

Flow-Tek[®]

A Subsidiary of BRAY INTERNATIONAL, Inc.

3 Piece Full Port Ball Valves, 1/4" - 12" Wide Selection of End Connections



Series 7000 & Series 8000

Model 7000-316SS
Model 8000-WCB

Flow-Tek's Series 7000 & 8000 ball valves offer the highest flexibility in selection of end connections, seat materials and 3 piece design. To meet customer demands for a valve with the widest possible range of applications, these valves can be fitted with control or tri-ported balls (for full cavity drainage), as well as cavity fillers for special service requirements.

The Series 7000/8000 is designed with extensive interchangeability of balls, stems,

stem packing, handles and mounting hardware between valve sizes and series members. This system reduces parts inventory and maintenance costs.

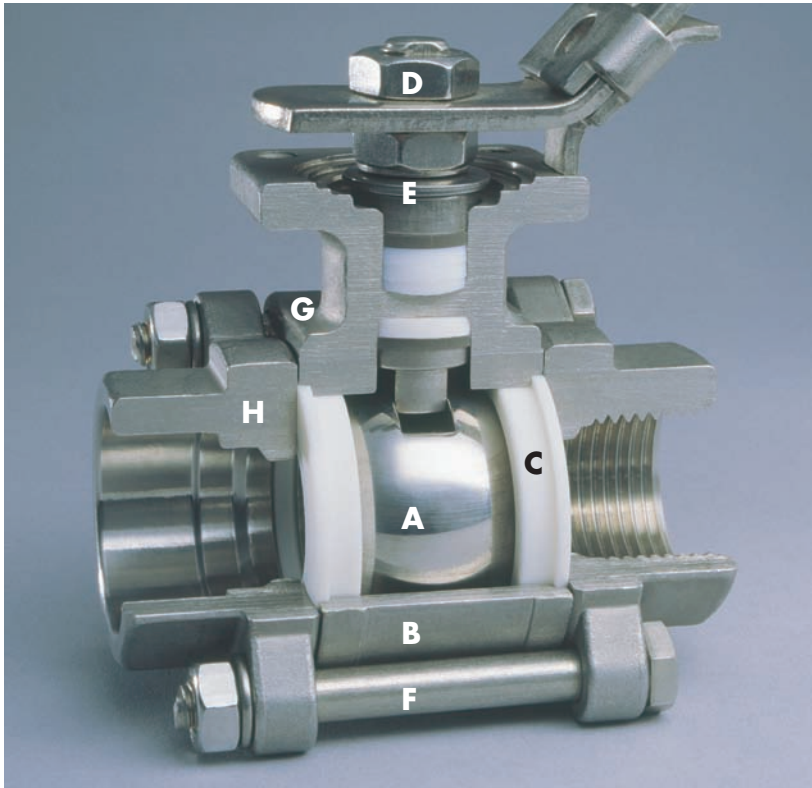
The 3 Piece Body Design allows the body to swing-out for ease of in-line maintenance. It also makes it possible to offer a wide variety of end connections.

Pressure Rating
1/4"-4": 1000 psi WOG,
6"-12": to 400 psi WOG

End Connections

- Threaded
- Socket Weld
- Butt Weld
- ASME150 Flanged
- Flush Bottom Tank
- Weld In Place Extended

End connections are completely interchangeable.



Ball (A) Flow-Tek balls are precision machined and mirror finished for bubble-tight shut off with less operating torque. Ball edges have machined curvatures to reduce seat wear and provide a high cycle life.

Body (B) Valve bodies are investment cast and solution annealed/normalized for the highest quality and added strength. Body castings are marked with a foundry heat number for full traceability. Carbon steel bodies are phosphate coated for increased corrosion resistance.

Seat (C) Flow-Tek's seat design ensures bi-directional, bubble-tight sealing while providing the lowest possible torque. This seat design reduces friction, minimizes seat wear and reduces operating torque.

Double Lock Nut Design (D) Standard on the Series 7000/8000, the double lock nuts allow handles to be easily and safely removed while the valve is under full line pressure.

Live-Loaded Stem Seals (E) The live-loaded seals considerably increase the number of cycles between maintenance adjustments.

Body Bolts (F) Standard material is 304 Stainless Steel.

Body Hinges (G) Heavy duty hinges, throughout the entire size range, provide positive alignment of body to end connection during swing-out, in-line servicing.

End Connections (H) Full range of interchangeable connections.

Anti-Static Protection Series 7000/8000 valves feature anti-static grounding devices as standard. These devices ensure electrical continuity between valve ball, stem and body, thus eliminating the possibility of static electrical charges creating sparks within the valve.

Seat Materials

Flow-Tek offers the following standard seat materials for the Series 7000/8000: RPTFE, TFM-1600, Stainless Steel/PTFE (50/50), UHMWPE, Virgin PTFE, Tek-Fil®, and Cavity Fillers. Other seat materials are available.

