1 1/2	1.25	6.50	3.15	5.00	3.58	5.25	7.32	17.00	.70	.71	2.26	6	6.00	12.8
2	1.50	7.00	3.27	6.00	3.69	5.36	7.37	17.00	.70	.71	2.31	6	6.00	17.6
2 1/2	2.00	7.50	3.32	7.00	4.12	5.79	7.82	17.00	.70	.71	2.76	6	6.00	27.1
3	2.42	8.00	3.46	7.50	4.38	6.05	8.12	17.00	.70	.71	3.06	6	6.00	31.5
4	3.00	9.00	4.10	9.00	6.75	8.83	11.63	22.00	1.88	1.06	4.43	8	7.50	54.2
6	4.50	10.50	5.25	11.00	8.56	10.55	13.22	22.00	1.44	1.32	6.02	8	7.50	137.0

Dimensional Data (in.), 1/2" - 1" & 1 1/2" - 6", Class 300, Reduced Port

Size (in.)	Dimension (in.)													Wt. (lbs.)
	A ^D	B	C	D ^D	E	F	F ₁	G	H	J ^D	U	Y	BB	
1/2	.500	5.50	1.58	3.75	1.487	2.549	—	6.06	.32	.31	.877	—	—	6.0
3/4	.656	6.00	2.01	4.62	1.824	2.814	—	7.06	.39	.37	1.104	—	—	8.0
1	.875	6.50	1.83	4.88	2.268	3.858	—	8.06	.56	.5	1.358	—	—	9.8

Size (in.)	Dimension (in.)													Wt. (lbs.)
	A ^D	B	C	D ^D	E	F	F ₁	G	H	J ^D	U	Y	BB	
1 1/2	1.25	7.50	3.15	6.12	3.58	5.25	7.32	17.00	.70	.71	2.26	6	6.00	20.0
2	1.50	8.50	3.27	6.50	3.69	5.36	7.37	17.00	.70	.71	2.31	6	6.00	26.0
3	2.42	11.12	3.96	8.25	4.38	6.05	8.12	17.00	.70	.71	3.06	6	6.00	46.0
4	3.00	12.00	4.10	10.00	6.75	8.83	11.63	22.00	1.38	1.06	4.43	8	7.50	70.0
6	4.50	15.88	5.25	12.50	8.56	10.55	13.22	22.00	1.44	1.32	6.02	8	7.50	157.0

Contromatics Unibody, Dimensional Data (mm), Class 150 & 300



Dimensional Data (mm), 1/2" - 1" & 1 1/2" - 6", Class 150, Reduced Port

Size (in.)	Dimension (mm)													Wt. (kg)
	AD	B	C	DD	E	F	F1	G	H	JD	U	Y	BB	
1/2	12.7	108.0	52.6	88.9	40.1	85.3	—	153.9	7.1*	7.87	27.2	—	—	1.36
3/4	16.8	117.6	58.7	98.6	48.5	85.3	—	179.3	6.1	9.40	32.3	—	—	2.18
1	22.4	127.0	58.4	108.0	64.8	92.5	—	179.3	8.4	12.70	39.1	—	—	2.81

* For 7.1 mm usable stem flat, the top jam nut must be removed.

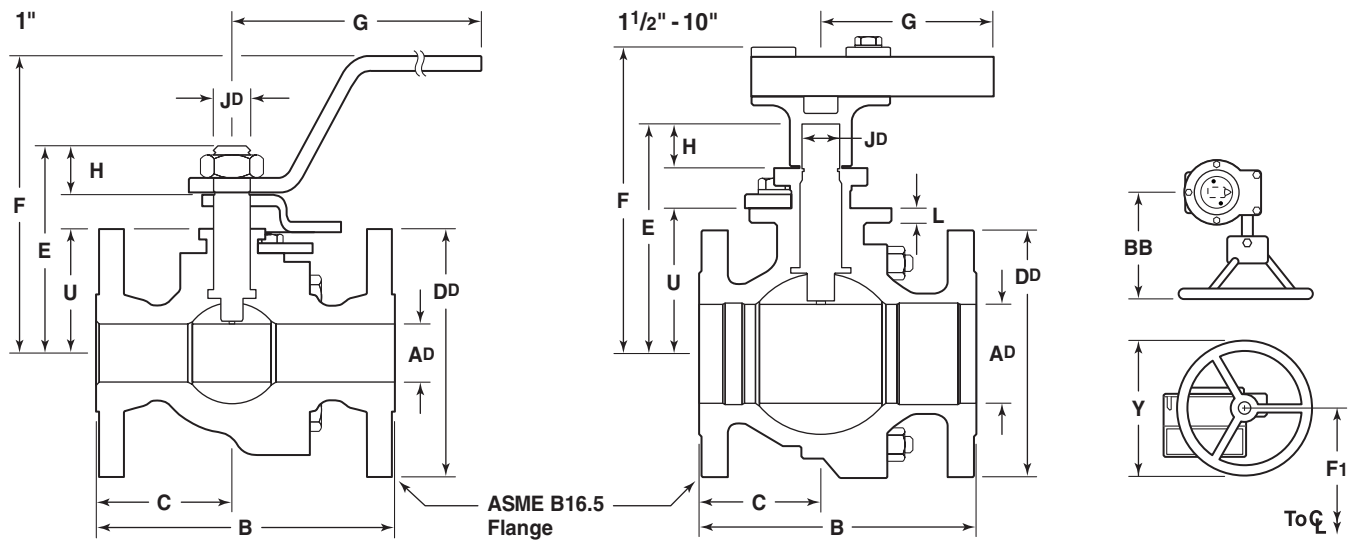
Size (in.)	Dimension (mm)													Wt. (kg)
	AD	B	C	DD	E	F	F1	G	H	JD	U	Y	BB	
1 1/2	31.8	165.1	80.0	127	90.9	133.4	185.9	431.8	17.8	18.03	57.4	152.4	152.4	5.81
2	38.1	177.8	83.1	152.4	93.7	136.1	187.2	431.8	17.8	18.03	58.7	152.4	152.4	7.98
2 1/2	50.8	190.5	84.3	177.8	104.6	147.1	198.6	431.8	17.8	18.03	70.1	152.4	152.4	12.29
3	61.5	203.2	87.9	190.5	111.3	153.7	206.2	431.8	17.8	18.03	77.7	152.4	152.4	14.29
4	76.2	228.6	104.1	228.6	171.5	224.3	295.4	558.8	47.8	26.92	112.5	203.2	190.5	24.58
6	114.3	266.7	133.4	279.4	217.4	268.0	335.8	558.8	36.6	33.53	152.9	203.2	190.5	62.14

