



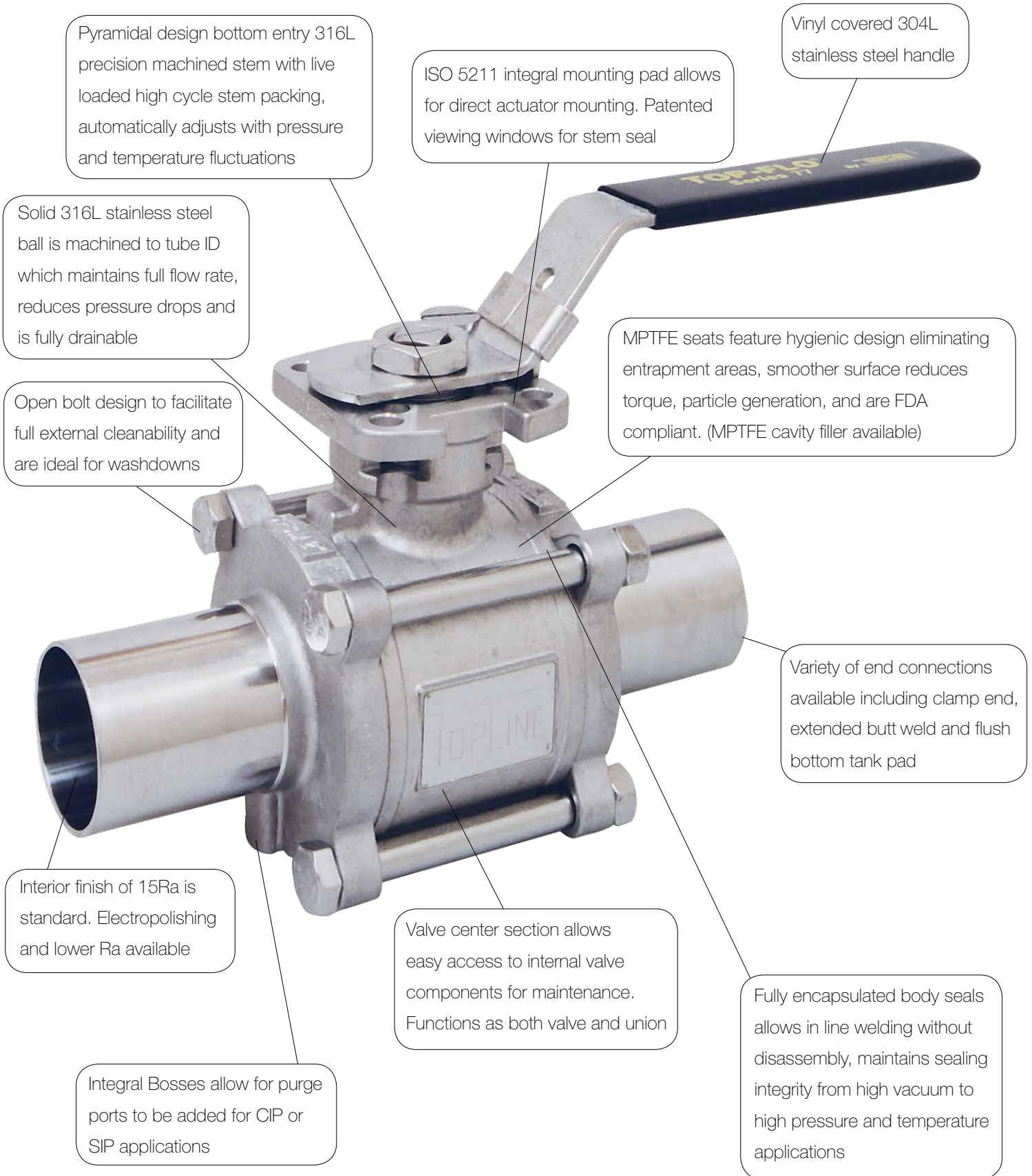
TOP-FLO® Series 77 High Purity Ball Valves



Stainless Steel Flow Control Equipment for the Food,
Beverage, Dairy, Cosmetics, Pharmaceutical,
Biotechnology, and Electronics Processing Industries

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TOP-FLO[®] High Purity Ball Valves



3-Piece Design

Series 77 Ball Valves feature a high quality 316L investment casting. They are available with sanitary clamp or orbital tube OD ends. Select the cavity filled or non-cavity filled design. Superior leak protection is accomplished by using a patented live-loaded packing system featuring Bellville washers and double "V" ring packing. An ISO 5211 mounting pad is provided for easy automation.