Features

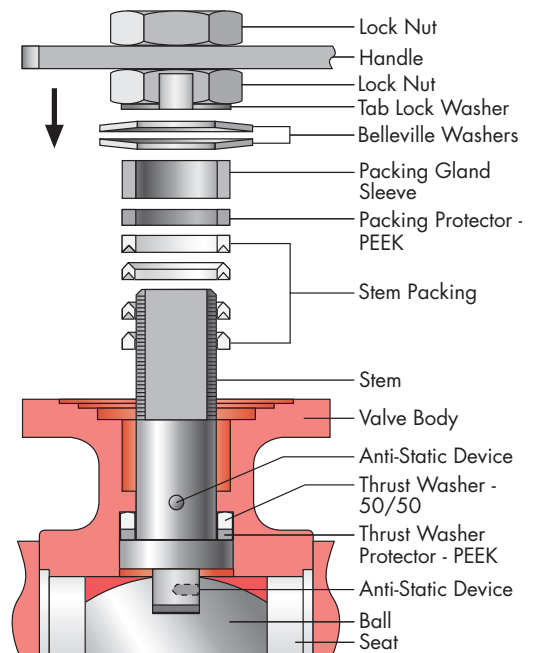
Stem Assemblies

Flow-Tek manufactures heavy duty, high quality stems with double "D" connection to ball and operator mounting. Stems are mated with the ball to ensure positive contact. All Flow-Tek stems are internal entry and blowout proof for maximum safety.

Smart Stem

Valve Sizes 1/4" through 2 1/2"

Flow-Tek's Interchangeable Family of valves feature strong, large diameter stems with live-loaded, self-adjusting sealing utilizing belleville washers which automatically adjust to compensate for changes in temperature and wear. Manual adjustments which can cause damage to the seal and seat are not required. The assembly is secured by a saddle-type lock washer which prevents stem nuts from unthreading in high cycle automation applications.



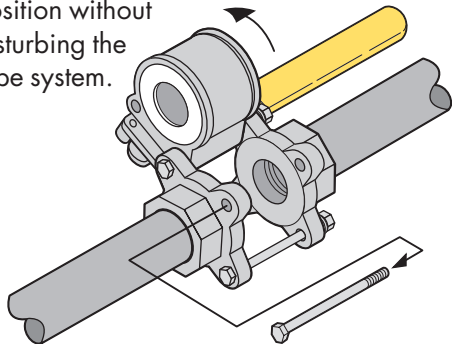
Stem Packing An adjustable V-ring design creates a multiple seal between the stem and body. Each stem assembly is composed of three or four (dependent on valve size) rings providing a very high cycle life by resisting creep and cold flow. The Thrust Washer and the Thrust Washer Protector combine to provide a primary seal, reduce torque and prevent galling. This arrangement is a Flow-Tek exclusive.

Features

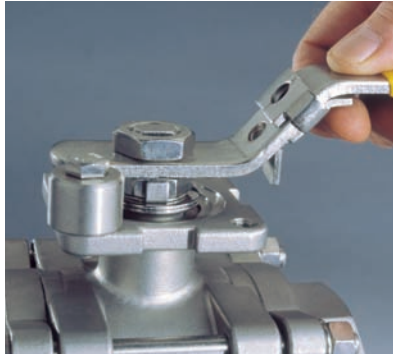
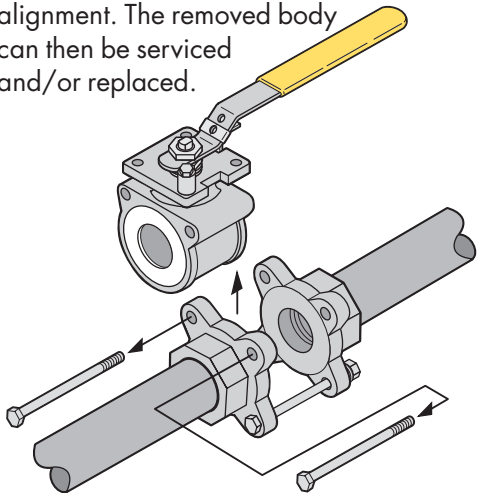
3 Piece Valve Body Design

The unique body design of the Series 7000/8000 offers many advantages, including installation flexibility, and ease of in line and out of line servicing. These time saving features are a big plus for process industries, automated valves and welded piping systems by reducing costly downtime. During maintenance, the actuator and mounting assemblies remain on the valve body. The entire valve and actuator assembly is easily reinstalled. No adjustment or reattachment is necessary.

In Line Servicing To perform in line maintenance, remove one of the body bolts through one of the two body hinges, loosen the remaining bolts and swing the body up. The valve can swing to the left or right depending on which bolt is removed. All body components can be serviced in this position without disturbing the pipe system.



Out of Line Servicing For complete removal of valve from the line, remove the upper two bolts that go through the body hinges, loosen the lower two while keeping them in line, then lift the valve body out of the pipeline. The remaining two bolts keep the pipeline system in place and maintain alignment. The removed body can then be serviced and/or replaced.



Handle (A) Flow-Tek handles feature a Safety Trigger to prevent accidental movement of ball position. Operation is easily made with one hand. The trigger locks the handle in the open or closed position. The handle lock can be bypassed, if needed, with a small bolt through the handle in the bypass position. An **Anti-Tamper Padlock** can be used to secure the handle in position, preventing unwanted access. **Travel Stop (B)** Limits the movement of handle to set 90° intervals, preventing over travel of the ball.



Secure Mount (C) The integrally cast top flange ensures positive actuator mounting. Secure Mount eliminates unwanted actuator movement during high cycle or continuous duty applications. Actuation equipment can be easily and safely removed while the valve is under full line pressure. Designed to ISO 5211 bolting pattern standards.