Dimensional Data (mm), 1/2" - 1" & 1 1/2" - 6", Class 300, Reduced Port

Size (in.)	Dimension (mm)													Wt. (kg)
	AD	B	C	DD	E	F	F1	G	H	JD	U	Y	BB	
1/2	12.7	139.7	40.1	95.3	37.8	64.7	—	153.9	8.1	7.87	22.3	—	—	2.72
3/4	16.7	152.4	51.1	117.3	46.3	71.5	—	179.3	9.9	9.40	28.0	—	—	3.63
1	22.2	165.1	46.5	124.0	57.6	98.0	—	204.7	14.2	12.70	34.5	—	—	4.45

Size (in.)	Dimension (mm)													Wt. (kg)
	AD	B	C	DD	E	F	F1	G	H	JD	U	Y	BB	
1 1/2	31.8	190.5	80.0	155.4	90.9	133.4	185.9	431.8	17.8	18.03	57.4	152.4	152.4	9.07
2	38.1	215.9	83.1	165.1	93.7	136.1	187.2	431.8	17.8	18.03	58.7	152.4	152.4	11.79
3	61.5	282.4	100.6	209.6	111.3	153.7	206.2	431.8	17.8	18.03	77.7	152.4	152.4	20.87
4	76.2	304.8	104.1	254	171.5	224.3	295.4	558.8	35.1	26.92	112.5	203.2	190.5	31.75
6	114.3	403.4	133.4	317.5	217.4	268.0	335.8	558.8	36.6	33.53	152.9	203.2	190.5	71.21

Contromatics Split Body, Dimensional Data (in.), Class 150 & 300



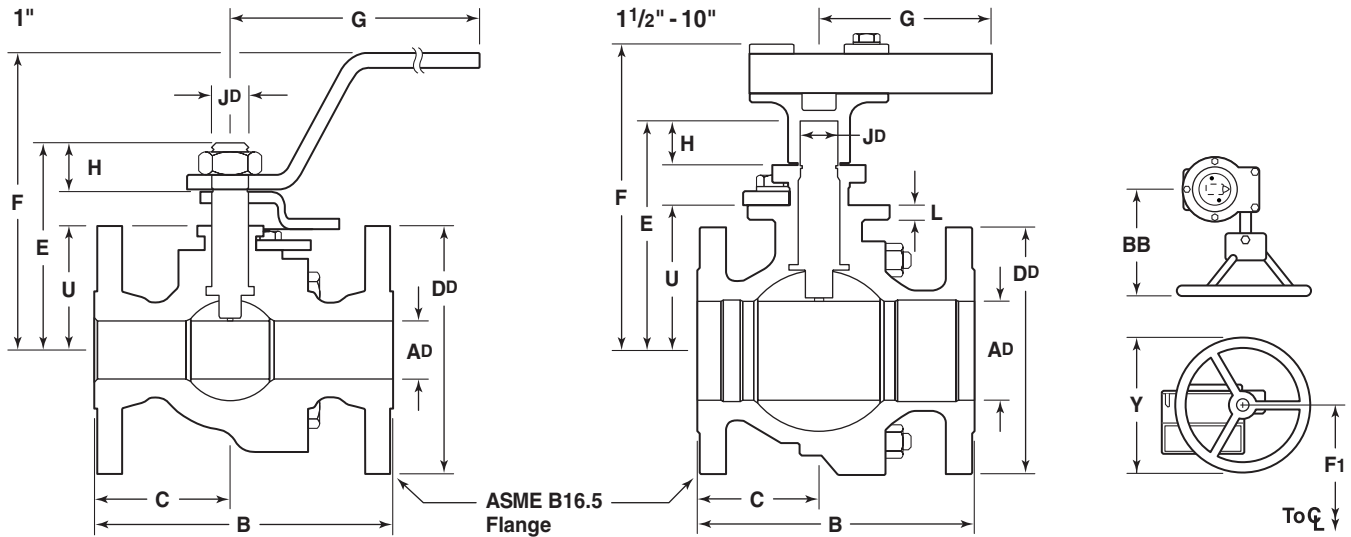
Dimensional Data (in.), 1" - 10", Class 150, Full & Reduced Port