- Sizes 1/2" - 4"
- Cavity filled and non-cavity filled
- ISO 5211 mounting pad
- 800/1000 PSI
- 316L body ball and stem full port
- Sanitary clamp ends or extended tube OD ends

Options

Value Size	Value Cv
1/2	10
3/4	30
1	65
1-1/2	200
2	410
2-1/2	600
3	1050
4	1900

- Flush bottom tank pad, TI-Line, QI-Line, others available upon request.
- Improved I.D. polish to 10Ra and electropolishing available
- Cavity filled seats in MPTFE
- Non-cavity filled seats available in MPTFE, 50/50 SS/TFE, PEEK
- Pneumatic or electric actuation available
- Westlock & Stonel products

Direct Mount! • Easy to Automate!
See automated data sheets for pre-sized assemblies



Electric

Standard Features

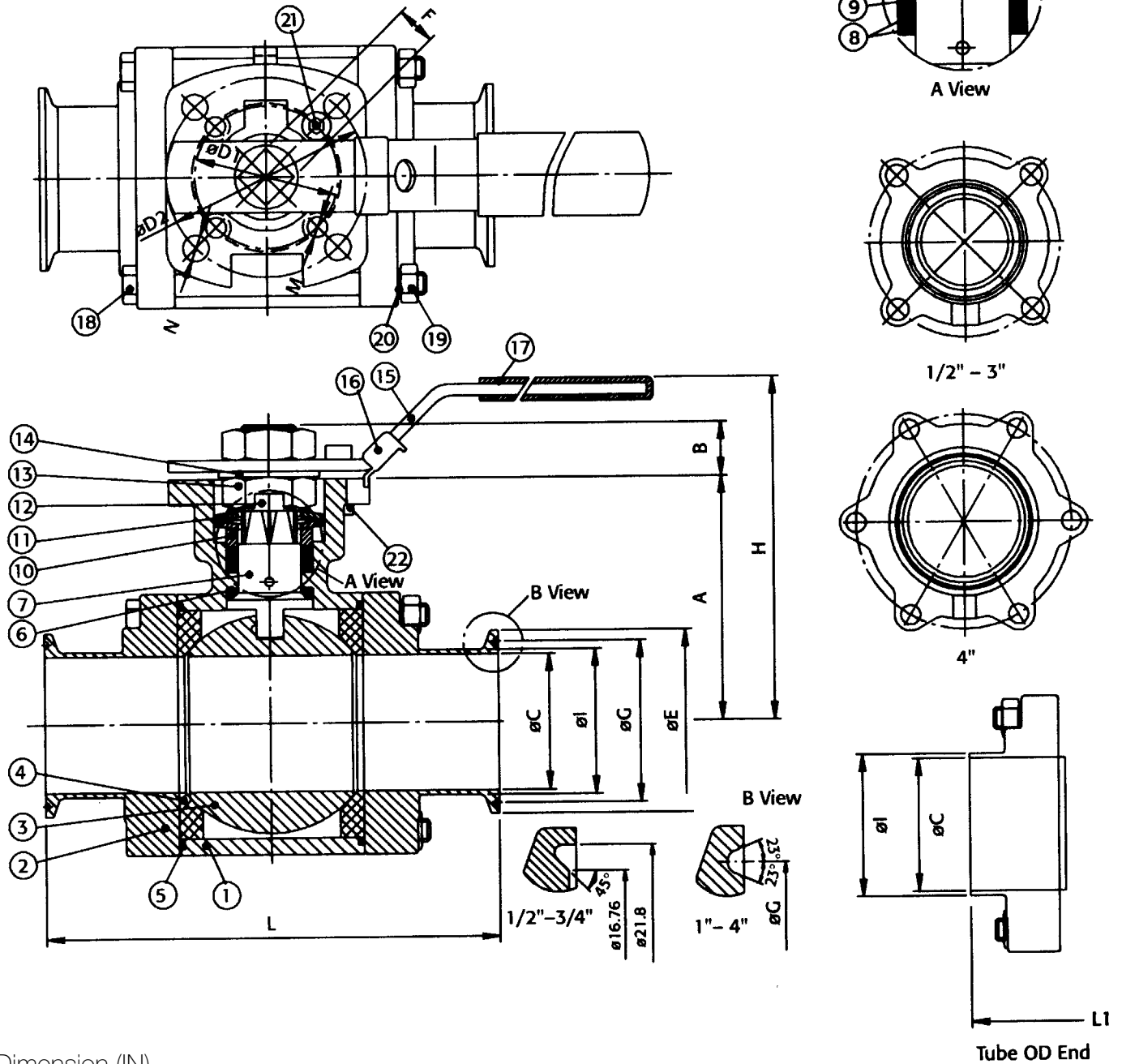
- Main valve components are made from 316L stainless steel
 - Body and ends are 316L CF3M ASTM A351 investment cast stainless steel
 - Ball is machined from 316L CF3M ASTM A351 cast stainless steel
 - Stem is machined from ASTM A493 316L bar stock
- Full traceability on all wetted parts (MTR's)
- Standard internal polish is 15Ra and is polished to meet BPE specifications of part SF and tables SF-2.2-1, SF-2.2-2 and SF-2.4-1.
- Standard seats MPTFE (FDA, USP 23 Class VI)
- Stem packing MPTFE
- Full port to I.D. of tubing for reduced pressured drop
- Bottom entry 316L pyramidal live loaded blow out proof high cycle stem adjusts to temperature and pressure fluctuation
- Locked stem nut to prevent loosening after continuous valve actuation
- Dual anti-static devices on stem (contact between stem and ball, and stem and valve body)
- ISO 5211 direct mounting pad
- Direct mount actuation 1/2" - 4"
- Handle locking device when manually actuated
- 3-piece body construction for ease of repair
- Open bolt design to facilitate full external cleanability
- Ends - clamp, extended butt-weld, or clamp by extended butt-weld
 - Clamp end requirements per BPE 2012 table DT-7-1
 - Extended butt-weld ends, 316L CF3M ASTM A351 controlled sulfur only per BPE 2012 part MM section 5.1.1 and tables DT-3.1, DT-3.2, DT-4.1, and DT-4.1.1.

