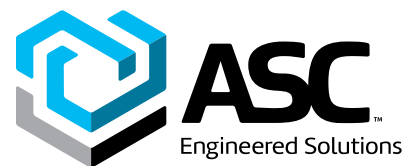


Building connections that last™



Sharpe®

High Performance &
Engineered Solutions





asc-es.com

Building connections that last™

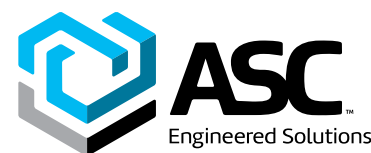
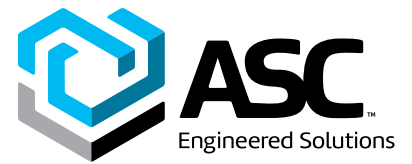


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Building connections that last™



Sharpe® Series 80/89 & FS80/FS89

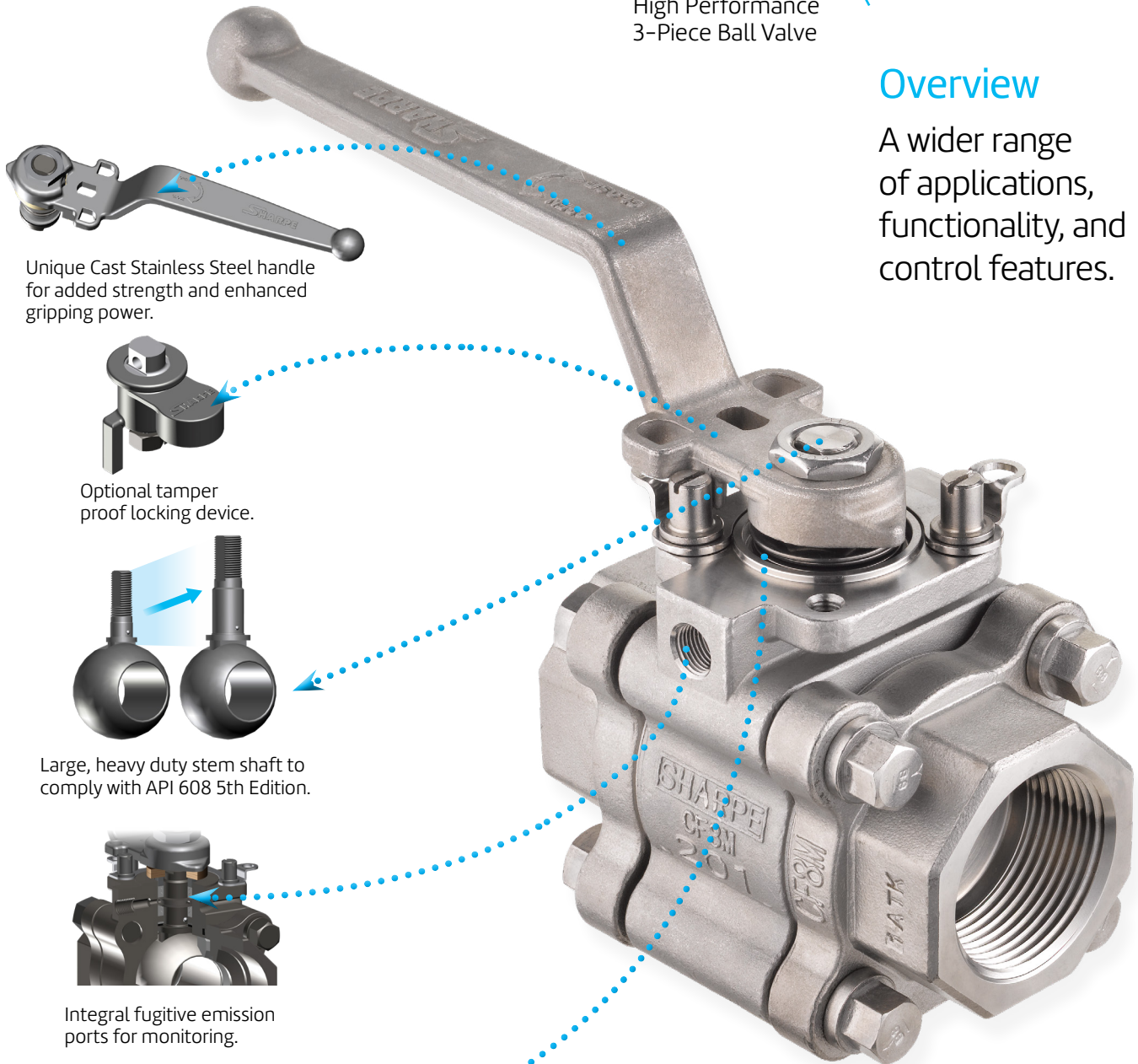
High Performance 3-Piece
Ball Valve



High Performance 3-Piece Ball Valve

Overview

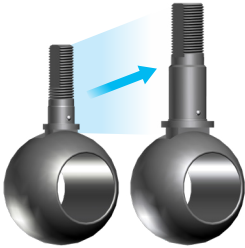
A wider range of applications, functionality, and control features.



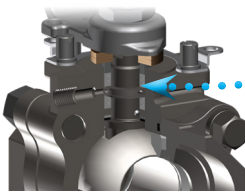
Unique Cast Stainless Steel handle for added strength and enhanced gripping power.



Optional tamper proof locking device.



Large, heavy duty stem shaft to comply with API 608 5th Edition.



Integral fugitive emission ports for monitoring.



Superior stem seal configuration for leakage protection and improved environmental performance.

The [Series 80/FS80 Standard Port](#) and [Series 89/FS89 Full Port 3-Piece ball valves](#) are designed for high performance, long cycle life and exceptional durability. The valves are fully compliant to API 608 Class 800 for sizes up to 2¾" Standard Port, 2" Full Port, and Class 300 up to 4" Standard Port, 3" Full Port.

Building connections that last™

Features

Important Construction Components

Body Material

316 Stainless Steel, Carbon Steel, Alloy 20 & 254 SMO®.

Rugged Body and End Pieces

Rugged body with higher and deeper stem packing area to allow for more stem seals.

Two cast bosses for optional fugitive emission ports.

Larger ISO 5211 bolt pattern for handling higher valve torques.

Extra thick end pieces to comply with Class 800 for sizes up to 2½" Standard Port, 2" Full port.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

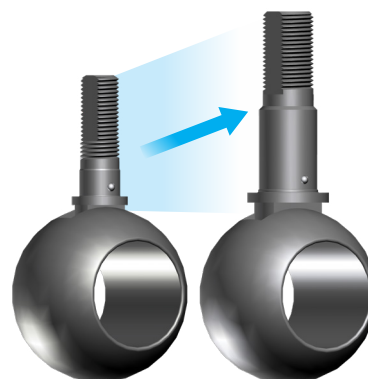
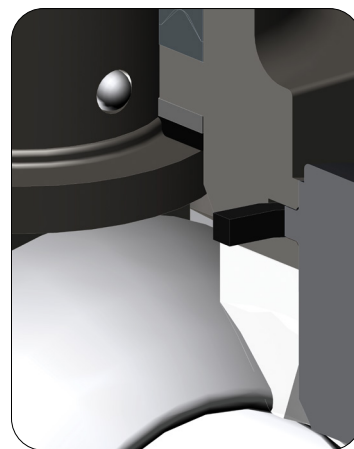
Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Heavy Duty Stem Design

Stem diameters have been increased to meet the higher torque requirements of the most demanding applications. Stem to ball contact area is wider and larger, allowing the valve to be used for higher torque applications.

Design allows for the use of 316 stainless steel stem material, rather than 17-4PH, for superior corrosion resistance.



Building connections that last™

Features

Larger Bolt Design

Larger diameter body bolts to comply with Class 800 for sizes up to 2¾" Standard port, 2" Full Port.

Encapsulated body bolts for added protection and wash down applications.

Optional bolts and nuts to comply with NACE MR-0175/ISO 15156.

ISO 5211 Top-Works Compatibility

The top-works offer compatibility for mounting a wide range of accessories.

Sharpe® actuators and accessories may be retrofitted on existing valves without disruption of line integrity.

Floating Ball Design

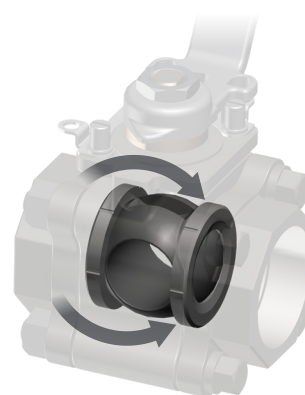
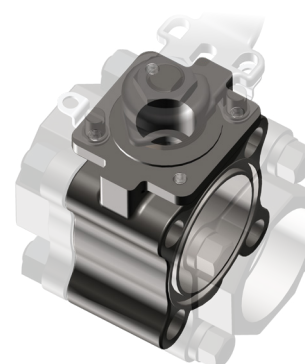
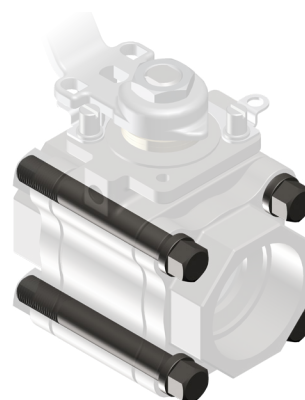
Solid stainless steel ball with wide selection of configurations for a variety of applications including; diverting, mixing, controlling, flushing, purging and more.

Floating ball seals on the downstream seat, reducing torque and assuring a bubble-tight shutoff.

Unique Handle

A unique cast stainless steel handle specially designed to accommodate locking devices and high operating torques.

A comfortable, ergonomic, non slip hand-grip design. Handle length according to API 608 requirements.



Valve Trim

Operational flexibility and process compatibility of stem assemblies

Stem Assemblies

Various stem assemblies are available based on application requirements.

Standard – A multiple pack of Chevron "V" shaped stem seals for better sealing in TFM® or Nova materials.

High Temperature – Double pack of flexible graphite seals for sealing under high temperature conditions.

Fugitive Emission – 2-pack stem seals in PTFE or graphite, with lantern ring to allow leak detection through the emission port(s).

High Cycle – Unique design for demanding high cycle applications that consist of multi-system sealing devices in the stem bonnet.

Stem Sealing

Increased Stem Sealing Area – Allows for a range of sealing combinations for severe applications and other stringent design demands.

Live-Loaded Stem – Two pairs of concave and opposing spring washers provide additional compensation for seal wear.

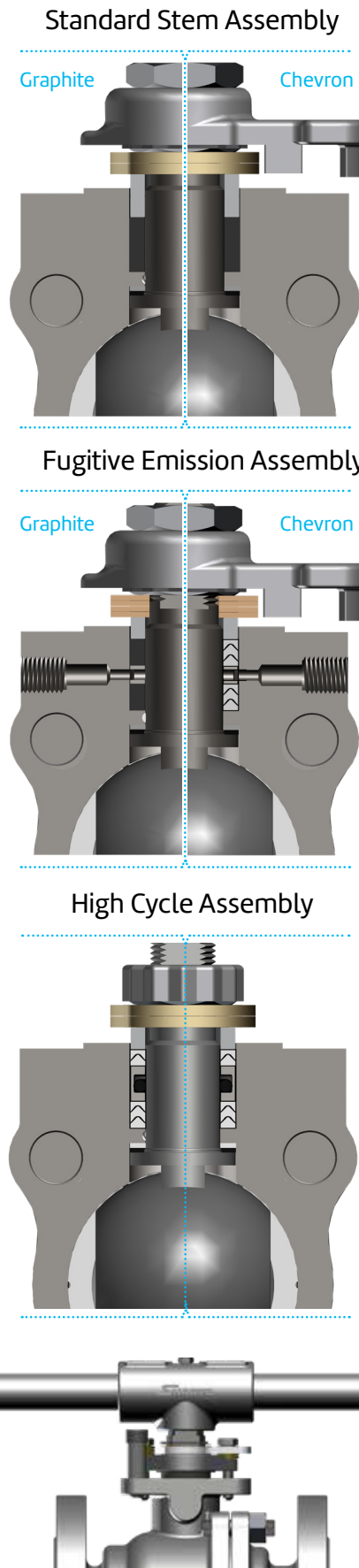
Safe Design – Blowout proof stem ensures the stem cannot be blown out by accidental medium pressure rise.

Wear Resistance – The thrust washer is either metallic for higher temperatures and wear resistance, or PEEK for lower temperatures.

Anti-Static – Static build-up discharges by anti-static device in stem or the metallic thrust washer.

Stem Trim for Sizes Greater Than 3"

According to API 608 all valve sizes greater than 3" have an adjustable packing gland with thru bolt holes. Gland bolts pass through the holes and thread to the valve body. The position stops are bolted to the body and are not integral to the packing gland, gland flange or gland bolting.



Building connections that last™

Seat & Seal

Options for demanding design solutions

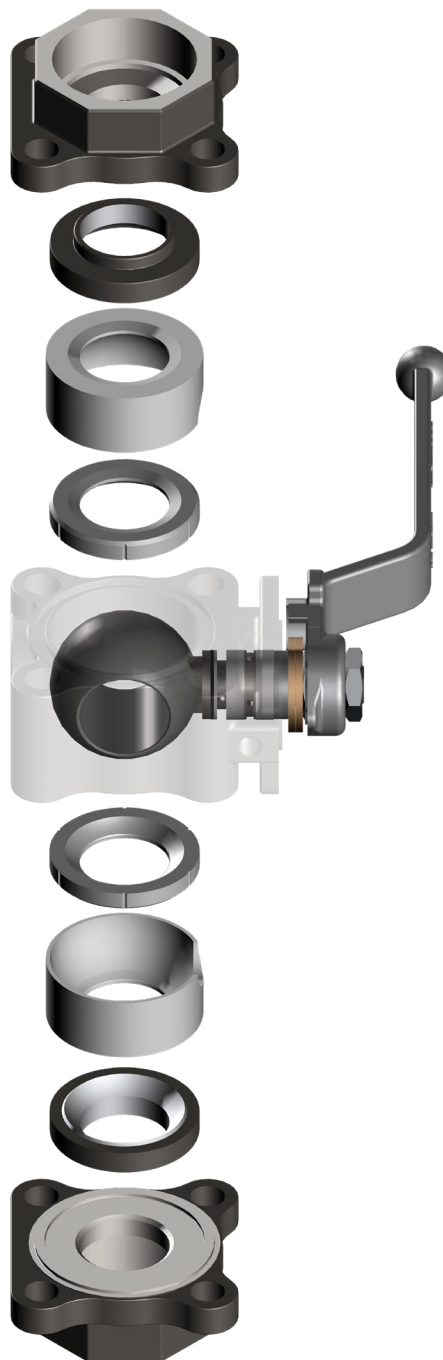
Choice of Seats and Seals – A wide variety of seat and seal materials are readily available for the most demanding applications including; TFE, RTFE, TFM®, Nova, Super Nova, Delrin®, PEEK, Buna, Graphite, Impregnated Graphite, EPDM and Viton®.

Seat Designs – All the seats are designed with circumferential relief slots to equalize body pressure and assure leak-tight sealing.

Aside from standard seats, Sharpe® also supplies seats designated for specific applications, including, but not limited to:

Cavity Filler Seats – Seats that eliminate the voids in the valve body cavity to minimize solidification of the media.

Metal Seats – Metal seats are the only option where high temperatures, severe abrasion and corrosive fluids are involved. See Sharpe® Valves M80/M89 and M70/M74 Metal Seated Series Brochure.



Accessories

End Connection Combinations

Customize your valve with the end connections of your choice including mixed ends. Threaded, socket weld, butt weld and extended butt weld ends are readily available.

Integrated Fugitive Emission Ports

One or two ports can be drilled and tapped into our specially designed body.

Ports align with a lantern ring precisely located between an upper and lower set of stem packing to allow monitoring of emissions.

Lockable Stem Extension

An option to move the valve top interface away from the pipe line to accommodate insulation.

Tamper Proof Locking Device

Upgrade from the standard locking device found on all Sharpe Valves to our unique spring loaded Tamper Proof Locking Device.

Spring Return Handle

Spring return handle ensures that the valve cannot be left open (or closed).

Cast Mounting Brackets

Cast stainless steel brackets with hole patterns conforming to ISO 5211 on top and bottom for actuation mounting. Safety locking holes for securing valves during maintenance (requires special couplers). Aesthetic design offers wide tool clearance for installation and open visual.

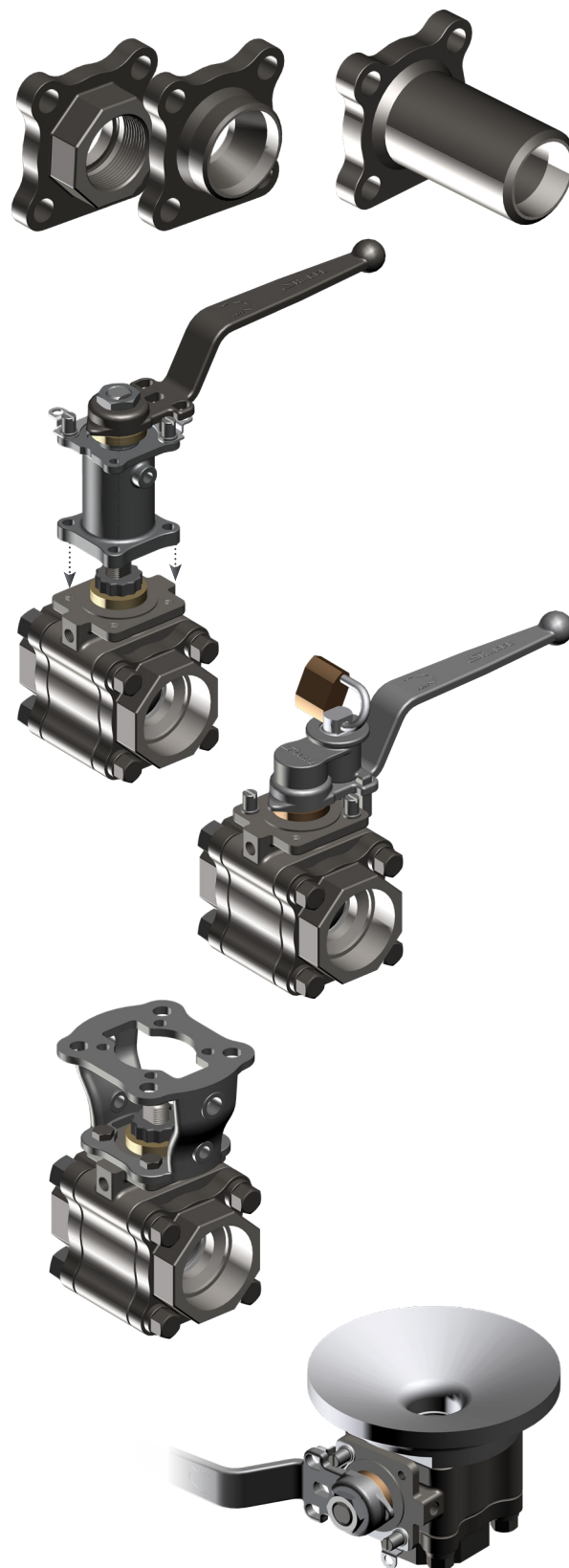
Steam Jackets

Steam jackets enable valves to be kept at a controlled temperature.

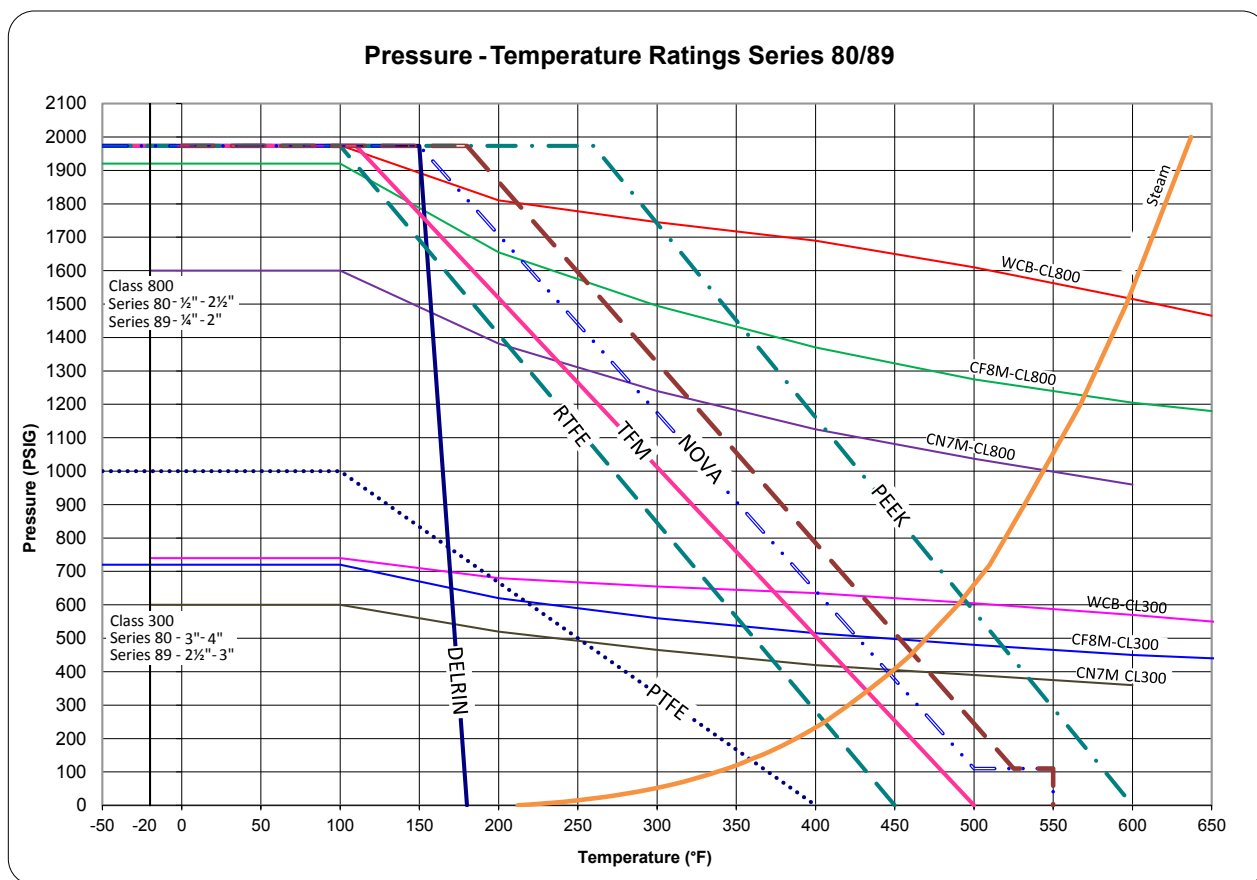
Tank Bottom Valves

Valves with special dished flanges for welding directly to tank bottoms.

Minimizes the static volume common with standard fittings.



Technical Information



Note: The maximum pressure / temperature ratings of the valve assemblies are limited to lowest of the body or seat material fitted. The valve body ratings are based on ASME B16.34 rating for materials. The graphs are based on laboratory testing and our experience in field. The seat ratings depend on the material, design, application and function. For higher pressure rating above 2000 psig, please consult with Sharpe Valves.

Standard Port

Class 800 1/2" - 2 1/2"

Class 300 3" - 4"

Full Port

Class 800 1/4" - 2"

Class 300 2 1/2" - 3"

Sharpe® Seat Materials

T - Virgin PTFE:

Polytetrafluoroethylene is a Fluorocarbon-based polymer. This seating material has excellent chemical resistance and low coefficient of friction. Its temperature range is -100°F to 400°F (-73°C to 204°C). Color - white.

M - TFM® PTFE:

Dyneon® TFM PTFE is a second generation PTFE with improved chemical and heat resistant properties over first generation PTFE and exhibits better stress recovery. Its temperature range is -100°F to 500°F (-73°C to 260°C). Color - white.

R - Reinforced Polytetrafluoroethylene: (RTFE 15% Glass Filled).

PTFE's mechanical properties are enhanced by adding filler material to provide improved strength, stability and wear resistance. Its temperature range is from -320°F to 450°F (-196°C to 204°C). Color - off-white.

N - Nova:

This is a Teflon base filled with glass amorphous carbon powder and graphite. It has a lower thermal contraction expansion than PTFE, and is ideal for steam or thermal fluid applications. Its temperature range is from -50°F to 550°F (-45°C to 288°C). Color - black.

B - Super Nova:

A free-flowing compound based on TFM® containing electro-graphitized carbon. It features: increased thermal dimensional stability and surface hardness, improved deformation under load, reduced friction and wear, and good chemical stability. It has a high limiting oxygen index (LOI), low coefficient of friction, very good mechanical properties and exceptional temperature resistance. It is used as a seat material in chemical processing and automotive industries. It is ideal to use with steam and thermal fluid applications up to 550°F (288°C) and as low as -40°F (-40°C). Color - black.

D - Delrin®:

This material is very rigid and does not undergo cold flow. It has a combination of strength, stiffness, hardness, dimensional stability, toughness, fatigue resistance, abrasion resistance, low wear and low friction. It can withstand pressure up to 6000 PSIG depending on valve size and class rating. Has a temperature range of -70°F to 180°F (-57°C to 82°C).

P - PEEK (Unfilled) Polyetheretherketone:

PEEK Polymer offers a unique combination of chemical, mechanical and thermal properties. Excellent for water and steam applications at elevated temperatures up to 600°F (315°C). Color - beige.

Other seat materials:

Other seat material are available according to the application, such as very high temperature or cryogenic conditions.