3 Piece Weld In Place Series

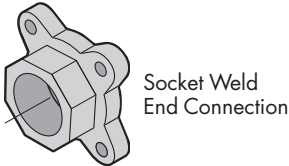
Socket-Weld and Butt-Weld

Flow-Tek offers extended end connections for the Series 7000/8000 valves. These ends allow the customer to weld the valve in the piping system without damaging the seat or seals. Installation time and piping material is reduced. Additionally, the Weld In Place Series extended end connections limit potential installation errors. The valve is factory assembled and tested, then delivered to the customer for installation. No assembly of valve or actuation equipment is required – valve and actuator integrity are maintained. The Weld In Place also eliminates the possibility of over-torquing the bolts or misplacing valve parts during installation.



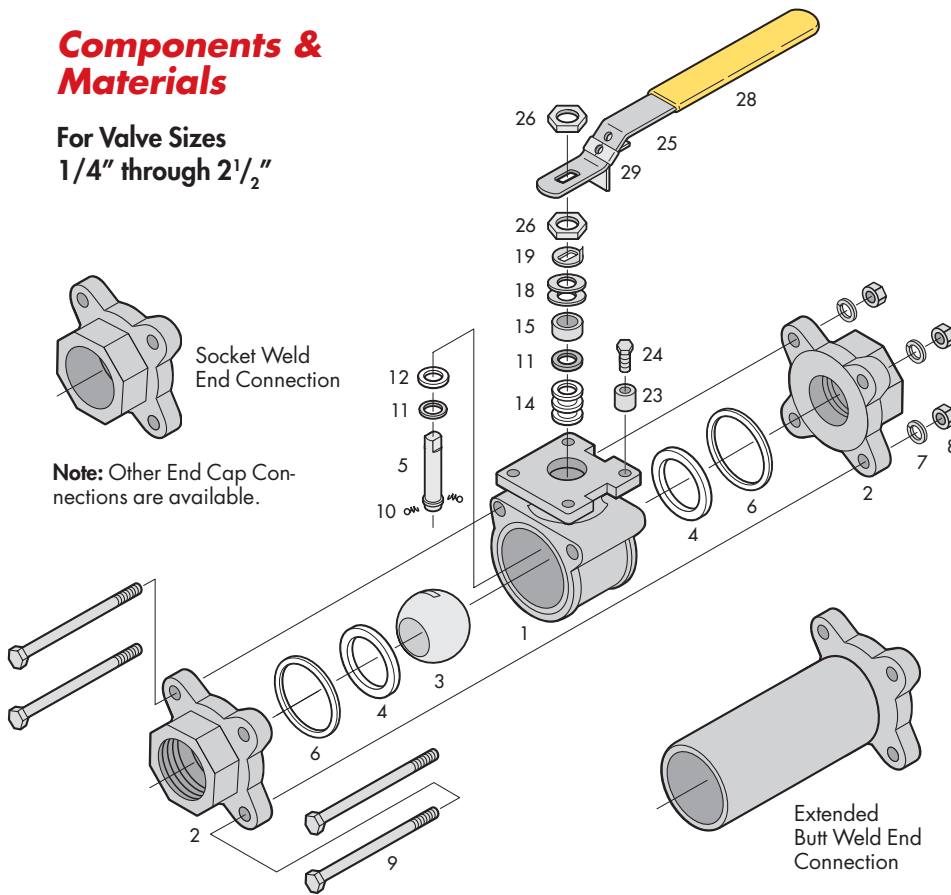
Components & Materials

For Valve Sizes
1/4" through 2 1/2"



Socket Weld End Connection

Note: Other End Cap Connections are available.



Extended Butt Weld End Connection

Item	Name	Stainless Steel	Carbon Steel	Qty.
1	Body	ASTM A351 Gr CF8M	ASTM A216 Gr WCB	1
2	End Cap*	ASTM A351 Gr CF8M*	ASTM A216 Gr WCB	2
3	Ball	ASTM A351 Gr CF8M	ASTM A351 Gr CF8M	1
4	Seat	15% RPTFE	15% RPTFE	2
5	Stem	ASTM A479 Type316	ASTM A479 Type316	1
6	Body Seal	TFM	TFM	2
7	Spring Washer	SS304	SS304	†
8	Body Nut	SS304	SS304	†
9	Body Bolt / Stud	SS304	SS304	4
10	Anti-Static Device	SS316	SS316	2
11	Thrust Washer Protector	PEEK	PEEK	2
12	Thrust Washer	50% SS316 + 50% PTFE	50% SS316 + 50% PTFE	1
14	Stem Packing	15% RPTFE	15% RPTFE	3
15	Packing Gland Sleeve	SS304	SS304	1
18	Belleville Washer	SS301	SS301	2
19	Lock Washer	SS304	SS304	1
23	Travel Stop Set Sleeve	SS304	SS304	1
24	Travel Stop Bolt	SS304	SS304	1
25	Handle	SS304	SS304	1
26	Lock Nut	SS304	SS304	2
28	Handle Sleeve	Vinyl	Vinyl	1
29	Locking Device	SS304	SS304	1

* Weld Ends use CF3M † Number of Nuts and Spring Washers:
1/4"-2" Valves ... 4
2-1/2" Valves 8

Specifications

Valve Sizes 1/4" through 12"

Design meets MSS-SP-110.
Threaded End Connections meet ASME B1.20.1 NPT.
Socket Weld End Connections meet ASME B16.11.
Butt Weld End Connections meet MSS SP-72 / ASME B16.25.
Flanged End Connections meet ASME Class 150.