Size (in.)	Dimension (in.)														Wt. (lbs.)
	A	B	C	D	E	F	F ₁	G	H	J	L	U	Y	BB	
1 FP	1.00	5.00	2.31	4.25	3.50	5.44	—	6.31	1.32	.623/.620	—	1.69	—	—	12.8
1 1/2 FP	1.50	6.50	2.96	5.00	3.69	5.75	7.37	15.50	.640	.746/.743	.38	2.31	6.00	6.50	12.8
2 FP	2.00	7.00	3.02	6.00	4.51	6.56	8.20	15.50	.640	.746/.743	.44	3.14	6.00	6.50	17.6
3 FP	3.00	8.00	3.50	7.50	6.81	10.25	11.63	20.00	1.28	1.067/1.062	.44	4.43	6.00	6.50	31.5
4 FP	4.00	9.00	4.00	9.00	8.40	11.00	13.08	20.00	1.28	1.321/1.316	.62	5.88	8.00	9.00	54.2
6 FP	6.00	15.50	7.75	11.00	10.81	11.12	15.63	20.00	1.45	1.515/1.510	.75	8.00	8.00	9.50	137.0
8 RP	6.00	11.50	5.13	11.00	10.81	11.12	15.63	20.00	1.45	1.515/1.510	.75	8.00	8.00	9.50	255.0
8 FP	8.00	18.00	9.00	13.50	14.25	—	17.14	—	2.27	1.950/1.945	.75	9.64	12.00	9.50	477.0
10 RP	8.00	21.00	10.50	16.00	14.25	—	17.14	—	2.27	1.997/1.922	.75	9.64	12.00	9.50	557.0
10 FP	10.00	21.00	10.50	16.00	17.41	—	22.03	—	3.06	2.497/2.429	.62	11.91	16.00	11.50	685.0

Dimensional Data (in.), 1" - 8", Class 300, Full & Reduced Port

Size (in.)	Dimension (in.)														Wt. (lbs.)
	A	B	C	D	E	F	F ₁	G	H	J	L	U	Y	BB	
1 FP	1	6.50	3.50	4.88	3.50	5.44	—	6.31	1.32	.623/.620	—	1.69	—	—	12.8
1 1/2 FP	1.50	7.50	3.53	6.13	3.69	5.75	7.37	15.50	.640	.746/.743	.38	2.31	6.00	6.50	20.0
2 FP	2.00	8.50	4.25	6.50	4.51	6.56	8.20	15.50	.640	.746/.743	.44	3.14	6.00	6.50	26.0
3 FP	3.00	11.13	5.82	8.25	6.81	10.25	11.63	20.00	1.28	1.067/1.062	.44	4.43	6.00	6.50	46.0
4 FP	4.00	12.00	6.00	10.00	8.40	11.00	13.08	20.00	1.28	1.321/1.316	.62	5.88	8.00	9.00	70.0
6 FP	6.00	15.88	7.94	12.50	12.75	14.00	15.63	48.00	2.27	1.950/1.945	.62	8.12	12.00	9.50	157.0
8 RP	6.00	19.75	9.88	15.00	12.75	—	15.63	—	2.27	1.950/1.945	.62	8.12	12.00	12.63	275.0
8 FP	8.00	19.75	9.88	15.00	16.00	—	20.64	—	3.06	2.453/2.448	.62	10.52	16.00	11.50	624.0

Contromatics Split Body, Dimensional Data (mm), Class 150 & 300



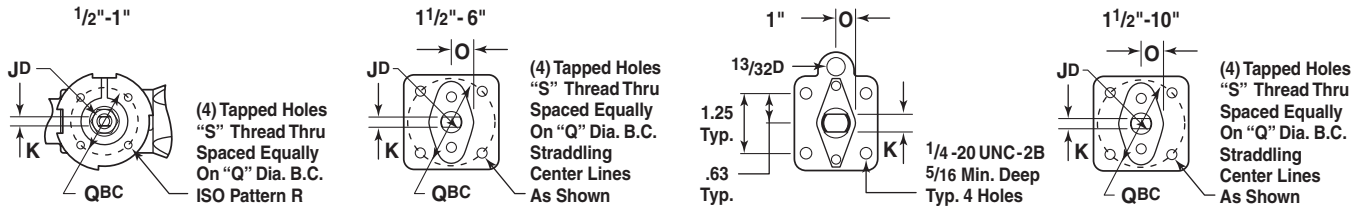
Dimensional Data (mm), 1"- 10", Class 150, Full & Reduced Port