Parts & Materials

Series 80/FS80 ½" – 2"
Series 89/FS89 ¼" – 1½"

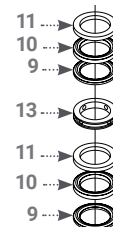
High Temperature or
Fire Safe Packing



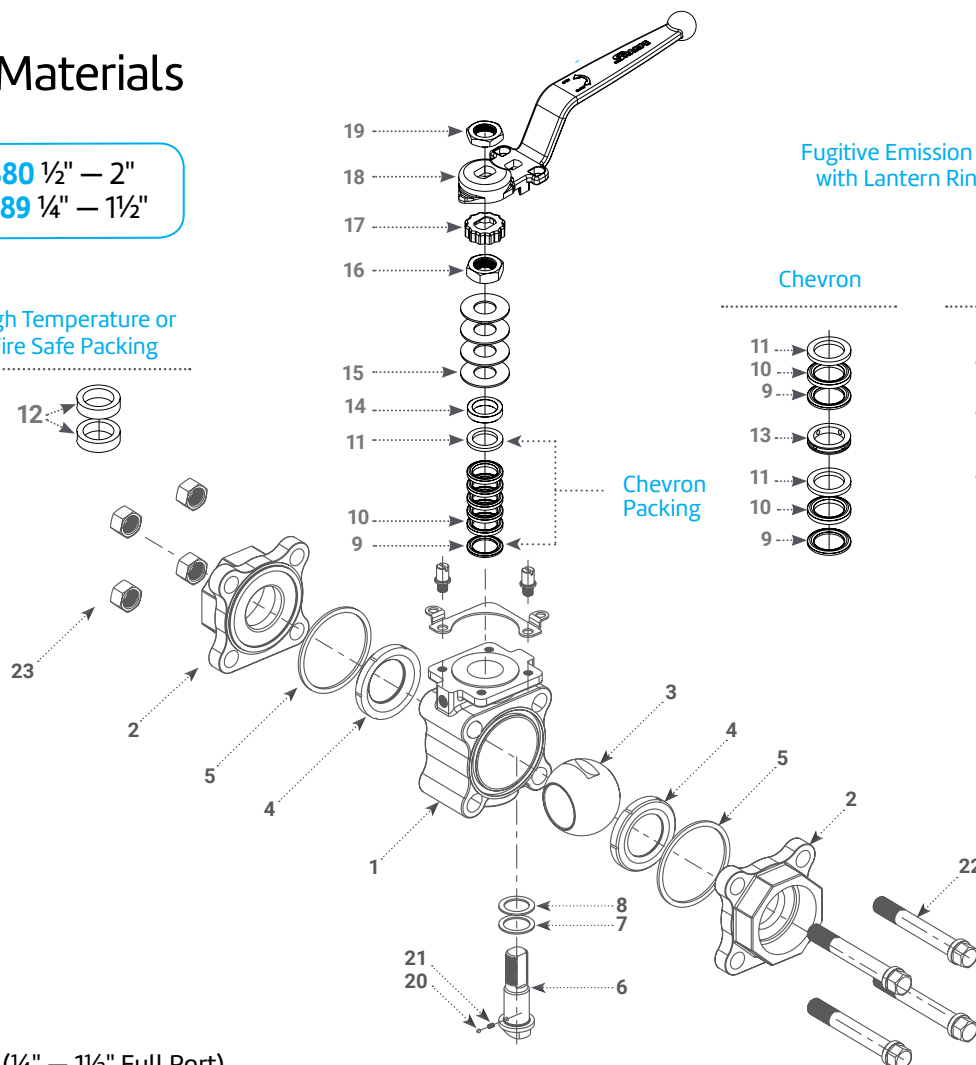
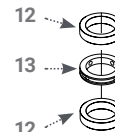
Fugitive Emission Monitoring
with Lantern Ring Packing

High
Temperature
or Fire Safe

Chevron



Chevron
Packing



Sizes ½" – 2" (¼" – 1½" Full Port)

Item	Description	Material	Qty.
1**	Body	Carbon Steel: ASTM A216 WCB 316 Stainless Steel: ASTM A351 CF8M Alloy 20: ASTM A351 CN7M SMO 254®: ASTM A351 CK3MCuN	1
2**	End Piece	Carbon Steel: ASTM A216 WCB 316 Stainless Steel: ASTM A351 CF8M 316L Stainless Steel: ASTM A351 CF3M (used for stainless steel weld ends) Alloy 20: ASTM A351 CN7M SMO 254®: ASTM A351 CK3MCuN	2
3**	Ball	316 Stainless Steel Alloy 20 SMO 254®	1
4*	Seat	PTFE, RTFE, TFM®, Nova, Super Nova, PEEK, DELRIN®	2
5*	Body Seal	Buna, EPDM, Graphite, Impregnated Graphite, PTFE, TFM®, Viton®	2
6	Stem	316 Stainless Steel, Alloy 20, SMO 254®, 17-4PH	1
6	Stern	316 Stainless Steel, Alloy 20, 17-4PH	1
7*	Thrust Bearing - Bottom	Nova, PEEK	1
8*	Thrust Bearing - Top	Nova	1
9*	Stem Packing - Bottom	PTFE, TFM®, Nova	2

Item	Description	Material	Qty.
10*	Stem Packing - Middle	PTFE, TFM®, Nova	2
11*	Stem Packing - Top	PTFE, TFM®, Nova	2
12*	Stem Packing	Graphite (FS or high temperature)	2
13	Lantern Ring	300 Series Stainless Steel	1
14	Gland	300 Series Stainless Steel	1
15*	Belleville Washer	17-7PH	4
16	Packing Nut	300 Series Stainless Steel	1
17	Lock Tab	300 Series Stainless Steel	1
18	Handle	304 Stainles Steel ASTM A351 CF8	1
19	Handle Nut	300 Series Stainless Steel	1
20	Anti-Static Ball	300 Series Stainless Steel	2
21	Anti-Static Spring	Hard Drawn Stainless Steel	2
22	Bolt	A193 Gr B8	4
23	Nut	300 Series Stainless Steel	4
24	Lock Plate	300 Series Stainless Steel	1
25	Stop pin	300 Series Stainless Steel	2

Note:

The quantities listed in the stem arrangement are for fugitive emission assemblies. Standard stem assemblies carry more seals and no lantern rings.

*These parts are used in repair kits.

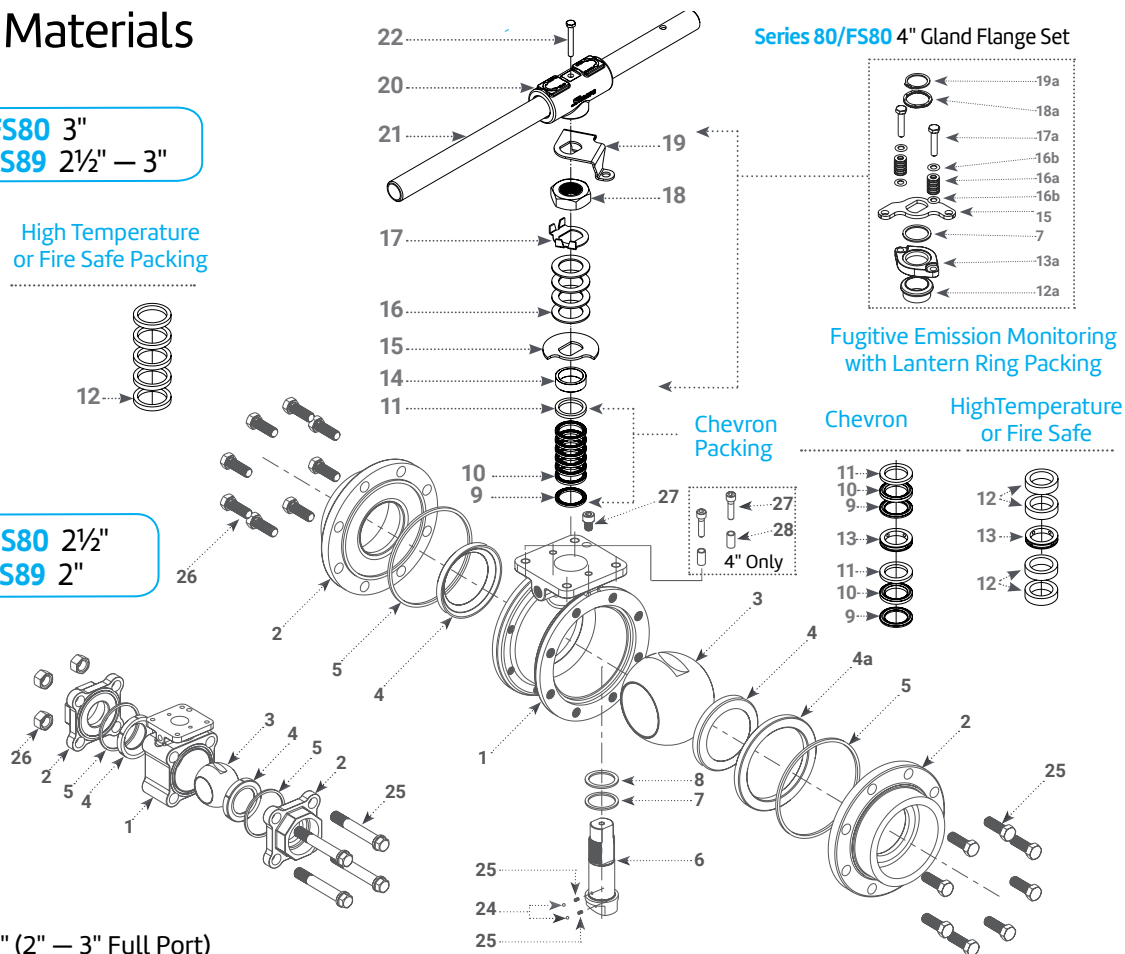
**Other materials available, call to discuss your special requirements.

Parts & Materials

Series 80/FS80 3"
Series 89/FS89 2½" – 3"

High Temperature
or Fire Safe Packing

Series 80/FS80 2½"
Series 89/FS89 2"



Sizes 2½" – 4" (2" – 3" Full Port)

Item	Description	Material	Qty.
1**	Body	Carbon Steel: ASTM A216 WCB, 316 Stainless Steel: ASTM A351 CF8M, Alloy 20: ASTM A351 CN7M	1
2**	End Piece	Carbon Steel: ASTM A216 WCB, 316 Stainless Steel: ASTM A351 CF8M, 316L Stainless Steel: ASTM A351 CF3M (used for Stainless Steel weld ends) Alloy 20: ASTM A351 CN7M	2
3**	Ball	316 Stainless Steel Alloy 20	1
4*	Seat	PTFE, RTFE, TFM®, Nova, Super Nova, PEEK, DELRIN®	2
4a	Seat Ring	Carbon Steel: ASTM A216 WCB, 316 Stainless Steel: ASTM A351 CF8M	1
5	Body Seal	Buna, EPDM, Graphite, Impregnated Graphite, PTFE, TFM®, Viton®	2
6	Stem	316 Stainless Steel, Alloy 20, 17-4PH	1
7*	Thrust Bearing - Bottom	Nova, PEEK	1
8*	Thrust Bearing - Top	Nova	1
9*	Stem Packing - Bottom	PTFE, TFM®, Nova	2
10*	Stem Packing - Middle	PTFE, TFM®, Nova	2
11*	Stem Packing - Top	PTFE, TFM®, Nova	2
12*	Stem Packing	Graphite (FS or high temperature)	4
12a	Gland Position Ring	300 Stainless Steel	1
13	Lantern Ring	300 Stainless Steel	1
13a	Gland (Size 4" Only)	316 Stainless Steel A351 CF8M	1

Item	Description	Material	Qty.
14	Gland	300 Series Stainless Steel	1
15	Stop Plate	300 Series Stainless Steel	1
16*	Belleville Washer	17-7PH	4
16a	Belleville Washer	17-7PH	16
16b	Washer	300 Stainless Steel	4
17	Lock Tab	300 Stainless Steel	1
17a	Gland Bolt	300 Stainless Steel	2
18	Packing Nut	300 Stainless Steel	1
18a	Retainer Spring	300 Stainless Steel	1
19	Packing Nut	300 Stainless Steel	1
19a	Retainer Lock	300 Stainless Steel	1
20	Wrench Block	304 Stainless Steel ASTM A351CF8	1
21	Handle Pipe	Zinc Plated Carbon Steel/Stainless Steel	1
22	Wrench Bolt	300 Series Stainless Steel	1
23	Anti-Static Ball	300 Series Stainless Steel	2
24	Anti-Static Spring	Hard Drawn Stainless Steel	2
25	Bolt	A193 Gr B8	4/16
26	Nut	300 Series Stainless Steel	4/na
27	Stop Pin	300 Series Stainless Steel	2
28	Stop Pin Sleeve	300 Series Stainless Steel	2

Note:

The quantities listed in the stem arrangement are for fugitive emission assemblies. Standard stem assemblies carry more seals and no lantern rings.

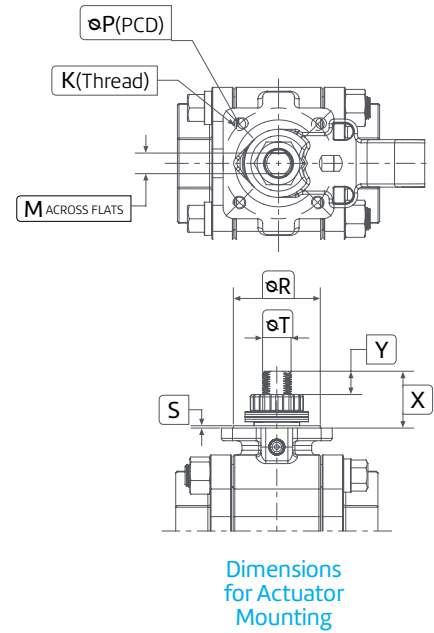
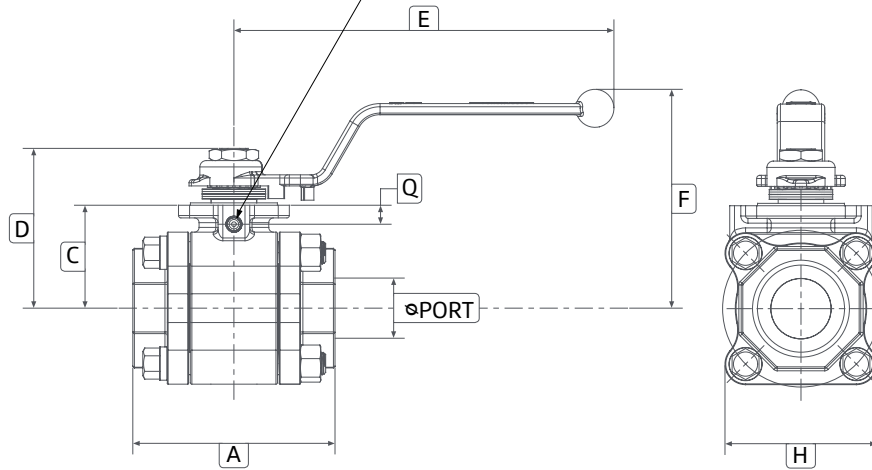
*These parts are used in repair kits.

**Other materials available, call to discuss your special requirements.

Series 80/89 & FS80/FS89 High Performance 3-Piece Ball Valve

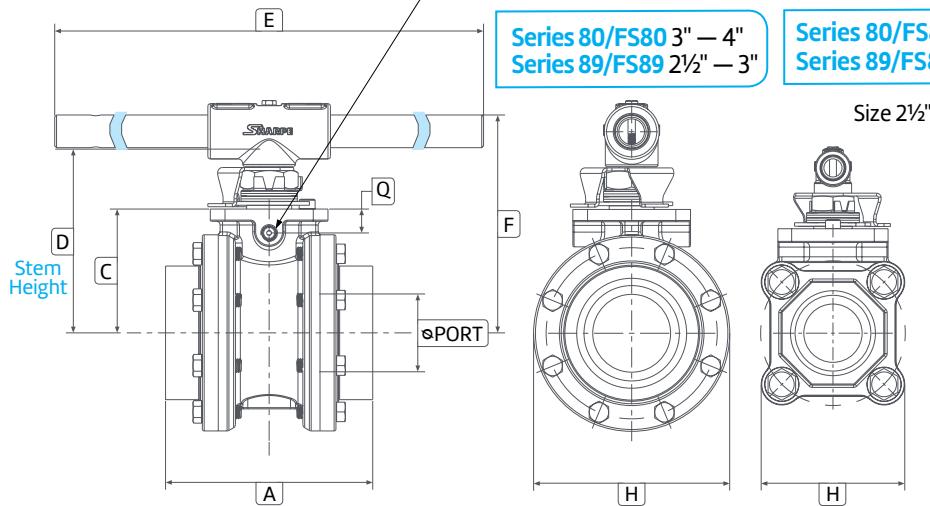
Series 80/FS80 ½" – 2"
Series 89/FS89 ¼" – 1½"

Optional
EMISSION PORT THREAD
⅛" NPT (Sizes ¾" to 2")



Series 80/FS80 2½" – 4"
Series 89/FS89 2" – 3"

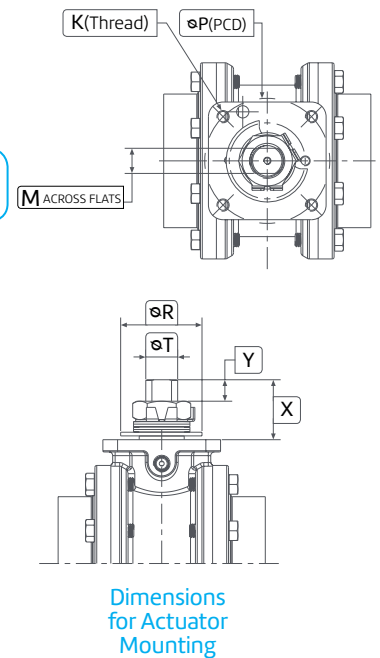
Optional
EMISSION PORT THREAD
¼" NPT (Sizes 2½" to 4")



Series 80/FS80 3" – 4"
Series 89/FS89 2½" – 3"

Series 80/FS80 2½"
Series 89/FS89 2"

Size 2½"



Dimensions (Inches)

Standard Port	Full Port	TE/SW BW		Ext BW Full Port														
		89/FS89	ØPORT		A	A	C	D	E	F	H	K (Thread)	M	ØP (PCD)	Q	ØR	S	ØT
½"	¼", ¾"	0.44	2.91	-	1.27	2.01	6.42	3.39	1.81	M5-P0.8	0.264	F04 (1.65)	NA	1.18	0.051	0.394	0.74	0.33
¾"	½"	0.56	3.07	13.10	1.42	2.17	6.42	3.54	1.95	M5-P0.8	0.264	F04 (1.65)	0.27	1.18	0.051	0.394	0.	0.33
1"	¾"	0.81	3.72	13.25	1.74	2.57	7.28	3.83	2.39	M6-P1.0	0.343	F05 (1.97)	0.39	1.38	0.059	0.472	0.	0.
1¼"	1"	1.00	4.25	13.61	1.91	2.74	7.28	4.00	2.85	M6-P1.0	0.343	F05 (1.97)	0.37	1.38	0.059	0.472	0.	0.
1½"	1¼"	1.24	4.57	13.90	2.40	3.82	9.45	5.28	3.15	M8-P1.25	0.512	F07 (2.76)	0.47	2.17	0.059	0.709	1.4	0.
2"	1½"	1.50	5.04	14.21	2.56	3.98	9.45	5.43	3.78	M8-P1.25	0.512	F07 (2.76)	0.47	2.17	0.059	0.709		0.
2½"	2"	2.00	6.34	14.87	3.58	5.28	15.75	6.34	4.92	M10-P1.5	0.630	F10 (4.02)	0.76	-	-	0.886		0
3"	2½"	2.50	6.65	-	3.98	5.87	23.62	7.48	6.30	M10-P1.5	0.807	F10 (4.02)	0.77	-	-	1.024		0
4"	3"	3.25	8.43	-	4.59	6.50	23.62	8.07	7.99	M10-P1.5	0.807	F10 (4.02)	0.77	-	-	1.024		0

Note: The dimensions above are for informational purpose only. Please refer to Sharpe® Valves if you need dimensions for construction.

How to order

Sharpe® Series 80/89 & FS80/FS89

2"	FS80	-	6	6	6	6	R	G	G	-	SW/TE	-	X	-	OH
Size	Series		Body	Ends	Ball	Stem	Seat	Body Seal	Stem Packing		Ends		Service		Suffixes and Options

Size			Series		Body Material		Seat Material		End Style		Suffixes & Options			
80/FS80	89/FS89	Class	80	Standard Port	2	Alloy 20	B	Super Nova	TE	Threaded	OH	Oval Handle up to 2" SP or 1½" FP		
-	¼"	800	89	Full Port	4	Carbon Steel	D	Delrin®	SW	Socketweld	F1	1 Emission Port **		
½"	¾"	800	FS80	Fire Safe	6	316 Stainless Steel	M	TFM®	BW	Buttweld SCH 40	F2	2 Emission Port **		
¾"	½"	800	FS89	Fire Safe	S	254 SMO® *	N	Nova	BW10	Buttweld SCH 10 *	L	Lockable Stem Extension †		
1"	¾"	800	CF80	Cavity Filler			P	Virgin PEEK	FB	Flush Bottom Tank Pad	A	NACE		
1¼"	1"	800	CF89	Cavity Filler			R	RTFE 15% Glass Filled			VB	Vented Ball		
1½"	1¼"	800	Note: Fire Safe valves must use: Graphite or Impregnated Graphite Body Seats and Stem Packing. PTFE, RTFE, TFM®, Nova, Super Nova Seats. Cavity Filler Seats available in PTFE.		End Material		T	PTFE	Additional Ends 89's Only		SJ	Steam Jacket		
2"	1½"	800			4	Carbon Steel	Body Seal Material		EBW	Buttweld SCH80 Extended	SJ3	Steam Jacket With 3 Outlets		
2½"	2"	800			6	316 Stainless Steel (Welded ends will be type L)	B	Buna	Service		TP	Tamper Proof Locking Device		
3	2½"	300			S	254 SMO® *	E	EDPM	X	Oxygen Service §	DMH	Spring Return Handle †		
4	3	300			Ball Material		G	Graphite	U	Vacuum	HC	High Cycle Stem		
					2	Alloy 20	I	Impregnate Graphite	MN	Amonia Surface	PN4	Packing Nut Design 4" Only		
					6	316 Stainless Steel	M	TFM®	SF	Silicone Free §				
					S	254 SMO® *	T	PTFE						
					Stem Material		V	Viton®						
					2	Alloy 20	Stem Packing		G	Graphite				
					6	316 Stainless Steel								
					7	17-4 PH								
					S	254 SMO® *								

Note:

- * POA.
- ** ¾" and larger std port, ½" and larger full port.
- † 3.25" Extension: ½"-1.25" standard port, ¼"-1 full port valves. 4" Extension: Larger valves.
- ‡ Contact Sharpe® Valves. 1" and smaller valves only.
- § Per Sharpe® Standards.

Other materials/options available please contact us with your requirement



Note:

* POA.

** ¾" and larger std port, ½" and larger full port.

† 3.25" Extension: ½"-1.25" standard port, ¼"-1 full port valves. 4" Extension: Larger valves.

‡ Contact Sharpe® Valves. 1" and smaller valves only.

§ Per Sharpe® Standards.

Other materials/options available please contact us with your requirement.

Applicable Standards

Body Wall Thickness	ASME B16.34
SW & Threaded Ends	ASME B16.11
Butt-Weld Ends	ASME B16.25
Basic Design	ASME B16.34, API 608 5th Ed
Fire Safe	API 607 6th Ed (FS versions only)
Pressure Test	API 598, MSS-SP 72
Mounting Dimensions	ISO 5211
NACE (Option A only)	MR-0175 / ISO 15156
Marking	MSS-SP 25
Fugitive Emission	ISO 15848-1 (with I or N stem packing)

Note:

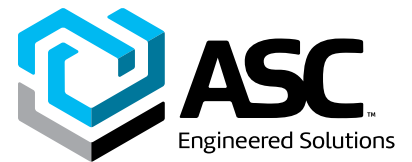
Viton® and Delrin® are registered trademarks of E.I. DuPont. TFM® is a registered trademark of Dyneon, LLC. 254 SMO® is a registered trademarks of Avesta.



Technical Information

Valve Size		Flow Coeff. Cv	Approx. Weight (lbs.)
80/FS80	89/FS89		
½"	¼", ¾"	8	2
¾"	½"	12	2
1"	¾"	32	4
1¼"	1"	46	6
1½"	1¼"	80	9
2"	1½"	120	12
2½"	2"	240	27
3"	2½"	350	32
4"	3"	720	53

Building connections that last™



Sharpe® Series HP80/HP89

High Performance – High Pressure
Standard / Full Port
3-Piece Ball Valve



Design & Features

Body Material

316 Stainless Steel & Carbon Steel.

Rugged Body and End Pieces

Rugged body, with higher and deeper stem packing area to allow for more stem seals. Two cast bosses for optional fugitive emission ports. Larger ISO 5211 bolt pattern for handling higher valve torques.

Heavy Duty Stem Design

Stem diameters have been increased to meet the higher torque requirements of the most demanding applications. Stem to ball contact area is wider and larger, allowing the valve to be used for higher torque applications.

Floating Ball Design

Solid stainless steel ball with wide selection of configurations for a variety of applications including; diverting, mixing, controlling, flushing, purging and more. Floating ball seals on the downstream seat, reducing torque and assuring a bubble-tight shutoff.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly. Design compensates for bolt expansion and reduces the chance of external leakage. Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Larger Bolt Design

Larger diameter body bolts encapsulated body bolts for added protection and wash down applications.

ISO 5211 Top-Works Compatibility

The top-works offer compatibility for mounting a wide range of accessories. Sharpe® actuators and accessories may be retrofitted on existing valves without disruption of line integrity.

Unique Handle

A unique cast stainless steel handle specially designed to accommodate locking devices and high operating torques.

A comfortable, ergonomic, non-slip, hand grip design. Handle length according to API 608 requirements.

Tamper Proof Locking Device

All Sharpe® Valves come standard with a lockable handle. The optional, Sharpe® exclusive, tamper proof locking device cannot be removed with a lock in place. When not being used with a lock its springs ensure the locking device snaps into place in the open or closed position to prevent accidental operation.

Stem Sealing

Increased Stem Sealing Area

Allows for a range of sealing combinations for severe applications and other stringent design demands.

Live-Loaded Stem

Two pairs of concave and opposing spring washers provide additional compensation for seal wear.