Valve body and end cap connections are high quality investment cast and solution annealed/normalized. Body and end cap wall thickness meets ASME B16.34.

Valve stems are blow-out proof for maximum safety and meet ASME B16.34 specification.

All valves are factory tested to MSS SP-72.

Pressure Ratings

Threaded, Socket Weld and Butt Weld:

Sizes 1/4" – 4" 1000 psi WOG

Sizes 6" – 12" 400 psi WOG

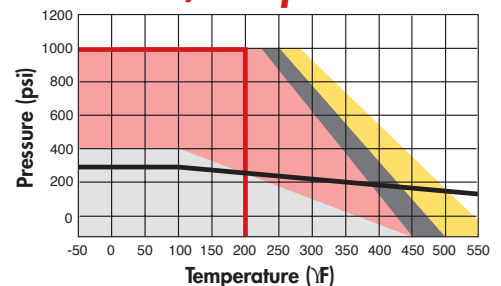
Flanged: ASME B16.34 Class 150

Steam Rating: 150 WSP

Vacuum Rating: 29.9 in. Hg gauge

Flow-Tek offers the seat, body seal, thrust washer and stem packing as recommended spare parts. These parts are available as a packaged repair kit.

Pressure / Temperature



1/4" - 4" Valves: RPTFE/TFM

1/4" - 4" Valves: UHMWPE

1/4" - 4" : 50/50 SS Filled TFE

6"-12" Butt Weld Valves: RPTFE

ASME Class 150 Flanges

1/4" - 4" Valves: Tek-Fil

NOTE: Series 8000 Carbon steel valves are limited to -20°F.

Extended Size Range

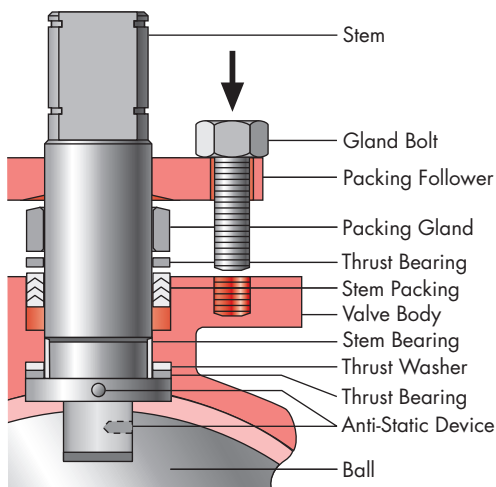
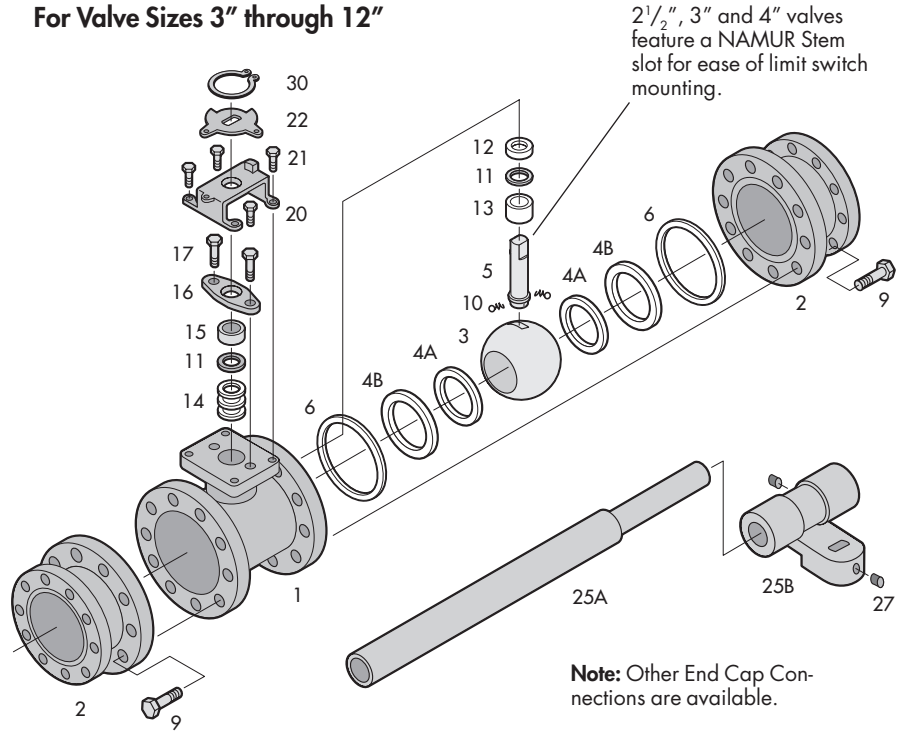


Valve Sizes 6"–12" Features

Flow-Tek's Extended Range ball valves feature a compact, lightweight three part body. This design simplifies maintenance procedures, allowing easier handling during disassembly and reassembly. Hex type cap screws ensure precise and secure alignment of valve center body to end connections. All valve parts are interchangeable with Flow-Tek full and reduced port flanged end series F15/RF15 and F30 valves. ASME Class 150 face-to-face take out dimensions are standard on 6"–12" flanged valves. Butt weld end connections meet ASME B16.10. Additionally, Flow-Tek's Extended Range is one of the markets only large sized valve ranges to offer body cavity fillers.