Excellent for:

- Pharmaceutical
- Food and Beverage

TOP-FLO[®] Series 77

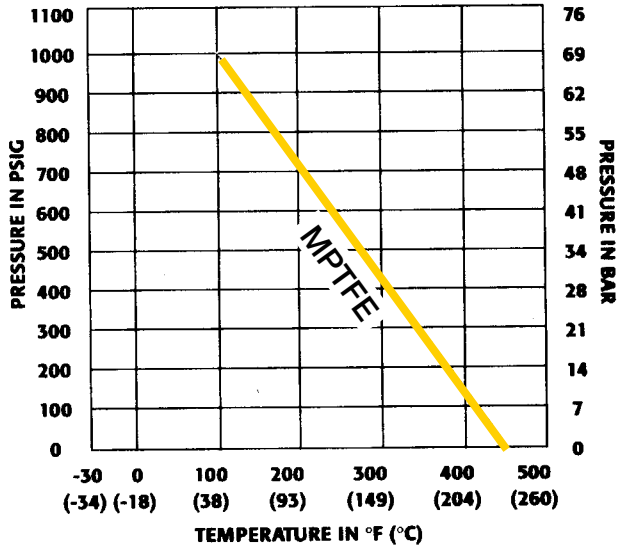
- With or without cavity filler
- Internal Polish
- Standard 15Ra



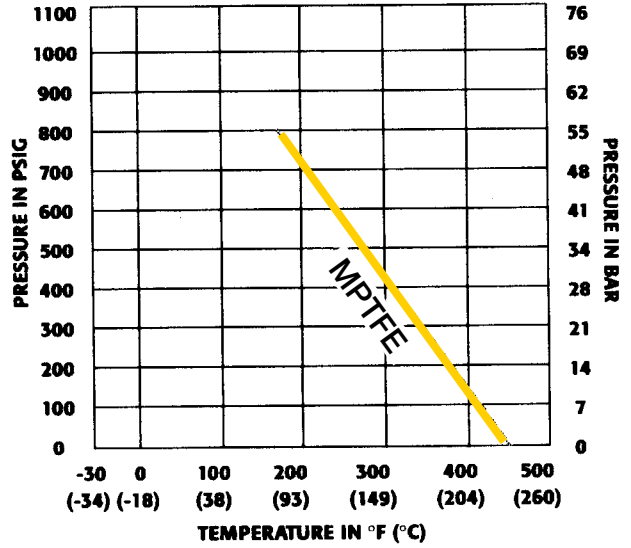
Dimension (IN)