Safe Design

Blowout proof stem ensures the stem cannot be blown out by accidental medium pressure rise.

Wear Resistance

The thrust washer is either metallic for higher temperatures and wear resistance, or PEEK for lower temperatures.

Anti-Static

Static build-up discharges by anti-static device in stem or the metallic thrust washer.

Stem Assemblies

Various stem assemblies are available based on application requirements.

Standard – A multiple pack of Chevron "V" shaped stem seals for better sealing in TFM® or Nova materials.

High Temperature – Double pack of flexible graphite seals for sealing under high temperature conditions.

Fugitive Emission – 2-pack stem seals in PTFE or graphite, with lantern ring to allow leak detection through the emission port(s).

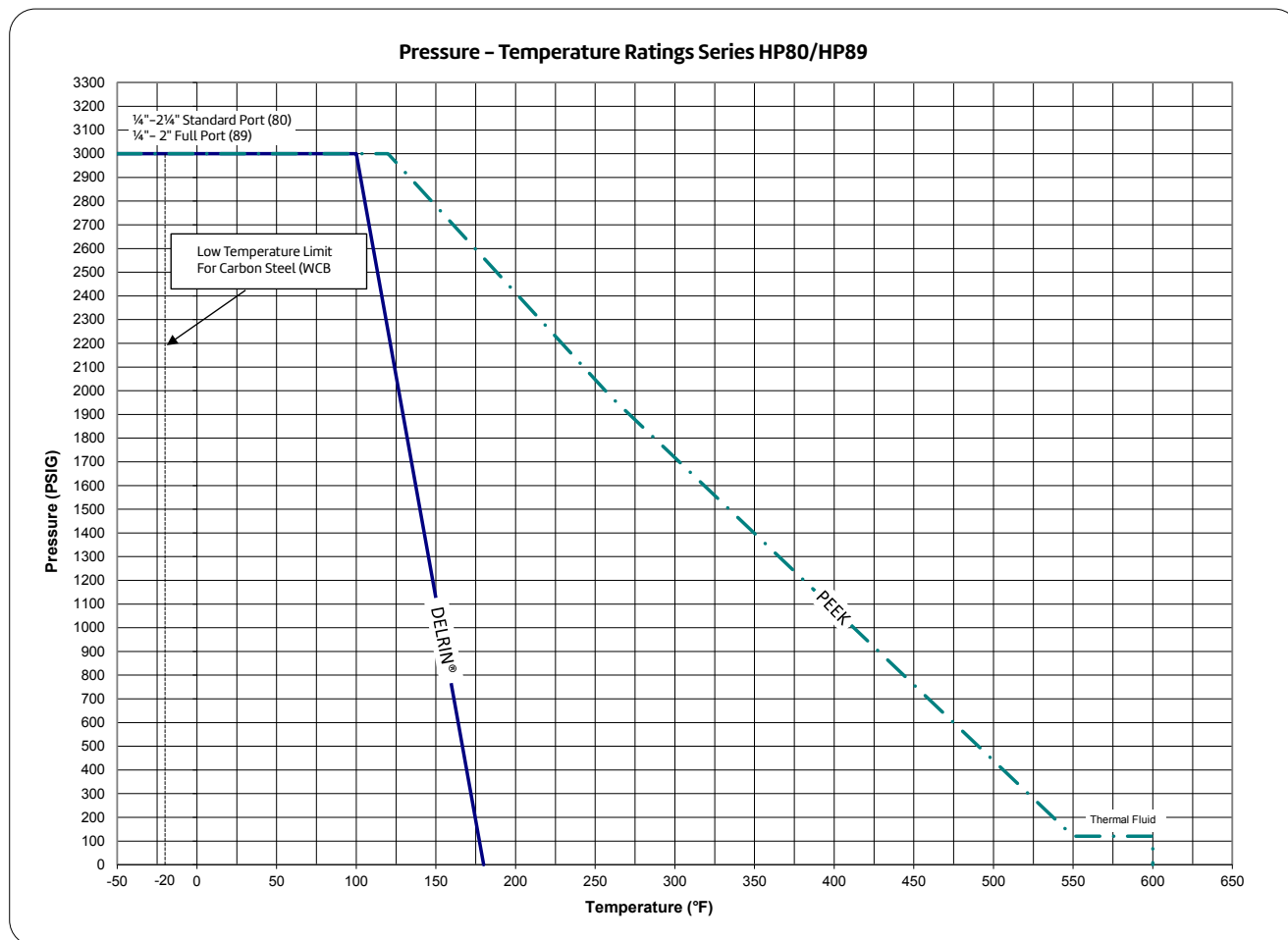
High Cycle – Unique design for demanding high cycle applications that consist of multi-system sealing devices in the stem bonnet.



High Performance
– High Pressure
Standard / Full
Port 3-Piece
Ball Valve

Building connections that last™

Technical Information



Sharpe® Seat Materials

D – Delrin®:

This material is very rigid and does not undergo cold flow. It has a combination of strength, stiffness, hardness, dimensional stability, toughness, fatigue resistance, abrasion resistance, low wear and low friction. It can withstand pressure up to 6000 PSIG depending on valve size and class rating. Has a temperature range of -70°F to 180°F (-57°C to 82°C).

P – PEEK (Unfilled) Polyetheretherketone:

PEEK Polymer offers a unique combination of chemical, mechanical and thermal properties. Excellent for water and steam applications at elevated temperatures up to 600°F (315°C). Color – beige.

Notes: Sharpe® HP80/89 series valves 3000 CWP:

The valves are rated for their maximum cold working pressure. The graphs are based on laboratory testing and our experience in field. The maximum pressure / temperature ratings are limited to the lowest of the body or seat material. High tensile bolts and nuts A193-B8 CL 2 / 300 Series Stainless nuts.



How to order Sharpe® Series HP80/HP89

2"	HP80	-	6	6	6	7	P	G	G	-	SW / TE
Size	Series		Body Material	End Material	Ball Material	Stem Material	Seat Material	Body Seal	Stem Packing		End Style

Sizes		Series		Body Material		Stem Material		Stem Packing	
80	89	HP80	Standard Port	4	Carbon Steel	7	17-4PH	N	Nova
-	¼"	HP89	Full Port	6	316 Stainless Steel			G	Graphite
½"	⅜"								
¾"	½"								
1"	¾"								
1¼"	1"								
1½"	1¼"								
2"	1½"								
2½"	2"								

End Material		Seat Material		End Style	
4	Carbon Steel	D	Delrin®	TE	Threaded
6	316 Stainless Steel (Welded ends will be type L)	P	Virgin PEEK	SW	Socketweld

Ball Material		Body Seal	
6	316 Stainless Steel	G	Graphite
		V	Viton®

Note:

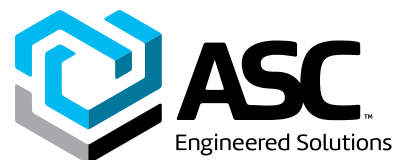
Responsibility for proper selection, use and maintenance of any product remains solely with the purchaser and end user. We reserve the right to modify or improve the designs or specifications of any product, at any time without notice. For additional materials, end pieces and options, please refer to our 80/89 series catalog.

Delrin® is a registered trademark of DuPont.

Viton® is a registered trademark of DuPont.

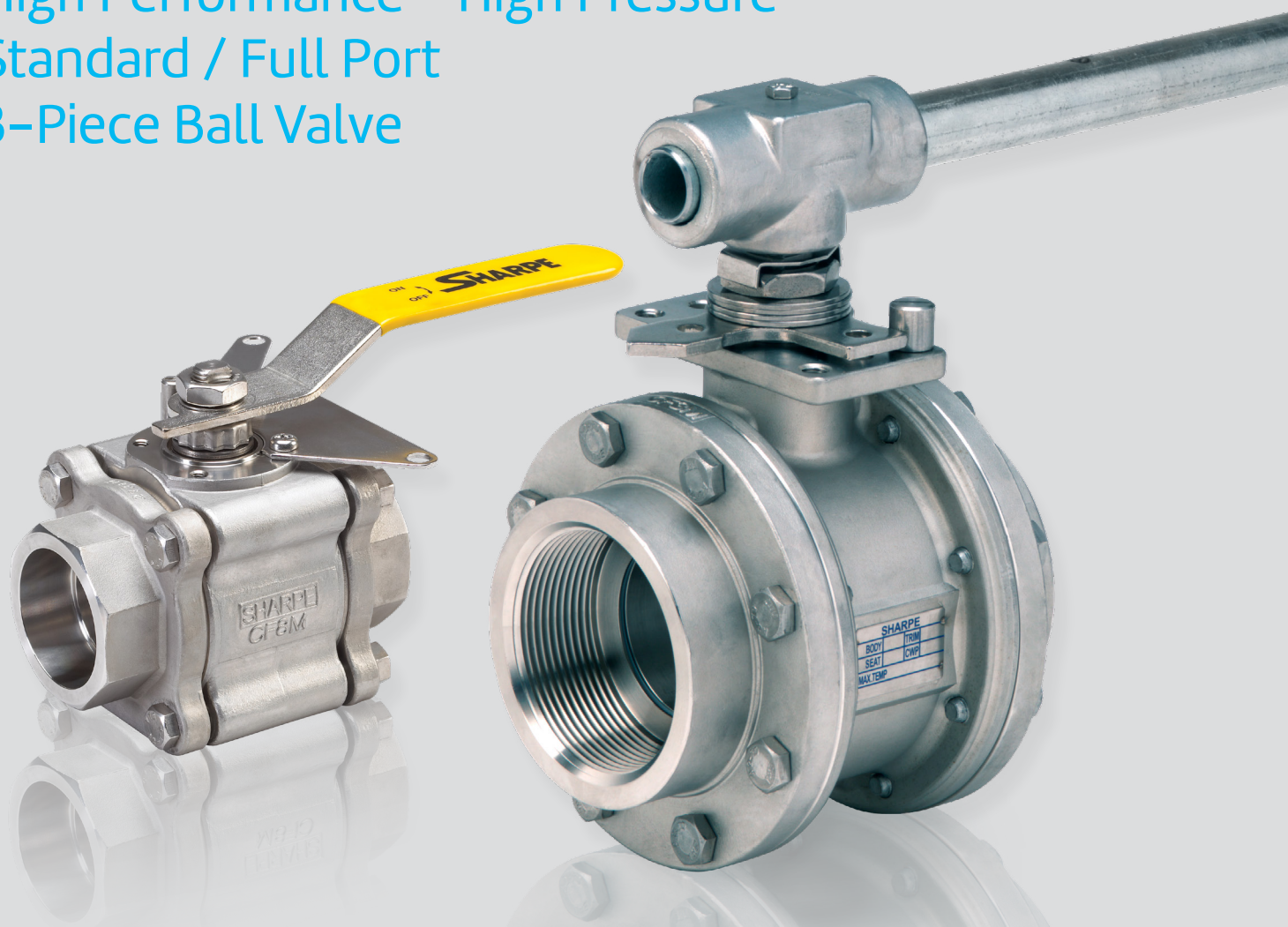
For additional materials, end pieces and options, please refer to our 80/89 series catalog.

Building connections that last™

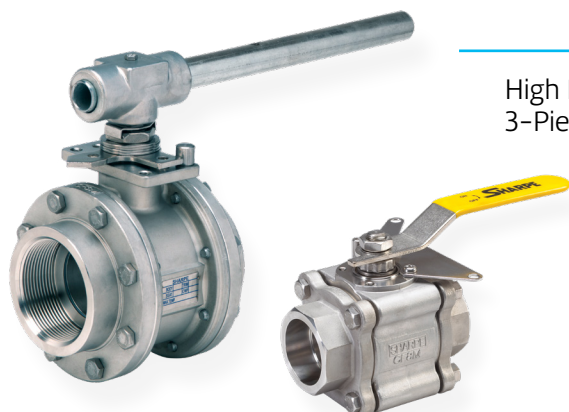


Sharpe® Series 84/99 & FS84/FS99

High Performance – High Pressure
Standard / Full Port
3-Piece Ball Valve



Design & Features



High Performance
3-Piece Ball Valve

Body Material

316 Stainless Steel, Carbon Steel, Hastelloy C & Alloy 20.

3-Piece Design

In-line serviceable swing-out center section allows easy access to internal valve components without disturbing alignment of pipe.

Stem Design

Live-loaded, bottom entry, blowout proof anti static stem features packing that extends valve cycle life over conventional ball valves and is the best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Encapsulated Body Bolts

Woutside environment assuring valve integrity.

Ideal for wash-downs.

Slotted Seat Design

Relief slots help equalize body pressure and assure leak-tight sealing. Seats also provide a wiping action that cleans ball and seats each time valve is cycled.

Choice of Seats and Seals

A wide variety of seat and seal materials are readily available for the most demanding applications including; TFE, RTFE, TFM®, Nova, Delrin®, PEEK, EPDM and Viton®.

Variety of End Combinations

A wide choice of end connections are available including, but not limited to; threaded, socket weld, butt weld, flanged and flush bottom tank pad ends.

ISO 5211 Integral Mounting Pad

Ideal for actuation.

Centering lip feature assures precise alignment of bracket, stem and coupler. Actuators may be retrofitted on existing Sharpe® Series 84/99 without disruption of line integrity. Allows for secondary containment unit to be added when necessary.

Lockable Handle

All Sharpe® Series 84/99 & FS84/FS99 valves are supplied with lever or pipe handles and are designed to permit locking the valve in either the open or closed position.

Traceability

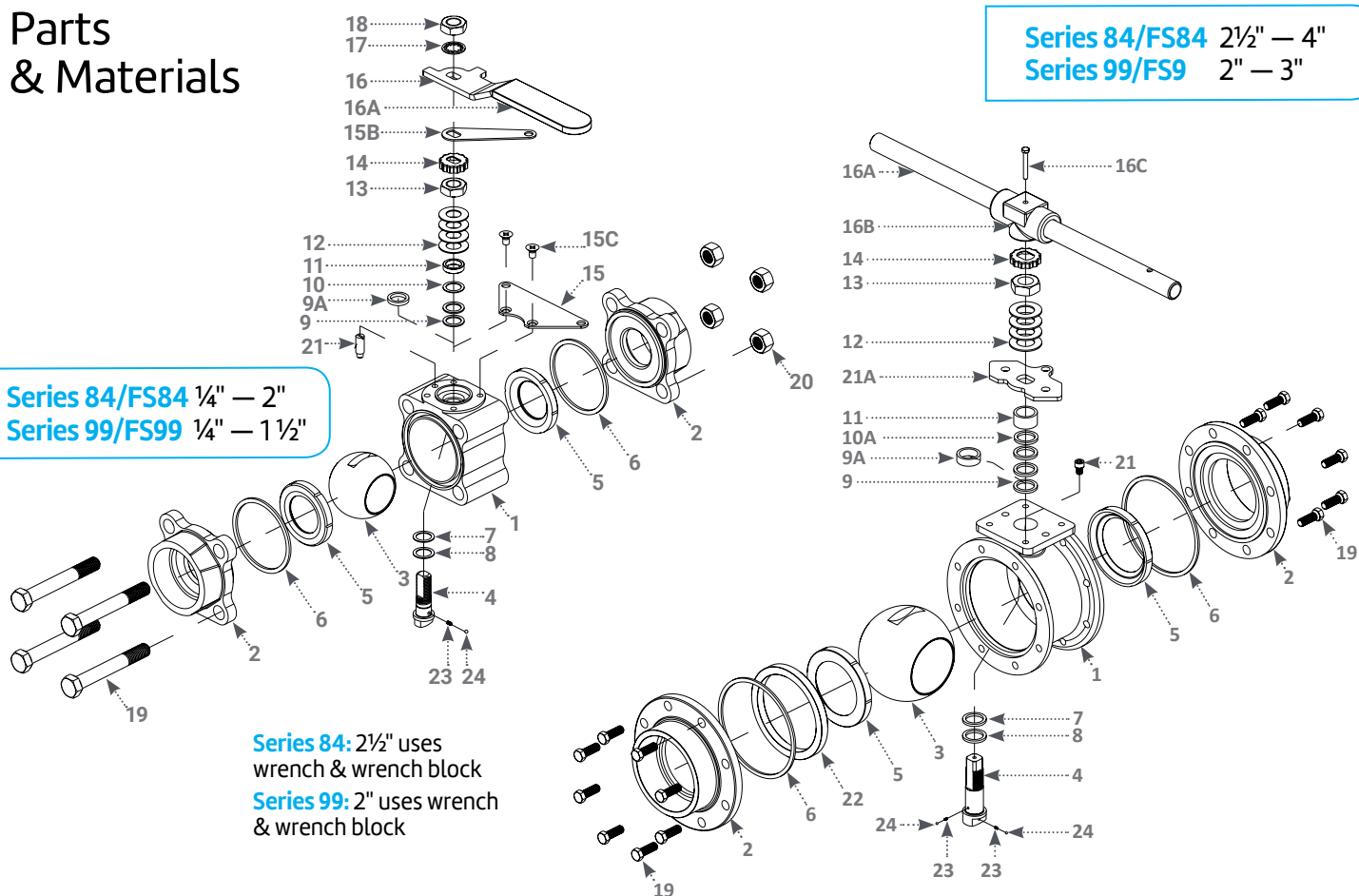
Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.

Building connections that last™

Parts & Materials

Series 84/FS84 ¼" — 2"
Series 99/FS99 ¼" — 1½"

Series 84/FS84 2½" — 4"
Series 99/FS99 2" — 3"

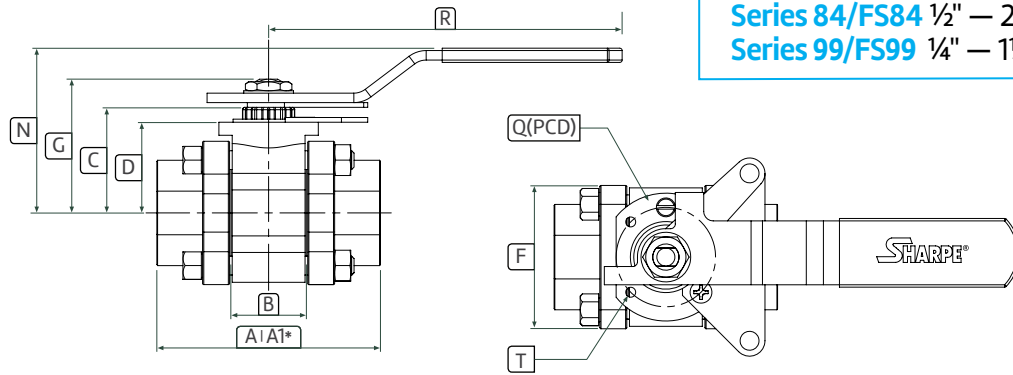


Series 84: 2½" uses
wrench & wrench block
Series 99: 2" uses wrench
& wrench block

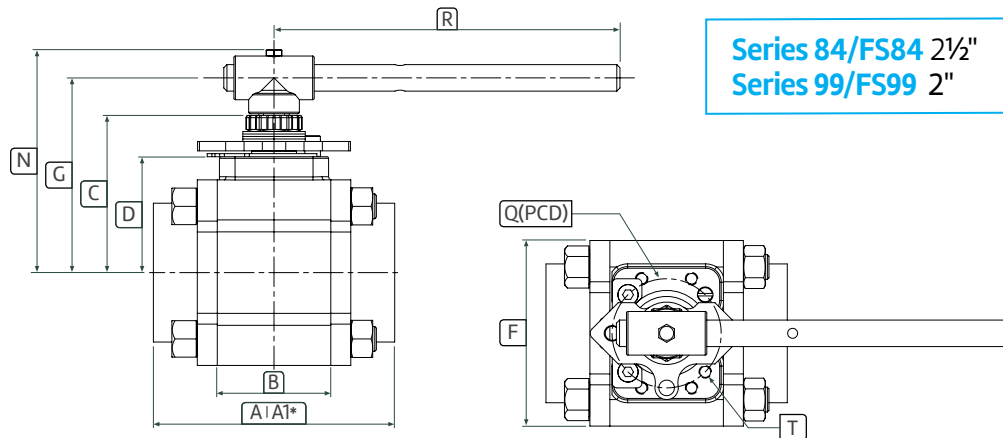
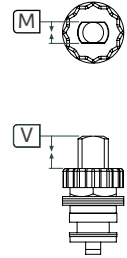
Part No.	Part	Qty.	Material
1	Body	1	316 Stainless Steel: ASTM A351 CF8M Carbon Steel: ASTM A216 WCB Alloy 20: ASTM A351 CN7M Hastelloy C: ASTM A494 Gr. CW-12MW
2	Ends Cap	2	316 Stainless Steel: ASTM A351 CF8M 316L Stainless Steel: ASTM A351 CF3M (used for stainless steel weld ends) Carbon Steel: ASTM A216 WCB Alloy 20: ASTM A351 CN7M Hastelloy C: ASTM A494 GR CS-12MW
3	Ball	1	316 Stainless Steel, Alloy 20, Hastelloy C
4	Stem	1	316 Stainless Steel, 17-4PH, Alloy 20, Hastelloy C
5	Seat	2	PTFE, RTFE, TFM®, Nova, Delrin®, UHMWPE, PEEK
6	Body Seal	2	PTFE, Graphite, UHMWPE, Buna, Viton®
7	Thrust Bearing	1	Nova (UHMWPE with UHMWPE Seats)
8	Thrust Bearing	1	PEEK (UHMWPE with UHMWPE Seats)
9	Stem Packing	2	Nova (UHMWPE with UHMWPE Seats)
9A	Stem Packing	1-2	Graphite (For Fire Safe & High Temperature Applications)
10	Seal Protector	1	PEEK
10A	Washer	1	300 Series Stainless Steel
11	Gland	1	300 Series Stainless Steel

Part No.	Part	Qty.	Material
12	Belleville Washer	4	300 Series Stainless Steel
13	Packing Nut	1	300 Series Stainless Steel
14	Lock Tab	1	300 Series Stainless Steel
15	Lower Lock Latch	1	300 Series Stainless Steel
15B	Upper Lock Latch	1	300 Series Stainless Steel
15C	Latch Bolt	2	300 Series Stainless Steel
16	Handle (¼" - 2")	1	300 Series Stainless Steel
16A	Wrench (3" - 4")	1	Galvanized
16B	Wrench Block	1	300 Series Stainless Steel
16C	Hex Head Bolt	1	300 Series Stainless Steel
17	Lock Washer	1	300 Series Stainless Steel
18	Handle Nut (¼" - 2")	1	300 Series Stainless Steel
19	Body Bolts	4/16	304 Stainless Steel
20	Nuts	4	300 Series Stainless Steel
21	Stop Pin	1	300 Series Stainless Steel
21A	Stopper	1	300 Series Stainless Steel
22	Seat Retainer	1	300 Series Stainless Steel Carbon Steel
23	Anti-Static Spring	1	Hard Drawn Stainless Steel
24	Anti-Static Ball	1	300 Series Stainless Steel

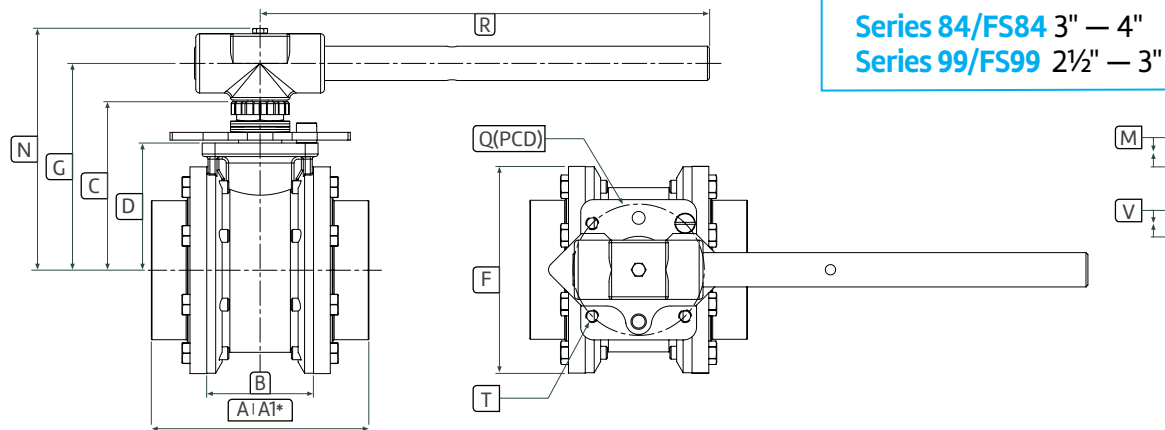
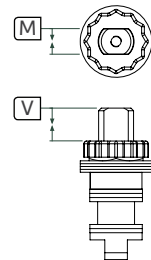
Series 84/99 & FS84/FS99 High Performance 3-Piece Ball Valve



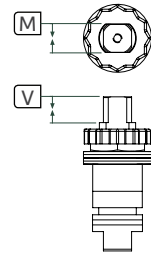
Series 84/FS84 1/2" – 2"
Series 99/FS99 1/4" – 1 1/2"



Series 84/FS84 2 1/2"
Series 99/FS99 2"