Components & Materials

For Valve Sizes 3" through 12"



Stem Design for 3"–12" Valves

The stem is guided by the valve body and the gland, ensuring smooth operation even in high torque service. The packing gland is adjustable and all stems are polished to reduce torque. Optional bellville washers can be added for a self-adjusting, live load.

Item	Name	Stainless Steel	Carbon Steel	Qty.
1	Body	ASTM A351 Gr CF8M	ASTM A216 Gr WCB	1
2	End Cap†	ASTM A351 Gr CF8M†	ASTM A216 Gr WCB	2
3	Ball	ASTM A351 Gr CF8M	ASTM A351 Gr CF8M	1
4A	Seat	15% RPTFE	15% RPTFE	2
4B	Seat Support	ASTM A351 Gr CF8M	ASTM A216 Gr WCB	2††
5	Stem	ASTM A479 Type316	ASTM A479 Type316	1
6	Body Seal	PTFE	PTFE	2
9	Body Bolt	SS304	SS304	*
10	Anti-Static Device	SS316	SS316	2
11	Thrust Bearing	50% SS316 + 50% PTFE	50% SS316 + 50% PTFE	2
12	Thrust Washer	15% RPTFE	15% RPTFE	1
13	Stem Bearing	15% RPTFE	15% RPTFE	1
14	Stem Packing	15% RPTFE	15% RPTFE	**
15	Packing Gland	SS304	Carbon Steel	1
16	Packing Follower	ASTM A351 Gr CF8M	ASTM A216 Gr WCB	1
17	Gland Bolt	SS304	Carbon Steel	2
20	Stop Housing	ASTM A351 Gr CF8M	ASTM A216 Gr WCB	1
21	Housing Bolt	SS304	Carbon Steel	4
22	Travel Stop	SS304	Carbon Steel, Zinc Plated	1
25A	Handle	Ductile Iron/Carbon Steel	Ductile Iron/Carbon Steel	1
25B	Handle Junction	Ductile Iron	Ductile Iron	1
27	Handle Bolt	Carbon Steel	Carbon Steel	2
30	Snap Ring	Nickel Plated Carbon Steel	Nickel Plated Carbon Steel	1

* Number of Studs:
 3"– 4" Valves ... 6
 12 Nuts & Spring Washers
 Number of Body Bolts:
 6" Valves 20
 8" Valves 24
 10" Valves 32
 12" Valves 40

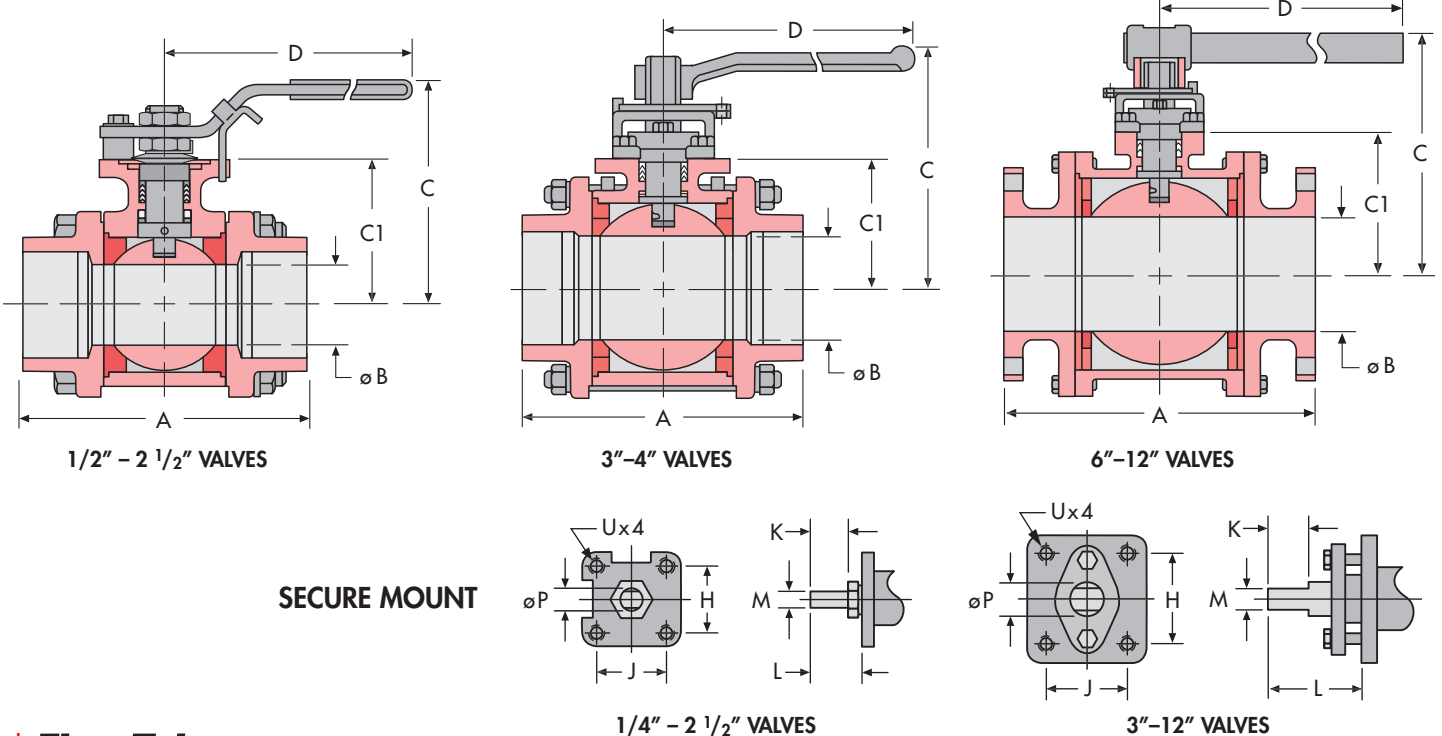
** Number of Rings in Stem Packing:
 3"– 4" Valves 4
 6" Valves 3
 8" Valves 3
 10" Valves 4
 12" Valves 4