Size (in.)	Dimension (mm)														Wt. (kg)
	A	B	C	D	E	F	F ₁	G	H	J	L	U	Y	BB	
1 FP	25.4	127	58.7	108.0	88.9	138.2	—	160.3	33.5	15.82/15.75	—	42.9	—	—	5.81
1 1/2 FP	38.1	165.1	75.2	127	93.7	146.1	187.2	393.7	16.3	18.95/18.87	9.7	58.7	152.4	165.1	5.81
2 FP	50.8	177.8	76.7	152.4	115.0	166.6	208.3	393.7	16.3	18.95/18.87	11.2	79.8	152.4	165.1	7.98
3 FP	76.2	203.2	88.9	190.5	173.0	260.4	295.4	508.0	32.5	27.10/26.98	11.2	112.5	152.4	165.1	14.29
4 FP	101.6	228.6	101.6	203.2	213.4	279.4	332.2	508.0	32.5	33.55/33.43	15.7	149.4	203.2	228.6	24.58
6 FP	152.4	393.7	196.9	279.4	274.6	282.4	397.0	508.0	36.8	38.48/38.35	19.1	203.2	203.2	241.3	62.14
8 RP	152.4	292.1	130.3	279.4	274.6	282.4	397.0	508.0	36.8	38.48/38.35	19.1	203.2	203.2	241.3	115.67
8 FP	203.2	457.2	228.6	342.9	362.0	—	442.0	—	57.7	49.53/49.4	19.1	244.9	304.8	241.3	216.36
10 RP	203.2	533.4	266.7	406.4	362.0	—	442.0	—	57.7	50.72/48.82	19.1	244.9	304.8	241.3	252.65
10 FP	254	533.4	266.7	406.4	442.2	—	559.6	—	77.7	63.42/61.69	15.7	302.5	406.4	292.1	310.71

Dimensional Data (mm), 1"- 8", Class 300, Full & Reduced Port

Size (in.)	Dimension (mm)														Wt. (kg)
	A	B	C	D	E	F	F ₁	G	H	J	L	U	Y	BB	
1 FP	25.4	165.1	88.9	124.0	88.9	138.2	—	160.3	33.5	15.82/15.75	—	42.9	—	—	5.81
1 1/2 FP	38.1	190.5	89.7	155.7	93.7	146.1	187.2	393.7	16.3	18.95/18.87	9.7	58.7	152.4	165.1	9.07
2 FP	50.8	215.9	108.0	165.1	115.0	166.6	208.3	393.7	16.3	18.95/18.87	11.2	79.8	152.4	165.1	11.79
3 FP	76.2	282.7	147.8	210.0	173.0	260.4	295.4	508	32.5	27.10/26.98	11.2	112.5	152.4	165.1	20.87
4 FP	101.6	304.8	152.4	254.0	213.4	279.4	332.2	508	32.5	33.55/33.43	15.7	149.4	203.2	228.6	31.75
6 FP	152.4	403.4	201.7	317.5	323.9	355.6	397.0	1219.2	57.7	49.53/49.40	15.7	206.2	304.8	241.3	71.21
8 RP	152.4	501.7	251.0	381.0	323.9	—	397.0	—	57.7	49.53/49.40	15.7	206.0	304.8	320.8	124.74
8 FP	203.2	501.7	251.0	381.0	406.4	—	524.3	—	77.7	62.31/62.18	15.7	267.2	406.4	292.1	283.04

Contromatics Flanged Floating Ball Valves – Topworks (in.)



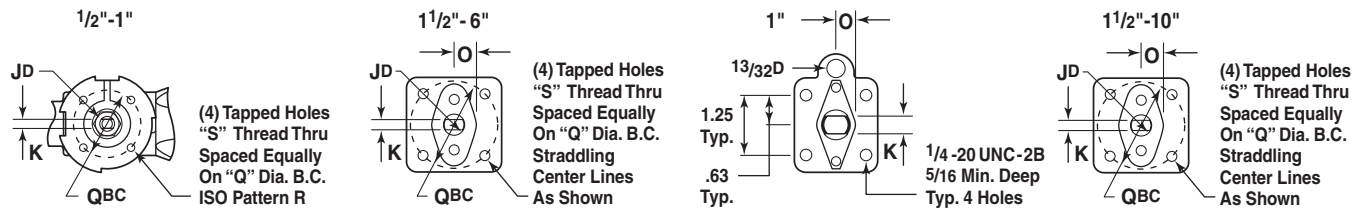
Unibody Ball Valves, Class 150 & 300

Size (in.)	Class	Dimension (in.)					
		JD	K	O	Q	R	S
1/2	150/300	.31	.190/.192	—	1.42	F03	10-32UNF
3/4	150/300	.37	.248/.250	—	1.42	F03	10-32UNF
1	150/300	.50	.276/.279	—	1.65	F04	10-32UNF
1 1/2	150/300	.71	.276/.279	.81	3.25	—	3/8-16UNC
2	150/300	.71	.376/.373	.81	3.25	—	3/8-16UNC
2 1/2	150	.71	.376/.373	.81	3.25	—	3/8-16UNC
3	150/300	.71	.376/.373	.81	3.25	—	3/8-16UNC
4	150/300	1.06	.674/.670	1.36	4.13	—	3/8-16UNC
6	150/300	1.32	.865/.861	1.36	4.41	—	3/8-16UNC