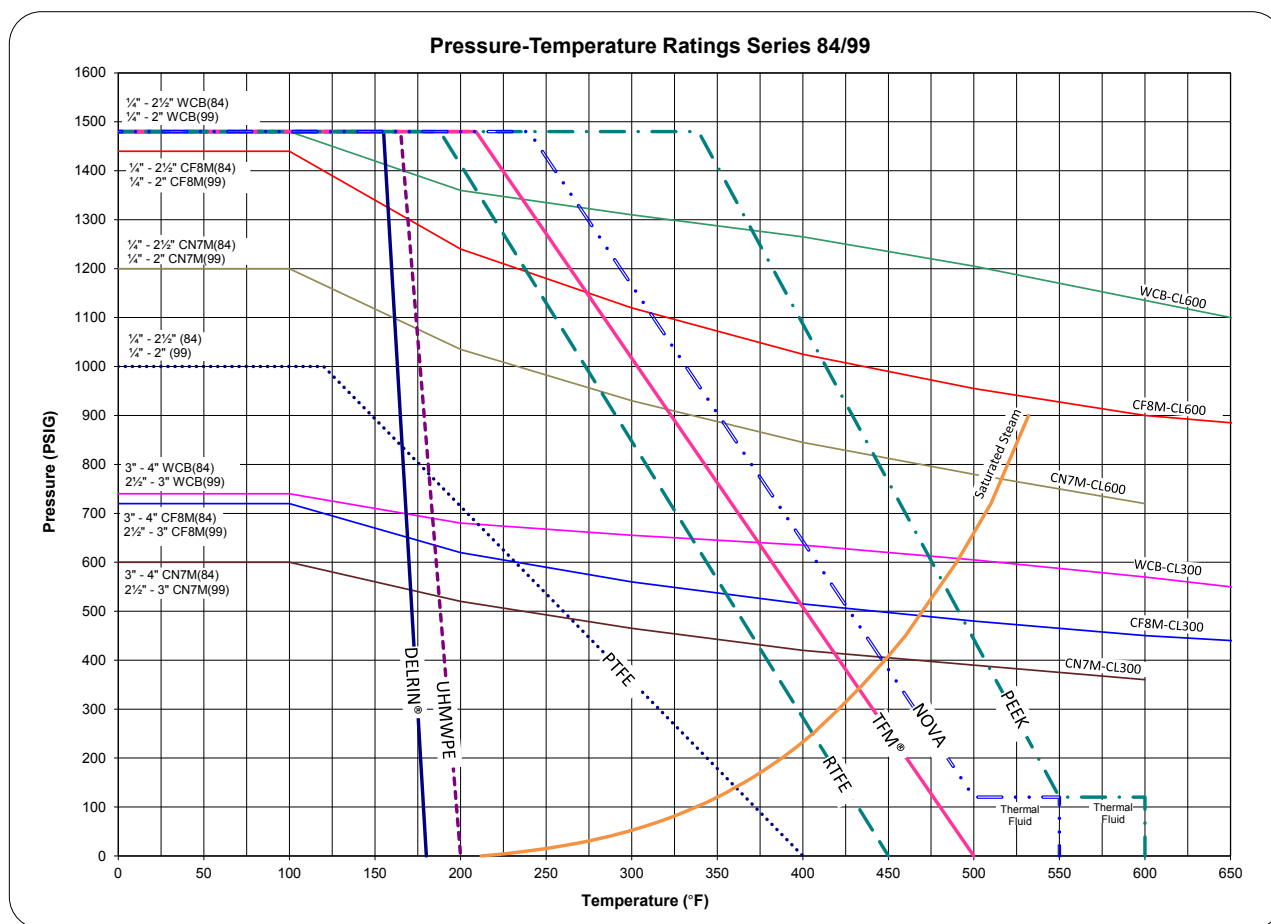
Series 84/FS84 3" – 4"
Series 99/FS99 2 1/2" – 3"



Dimensions (Inches)

Standard Port 84/FS84	Full Port 99/FS99	A*	A1*	B	C	D	F	G	L	M	N	ε Q (ISO)	R	T	V
1/2"	1/4", 3/8"	2.62	2.62	0.82	1.32	1.06	1.81	1.58	3/8"-24 UNF	0.220	2.15	1.42 (F03)	4.53	M5 x P0.8	0.31
3/4"	1/2"	2.87	2.87	0.97	1.27	1.13	1.94	1.65	3/8"-24 UNF	0.220	2.28	1.42 (F03)	4.53	M5 x P0.8	0.35
1"	3/4"	3.72	3.72	1.25	1.73	1.51	2.38	2.23	1/2"-20 UNF	0.295	2.70	1.65 (F04)	5.79	M5 x P0.8	0.52
1 1/4"	1"	4.25	4.25	1.61	1.90	1.70	2.78	2.43	1/2"-20 UNF	0.295	2.89	1.65 (F04)	5.79	M5 x P0.8	0.53
1 1/2"	1 1/4"	4.58	4.50	1.90	2.17	1.73	3.12	2.90	3/4"-18 UNF	0.342	3.15	1.97 (F05)	6.78	M6 x P1.0	0.73
2"	1 1/2"	5.03	5.06	2.21	2.39	1.90	3.60	3.09	3/4"-18 UNF	0.342	3.37	1.97 (F05)	6.78	M6 x P1.0	0.73
2 1/2"	2"	5.88	5.87	2.87	3.98	2.93	4.77	4.88	M20 x P2.5	0.551	5.61	2.75 (F07)	8.73	M8 x P1.25	0.74
3"	2 1/2"	6.65	6.65	3.27	5.01	3.89	6.46	6.14	1" - 14 UNS	0.748	6.14	4.02 (F10)	13.74	M10 x P1.5	0.69
4"	3"	8.43	8.43	4.29	5.60	4.48	8.00	6.73	1" - 14 UNS	0.748	7.81	4.02 (F10)	13.74	M10 x P1.5	0.69

Technical Data


Note:

The maximum pressure/temperature ratings of the valve assemblies are limited to lowest of the body or seat material fitted. The valve body ratings are based on ASME B16.34 rating for materials. The graphs are based on laboratory testing and our experience in field. The seat ratings depend on the material, design, application and function. For higher pressure rating above 1,480 psig, please consult with Sharpe® Valves.

Standard Port (84) Full Port (99)
Class 600 ½" - 2½"

Class 300 3" - 4"

Class 600 ¼" - 2"

Class 300 2½" - 3"

- 1 Delrin® and UHMWPE seats should not be used for steam service.
- 2 Delrin® must not be used in Oxygen applications.

Performance Data

84/FS84	99/FS99	Cv Flow Coefficient	Equivalent Length of Pipe (Feet)	Approx. Weight (lbs.)	Port Size
-	¼"	8	1.9	1.20	.44
½"	⅜"	8	1.9	1.20	.44
¾"	½"	12	6.3	1.70	.56
1"	¾"	32	3.1	3.00	.81
1¼"	1"	46	6.3	4.00	1.00
1½"	1¼"	80	4.3	6.00	1.25
2"	1½"	120	7.5	8.00	1.50
2½"	2"	240	5.00	25.00	2.00
3"	2½"	350	8.3	30.00	2.50
4"	3"	720	10.4	50.20	3.25

Applicable Standards

Body Wall Thickness	ASME B16.34
SW & Threaded Ends	ASME B16.11
Butt-weld Ends	ASME B16.25
Flange Dimensions	ASME B16.5
Basic Design	ASME B16.34 (Note 1)
Fire Safe	API 607 4th Edt. (FS84/FS99 only)
Testing (Options)	ASME B16.34 API 598

Building connections that last™



How to order Sharpe® Series 84/99

1"	84	-	2	2	R	G	-	TE	-	OH
Size	Series		Body & Ends	Ball & Stem	Seat	Seal		Ends		Options
Size	Series		Body & Ends		Seat			Ends		Options
84	99		2 Alloy 20*		T PTFE			TE Threaded		OH Oval Handle up to 2"
-	1/4"	84 Standard Port	4 Carbon Steel		R RTFE			SW Socketweld		L Lockable Stem Extension
-	3/8"	99 Full Port	5 Hastelloy C*		M TFM®			BW10 Buttweld SCH 10*		A NACE
1/2"	1/2"		6 316 Stainless Steel		N Nova			BW40 Buttweld SCH 40		VB Vented Ball
3/4"	3/4"				D Delrin®			BW80 Buttweld SCH 80		SF Silicone Free (as per MFG's standards)
1"	1"		Ball & Stem		P Virgin PEEK			1 150# Flanged RF*		X Oxygen Clean (as per MFG's standards)
1 1/4"	1 1/4"		2 Alloy 20		U UHMWPE			3 300# Flanged RF*		
1 1/2"	1 1/2"		5 Hastelloy C*					FB Flush Bottom Tank Pad		
2"	2"		6 316 Stainless Steel							
2 1/2"	2 1/2"		7 17-4PH Stem / 316 SS Ball							
3"	3"									
4"	-									

Note:
 *POA.
 Viton® and Delrin® are registered trademarks of DuPont 3M™, Dyneon™, and TFM® are trademarks owned by 3M.

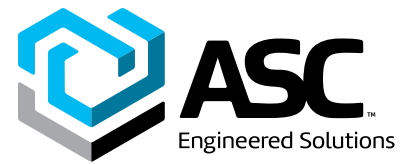


How to order Sharpe® Series FS84/FS99

1"	FS84	-	2	2	R	G	-	TE	-	OH
Size	Series		Body & Ends	Ball & Stem	Seat	Seal		Ends		Options
Size	Series		Body & Ends		Seat			Ends		Options
FS84	FS99		2 Alloy 20*		T PTFE					OH Oval Handle up to 2"
-	1/4"	FS84 Standard Port	4 Carbon Steel		R RTFE					L Lockable Stem Extension
-	3/8"	FS99 Full Port	5 Hastelloy C*		M TFM®					A NACE
1/2"	1/2"		6 316 Stainless Steel		N Nova			TE Threaded		VB Vented Ball
3/4"	3/4"							SW Socketweld		SF Silicone Free (as per MFG's standards)
1"	1"		Ball & Stem					BW10 Buttweld SCH 10*		X Oxygen Clean (as per MFG's standards)
1 1/4"	1 1/4"		2 Alloy 20					BW40 Buttweld SCH 40		
1 1/2"	1 1/2"		5 Hastelloy C*					BW80 Buttweld SCH 80		
2"	2"		6 316 Stainless Steel					1 150# Flanged RF*		
2 1/2"	-		7 17-4PH Stem / 316 SS Ball					3 300# Flanged RF*		
								FB Flush Bottom Tank Pad		

Note:
 3M™, Dyneon™, and TFM® are trademarks owned by 3M.

Building connections that last™



Sharpe® Series 60

Class 2500 Standard Port
3-Piece Ball Valve



Design & Features



Class 2500
Standard Port
3-Piece Ball Valve

Body Material

316 Stainless & Carbon Steel.

3-Piece Design

In-line serviceable swing-out center section allows easy access to internal valve components without disturbing alignment of pipe.

Stem Design

Live-loaded, bottom entry, blowout proof, anti-static stem featuring packing that extends valve cycle life over conventional ball valves and is best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment. High-strength 17-4PH stainless steel as standard material.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Floating Ball Design

Precision engineered and machined solid stainless steel ball with relief hole in the stem slot prevents build-up of cavity pressure while the valve is open.

Slotted Seat Design

Relief slots help equalize body pressure, and assure leak-tight sealing. Seats also provide a wiping action that cleans ball and seats each time valve is cycled.

Choice of Seats and Seals

A choice of seat material is available for the most demanding applications.

Integral Mounting Pad

Permits easy field conversion from manual operation to power actuation.

Lockable Handle

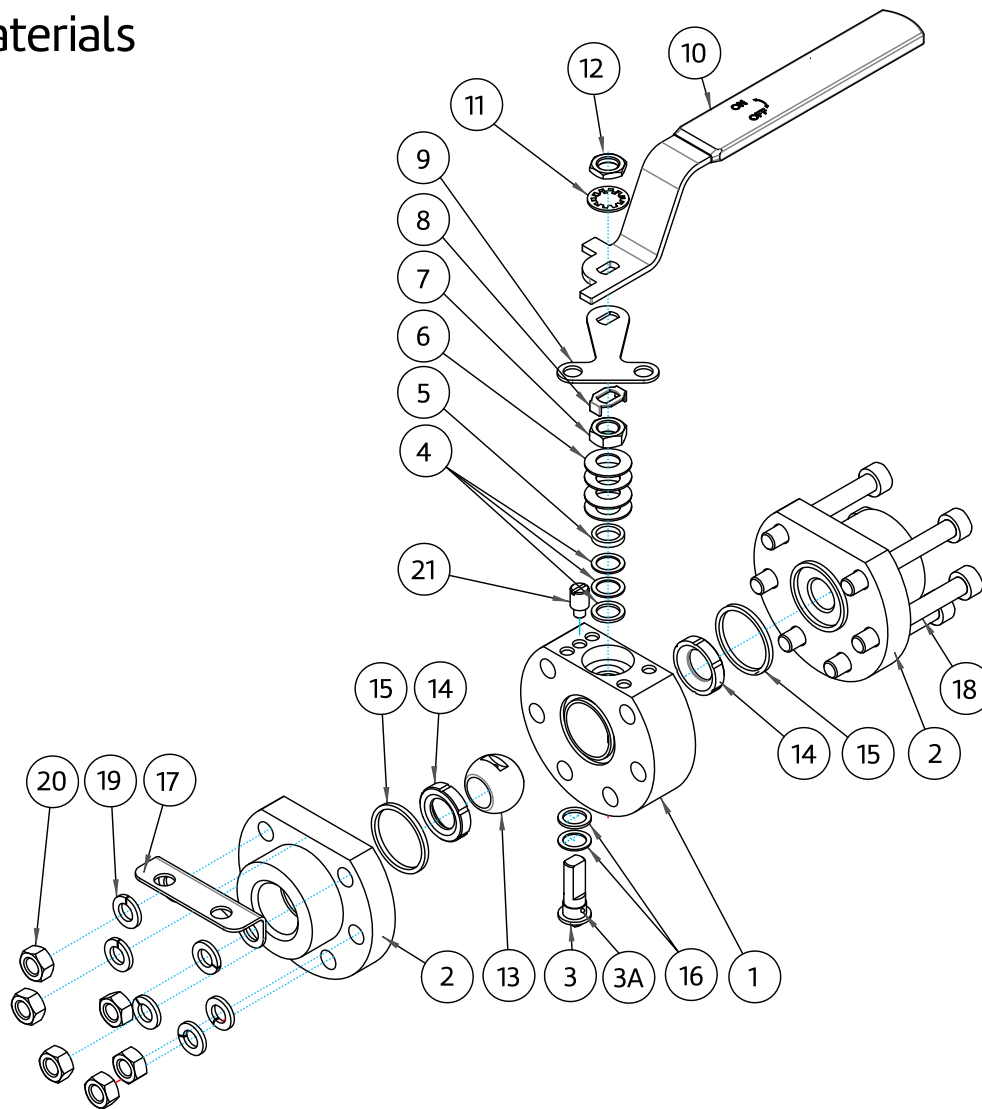
All Sharpe® Series 60 valves are supplied with lever or pipe handles and are designed to permit locking the valve in either the open or closed position.

Traceability

Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.

Building connections that last™

Parts & Materials

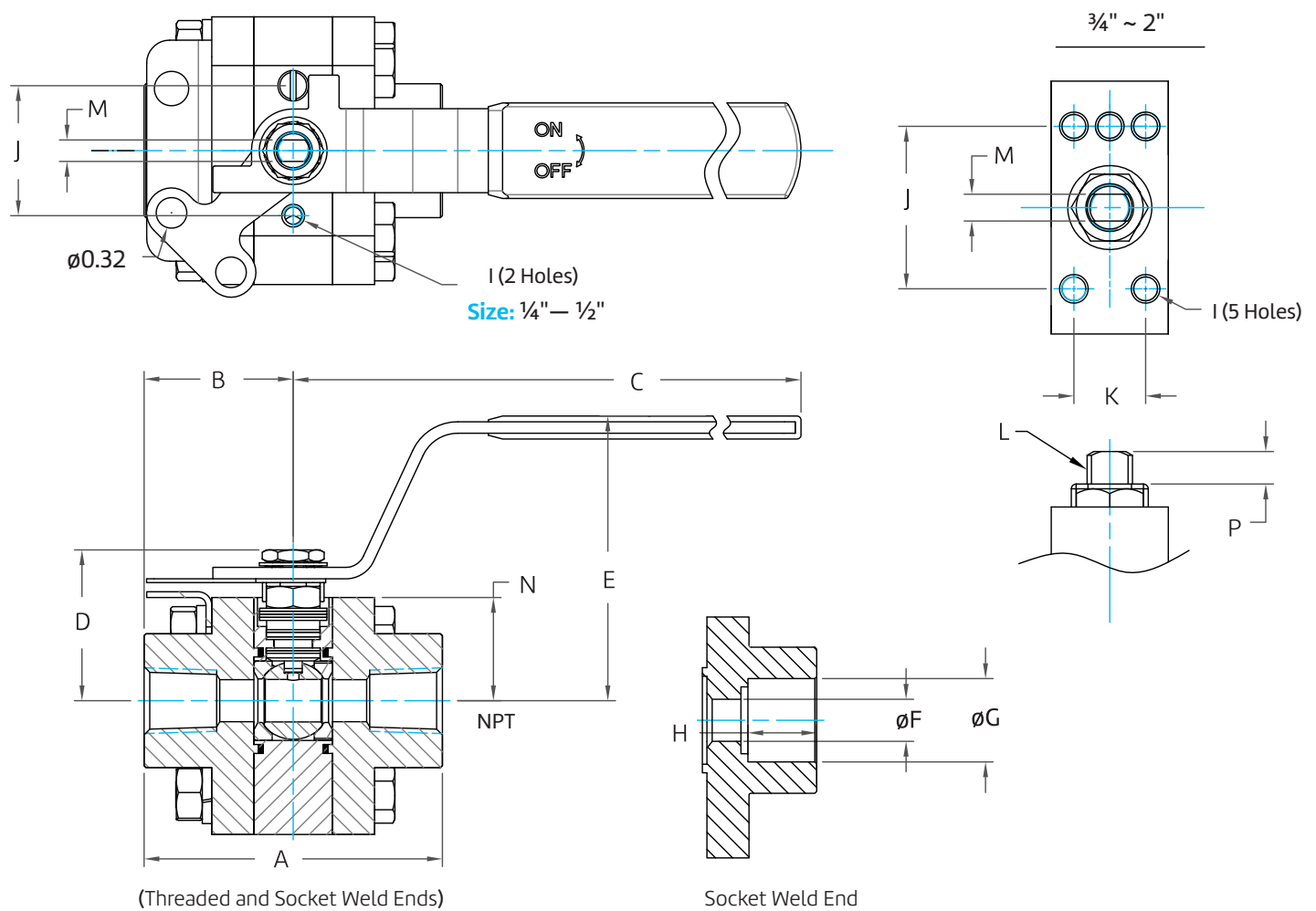


No.	Part Name	Qty.	Material
1	Body	1	316 Stainless Steel ASTM A351 CF8M, Carbon Steel ASTM A216 WCB
2	End Piece	2	316 Stainless Steel ASTM A351 CF8M, Carbon Steel ASTM A216 WCB
3	Stem	1	17-4PH Stainless Steel
3A	Anti-Static Device	1	316 Stainless Steel
4	Stem Packing	3/1	Nova / Graphite
5	Gland	1	300 Series Stainless Steel
6	Belleville Washer	4	300 Series Stainless Steel
7	Packing Nut	1	300 Series Stainless Steel
8	Lock Tab	1	300 Series Stainless Steel
9	Upper Locking Device	1	300 Series Stainless Steel
10	Handle	1	300 Series Stainless Steel

No.	Part Name	Qty.	Material
11	Lock Washer	1	300 Series Stainless Steel
12	Handle Nut	1	300 Series Stainless Steel
13	Ball	1	316 Stainless Steel
14	Seat	2	Delrin®, Peek
15	Body Seal	2	Graphite, Viton®, PTFE
16	Thrust Bearings	2	Nova / PEEK
17	Lower Locking Device	1	300 Series Stainless Steel
18	Body Bolts	6/8*	ASTM A193 Gr B8 / A2-70 Stainless Steel Class 2
19	Body Washers	6/8*	304 Stainless Steel
20	Body Nuts	6/8*	300 Series Stainless Steel
21	Stop Pin	1	300 Series Stainless Steel

Note: * 1-½" & 2" Sizes.

Building connections that last™

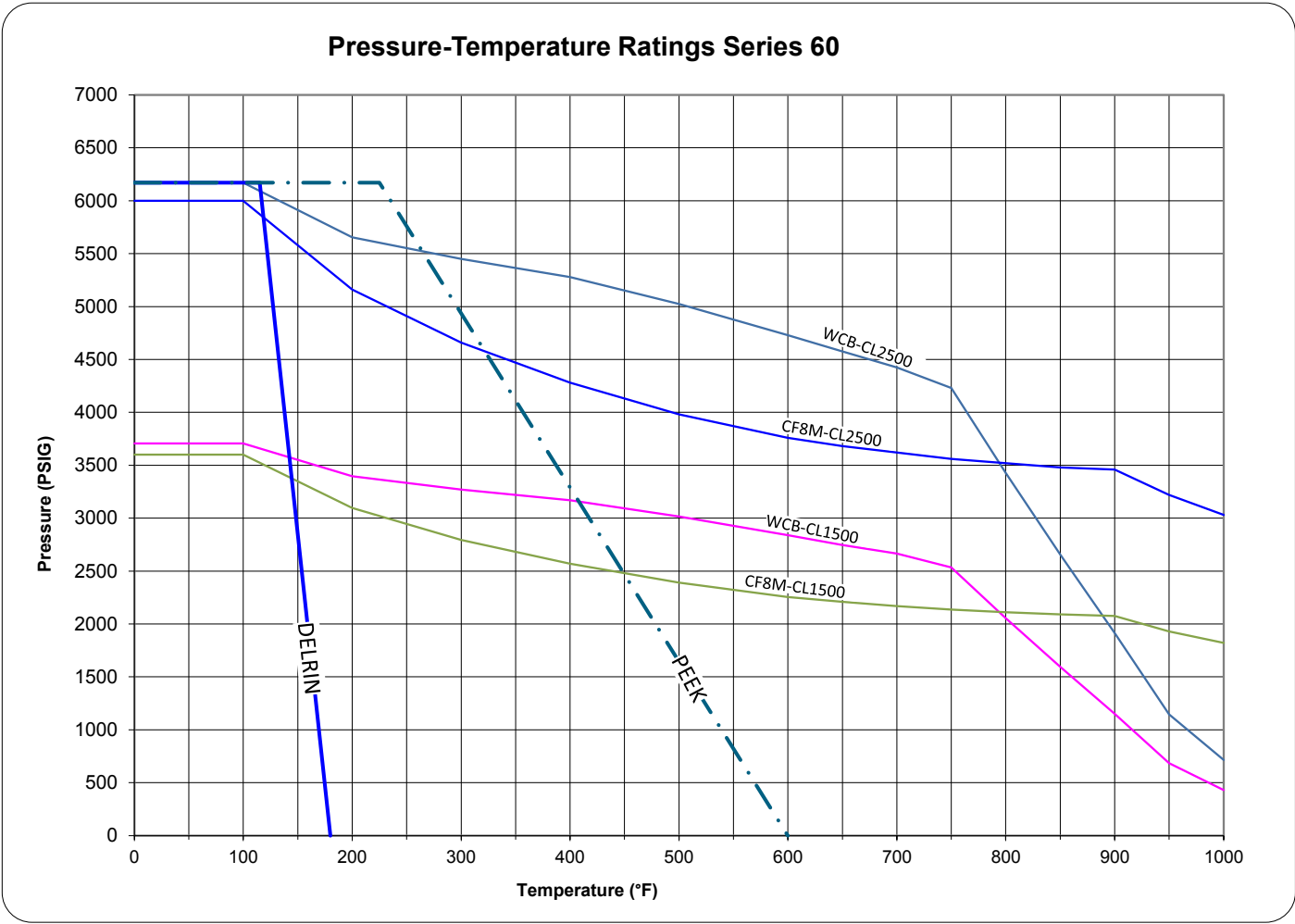


Dimensions (Inches)

Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P
$\frac{1}{4}$	3.00	1.50	7.11	1.55	2.93	0.43	0.56	0.75	M5x.8	1.34	-	3/8-24 UNF	0.220	1.06	0.37
$\frac{3}{8}$	3.09	1.54	7.11	1.55	2.93	0.43	0.69	0.75	M5x.8	1.34	-	3/8-24 UNF	0.220	1.06	0.37
$\frac{1}{2}$	3.09	1.54	7.11	1.55	2.93	0.43	0.86	0.71	M5x.8	1.34	-	3/8-24 UNF	0.220	1.06	0.37
$\frac{3}{4}$	3.49	1.74	7.11	1.68	3.06	0.56	1.07	0.63	M5x.8	1.34	0.59	3/8-24 UNF	0.220	1.18	0.38
1	4.00	2.00	7.70	2.16	2.48	0.81	1.33	0.98	M5x.8	1.65	0.94	7/16-20 UNF	0.295	1.50	0.57
1- $\frac{1}{2}$	5.07	2.54	11.53	2.89	3.15	1.25	1.91	0.94	M6x1.0	1.57	1.42	9/16-18 UNF	0.342	1.97	0.53
2	6.14	3.07	11.53	3.08	3.29	1.50	2.41	1.06	M6x1.0	1.97	1.57	9/16-18 UNF	0.342	2.17	0.54

Note: The dimensions above are for informational purpose only. Please refer to Sharpe® Valves if you need dimensions for construction.

Technical Information



Note:
*Ratings are for the valve body, specific ends may cause the ratings to change.

Technical Information

Size	C _v	Approx. Weight Lbs.
¼	5	3.55
⅜	8	3.55
½	23	3.50
¾	61	5.30
1	73	9.90
1-½	82	21.00
2	150	29.00



How to order
Sharpe® Series 60

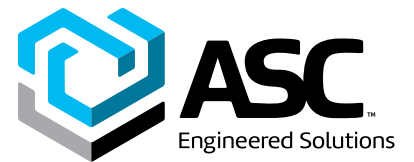
Fig: 1-½ - 60 - 4 - 6 - D - T - TE

Size Series Body & Ends Trim Seat Seal Ends

Size	Series	Body & Ends	Trim	Seat	Seal	Ends
¼	60		6 17-4 PH Stainless Steel Stem & 316 Stainless Steel Ball			TE Threaded
⅜						SW Socket Weld
½		Body & Ends				BW Butt-weld (Sch 160)*
¾	4 Carbon Steel		D Delrin®			1 ANSI CL1500 RF Flange*
1	6 Stainless Steel		P Peek			1J ANSI CL 1500 RTJ Flange*
-1½						2 ANSI CL2500 RF Flange*
2						2J ANSI CL2500 RTJ Flange*
				Seal		
			G Graphite			
			V Viton®			

Note:
*POA
Viton® is a registered trademark of E.I. Dupont.
Delrin® is a registered trademark of E.I. Dupont.