† Weld Ends use CF3M
 †† Seat Supports for 6" and larger valves

DIMENSIONS Models 7000 (316SS), 8000 (WCB)

Size ins mm	A1	A3	A5	A6	øB	C	C1	D	H	J	K	L	M	P	U (UNC)	Cv	Torque lbs-in Nm	Weight lbs. kg.
1/4 8	2.84 72.1	—	—	—	0.37 9.5	2.60 66	1.54 39	6.50 165	1.17 29.7	1.17 29.7	0.32 8	0.55 14	0.25 6.4	0.37 9.3	10-24	8	60 6.8	1.8 0.8
3/8 10	2.84 72.1	—	—	—	0.50 12.7	2.60 66	1.54 39	6.50 165	1.17 29.7	1.17 29.7	0.32 8	0.55 14	0.25 6.4	0.37 9.3	10-24	8	60 6.8	1.8 0.8
1/2 15	2.84 72.1	4.39 111.5	10.04 254.9	9.04 229.5	0.59 15	2.60 66	1.54 39	6.50 165	1.17 29.7	1.17 29.7	0.32 8	0.55 14	0.25 6.4	0.37 9.3	10-24	32	60 6.8	1.8 0.8
3/4 20	3.35 85	5.80 147.2	10.43 264.8	9.30 236.2	0.79 20	2.91 74	1.66 42.1	6.50 165	1.17 29.7	1.17 29.7	0.32 8	0.55 14	0.25 6.4	0.37 9.3	10-24	54	95 10.7	2.3 1.1
1 25	3.62 92	5.97 151.7	10.71 271.9	9.48 240.7	1.00 25.4	3.43 87	2.05 52	7.87 200	1.39 35.7	1.39 35.7	0.43 11	0.75 19	0.32 8	0.43 10.9	1/4-20	105	140 15.8	3.4 1.5
1 1/4 32	4.33 110	—	11.21 284.8	9.84 249.8	1.26 32	3.62 92	2.21 56	7.87 200	1.39 35.7	1.39 35.7	0.43 11	0.75 19	0.32 8	0.43 10.9	1/4-20	200	195 22.0	4.9 2.2
1 1/2 40	4.84 123	8.03 204	11.78 299.2	10.28 261	1.50 38	4.13 105	2.60 66	9.84 250	1.95 49.5	1.95 49.5	0.55 14	0.91 23	0.37 9.5	0.62 15.7	5/16-18	275	315 35.6	7.6 3.5
2 50	5.59 142	9.04 229.6	12.48 317	10.73 272.6	2.00 50.8	4.53 115	2.95 75	9.84 250	1.95 49.5	1.95 49.5	0.55 14	0.91 23	0.37 9.5	0.62 15.7	5/16-18	500	510 57.6	11.4 5.2
2 1/2 65	7.26 184.5	—	—	12.00 304.8	2.56 65	5.04 128	3.39 86	9.84 250	2.84 72.1	2.84 72.1	0.69 17.5	1.14 29	0.47 12	0.75 19	5/16-18	780	800 90.4	21.8 9.9
3 80	7.95 202	10.10 256.5	—	12.00 304.8	2.99 76	6.42 163	3.72 94.5	15.35 390	3.54 90	1.87 47.6	1.75 44.5	3.07 78	0.67 17	1.10 28	1/2-13	1150	1100 124.3	34.6 15.7
4 100	9.06 230	13.90 353	—	12.00 304.8	4.02 102	7.087 180	4.35 110.5	15.35 390	3.54 90	1.87 47.6	1.75 44.5	3.07 78	0.67 17	1.10 28	1/2-13	2100	3600 406.7	54.7 24.8
6 150	18.00 457.2	15.50 394	—	—	5.98 152	12.21 310	7.17 182	43.31 1100	3.38 85.7	3.38 85.7	1.65 42	3.54 90	1.02 26	1.71 43.5	1/2-13	5000	4150 469	233.7 106
8 200	20.50 520.7	18.00 457	—	—	7.87 200	13.50 343	8.47 215	43.31 1100	3.38 85.7	3.38 85.7	1.65 42	3.54 90	1.02 26	1.71 43.5	1/2-13	9600	6200 700.5	377 171
10 250	22.00 558.8	21.00 533	—	—	9.84 250	14.69 373	9.96 253	43.31 1100	4.53 115	4.53 115	1.97 50	3.78 96	1.38 35	2.17 55	5/8-11	15000	14700 1661	632.7 287
12 300	25.00 635	24.00 610	—	—	11.81 300	16.26 413	11.54 293	43.31 1100	4.53 115	4.53 115	1.97 50	3.78 96	1.38 35	2.17 55	5/8-11	21000	22000 2486	CF

Dimension A is the length of Valve including End Connections as follows: A1= Threaded, Socket Weld & Sch 40 Butt Weld; A3=Flanged; 6" to 12" meet ASME B16.10 long pattern, 4" and smaller do not; A5=Extended Socket Weld; A6=Extended Butt Weld. Note: 1/4"-4" Weights are based on Threaded End Connection. 6"-12" Weights are based on Class 150 Flanged ends. Torque valves are at maximum rated pressures, clean water, RPTFE seats, Refer to Tech Bulletin 1005 for complete torque information.