Split Body Ball Valves, Class 150 & 300

Size (in.)	Class	Dimension (in.)				
		J ^D	K	O	Q	S
1 x 1	150/300	.623/.620	.371/.369	.56	—	1/4-20 UNC
1 1/2 x 1 1/2	150/300	.746/.743	.376/.373	.76	3.25	3/8-16 UNC
2 x 2	150/300	.746/.743	.376/.373	.76	3.25	3/8-16 UNC
3 x 3	150/300	1.067/1.062	.674/.670	1.36	4.13	3/8-16 UNC
4 x 4	150/300	1.321/1.316	.865/.861	1.36	4.41	1/2-13 UNC
6 x 6	150	1.515/1.510	1.065/1.061	1.36	5.13	5/8-11 UNC
6 x 6	300	1.950/1.945	1.249/1.245	1.58	5.13	5/8-11 UNC
8 x 6	150	1.515/1.510	1.065/1.061	1.58	5.13	5/8-11 UNC
8 x 6	300	1.950/1.945	1.249/1.245	1.58	5.13	5/8-11 UNC
8 x 8	150	1.950/1.945	1.249/1.245	1.58	5.13	5/8-11UNC
8 x 8	300	2.453/2.448	1.749/1.745	2.10	6.75	3/4-10 UNC
10 x 8	150	1.997/1.922	1.249/1.245	2.10	5.13	5/8-11 UNC
10 x 10	150	2.497/2.429	1.749/1.745	2.10	6.75	3/4-10 UNC

Contromatics Flanged Floating Ball Valves • Topworks (mm)



Unibody Ball Valves, Class 150 & 300

Size (in.)	Class	Dimension (mm)					
		JD	K	O	Q	R	S
1/2	150/300	7.87	4.83/4.88	—	52.3	26.2	10-32UNF
3/4	150/300	9.40	6.3/6.35	—	52.3	26.2	10-32UNF
1	150/300	12.70	7.01/7.09	—	58.7	29.4	10-32UNF
1 1/2	150/300	18.03	7.01/7.09	20.6	82.6	—	3/8-16UNC
2	150/300	18.03	9.55/9.47	20.6	82.6	—	3/8-16UNC
2 1/2	150	18.03	9.55/9.47	20.6	82.6	—	3/8-16UNC
3	150/300	18.03	9.55/9.47	20.6	82.6	—	3/8-16UNC
4	150/300	26.92	17.12/17.02	34.5	104.9	—	3/8-16UNC
6	150/300	33.53	21.97/21.87	34.5	112.0	—	1/2-13UNC

Split Body Ball Valves, Class 150 & 300

Size (in.)	Class	Dimension (mm)				
		J ^D	K	O	Q	S
1 x 1	150/300	15.82/15.75	9.42/9.37	14.2	—	1/4-20 UNC
1 1/2 x 1 1/2	150/300	18.95/18.87	9.55/9.47	19.3	82.6	3/8-16 UNC
2 x 2	150/300	18.95/18.87	9.55/9.47	19.3	82.6	3/8-16 UNC
3 x 3	150/300	27.10/26.98	17.12/17.02	34.5	104.9	3/8-16 UNC
4 x 4	150/300	33.55/33.43	21.97/21.87	34.5	112.0	1/2-13 UNC
6 x 6	150	38.48/38.35	27.05/26.95	34.5	130.3	5/8-11 UNC
6 x 6	300	49.53/49.40	31.72/31.62	40.13	130.3	5/8-11 UNC
8 x 6	150	38.48/38.35	21.97/21.87	40.13	130.3	5/8-11 UNC
8 x 6	300	49.53/49.40	31.72/31.62	40.13	130.3	5/8-11 UNC
8 x 8	150	49.53/49.4	44.42/44.32	40.13	130.3	5/8-11 UNC
8 x 8	300	62.31/62.18	1.749/1.745	53.34	171.5	3/4-10 UNC
10 x 8	150	50.72/48.82	31.72/31.62	53.34	130.3	5/8-11 UNC
10 x 10	150	63.42/61.69	44.42/44.32	53.34	171.5	3/4-10 UNC

Contromatics Mounting Kits & Gear Operators

Actuator Mounting Kits, Reduced Port

Size (in.)	Series PA/PAS Model Number												
	200	300	500	700	1030	1400	2200	2900	4100	5800	9000	12100	23600
1/2	0100107	0098984											
3/4	0100087	0098985		0099338									
1		0100152	0100101	0098986									
1 1/2		0093171		0092500		0092799	0100139	0098804					
2		0093171		0092500		0092799	0100139	0098804					
2 1/2		0093171		0092500		0092799	0100139	0098804					
3		0093171		0092500		0092799	0100139	0098804					
4				0096232		0092800	0092800	0096724					
6						0096548	0100237	0092716	0098215	0098187			
8												0092740	0092598

Note: Based on 80 psi supply pressure.