Building connections that last™



Sharpe® Series 66

High Purity Tube Full Port
3-Piece Ball Valve



Design & Features



High Purity Tube
Full Port 3-Piece
Ball Valve

Body Material

316L Stainless Steel.

Tube Full Port Design (TFP)

Tube full port maintains unrestricted flow of media.

3-Piece Design

In-line serviceable swing out center section allows easy access to internal valve components without disturbing alignment of tubing.

Floating Ball Design

Precision engineered and machined solid stainless steel ball with relief hole in the stem slot prevents build-up of cavity pressure while the valve is open.

Stem Design

Live-loaded, bottom entry, blowout proof stem featuring packing that extends valve cycle life over conventional ball valves and is best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

ISO 5211 Integral Mounting Pad

Ideal for actuation.

Centering lip feature assures precise alignment of bracket, stem and coupler.

Actuators may be retrofitted on existing Sharpe® Series 66 without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Variety of End Combinations

End connections available include; Clamp End (CE), Short Butt Weld Tube (BE) and Butt Weld Extensions (BTE) for orbital welders.

Encapsulated Body Bolts

Heavy duty stainless steel bolting is protected from outside environment assuring valve integrity.

Ideal for wash-downs.

Lockable Handle

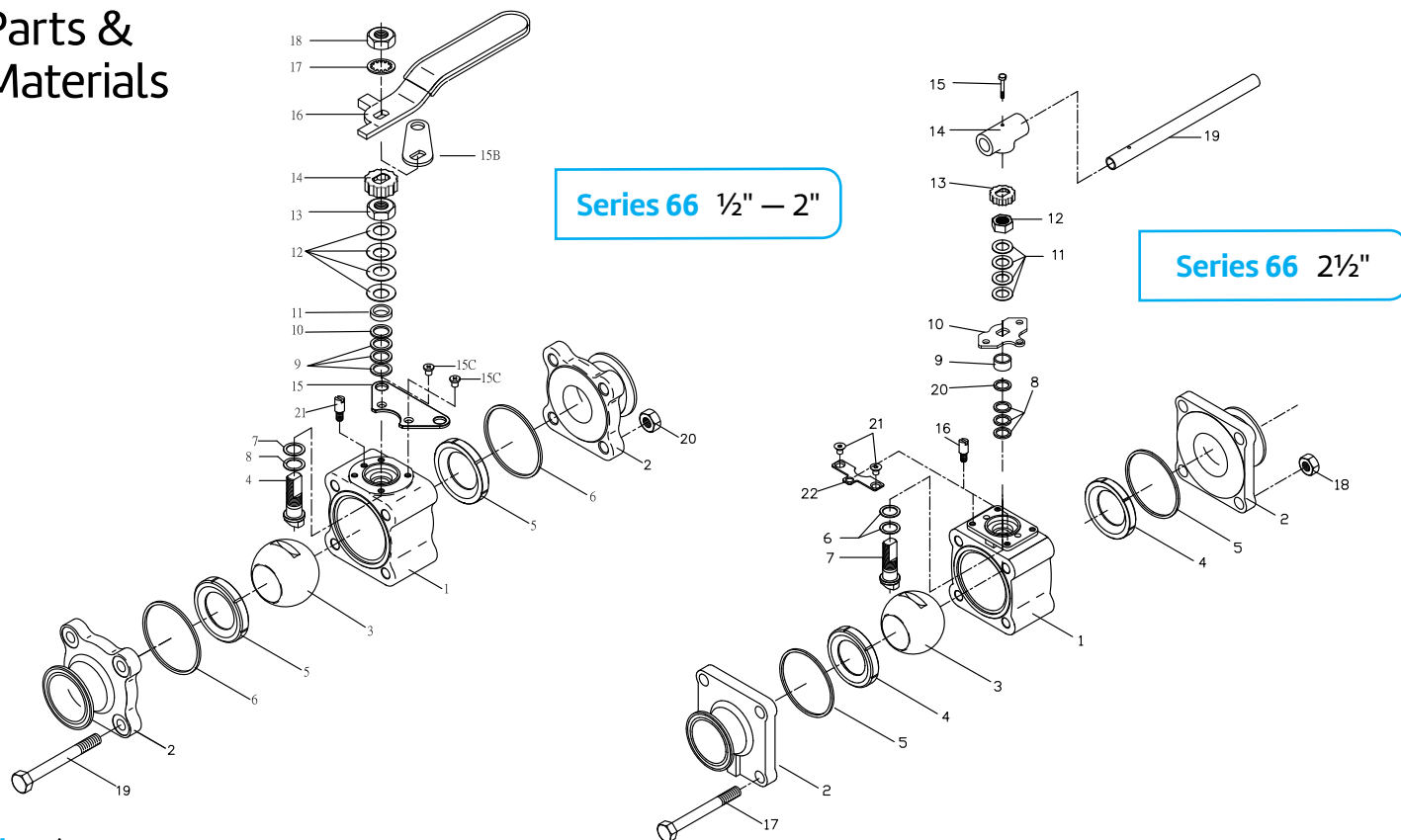
All Sharpe® Series 66 valves are supplied with lever or pipe handles and are designed to permit locking the valve in either the open or closed position.

Traceability

Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.

Building connections that last™

Parts & Materials



Sizes (1/2" – 2", 2 1/2")

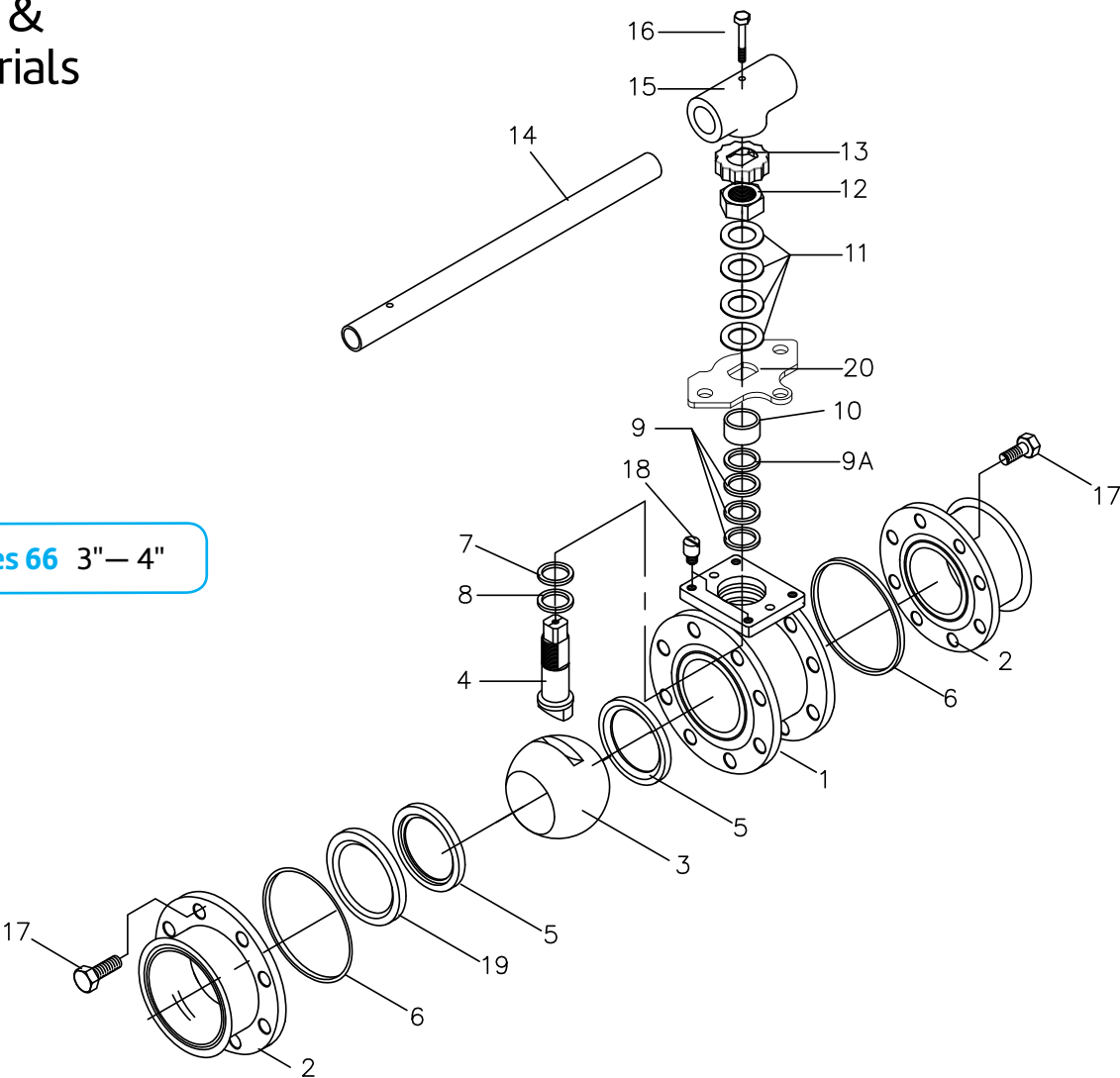
No.	Part Name	Qty.	Material
1	Body	1	316L Stainless Steel ASTM A351 CF3M
2	Pipe Ends	2	316L Stainless Steel ASTM A351 CF3M
3	Ball	1	316L Stainless Steel
4	Stem	1	316L Stainless Steel
5	Seat	2	TFM®, PTFE / RTFE / Cavity Filler PTFE
6	Body Seal	2/3	PTFE, TFM®
7	Thrust Bearing	1	TFM®
8	Thrust Bearing	1	TFM®
9	Stem Packing	3	TFM®
10	Seal Protector	1	TFM®
11	Gland	1	300 Series Stainless Steel
12	Belleville Washer	4	300 Series Stainless Steel
13	Packing Nut	1	300 Series Stainless Steel
14	Lock Tab	1	300 Series Stainless Steel
15	Lower Lock Hatch	1	300 Series Stainless Steel
15B	Upper Lock Hatch	1	300 Series Stainless Steel
15C	Latch Bolt	2	300 Series Stainless Steel
16	Handle	1	300 Series Stainless Steel
17	Lock Washer	1	300 Series Stainless Steel
18	Handle Nut (1/4"-2")	1	300 Series Stainless Steel
19	Body Bolts	4	304 Stainless Steel
20	Nuts	4	300 Series Stainless Steel
21	Stop Pin (1/2")*	1	300 Series Stainless Steel
		2	300 Series Stainless Steel

No.	Part Name	Qty.	Material
1	Body	1	316L Stainless Steel ASTM A351 CF3M
2	Pipe Ends	2	316L Stainless Steel ASTM A351 CF3M
3	Ball	1	316L Stainless Steel
4	Seat	2	TFM®, PTFE / RTFE / Cavity Filler PTFE
5	Body Seal	2	PTFE, TFM®
6	Thrust Bearing	2	TFM®
7	Stem	1	316L Stainless Steel
8	Stem Seal	3	TFM®
9	Gland	1	300 Series Stainless Steel
10	Stopper	1	300 Series Stainless Steel
11	Belleville Washer	4	300 Series Stainless Steel
12	Packing Nut	1	300 Series Stainless Steel
13	Lock Tab	1	300 Series Stainless Steel
14	Wrench Block	1	300 Series Stainless Steel
15	Handle Bolt	1	300 Series Stainless Steel
16	Stop Pin	1	300 Series Stainless Steel
17	Body Bolts	4	304 Stainless Steel
18	Body Nuts	4	300 Series Stainless Steel
19	Handle	1	300 Series Stainless Steel
20	Gland Washer	1	300 Series Stainless Steel
21	Screw	2	304 Stainless Steel
22	Lower Stopper	1	316 Stainless Steel

Building connections that last™

Parts & Materials

Series 66 3" – 4"

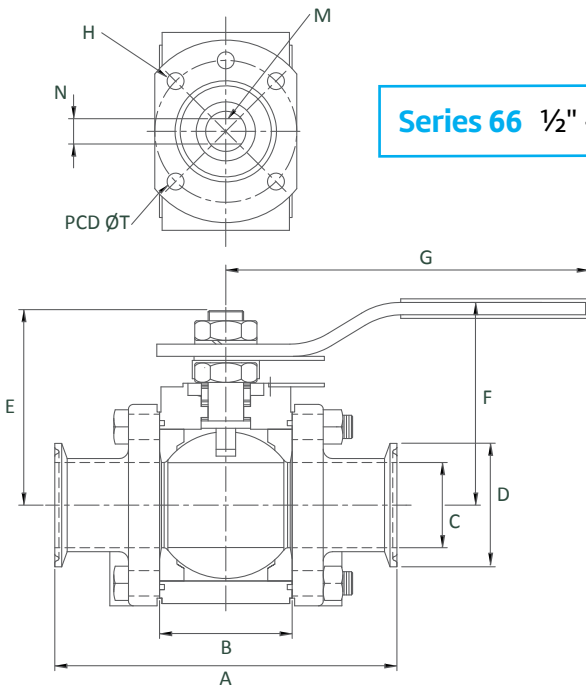


Sizes (3" – 4")

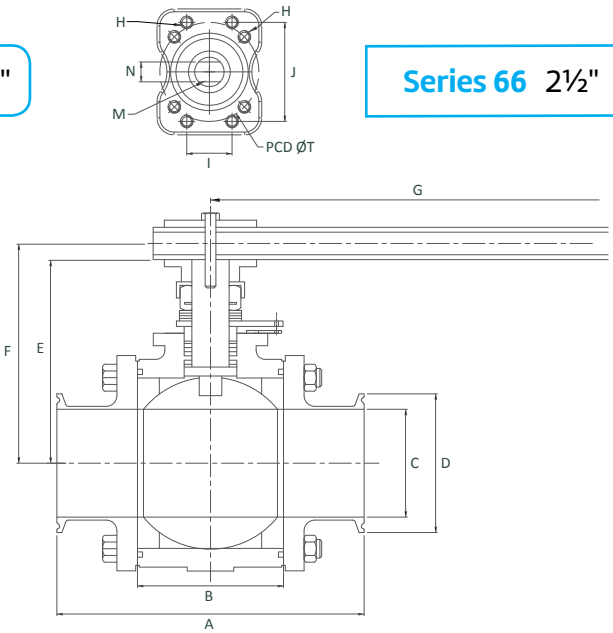
No.	Part Name	Qty.	Materials
1	Body	1	316L Stainless Steel ASTM A351 CF3M
2	Pipe Ends	2	316L Stainless Steel ASTM A351 CF3M
3	Ball	1	316L Stainless Steel
4	Stem	1	316L Stainless Steel
5	Seat	2	TFM®, PTFE/RTFE/Cavity Filler PTFE
6	Body Seal	2	PTFE, TFM®
7	Thrust Bearing	1	TFM®
7A	Stem Location Ring	1	300 Series Stainless Steel
8	Thrust Bearing	1	TFM®
9	Stem Packing	3	TFM®
9A	Packing Protector	1	300 Series Stainless Steel

No.	Part Name	Qty.	Materials
10	Gland	1	300 Series Stainless Steel
11	Belleville Washer	4	300 Series Stainless Steel
12	Packing Nut	1	300 Series Stainless Steel
13	Lock Tab	1	300 Series Stainless Steel
14	Handle	1	300 Series Stainless Steel
15	Wrench Block	1	300 Series Stainless Steel
16	Hex Head Bolt	1	300 Series Stainless Steel
17	Body Bolts	16	304 Stainless Steel
18	Stop Pin	1	300 Series Stainless Steel
19	Seat Retainer	1	300 Series Stainless Steel
20	Stopper	1	300 Series Stainless Steel

Series 66 High Purity Tube 3-Piece Ball Valve

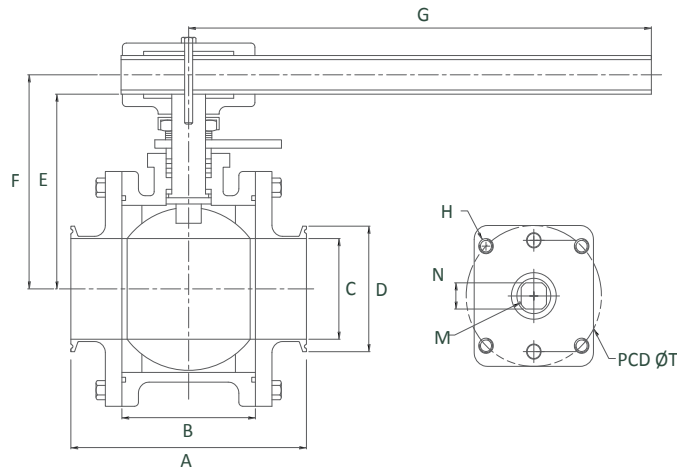


Series 66 1/2" – 2"



Series 66 2 1/2"

Series 66 3" & 4"



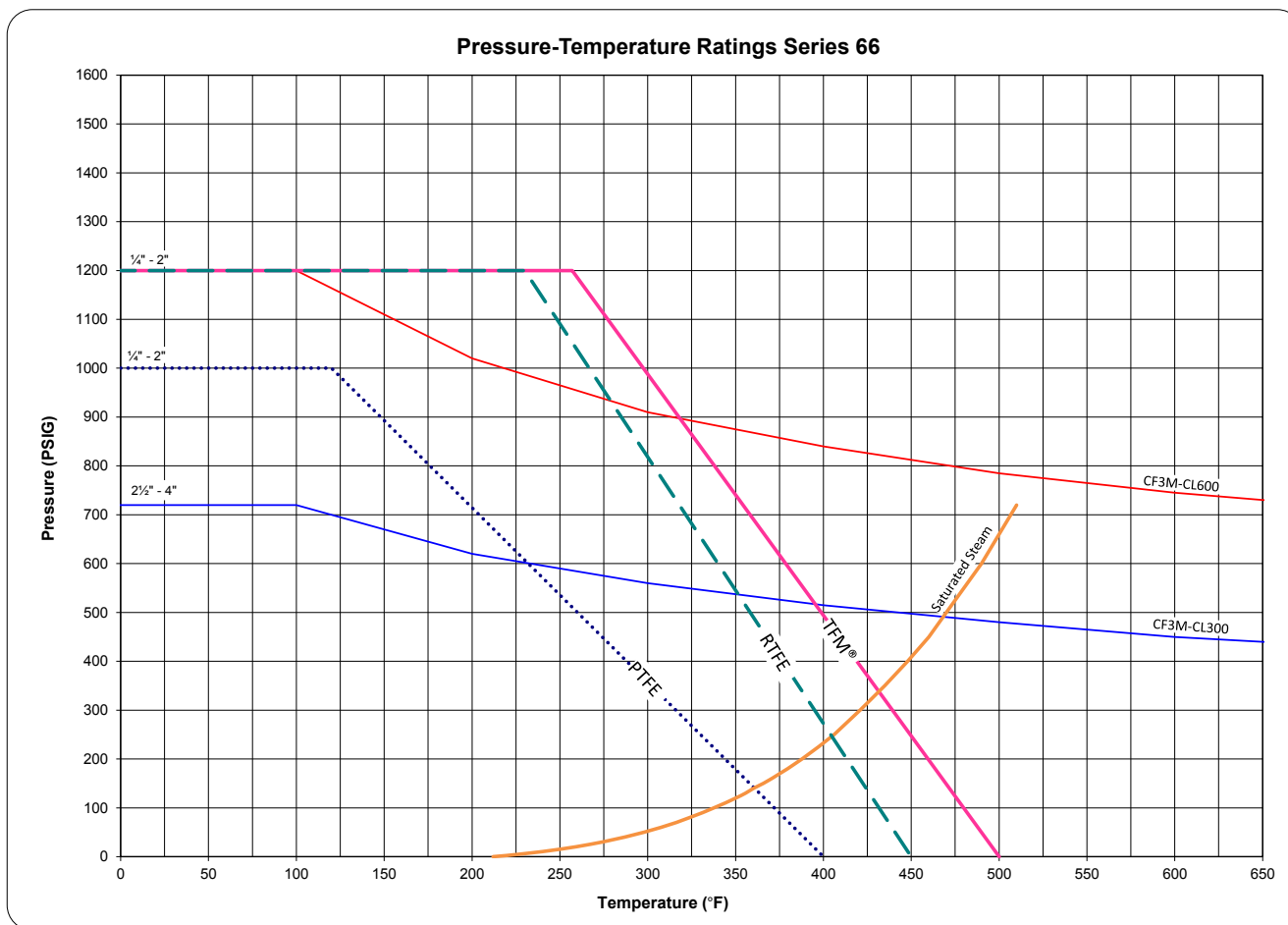
Sizes (1/2" – 2")

Size	A	B	C	D	E	F	G	H	T	N	M	I	J
1/2	3.50	0.97	0.37	0.98	1.64	2.23	4.50	M5	1.42	0.22	3/8 - 24	-	-
3/4	4.00	1.05	0.62	0.98	1.69	2.28	4.50	M5	1.42	0.22	3/8 - 24	-	-
1	4.50	1.54	0.87	1.98	2.36	2.84	5.79	M5	1.65	0.30	7/16 - 20	-	-
1-1/2	5.50	2.13	1.37	1.98	3.06	3.33	6.78	M6	1.97	0.35	9/16 - 18	-	-
2	6.25	2.66	1.87	2.52	3.43	3.68	6.78	M6	1.97	0.35	9/16 - 18	-	-
2-1/2	6.75	3.20	2.37	3.34	4.87	5.98	8.74	M8	2.76	0.55	M20 x P2.0	1.95	2.76
3	6.75	3.96	2.87	5.50	6.54	6.52	13.80	M10	4.02	0.75	1 - 14	-	-
4	8.25	4.73	3.83	6.97	7.13	7.05	13.80	M10	4.02	0.75	1 - 14	-	-

Note: The dimensions above are for informational purpose only. Please refer to Sharpe® Valves if you need dimensions for construction.

Building connections that last™

Technical Information



Note: *Ratings are for the valve body, specific ends may cause the ratings to change.

Approximate Weight (Lbs.)

Size	Tri Clamp End	Extended Butt Weld End	Short Butt Weld
1/4"	1.50		1.40
3/8"	1.50		1.40
1/2"	1.50		1.40
3/4"	2.00		1.85
1"	3.90		3.60
1 1/4"	6.00		5.70
1 1/2"	7.50		7.30
2"	6.00		11.70
2 1/2"	7.50		20.00
3"	32.70		30.80
4"	47.50		45.00

Technical Information

Size	C _v
1/4"	1.5
3/8"	3.2
1/2"	8.1
3/4"	28.6
1"	67
1 1/4"	110
1 1/2"	192
2"	434
2 1/2"	779
3"	1123
4"	2054



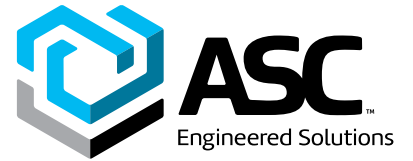
How to order
Sharpe® Series 66

Fig: **2** - **66** - **6** - **6** - **R** - **T** - **CE**
Size Series Body Ball & Stem Seat Seal Ends

Size	Series		Seat		Ends		Options	
½	66		R	RTFE	CE	Clamp 180 Grit	X	Oxygen Clean*
¾			T	PTFE	BE	Butt-weld Tube, Short 18-24 Ra (180 Grit)	SF	Silicone Free*
1	Body & Ends		M	TFM®	BTE	Butt-weld Tube, Extended 18-24 Ra (180 Grit)	OH	Oval Handle*
1½	6	316L Stainless Steel	C	Cavity Filler - PTFE				
2	Ball & Stem							
2½	6	316L Stainless Steel	Seal					
3			T	PTFE				
4			M	TFM®				

Note:
*POA
TFM® is a registered trademark of Dyleon, LLC.
Due to continuous development of our product range, we reserve the right to change the dimensions and information for this product as required.

Building connections that last™



Sharpe® Series 86

Instrumentation Ball Valve



Design & Features



Instrumentation
Ball Valve

Body Material

316L Stainless Steel.

Tube Full Port Design (TFP)

Tube full port maintains unrestricted flow of media.

3-Piece Design

In-line serviceable swing out center section allows easy access to internal valve components without disturbing alignment of tubing.

Floating Ball Design

Precision engineered and machined solid stainless steel ball with relief hole in the stem slot prevents build-up of cavity pressure while the valve is open.

Stem Design

Live-loaded, bottom entry, blowout proof stem featuring packing that extends valve cycle life over conventional ball valves and is best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

ISO 5211 Integral Mounting Pad

Ideal for actuation.

Centering lip feature assures precise alignment of bracket, stem and coupler.

Actuators may be retrofitted on existing Sharpe® Series 86 without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Encapsulated Body Bolts

Heavy duty stainless steel bolting is protected from outside environment assuring valve integrity.

Ideal for wash downs.