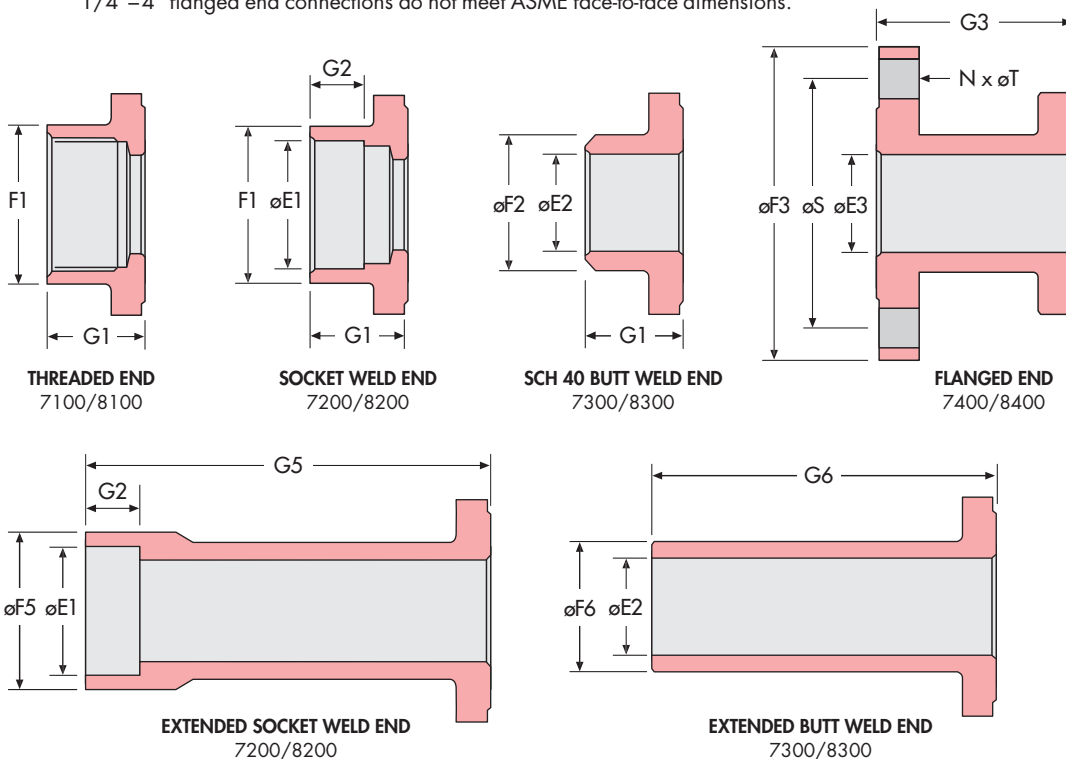


Dimensions

DIMENSIONS Models 7000 (316SS), 8000 (WCB)

Size ins mm	E1	E2	E3	F1	F2	F3	F5	F6	G1	G2	G3	G5	G6	N	S	T
1/4 8	0.55 14	0.36 9.25	—	0.98 25	0.54 13.7	—	—	—	0.90 22.8	0.500 12.7	—	—	—	—	—	—
3/8 10	0.69 17.5	0.49 12.5	—	0.98 25	0.68 17.2	—	—	—	0.90 22.8	0.500 12.7	—	—	—	—	—	—
1/2 15	0.85 21.7	0.62 15.8	0.57 14.4	1.10 28	0.84 21.3	3.50 88.9	1.14 29	0.87 22	0.90 22.8	0.500 12.7	1.67 42.5	4.50 114.2	4.00 101.5	4	2.38 60.5	0.62 15.6
3/4 20	1.07 27.1	0.82 20.93	0.79 20	1.39 35	1.05 26.7	3.88 98.6	1.46 37	1.10 28	1.02 25.9	0.560 14.3	2.24 57	4.56 115.8	4.00 101.5	4	2.75 69.9	0.62 15.6
1 25	1.33 33.8	1.05 26.6	0.98 25	1.65 42	1.32 33.4	4.25 107	1.77 45	1.34 34	1.07 27.1	0.63 15.9	2.24 57	4.61 117.1	4.00 101.5	4	3.12 79.3	0.62 15.6
1 1/4 32	1.67 42.6	1.38 35.1	—	2.05 52	1.66 42.2	—	2.17 55	1.69 43	1.24 31.6	0.69 17.5	—	4.69 119	4.00 101.5	—	—	—
1 1/2 40	1.91 48.6	1.61 40.9	1.50 38	2.36 60	1.90 48.3	5.00 127	2.44 62	1.93 49	1.28 32.5	0.75 19.1	2.87 73	4.75 120.6	4.00 101.5	4	3.88 98.6	0.62 15.6
2 50	2.41 61.1	2.07 52.5	2.00 50.8	2.91 74	2.38 60.3	6.00 152.4	2.91 74	2.40 61	1.43 36.2	0.87 22.2	3.15 80	4.87 123.7	4.00 101.5	4	4.75 120.7	0.75 19.1
2 1/2 65	2.91 73.8	2.46 62.5	—	3.39 86	2.87 73	—	—	—	1.95 49.5	0.98 25	—	—	—	—	—	—
3 80	3.54 89.8	2.99 76	2.99 76	4.17 106	3.62 92	7.50 190.5	—	—	1.97 50	0.98 25	3.04 77.3	—	—	4	6.00 152.4	0.75 19.1
4 100	4.54 115.4	4.02 102	3.40 101.5	5.32 135	4.78 121.5	9.00 228.6	—	—	2.09 53	1.18 30	4.51 114.5	—	—	8	7.50 190.5	0.75 19.1
6 150	—	6.07 154.1	5.98 152	—	6.63 168.3	11.0 279.4	—	—	4.87 123.6	—	3.62 92	—	—	8	9.50 241.3	0.88 22.4
8 200	—	7.98 202.7	7.87 200	—	8.63 219.1	13.5 342.9	—	—	5.23 132.9	—	3.98 101	—	—	8	11.75 298.5	0.88 22.4
10 250	—	10.02 254.5	9.84 250	—	10.75 273.1	16.0 406.4	—	—	4.94 125.4	—	4.43 112.5	—	—	12	14.25 362	1.00 25.4
12 300	—	11.94 303.2	11.81 300	—	12.75 323.6	19.0 482.6	—	—	5.14 130.5	—	4.65 118	—	—	12	17.00 431.8	1.00 25.4