Actuator Mounting Kits, Full Port

Size (in.)	Series PA/PAS Model Number												
	200	300	500	700	1030	1400	2200	2900	4100	5800	9000	12100	23600
1			0100096	0092838									
1 1/2		0093171		0092500		0092799		0098804					
2		0093171		0092500		0092799		0098804					
3				0092500		0092800		0096724					
4						0096548	0092800		0092716	0098215	0098187		
6												0092740	0092598

Note: Based on 80 psi supply pressure.

Gear Operators

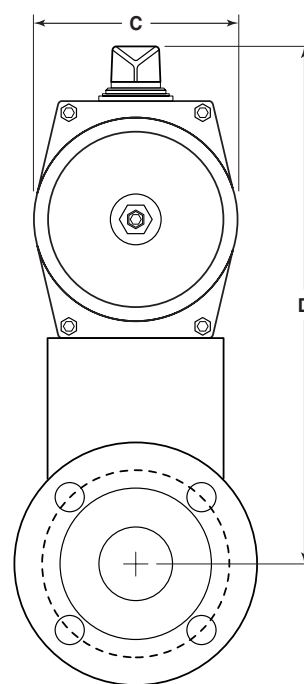
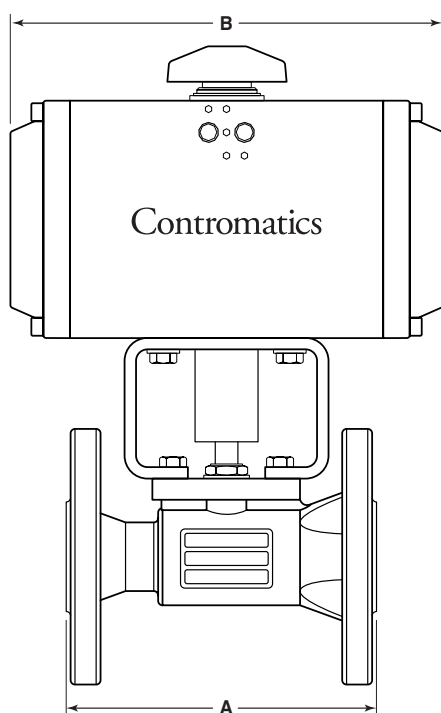
Size (in.)	Class 150		Class 300	
	Reduced Port	Full Port	Reduced Port	Full Port
1 1/2	0090283	0090283	0090283	0090283
2	0090283	0090283	0090283	0090283
3	0090283	0898662	0090283	0898662*
4	0898662	0898663	0898662	0898663*
6	0898663	0898665	0898663	0898665
8	0898665	0090157	0898667	0898669
10	0090157	0898670		

* Torque values are established for clean wet-line media. Other service conditions may require slightly higher torque values. Please consult factory for common service factors to be applied to the above values.

Operating Torque (in.-lbs.), Uniseal™ Seats

Size (in.)	Class 150		Class 300	
	Reduced Port	Full Port	Reduced Port	Full Port
1/2	40		40	
3/4	50		50	
1	100	130	100	130
1 1/2	180	280	180	280
2	240	440	240	500
2 1/2	440		440	
3	520	600	520	1000
4	650	1440	650	2500
6	1440	5000	1440	7000
8	5000	12,000	12,000	27,000
10	12,000	30,000		

Contromatics Series PAS Actuator Sizing



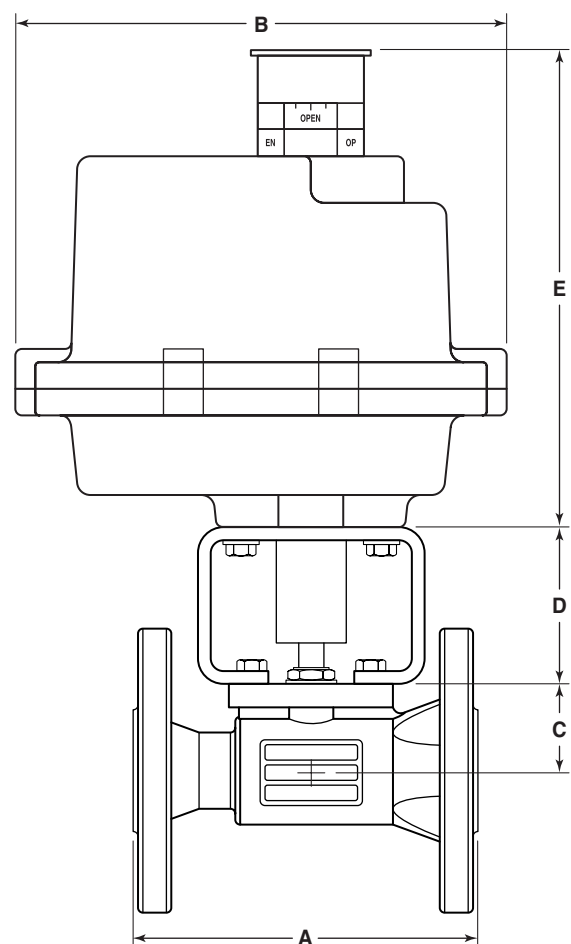
Envelope Dimensional Data (in.)