Lockable Handle

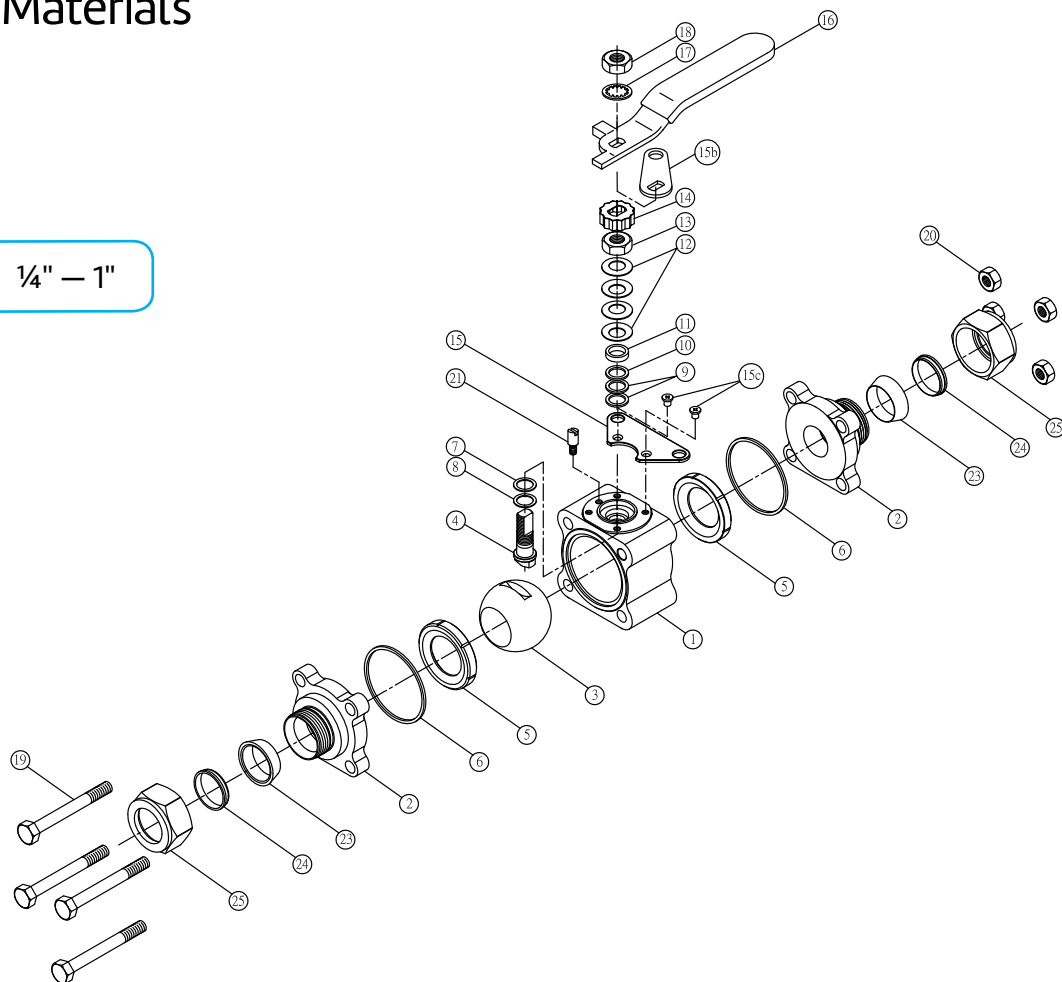
All Sharpe® Series 86 valves are supplied with lever handles and are designed to permit locking the valve in either the open or closed position.

Traceability

Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.

Parts & Materials

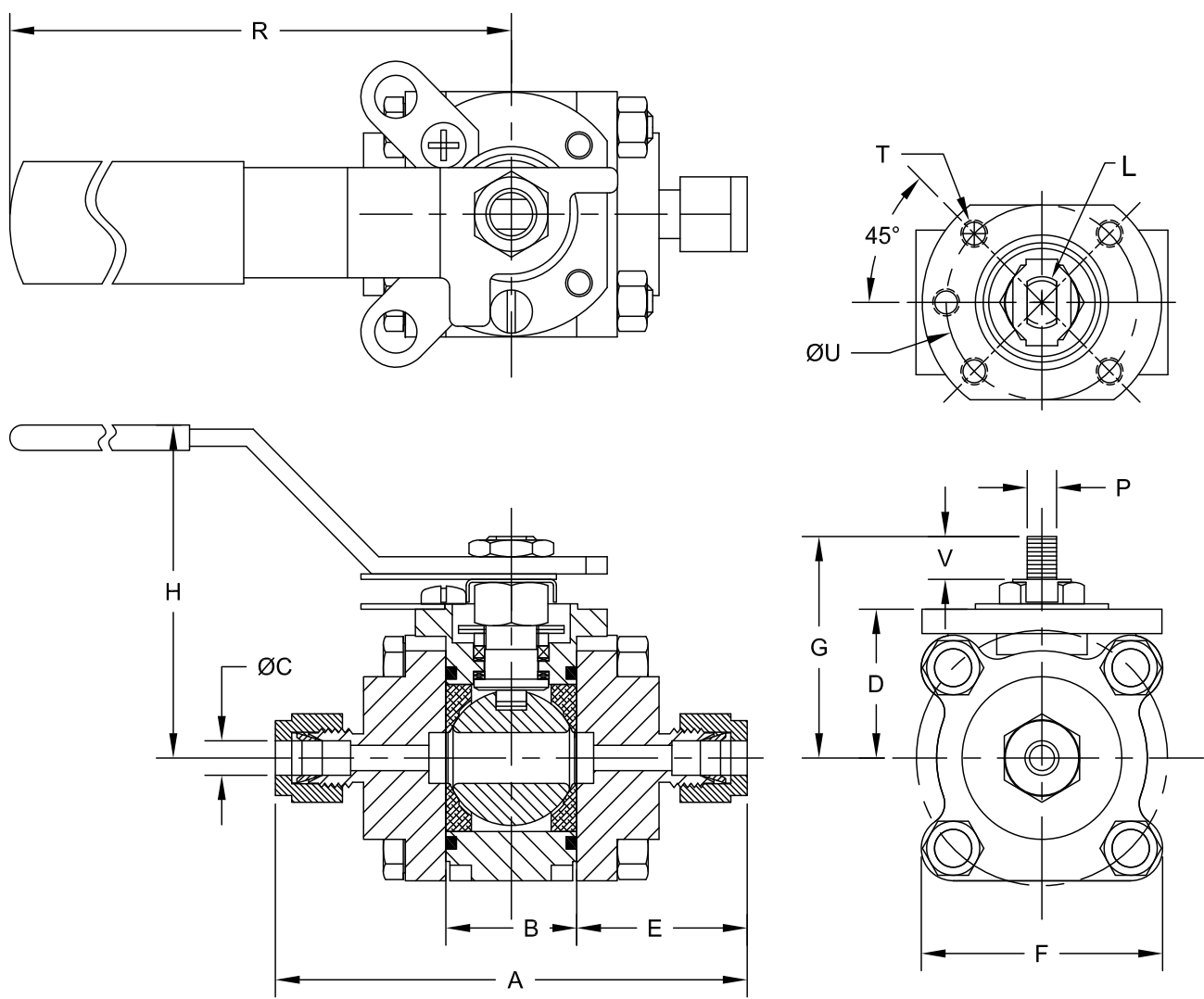
Series 86 ¼" – 1"



Sizes (¼" – 1")

No.	Part Name	Qty.	Material
1	Body	1	316L Stainless Steel ASTM A351 CF3M
2	Instrument Ends	2	316L Stainless Steel ASTM A351 CF3M
3	Ball	1	316L Stainless Steel
4	Stem	1	316L Stainless Steel
5	Seat	2	PTFE, RTFE, TFM®, PTFE Cavity Filler
6	Body Seal	2	PTFE, TFM®
7	Thrust Bearing	1	TFM®
8	Thrust Bearing	1	TFM®
9	Stem Packing	2	TFM®
10	Seal Protector	1	TFM®
11	Gland	1	300 Series Stainless Steel
12	Belleville Washer	4	300 Series Stainless Steel
13	Packing Nut	1	300 Series Stainless Steel

No.	Part Name	Qty.	Material
14	Lock Tab	1	300 Series Stainless Steel
15	Lower Lock Hatch	1	300 Series Stainless Steel
15B	Upper Lock Hatch	1	300 Series Stainless Steel
15C	Latch Bolt	2	300 Series Stainless Steel
16	Handle	1	300 Series Stainless Steel
17	Lock Washer	1	300 Series Stainless Steel
18	Handle Nut	1	300 Series Stainless Steel
19	Body Bolts	4	304 Stainless Steel
20	Nuts	4	316 Stainless Steel
21	Stop Pin	1	300 Series Stainless Steel
23	Front Ferrule	2	316 Stainless Steel
24	Back Ferrule	2	316 Stainless Steel
25	Companion Nut	2	316 Stainless Steel, Silver Plated

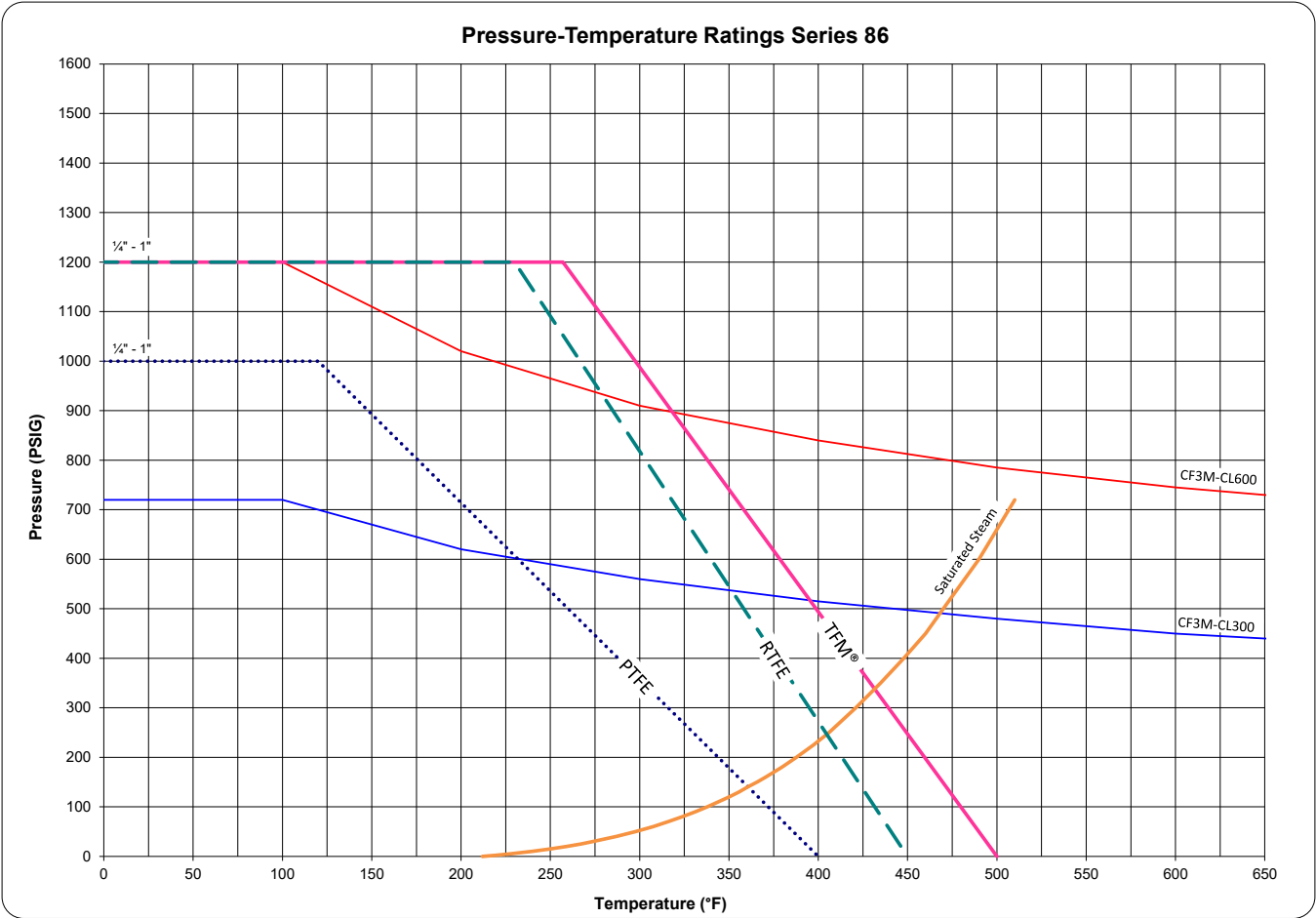


Dimensions (Inches)

Size	A	B	C	D	E	F	G	H	L	P	R	T	U	V
¼	3.59	0.97	0.254	1.10	1.31	1.75	1.64	2.23	3/8-24	.218/.220	4.50	M5x.8	1.42(F03)	0.45
⅜	3.65	0.97	0.380	1.10	1.37	1.75	1.64	2.23	3/8-24	.218/.220	4.50	M5x.8	1.42(F03)	0.45
½	3.91	0.97	0.505	1.10	1.47	1.75	1.64	2.23	3/8-24	.218/.220	4.50	M5x.8	1.42(F03)	0.45
¾	4.13	1.05	0.755	1.16	1.54	2.05	1.69	2.28	3/8-24	.218/.220	4.50	M5x.8	1.42(F03)	0.39
1	5.12	1.54	0.997	1.62	1.79	2.42	2.36	2.84	7/16-20	.293/.295	5.79	M5x.8	1.65(F04)	0.65

Note:
The dimensions above are for informational purpose only. Please refer to Sharpe® Valves if you need dimensions for construction.

Technical Data



Note:
*Ratings are for the valve body, specific ends may cause the ratings to change.



How to order
Sharpe® Series 86

Fig: $\frac{3}{4}$ - 86 - 6 - 6 - R - T - IE
Size Series Body Ball & Stem Seat Seal Ends

Size	Series		Seat		Ends		Options	
¼	86		T	PTFE	IE	Instrumentation End	OH	Oval Handle
⅜	Body		M	TFM®	TE	Threaded Ends (NPT)*	X	Oxygen Clean* (as per Mfg's Standards)
½	6	316L Stainless Steel	R	RTFE			SF	Silicone Free*
¾	Ball & Stem		Seal					
1	6	316L Stainless Steel	T	PTFE				
			M	TFM®				

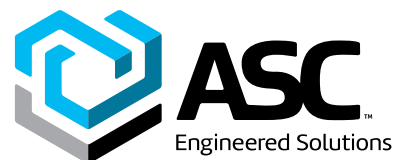
Note:

*POA

TFM® is a registered trademark of Dyleon, LLC.

Due to continuous development of our product range, we reserve the right to change the dimensions and information for this product as required.

Building connections that last™



Sharpe® Series 88

High Purity Tube Full Port
3-Piece Ball Valve



Design & Features

Body Material

316L Stainless Steel.

ASME / BPE-2009

Designed specifically for the demanding process requirements found in the pharmaceutical, biotech, cosmetic, food and other industries where aseptic conditions are required.

5% or Less Ferrite Content

Content of less than 5% to prevent rouging.

Low Sulphur

All welded end parts made from 316L stainless steel are supplied with sulphur content of 0.005 – 0.017% assuring the integrity of the orbital welding. (BPE-2009)

All Wetted Parts Polish To 14–18 Ra, 240 Grit

Significantly reduces friction between valve and media. Crevice-free smooth surface helps eliminate areas where contaminants can proliferate. (BPE-2009)

FDA Compliant Material Hygienic Seat and Seal Design

PTFE and TFM® seats provide a bubble-tight bidirectional shut off.

Encapsulated PTFE and TFM® body seals eliminate entrapment area between valve body and valve ends.

Optional PTFE cavity fillers eliminate the dead space between the ball and valve body.

Extended Butt Weld Ends

Meets table DT-4 minimal length for automatic welding. (BPE-2009)

3-Piece Design

In-line serviceable swing out center section allows easy access to internal valve components without disturbing alignment of pipe.

Floating Ball Design

Precision engineered and machined solid stainless steel ball with relief hole in the stem slot prevents build-up of cavity pressure while the valve is open.

Stem Design

Live-loaded, bottom entry, blowout proof stem featuring packing that extends valve cycle life over conventional ball valves and is best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

ISO 5211 Integral Mounting Pad

Ideal for actuation.

Centering lip feature assures precise alignment of bracket, stem and coupler. Actuators may be retrofitted on existing Sharpe® Series 88 without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Variety of End Combinations

End connections available include; Clamp End (CE), Butt Weld Extensions (BTE) for orbital welders. Optional ends include but are not limited to; Short Butt Weld Tube, Butt Weld Tube of Cherry Burrell I, S & Q line and Flush Bottom Tank Pads.

Encapsulated Body Bolts

Heavy duty stainless steel bolting is protected from outside environment assuring valve integrity.

Ideal for wash-downs.

Lockable Handle

All Sharpe® Series 88 valves are supplied with lever or pipe handles and are designed to permit locking the valve in either the open or closed position.

Traceability

Body, end piece, ball and stems are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's are supplied with every Sharpe® Series 88 Ball Valves.

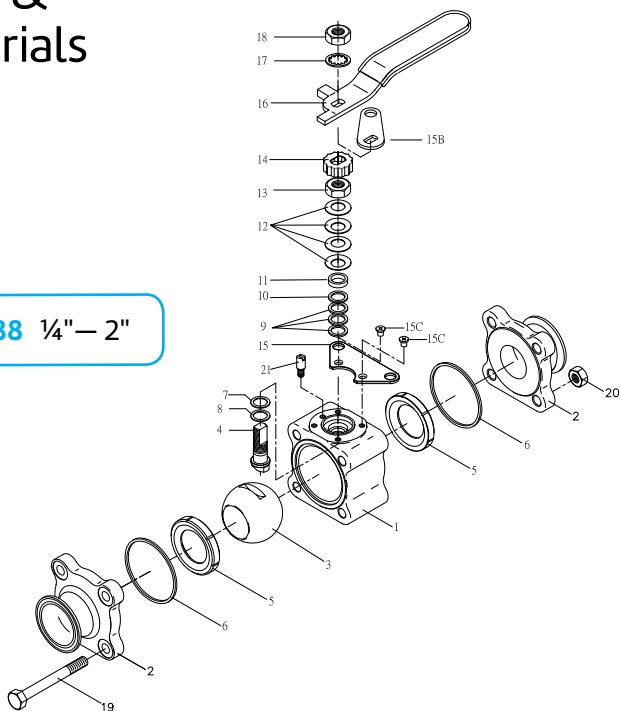


High Purity Tube
Full Port 3-Piece
Ball Valve

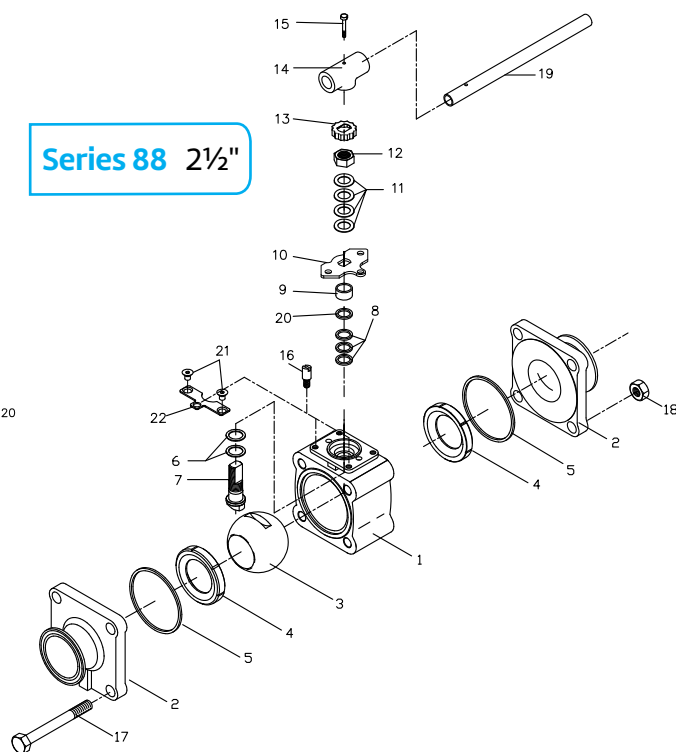
Building connections that last™

Parts & Materials

Series 88 ¼" – 2"



Series 88 2½"



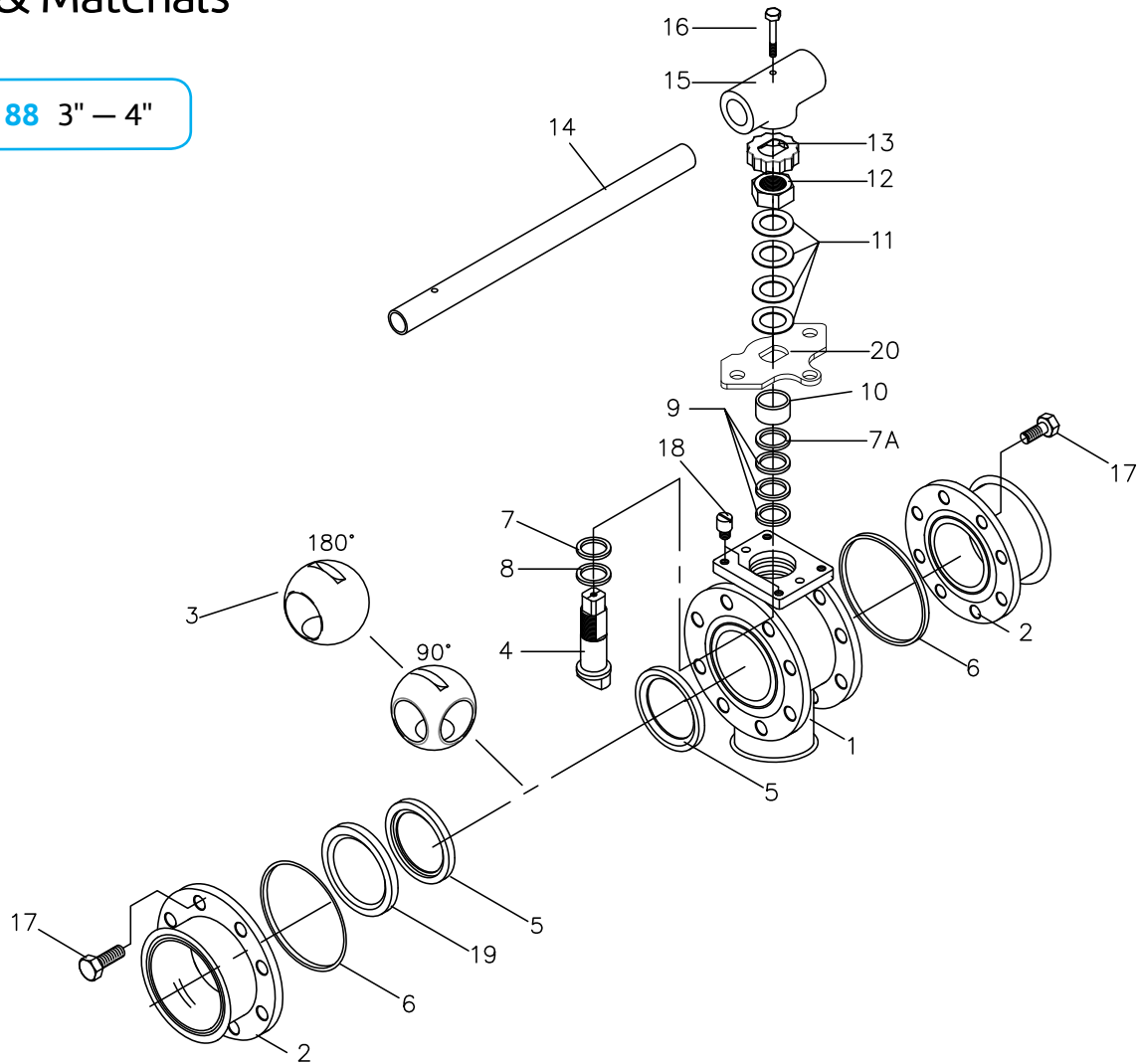
Parts & Materials

No.	Part Name	Qty.	Materials
1	Body	1	316L Stainless Steel ASTM A351 CF3M
2	End Piece	2	316L Stainless Steel ASTM A351 CF3M
3	Ball	1	316L Stainless Steel
4	Stem	1	316L Stainless Steel
5	Seat	2	TFM®, PTFE/RTFE/Cavity Filler PTFE
6	Body Seal	2/3	PTFE, TFM®
7	Thrust Bearing	1	TFM®
8	Thrust Bearing	1	TFM®
9	Stem Packing	3	TFM®
10	Seal Protector	1	TFM®
11	Gland	1	300 Series Stainless Steel
12	Belleville Washer	4	300 Series Stainless Steel
13	Packing Nut	1	300 Series Stainless Steel
14	Lock Tab	1	300 Series Stainless Steel
15	Lower Lock Latch	1	300 Series Stainless Steel
15B	Upper Lock Latch	1	300 Series Stainless Steel
15C	Latch Bolt	2	300 Series Stainless Steel
16	Handle	1	300 Series Stainless Steel
17	Lock Washer	1	300 Series Stainless Steel
18	Handle Nut (¼"-2")	1	300 Series Stainless Steel
19	Body Bolts	4	304 Stainless Steel
20	Nuts	4	300 Series Stainless Steel
21	Stop Pin (½")*	1	300 Series Stainless Steel

No.	Part Name	Qty.	Materials
1	Body	1	316L Stainless Steel ASTM A351 CF3M
2	End Piece	2	316L Stainless Steel ASTM A351 CF3M
3	Ball	1	316L Stainless Steel
4	Seat	2	TFM®, PTFE/RTFE/Cavity Filler PTFE
5	Body Seal	2	PTFE, TFM®
6	Thrust Bearing	2	TFM®
7	Stem	1	316L Stainless Steel
8	Stem Seal	3	TFM®
9	Gland	1	300 Series Stainless Steel
10	Stopper	1	300 Series Stainless Steel
11	Belleville Washer	4	300 Series Stainless Steel
12	Packing Nut	1	300 Series Stainless Steel
13	Lock Tab	1	300 Series Stainless Steel
14	Wrench Block	1	300 Series Stainless Steel
15	Handle Bolt	1	300 Series Stainless Steel
16	Stop Pin	1	300 Series Stainless Steel
17	Body Bolts	4	304 Stainless Steel
18	Body Nuts	4	300 Series Stainless Steel
19	Handle	1	300 Series Stainless Steel
20	Gland Washer	1	300 Series Stainless Steel
21	Screw	2	304 Series Stainless Steel
22	Lower Stopper	1	316L Stainless Steel

Parts & Materials

Series 88 3" – 4"