For Cam Lock, Tube O.D. and Flush Bottom Tank connection dimensions and for other available End Connections, please consult the Flow-Tek factory. End connections are fully interchangeable and can be used in any combination. Note: Due to design constraints, 1/4"-4" flanged end connections do not meet ASME face-to-face dimensions.



Flow-Tek's 3 piece valve is offered with a center body and a large selection of end connections. This versatile design offers easy customizing to meet most special application requirements.

Extended End connections may be fabricated from pipe and fittings.



Accessories

Ordering Information

Item	Selection	Code
1. Body Material:	316 Stainless Steel (CF8M).....	7
	WCB Carbon Steel (A216).....	8
2. End Connection:	Threaded (NPT)	1
	Socket Weld.....	2
	Extended Socket Weld.....	2E
	Butt Weld.....	3
	Extended Butt Weld.....	3E
	ASME Class 150 Flanged	4
	JIC Male	6
3. Valve Size:	1/4" = 01, 3/8" = 02, 1/2" = 03, 3/4" = 04, 1" = 05, 1 1/4" = 06, 1 1/2" = 07, 2" = 08, 2 1/2" = 09, 3" = 10, 4" = 11, 6" = 13, 8" = 14, 10" = 15, 12" = 16	
4. Ball and Stem:	316 Stainless Steel.....	3
	304 Stainless Steel.....	2
	Hastelloy C	H
5. Seat*:	RPTFE	R
	Virgin PTFE.....	T
	Tek-Fil®	K
	Stainless Steel Filled PTFE (50/50).....	S
	UHMWPE.....	U
	TFM.....	J
	Cavity Fillers* (PTFE is Standard)	CF
6. Seals*:	RPTFE	R
	UHMWPE.....	U
7. Operator:	Locking Lever Handle	L
	Oval Locking Handle.....	OL
	Double Acting Actuator	DA
	Spring Return Actuator.....	SR
	Electric Actuator.....	EL
	Gear Operator	G

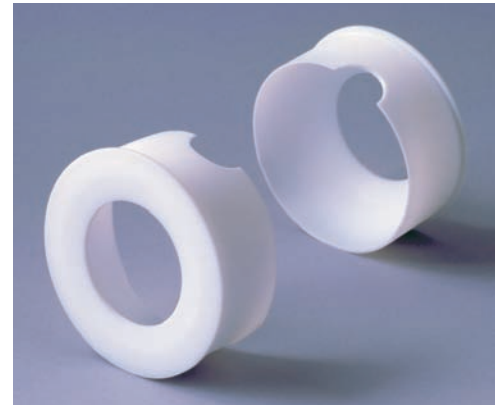
*Other seat, seals and cavity filler materials are available upon request.

Ordering Example:

Body	Connection	Size	Ball/Stem	Seat	Seals	Operator
(316)	(NPT)	(1")	(316)	(RPTFE)	(RPTFE)	Handle
7	- 1	- 05	- 3	- R	- R	- L

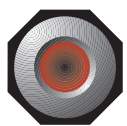
Cavity Fillers

Flow-Tek offers body Cavity Fillers as an option to the standard valve seats. Cavity Fillers are designed to reduce the possibility of contamination due to entrapment of line media fluids in the void behind the ball and the valve body wall. These seats are ideal for applications where cross contamination is a concern, such as with paints and dyes, and for sanitary applications.



Media Containment Unit

In the event of a stem leak that cannot be corrected, Flow-Tek offers a Media Containment Unit which easily mounts to standard valves. These units prevent costly downtime and allow maintenance to be scheduled when convenient. The M/C unit can be provided with a button-head check valve for injection of a sealing agent. Also, this unit is an excellent, cost effective way to address emission control requirements.



Flow-Tek®

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