Size	A	B	C dia	D1 dia	D2 dia	E dia	F	G dia.	I dia.	H	L	L1	M	N	ISO 5211
1/2	1.66	0.34	0.37	1.42	1.65	0.99	0.35	N/A	0.50	3.03	3.51	5.50	0.24	0.28	F03/F04/F05
3/4	1.89	0.33	0.62	1.42	1.65	0.99	0.35	N/A	0.75	3.27	4.00	5.75	0.24	0.28	F03/F04/F05
1	2.23	0.45	0.87	1.64	1.97	1.98	0.43	1.71	1.00	3.74	4.51	6.25	0.24	0.28	F04/F05
1-1/2	3.05	0.55	1.37	1.97	2.76	1.99	0.55	1.71	1.50	5.00	5.52	7.50	0.28	0.35	F05/F07
2	3.35	0.55	1.87	1.97	2.76	2.52	0.55	2.20	2.00	5.28	6.26	8.50	0.28	0.35	F05/F07
2-1/2	4.28	0.66	2.37	2.76	4.02	3.05	0.67	2.78	2.50	6.54	6.85	9.75	0.39	0.47	F07/F10
3	4.63	0.70	2.87	2.76	4.02	3.58	0.67	3.28	3.00	6.93	7.61	10.50	0.39	0.47	F07/F10
4	5.22	0.66	3.83	2.76	4.02	4.68	0.748	4.34	4.00	7.48	8.90	12.50	0.39	0.47	F07/F10

Pressure vs. Temperature Chart
for valve 1/2" - 2"



Pressure vs. Temperature Chart
for valve 2-1/2" - 4"



NOTE: Use of sanitary clamp ends will affect pressure ratings.

NOTE: PTFE Seats. Consult factory when using other seat material.

Valve Operating Torques		
	Non-Cavity Filled	Cavity Filled
1/2	80	95
3/4	89	100
1	127	160
1-1/2	210	410
2	354	490
2-1/2	580	1010
3	755	1075
4	1317	1400

No.	Part Name	Qty.	Material	No.	Part Name	Qty.	Material
1	Body	1	CF3M	12	Stop Washer	1	SS304
2	End Cap	2	CF3M	13	Stem Nut	2	SS304
3	Ball	1	SS316L	14	Stem Washer	1	SS304
4	Seat	2	MPTFE	15	Handle	1	SS304
5	Joint Gasket	2	MPTFE	16	Locking Device	1	SS304
6	Stem Seal	1	MPTFE	17	Handle Sleeve	1	Vinyl
7	Stem	1	SS316L	18	Bolt	#	SS304
8	Gland Packing	*	MPTFE	19	Bolt Nut	§	SS304
9	Gland Packing	1	‡	20	Bolt Washer	§	SS304
10	Gland Bush	1	SS304	21	Stop Pin	1	SS304
11	Belleville Washer	2	SS301	22	Pin Nut	1	SS304

* For 1/2" - 2" - 2 pcs.; For 2-1/2" - 4" - 3 pcs.

For 1/2" to 3" - 4 pcs.; For 4" - 6 pcs.

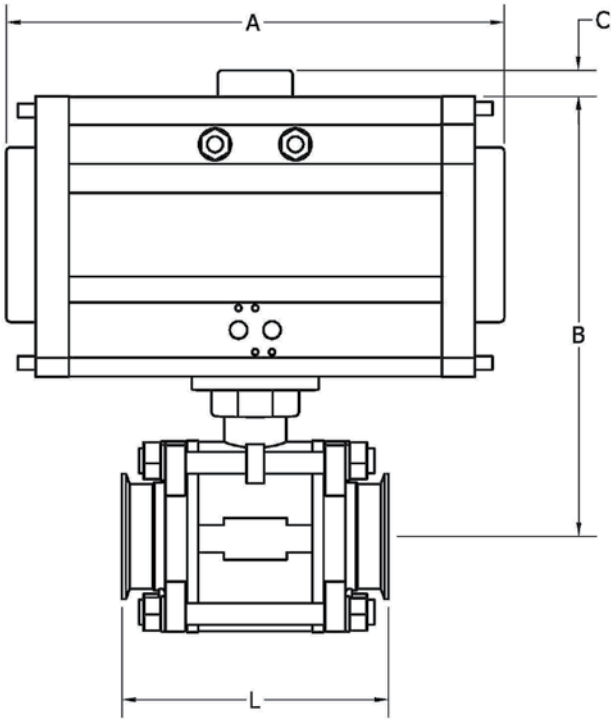
§ For 1-1/2" - 2" - 4 pcs.; For 2-1/2" - 4" - 12 pcs.