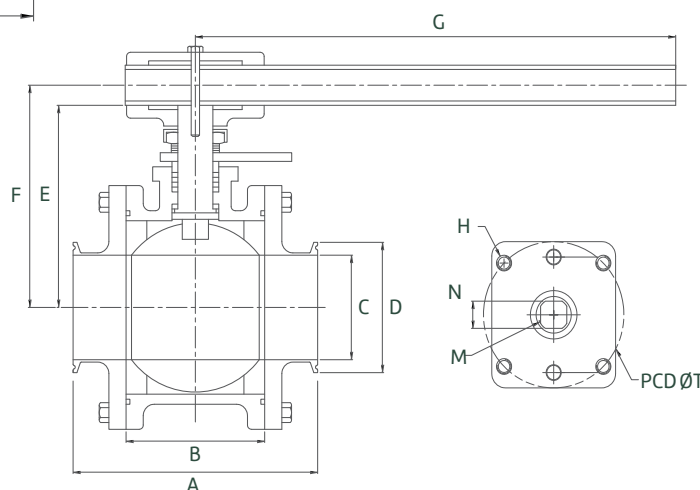
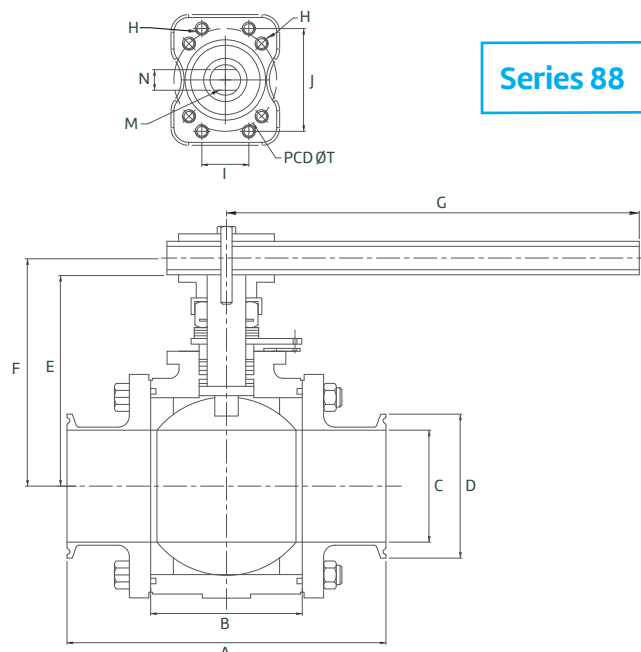
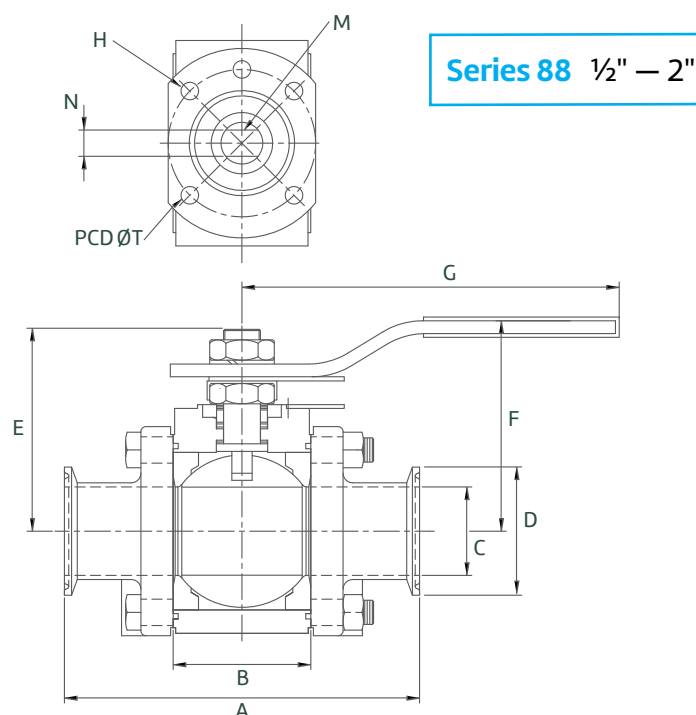


No.	Part Name	Qty.	Material
1	Body	1	316L Stainless Steel ASTM A351 CF3M
2	End Piece	2	316L Stainless Steel ASTM A351 CF3M
3	Ball	1	316L Stainless Steel
4	Stem	1	316L Stainless Steel
5	Seat	2	TFM®, PTFE / RTFE / Cavity Filler PTFE
6	Body Seal	2	PTFE, TFM®
7	Thrust Bearing	1	TFM®
7a	Stem Location Ring	1	300 Series Stainless Steel
8	Thrust Bearing	1	TFM®
9	Stem Packing	3	TFM®
10	Gland	1	300 Series Stainless Steel

No.	Part Name	Qty.	Material
11	Belleville Washer	4	300 Series Stainless Steel
12	Packing Nut	1	300 Series Stainless Steel
13	Lock Tab	1	300 Series Stainless Steel
14	Handle	1	300 Series Stainless Steel
15	Wrench Block	1	300 Series Stainless Steel
16	Hex Head Bolt	1	300 Series Stainless Steel
17	Body Bolts	16	304 Stainless Steel
18	Stop Pin	1	300 Series Stainless Steel
19	Seat Retainer	1	300 Series Stainless Steel
20	Stopper	1	300 Series Stainless Steel

Building connections that last™

Series 88 High Purity Tube Full Port 3-Piece Ball Valve



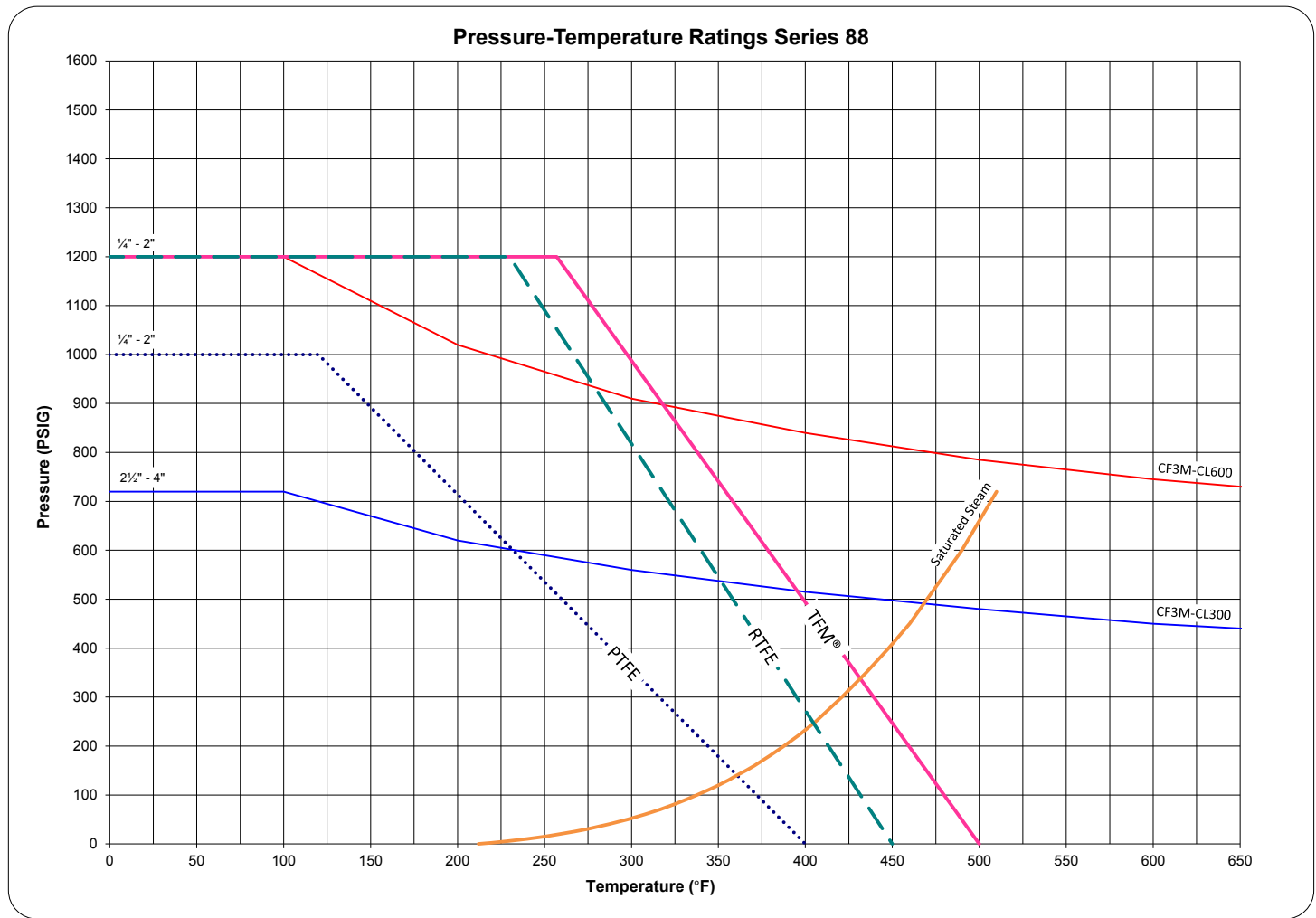
Dimensions (Inches)

Size	A	B	C	D	E	F	G	H	T	N	M	I	J
1/2	3.50	0.97	0.37	0.98	1.64	2.23	4.50	M5	1.42	0.22	3/8 - 24	-	-
3/4	4.00	1.05	0.62	0.98	1.69	2.28	4.50	M5	1.42	0.22	3/8 - 24	-	-
1	4.50	1.54	0.87	1.98	2.36	2.84	5.79	M5	1.65	0.30	7/16 - 20	-	-
1-1/2	5.50	2.13	1.37	1.98	3.06	3.33	6.78	M6	1.97	0.35	9/16 - 18	-	-
2	6.25	2.66	1.87	2.52	3.43	3.68	6.78	M6	1.97	0.35	9/16 - 18	-	-
2-1/2	6.75	3.20	2.37	3.34	4.87	5.98	8.74	M8	2.76	0.55	M20 x P2.0	1.95	2.76
3	6.75	3.96	2.87	5.50	6.54	6.52	13.80	M10	4.02	0.75	1 - 14	-	-
4	8.25	4.73	3.83	6.97	7.13	7.05	13.80	M10	4.02	0.75	1 - 14	-	-

Note: The dimensions above are for informational purposes only. Please refer to Sharpe® Valves if you need dimensions for construction.



Technical Information



Note: *Ratings are for the valve body, specific ends may cause the ratings to change.

Available Options

Mechanical Polishing

Available to 320 Grit (10 Ra).

Improves machined surface by removing entrapment areas and adding a high luster appearance.

Electro-Polishing

Improves surface finish of mechanical polishing up to 50%. Passivates surface for increased corrosion resistance.

Removes any entrapped contaminants.

Purge Ports

Available on bodies or ends.

These ports are suitable for CIP (clean in place) and SIP (sterilize in place) applications.

Flush Bottom Tank Pads

Highly polished and made from 316L bar stock. Tube full port assures quick unobstructed drainage.

Building connections that last™

Technical Information

Conversion Table of Surface Finishes

Surface Designation ASME	Mechanically Polished			
	Ra Average		Ra Max	
	μ-in.	μ-m	μ-in.	μ-m
BPE				
SFV1	15	0.375	20	0.500
SFV2	20	0.500	25	0.625
SFV3	25	0.625	30	0.750

Surface Designation ASME	Mechanically Polished and Electropolished			
	Ra Average		Ra Max	
	μ-in.	μ-m	μ-in.	μ-m
BPE				
SFV4	10	0.250	15	0.375
SFV5	15	0.375	20	0.500
SFV6	20	0.500	25	0.625

Conversion Table Chart

Standard Grit	Ra		RMS	
	μ-in.	μ-m.	μ-in.	μ-m.
150 Grit	27 - 32	.68 - .80	30 - 35	.76 - .89
180 Grit	18 - 23	.46 - .58	20 - 25	.51 - .64
240 Grit	14 - 18	.34 - .36	15 - 20	.38 - .51
320 Grit	8 - 10	.21 - .25	9 - 11	.23 - .28

Approx. Weight (Lbs.)

Size	Tri Clamp End	Extended Butt Weld End	Short Butt Weld
¼"		1.50	1.40
⅜"		1.50	1.40
½"		1.50	1.40
¾"		2.00	1.85
1"		3.90	3.60
1¼"		6.00	5.70
1½"		7.50	7.30
2"		12.10	11.70
2½"		20.80	20.00
3"		32.70	30.80
4"		47.50	45.00

C_v Factor

Size	C _v
¼"	1.5
⅜"	3.2
½"	8.1
¾"	28.6
1"	67
1¼"	110
1½"	192
2"	434
2½"	779
3"	1123
4"	2054



How to order Sharpe® Series 88

Fig: 1 - ½ - 88 - 6 - 6 - T - T - CE

Size	Series		Seat		Ends		Options	
¼*	88		T	PTFE	CE	Clamp Ends	EP	Electro Polish*
⅜*			M	TFM®	BTE	Butt-weld Tube Extended	3	320 Grit / 8 - 10 RA*
½	Body & Ends		R	RTFE	BE	Butt-weld (Short)*	PP1	Purge Port on One End*
¾	6	316L Stainless Steel	C	Cavity Filler - PTFE	TP	Flush Bottom Tank Pad*	PP2	Purge Port on Two Ends*
1	Ball & Stem				Cherry Burrell		PP3	Purge Port on Ends & Body*
1-¼	6	316L Stainless Steel	Body Seal		I	I Line*	PPB	Purge Port on Body*
1-½			M	TFM®	S	S Line*	VF	Purge with VCR Female*
2			T	PTFE	Q	Q Line*	C	Purge Port Compression*
2-½							VM	Purge Port VCR Male*
3							OT	Purge Port O.D. Tubing*
4							C	Purge Port with Clamp*
							X	Oxygen Service* (As Per MFG's Standards)
							OH	Oval Handle
							L	Lockable Stem Ext.

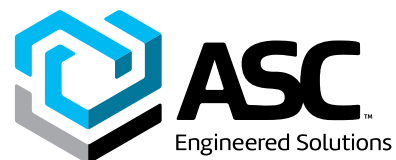
Note:

*POA

3M™, Dyneon™, and TFM® are trademarks owned by 3M.

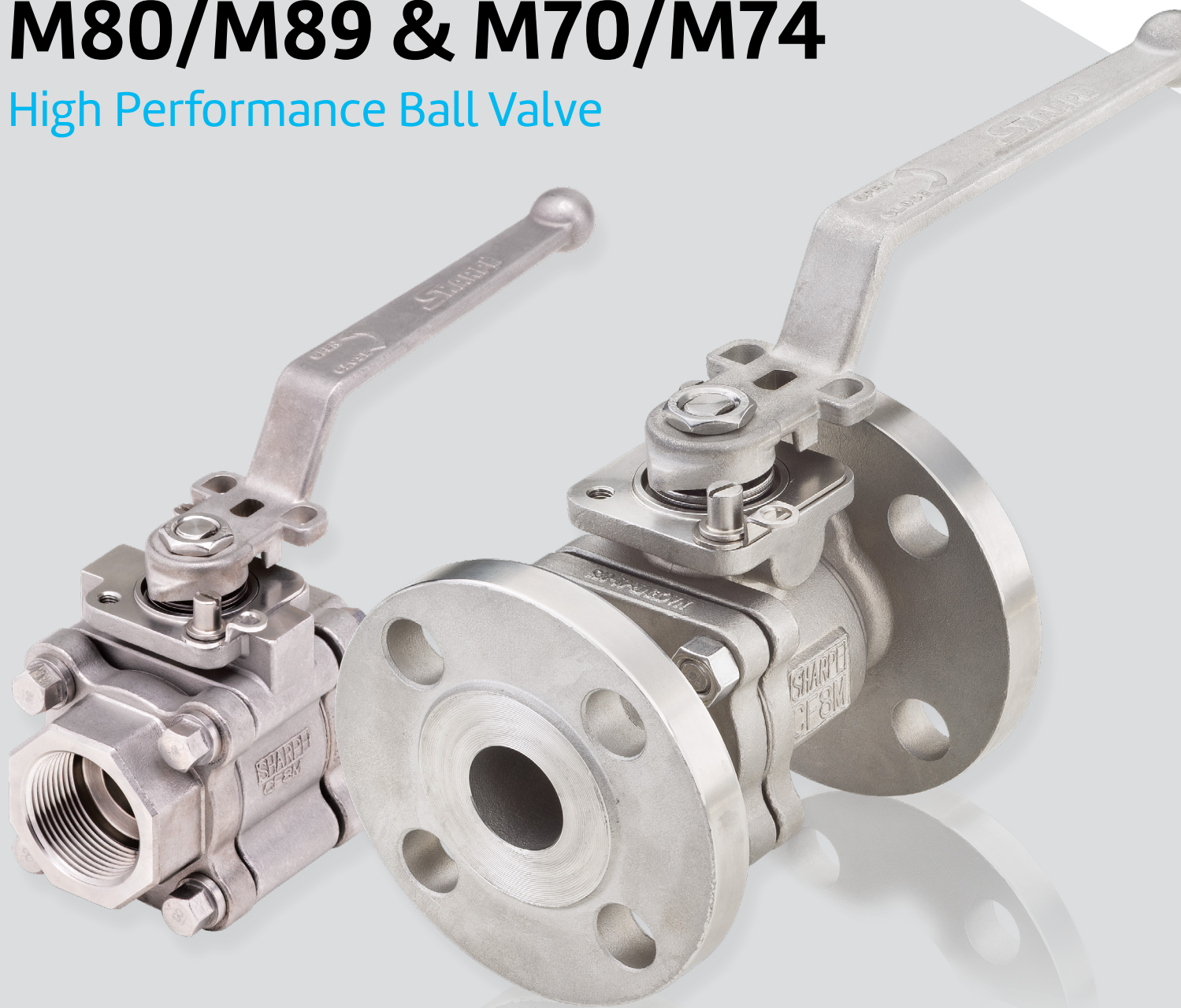
Due to continuous development of our product range, we reserve the right to change the dimensions and information for this product as required.

Building connections that last™



Sharpe® Series M80/M89 & M70/M74

High Performance Ball Valve



Overview

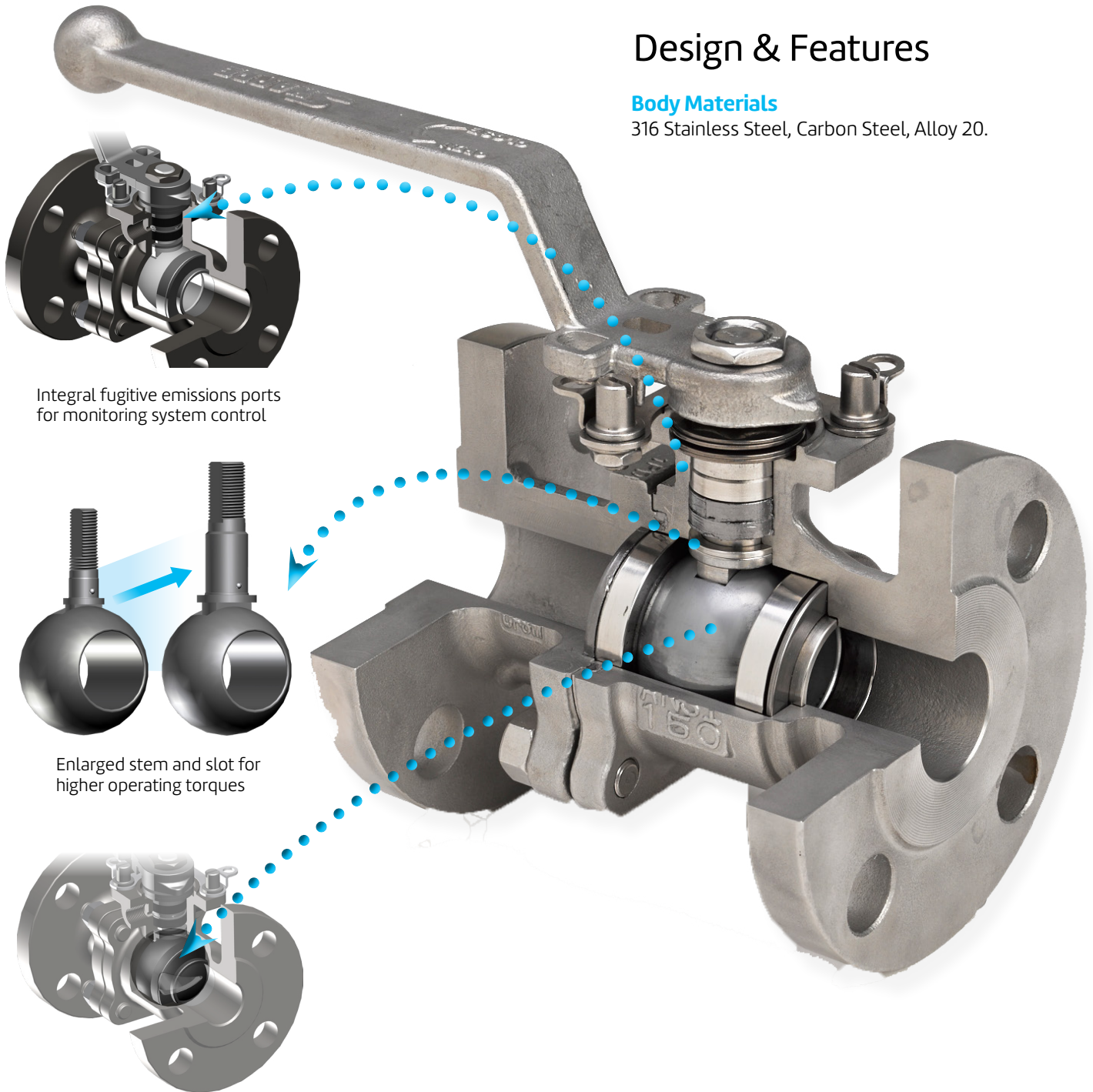
Valves designed for high temperatures and severe service applications

High Performance
Ball Valve

Design & Features

Body Materials

316 Stainless Steel, Carbon Steel, Alloy 20.



Integral fugitive emissions ports
for monitoring system control

Enlarged stem and slot for
higher operating torques

Tight tolerated stem and ball
with characterized port for precise
process control

The exceptional capabilities of metal sealing together with the advanced features of the new line of Sharpe API 608 valves, results in a superior valve that functions under the most demanding applications where soft seats are not an option.

Building connections that last™

Design

Mate-Lapped Ball and Seat Set

The design is based on a ball and two metal seats which are precision machined, and then mate-lapped together to provide an extremely tight fit.

Behind the seats are a spring or seal whose function is to enable sealing by applying a load to the sealing surfaces.

Protected Seat Seal and Springs

The seat design protects the seat seals and the springs from the media, which reduces problems associated with solidification of material in the valve.

The metal seated valves come in two configurations depending on the application

Bi-Directional

Provides shut-off in both directions.

The valves have a symmetric build where both the upstream and downstream seats have a seat seal.

The seat seal material is polymeric or O-rings for low temperatures, and graphite or metal for high temperatures.

Uni-Directional

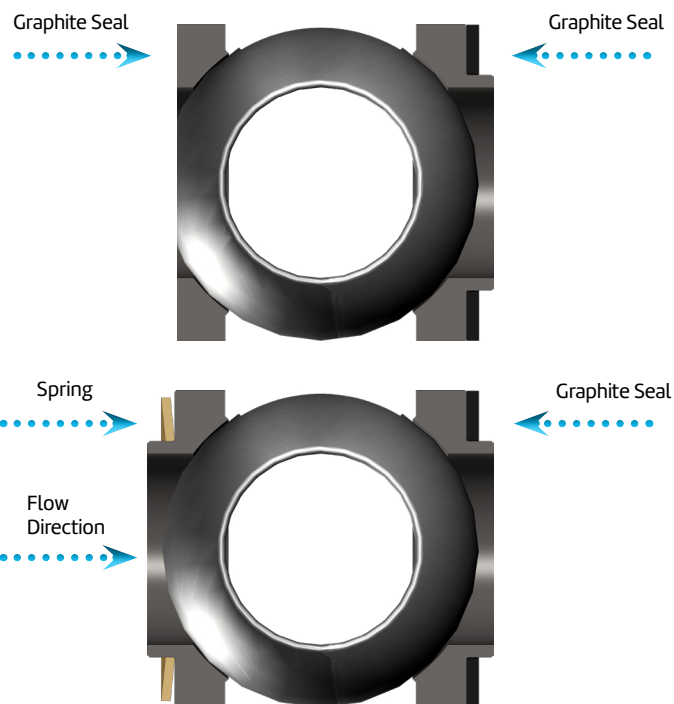
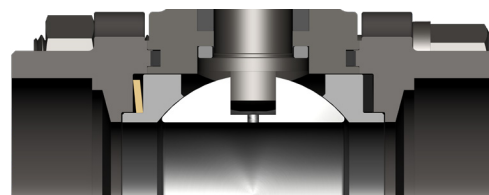
Provides shut-off in one direction.

The valve is built with an upstream spring and downstream seat seal.

The spring is assembled behind the upstream seat and is protected from the media. The spring material is specified according to the application media and temperature. All uni-directional valves carry a flow direction arrow.

Sharpe metal seated valves are designed for applications requiring resistance to erosion, abrasion, corrosion, and high temperatures beyond the capabilities of the currently available polymeric seat materials.

Typical applications include Pulp and Paper, Petrochemical, Petroleum, Chemical, and Power industries to name a few.



Features

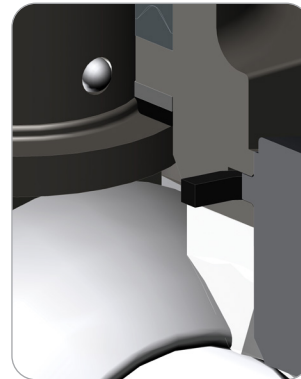
Important construction components

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

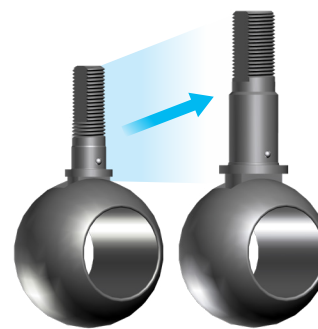


Heavy Duty Stem Design

Stem diameters have been increased to meet the higher torque requirements of the most demanding applications.

Stem to ball contact area is wider and larger, allowing the valve to be used for higher torque applications.

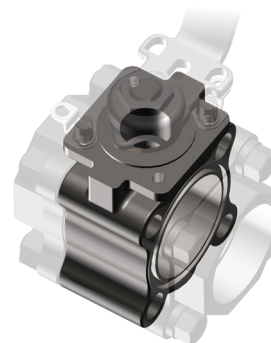
Design allows for the use of 316 stainless steel stem material, rather than 17-4PH, for superior corrosion resistance.