Size (in.)	Actuator Model	Dimensions (in.)				
		A / 150	A / 300	B	C	D
1/2	200	4.25	5.50	5.00	2.32	7.89
	300	4.25	5.50	5.24	2.76	8.44
	500	4.25	5.50	6.10	3.27	8.55
3/4	200	4.62	6.00	5.00	2.32	8.09
	300	4.62	6.00	5.24	2.76	8.64
	500	4.62	6.00	6.10	3.27	8.75
1	300	5.00	6.50	5.24	2.76	8.91
	500	5.00	6.50	6.10	3.27	9.02
	700	5.00	6.50	6.97	3.58	9.49
1 1/2	500	6.50	7.50	6.10	3.27	10.10
	700	6.50	7.50	6.97	3.58	10.21
	1030	6.50	7.50	7.99	3.94	10.81
2	500	7.00	8.50	6.10	3.27	10.15
	700	7.00	8.50	6.97	3.58	10.26
	1030	7.00	8.50	7.99	3.94	10.86
3	700	8.00	11.12	6.97	3.58	11.01
	1400	8.00	11.12	8.50	4.72	12.51
	2200	8.00	11.12	11.18	4.72	12.77
4	1030	9.00	12.00	7.99	3.94	12.98
	2200	9.00	12.00	11.18	4.72	14.14
	2900	9.00	12.00	11.42	5.39	14.94
6	2200	11.00	N/A	11.18	4.72	16.73
	2900	11.00	N/A	11.42	5.39	17.53
	5800	11.00	N/A	14.49	6.77	19.72

Envelope Dimensional Data (mm)

Size (in.)	Actuator Model	Dimensions (mm)				
		A / 150	A / 300	B	C	D
1/2	200	108.0	139.7	127.0	58.9	200.4
	300	108.0	139.7	133.1	70.1	214.4
	500	108.0	139.7	154.9	83.1	217.2
3/4	200	117.3	152.4	127.0	58.9	205.5
	300	117.3	152.4	133.1	70.1	219.5
	500	117.3	152.4	154.9	83.1	222.3
1	300	127.0	165.1	133.1	70.1	226.3
	500	127.0	165.1	154.9	83.1	229.1
	700	127.0	165.1	177.0	90.9	241.0
1 1/2	500	165.1	190.5	154.9	83.1	256.5
	700	165.1	190.5	177.0	90.9	259.3
	1030	165.1	190.5	202.9	100.1	274.6
2	500	177.8	215.9	154.9	83.1	257.8
	700	177.8	215.9	177.0	90.9	260.6
	1030	177.8	215.9	202.9	100.1	275.8
3	700	203.2	282.4	177.0	90.9	279.7
	1400	203.2	282.4	215.9	119.9	317.8
	2200	203.2	282.4	284.0	119.9	324.4
4	1030	228.6	304.8	202.9	100.1	329.7
	2200	228.6	304.8	284.0	119.9	359.2
	2900	228.6	304.8	290.1	135.1	379.5
6	2200	279.4	N/A	284.0	119.9	424.9
	2900	279.4	N/A	290.1	135.1	445.3
	5800	279.4	N/A	368.0	172.0	500.9

Contromatics Series PF Actuator Sizing



Envelope Dimensional Data (in.)

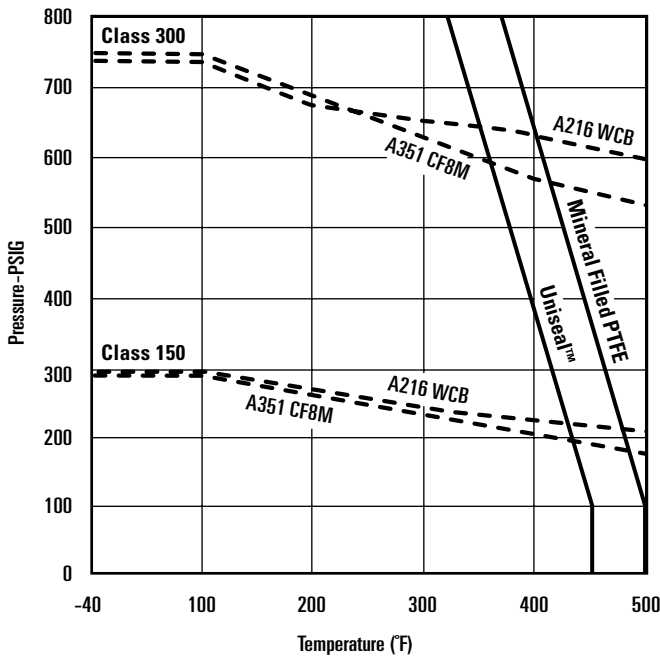
Size (in.)	Actuator Model	Dimensions (in.)				
		A	B	C	D	E
1/2	400	4.25	9.25	1.07	3.00	9.38
3/4	400	4.62	9.25	1.27	3.00	9.38
1	400	5.00	9.25	1.54	3.00	9.38
1 1/2	400	6.50	9.25	2.26	3.00	9.38
2	400	7.00	9.25	2.31	3.00	9.38
3	700	8.00	9.25	3.06	3.00	9.38
4	1000	9.00	9.25	4.43	3.75	9.38
6	2000	10.50	9.25	6.02	4.00	11.60