‡ 25% glass fiber filled and PTFE

1/2" - 2" single ended external thread

2-1/2" - 4" double extended external thread

Double Acting or Spring Return Pneumatic Automated Ball Valve Package



Non-Cavity Filled

Valve Size	A	B	C	L		
				C X C	BW X BW	C X BW
1/2	5.59	5.12	20mm	3.51	5.50	4.51
3/4	5.59	5.35	20mm	4.00	5.75	4.88
1	6.62	6.19	20mm	4.51	6.25	5.38
1 - 1/2	8.74	7.66	20mm	5.52	7.50	6.51
2	8.74	7.96	20mm	6.26	8.50	7.38
2 - 1/2	12.20	10.62	20mm	6.85	9.75	8.30
3	12.20	10.97	20mm	7.61	10.50	9.06
4	14.57	12.31	20mm	8.90	12.50	10.70

Cavity Filled

Valve Size	A	B	C	L		
				C X C	BW X BW	C X BW
1/2	5.59	5.12	20mm	3.51	5.50	4.51
3/4	5.59	5.35	20mm	4.00	5.75	4.88
1	6.62	6.19	20mm	4.51	6.25	5.38
1 - 1/2	8.74	7.66	20mm	5.52	7.50	6.51
2	12.20	9.69	20mm	6.26	8.50	7.38
2 - 1/2	12.20	10.62	20mm	6.85	9.75	8.30
3	14.57	11.72	20mm	7.61	10.50	9.06
4	19.57	13.13	30mm	8.90	12.50	10.70

Other Available Options

- Electric actuators
- Solenoid valves
- Switch packs
- Mechanical
- Proximity
- AS-I
- Positioners (4-20 ma or 3-15 psi)
- Westlock & Stonel products
- Stem extensions
- "V" port control ball
- Alternate seat materials available upon request
- Stainless actuators
- Steam ports
- CIP ports



TOP-FLO® Series 77 BioPharm 2-Way Sanitary Ball Valve

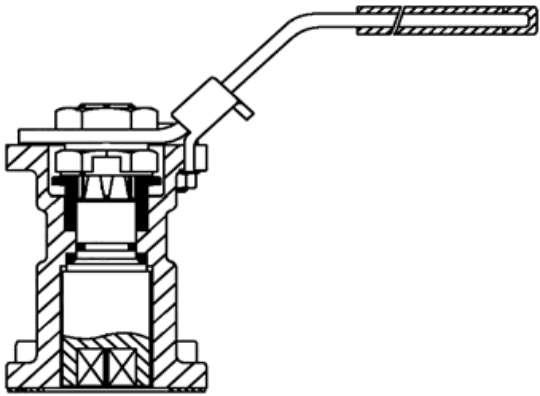
END CONNECTORS		VALVE TYPE		MATERIAL		SIZE		VALVE SERIES		SEAT MATERIAL & TYPE		OPERATOR TYPE		ID SURFACE FINISH	
38	CLAMP X CLAMP	4	2-WAY	3	CF3M/316L	05	1/2	77	VALVE SERIES	PTFE	NON-CAVITY FILLED MPTFE	-	MANUAL LEVER HANDLE	-	15RA
3C	CLAMP X EXT. BW					07	3/4			SSFE	NON-CAVITY FILLED 50/50 SS-316L	SR	SR80 PSI ACTUATOR	-3EP	15RA W/EP (SF4)
40	EXT. BW X EXT. BW					10	1					DA	DA80 PSI ACTUATOR		
						15	1-1/2					SR1	SR60 PSI ACTUATOR		
						20	2					DA1	DA60 PSI ACTUATOR		
						25	2-1/2					E1	115VAC - 1PH, NEMA4,4X		
						30	3					2	24VDC, NEMA 4, 4X		
						40	4					*	CUSTOMER SPECIFIED		
						60*	6								