Envelope Dimensional Data (mm)

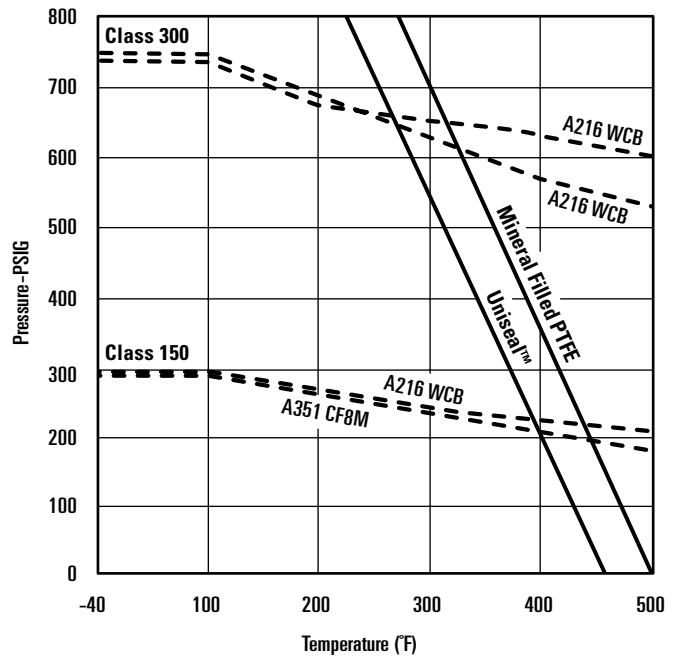
Size (in.)	Actuator Model	Dimensions (mm)				
		A	B	C	D	E
1/2	400	108.0	235.0	27.2	76.2	238.3
3/4	400	117.3	235.0	32.3	76.2	238.3
1	400	127.0	235.0	39.1	76.2	238.3
1 1/2	400	165.1	235.0	57.4	76.2	238.3
2	400	177.8	235.0	58.7	76.2	238.3
3	700	203.2	235.0	77.7	76.2	238.3
4	1000	228.6	235.0	112.5	95.3	238.3
6	2000	266.7	235.0	152.9	101.6	294.6

Engineering Data

Seat Rating, 1/2" - 2"



Seat Rating, 2 1/2" - 10"



Temperature Rating

Seat Material	°F	°C
Uniseal™	450°	232°
Min. Filled PTFE	500°	260°
PEEK™	600°	316°

Pressure Range

Pressure Range @ 100°F		
Body Material	Cl. 150	Cl. 300
CS, WCB	285	740
SS, CF8M	275	720

Flow Coefficient (C_v)

Size (in.)	Cl. 150	Cl. 300
1 FP	98	98
1 1/2 FP	265	265
2 RP	140	140
2 FP	470	420
3 RP	220	210
3 FP	1240	1050
4 RP	630	600
4 FP	2770	2000

Size (in.)	Cl. 150	Cl. 300
6 RP	925	910
6 FP	5249	5100
8 RP	2500	2400
8 FP	10,750	10,300
10 RP	5000	4825
10 FP	17,775	—
12 RP	8400	—

Steam Rating (Saturated)

Seat Material	Rating
Min. Filled PTFE	250 WSP
Uniseal™	150 WSP

Vacuum Rating

10 Microns Hg

Low Temperature Limits

Body Material	°F	°C
CS, WCB	-20°	-28.9°
SS, CF8M	-50°	-45.6°

Seat Material	°F	°C
Uniseal™	-50°	-45.6°
Min. Filled PTFE	-50°	-45.6°
PEEK™	-50°	-45.6°

Seal Material	°F	°C
TFE/GRF Packing	-50°	-45.6°

Method of Calculating Flow

The Flow Coefficient "C_v" of a valve is the flow rate of water (gallons/minute) through a fully opened valve, with a pressure drop of 1 psi across the valve. To find the flow of liquid through valve from the C_v, use the following formulas:

Liquid Flow

QL = flow rate of liquid (gal./min.)

ΔP = differential pressure across the valve (psi)

G = specific gravity of liquid (for water, G=1)

$$Q_L = C_v \sqrt{\frac{\Delta P}{G}}$$

Gas Flow

Qg = flow rate of gas (CFH at STP)

P2 = outlet pressure (psia)

g = Specific gravity of gas (for air, g=1.000)

$$Q_g = 61 C_v \sqrt{\frac{P_2 \Delta P}{g}}$$

For non-critical flow
 $\left\{ \frac{\Delta P}{P_2} < 1.0 \right\}$



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