PART NUMBER EXAMPLE:
3C431577PTFEDA-3EP
 TOP-FLO® 1 1/2" SERIES 77 BIOPHARM
 3-PC BALL VALVE, CLAMP X EXT. BW ENDS,
 FDA/USP TFM1600 SEATS & SEALS, 15R_s
 EP ID (SF4), CF3M/316L CONSTRUCTION,
 DIRECT MOUNT TA SERIES DOUBLE
 ACTING ACTUATOR SIZED FOR 80 PSIG,
 VISUAL POSITION INDICATOR

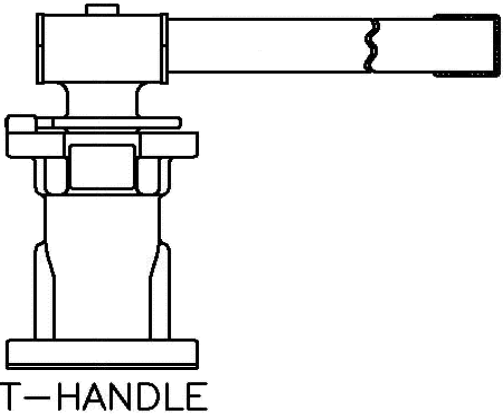
* FOR 6" VALVE - SEE TF4 SERIES BROCHURE

Direct Mount TSM Stem Extensions

STEM EXTENSION PART #	CORRESPONDING VALVE SIZE	HANDLE TYPE
88TSM1	1/2	LEVER
88TSM1	3/4	LEVER
88TSM3	1	LEVER
88TSM4	1-1/2	LEVER
88TSM4	2	LEVER
D9TSM3	1-1/2	T-TYPE PIPE
D9TSM3	3	T-TYPE PIPE
D9TSM4	4	T-TYPE PIPE



TSM extensions are ordered as a separate component
 Please specify quantity required and corresponding valve size
 when ordering.
 Direct mount TSM extensions are constructed of 316SS material
 And have integral iso 5211 mounting pad for easy adaptation
 For both manual handle or actuator requirements.



Alternate end connections upon request - consult factory for options



Always giving you
top of the line
service and quality.

Contact your Top Line Representative for Assistance

Office: P.O. Box 264 · Bradford, PA 16701

Plant: 21 Valley Hunt Drive · Lewis Run, PA 16738

800-458-6095

814-362-4626

Fax: 814-362-4453

This is what our customers are saying about us:

What is the benchmark for this industry.

Service.

The stainless steel sanitary fittings/valves industry has morphed and changed over my 24 years of dealing with it... and many suppliers/distributors/manufacturers have come and gone... those who have survived and thrived, have done so because of that benchmark.

What says "service" to me... reliability, promptness and the ability to react to the marketplace and competition when it's needed. The 25 year relationship between Shambaugh & Top Line has perfectly defined and proved this is still possible in the volatile sales world we live in.

There has been a steady and consistent understanding between supplier and customer that has worked for those same amount of years. When it comes down to "crunch time" and made to the inside sales reps at Top Line will suffice for the needs of the moment.

All of Top Line's personnel have been commendable for the major bulk of those 25 years...

As to the point of specifics... Ann Marie has been the epitome of what I've defined above. For Shambaugh's needs/requests... she has met and exceeded that benchmark... consistently.

Bob Goleeke, Shambaugh & Son

I have been working with Top Line for about 7 years. my company, for many years more.

Their personnel, service, pricing and product quality is excellent.

They have very helpful and knowledgeable engineers that always help us in more complicated scenarios. You can't ask for more from a supplier. They are responsible for my company winning many projects. I would recommend Top Line to anyone in the industry.

Bravo Top Line,

George Palov, Sales Manager - Haleson

Top Line is the leading supplier of sanitary stainless steel process equipment serving the food, beverage, dairy, pharmaceutical, biotechnological and personal care industries. For over 50 years we've provided our customers with exceptional customer service and quality products. We are committed to meeting the fastest delivery, new product development and application engineering to meet all our customer's needs with our extensive inventory and expert sales team.

Limited Warranty

Top Line Process Equipment Company products are warranted to be free of defects in material or workmanship for a period of one year from date of shipment. Warranty covers those Top Line products used in an approved installation and maintained in strict accordance with recognized standard industry practice. If, after properly authorized return, Top Line determines that products are defective, Top Line may at its option, repair or replace such defective products.

Top Line shall not be liable for consequential, indirect or incidental damages. The above warranty is in lieu of all other warranties, expressed or implied.

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