ISO 5211 Top-Works Compatibility

The top-works offer compatibility for mounting a wider range of accessories.

Sharpe® actuators and accessories may be retrofitted on existing valves without disruption of line integrity.



Lockable Stem Extension

An option to move the valve top interface away from the pipe line to accommodate insulation.

Tamper Proof Locking Device

All Sharpe® Valves come standard with a lockable handle.

The optional, Sharpe® exclusive, tamper proof locking device cannot be removed with a lock in place. When not being used with a lock its springs ensure the locking device snaps into place in the open or closed position to prevent accidental operation.



Features

Process compatibility of stem assemblies provide operational flexibility

Stem assemblies

Various stem assemblies are available based on application requirements.

Standard – A multiple pack of chevron "V" shaped stem seals for better sealing in TFM® or Nova materials.

High Temperature – Double pack of flexible graphite seals for sealing under high temperature conditions.

Fugitive Emission – Two-pack stem seals in PTFE or graphite, with lantern ring to allow leak detection through the emission port(s).

High Cycle – Unique design for demanding high cycle applications that consist of multi-system sealing devices in the stem bonnet.

Stem sealing

Increased Stem Sealing Area

Allows for a range of sealing combinations for severe applications and other stringent design demands.

Live-loaded stem

Two pairs of concave and opposing spring washers provide additional compensation for seal wear.

Safe Design

Blowout proof stem ensures the stem cannot be blown out by accidental medium pressure rise.

Wear Resistance

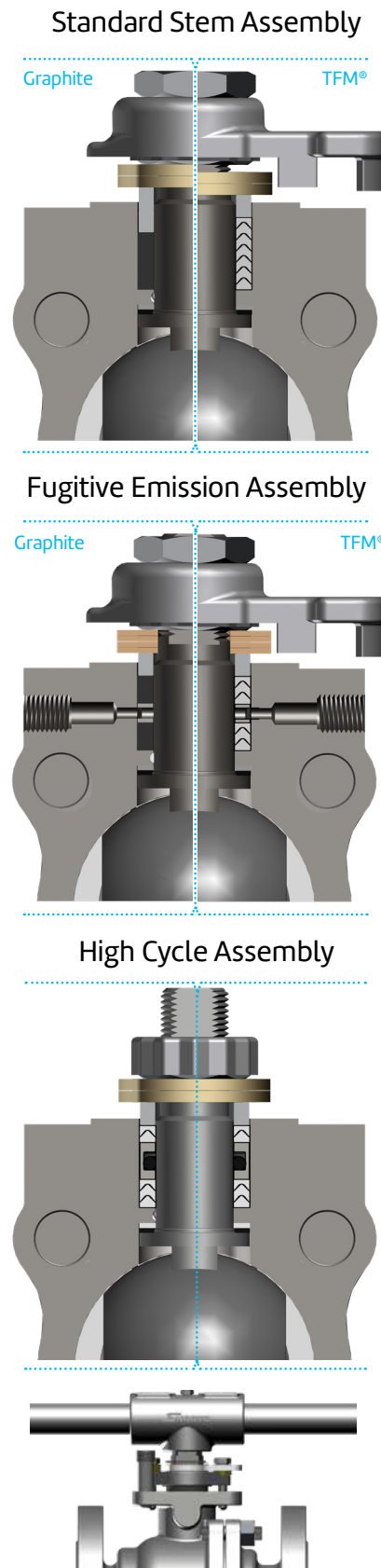
The thrust washer is either metallic for higher temperatures and wear resistance, or PEEK for lower temperatures.

Anti-Static

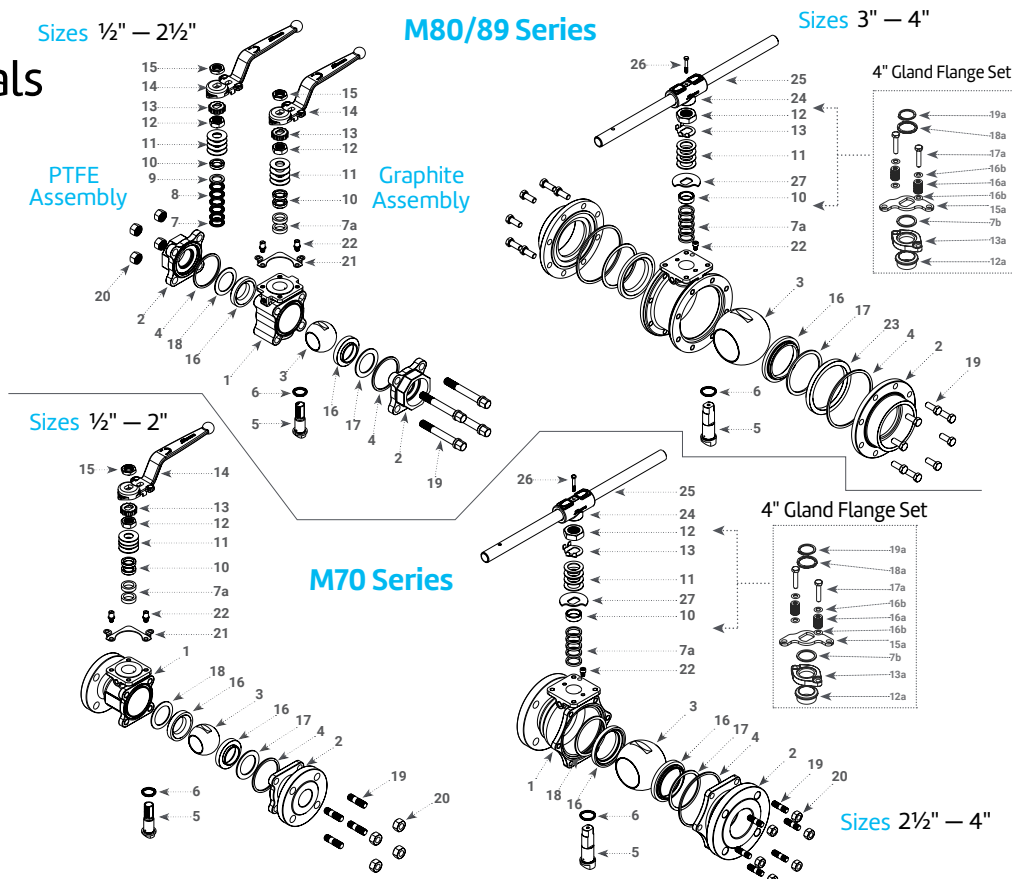
Static build-up discharges by anti-static device in stem or the metallic thrust washer.

Stem trim for sizes greater than 3"

According to API 608 all valve sizes greater than 3" have an adjustable packing gland with thru bolt holes. Gland bolts pass through the holes and thread to the valve body. The position stops are bolted to the body and are not integral to the packing gland, gland flange or gland bolting.



Parts & Materials



Item	Description	Material	Qty.
1	Body	Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB Alloy 20 ASTM A351 CN7M	1
2	End	Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB Alloy 20 ASTM A351 CN7M	1/2
3	Ball	316 Stainless Steel Hard Chrome Plated (HCP)	1
4*	Body Seal	PTFE, RTFE, Graphite, Viton®	1/2
5	Stem	316 Stainless Steel, 17-4PH Stainless Steel, Inconel	1
6*	Thrust Washer	Nitronic 60, Inconel 718, PEEK (x2)	1
7*	Stem Seal - Bottom	PTFE, TFM®, Nova	1
7a*	Stem Seal	GRAPHITE (high temperature)	2 or 5
7b	Thrust Bearing	PEEK	1
8*	Stem Seal - Middle	PTFE, TFM®, Nova	5
9*	Stem Seal - Top	PTFE, TFM®, Nova	1
10	Gland	300 Series Stainless Steel	1 or 2
11	Belleville Spring	17-7PH Stainless Steel	4
12	Stem Nut	300 Series Stainless Steel	1
12a	Gland Position Ring	300 Series Stainless Steel	1
13	Lock Tab	300 Series Stainless Steel	1
13a	Gland (Size 4" only)	316 Stainless Steel A351 CF8M	1
14	Handle	300 Series Stainless Steel	1

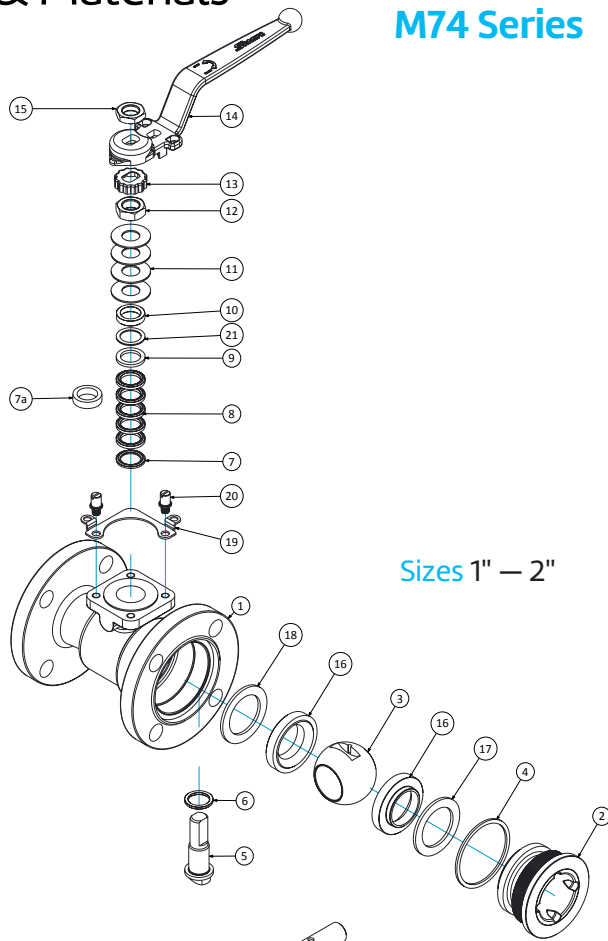
15	Handle Nut	300 Series Stainless Steel	1
15a	Stop Plate	300 Series Stainless Steel	1
16	Metal Seat	Stainless Steel Stellite™ 6 coated	2
16a	Belleville Washer	17-7PH	16
16b	Washer	300 Series Stainless Steel	4
17*	Seat Seal	Graphite, PTFE, Viton®	1
17a	Gland Bolt	300 Series Stainless Steel	2
18	Seat Disk Spring	17-4PH Stainless Steel, ½ Hard 301, Inconel 718	1
18a	Retainer Spring	300 Series Stainless Steel	1
19	Body Bolt/Stud	A193 8/8M	4/16
19a	Retainer Lock	300 Series Stainless Steel	1
20	Body Nut	300 Series Stainless Steel	4/8
21	Stop Pin	300 Series Stainless Steel	1
22	Stop Plate	300 Series Stainless Steel	1 or 2
23	Seat Ring	300 Series Stainless Steel	1
24	Wrench Block	300 Series Stainless Steel	1
25	Handle Pipe	300 Series Stainless Steel	1
26	Wrench Bolt	300 Series Stainless Steel	1
27	Stop Plate	300 Series Stainless Steel	1

Building connections that last™

The quantities listed in the stem arrangement are for standard stem assemblies.
* These parts are used in repair kits.

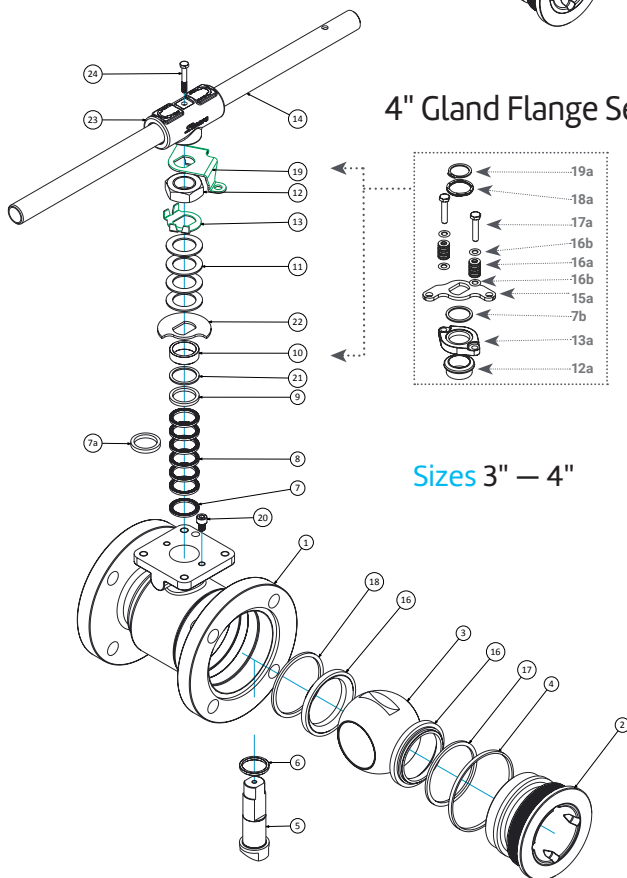
Parts & Materials

M74 Series



Sizes 1" – 2"

4" Gland Flange Set

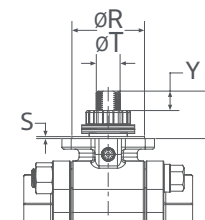
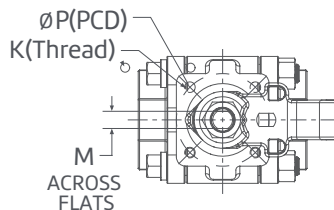
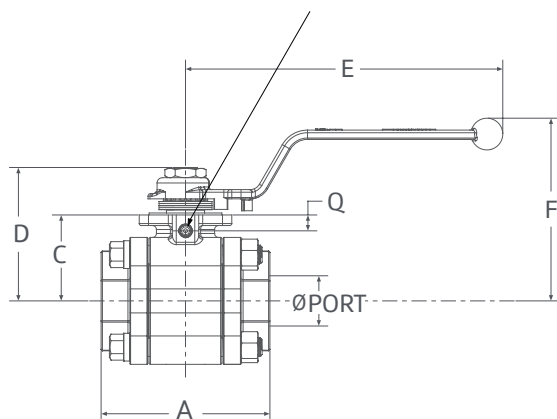


Sizes 3" – 4"

Item	Description	Material	Qty.
1	Body	Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB Alloy 20 ASTM A351 CN7M	1
2	End Cap	Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB Alloy 20 ASTM A351 CN7M	1
3	Ball	316 Stainless Steel Hard, Chrome Plated (HCP)	1
4*	Body Seal	PTFE, RTFE, Graphite, Viton®	1
5	Stem	316 Stainless Steel, 17-4PH Stainless Steel, Inconel	1
6*	Thrust Washer	Nitronic 60, Inconel 718, PEEK (x2)	1
7*	Stem Seal - Bottom	PTFE, TFM®, Nova	1
7a*	Stem Seal	Graphite (High Temperature)	2 or 5
7b	Thrust Bearing	PEEK	1
8*	Stem Seal - Middle	PTFE, TFM®, Nova	5
9*	Stem Seal - Top	PTFE, TFM®, Nova	1
10	Gland	300 Series Stainless Steel	1 or 2
11	Belleville Spring	17-7PH Stainless Steel	4
12	Stem Nut	300 Series Stainless Steel	1
12a	Gland Position Ring	300 Series Stainless Steel	1
13	Lock Tab	300 Series Stainless Steel	1
13a	Gland (Size 4" only)	316 Stainless Steel A351 CF8M	1
14	Handle	300 Series Stainless Steel	1
15	Handle Nut	300 Series Stainless Steel (1"-2")	1
15a	Stop Plate	300 Series Stainless Steel	1
16	Metal Seat	Stainless Steel Stellite™ 6 Coated	1
16a	Belleville Washer	17-7PH	16
16b	Washer	300 Series Stainless Steel	4
17	Seat Seal	Graphite, PTFE, Viton®	1
17a	Gland Bolt	300 Series Stainless Steel	2
18	Seat Disk Spring	17-7PH Stainless Steel, ½ Hard 301, Inconel 718	1
18a	Retainer Spring	300 Series Stainless Steel	1
19	Lock Plate	300 Series Stainless Steel	1
19a	Retainer Lock	300 Series Stainless Steel	1
20	Stop Pin	300 Series Stainless Steel	1 or 2
21	Thrust Seal	300 Series Stainless Steel	1
22	Stop Plate	300 Series Stainless Steel (3"- 4")	1
23	Wrench Book	300 Series Stainless Steel (3"- 4")	1
24	Wrench Bolt	300 Series Stainless Steel (3"- 4")	1

Series M80 ½" – 2"
Series M89 ¼" – 1½"

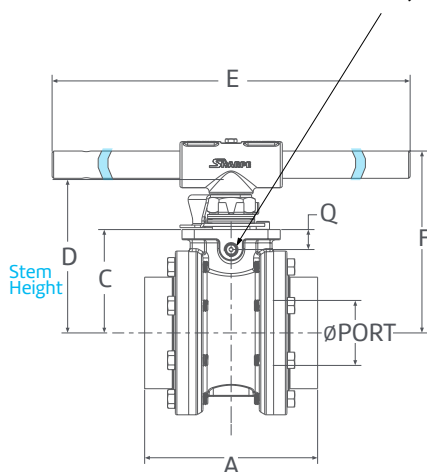
Optional EMISSION PORT THREAD
 ⅛" NPT (Sizes ¾" to 2")



Dimensions
for Actuator
Mounting

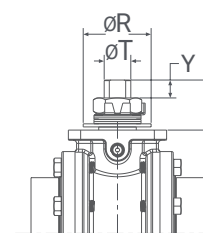
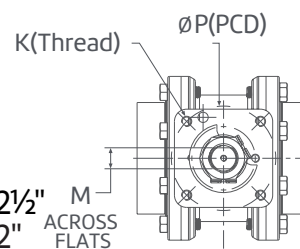
Series M80 2½" – 4"
Series M89 2" – 3"

Optional EMISSION PORT THREAD
 ¼" NPT (Sizes 2½" to 4")



Series M80 3" – 4"
Series M89 2½" – 3"

Series M80 2½"
Series M89 2"



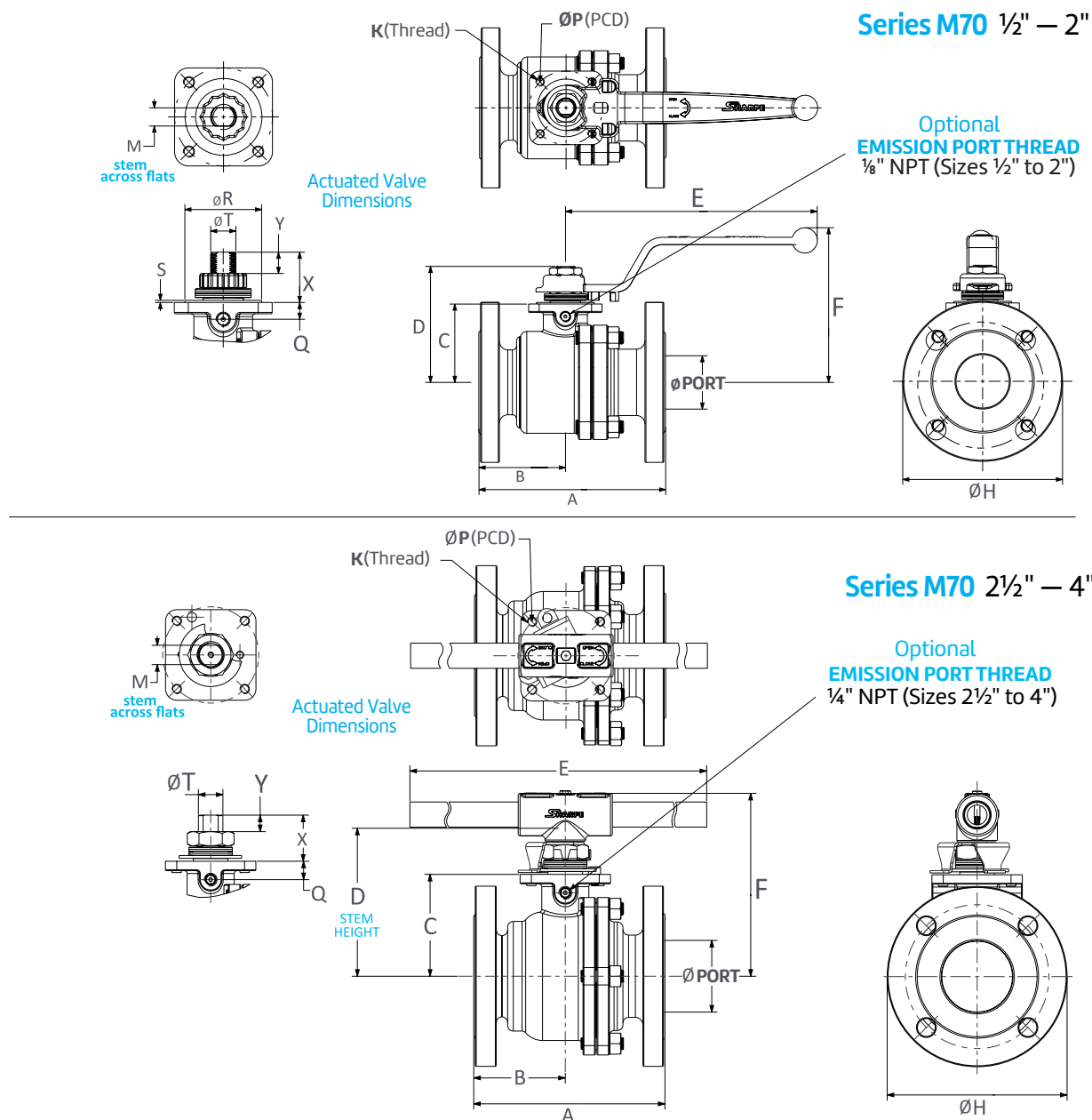
Dimensions
for Actuator
Mounting

Dimensions (Inches)

Standard Port	Full Port	ØPORT	TE/SW BW	Ext BW Full Port	C	D	E	F	H	K (Thread)	M	ØP (PCD)	Q	ØR	S	ØT	X	Y
M80	M89		A	A														
½"	¼", ⅜"	0.44	2.91	-	1.27	2.01	6.42	3.39	1.81	M5-P0.8	0.264	F04 (1.65)	NA	1.18	0.051	0.394	0.74	0.33
¾"	½"	0.56	3.07	13.10	1.42	2.17	6.42	3.54	1.95	M5-P0.8	0.264	F04 (1.65)	0.27	1.18	0.051	0.394	0.74	0.33
1"	¾"	0.81	3.72	13.25	1.74	2.57	7.28	3.83	2.39	M6-P1.0	0.343	F05 (1.97)	0.39	1.38	0.059	0.472	0.81	0.30
1¼"	1"	1.00	4.25	13.61	1.91	2.74	7.28	4.00	2.85	M6-P1.0	0.343	F05 (1.97)	0.37	1.38	0.059	0.472	0.81	0.30
1½"	1¼"	1.24	4.57	13.90	2.40	3.82	9.45	5.28	3.15	M8-P1.25	0.512	F07 (2.76)	0.47	2.17	0.059	0.709	1.41	0.48
2"	1½"	1.50	5.04	14.21	2.56	3.98	9.45	5.43	3.78	M8-P1.25	0.512	F07 (2.76)	0.47	2.17	0.059	0.709	1.41	0.48
2½"	2"	2.00	6.34	14.87	3.58	5.28	15.75	6.34	4.92	M10-P1.5	0.630	F10 (4.02)	0.76	-	-	0.886	1.92	0.65
3"	2½"	2.50	6.65	-	3.98	5.87	23.62	7.48	6.30	M10-P1.5	0.807	F10 (4.02)	0.77	-	-	1.024	1.93	0.65
4"	3"	3.25	8.43	-	4.59	6.50	23.62	8.07	7.99	M10-P1.5	0.807	F10 (4.02)	0.77	-	-	1.024	1.93	0.65

Note: The dimensions above are for informational purposes only. Please contact Sharpe® Valves if you need dimensions for construction.

Building connections that last™

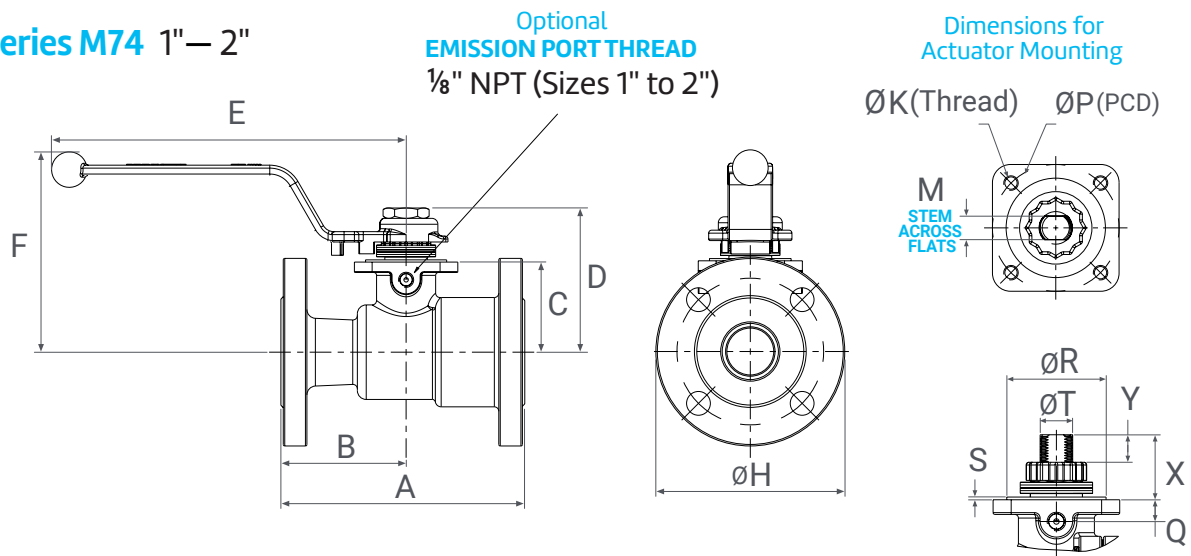


Dimensions (Inches)

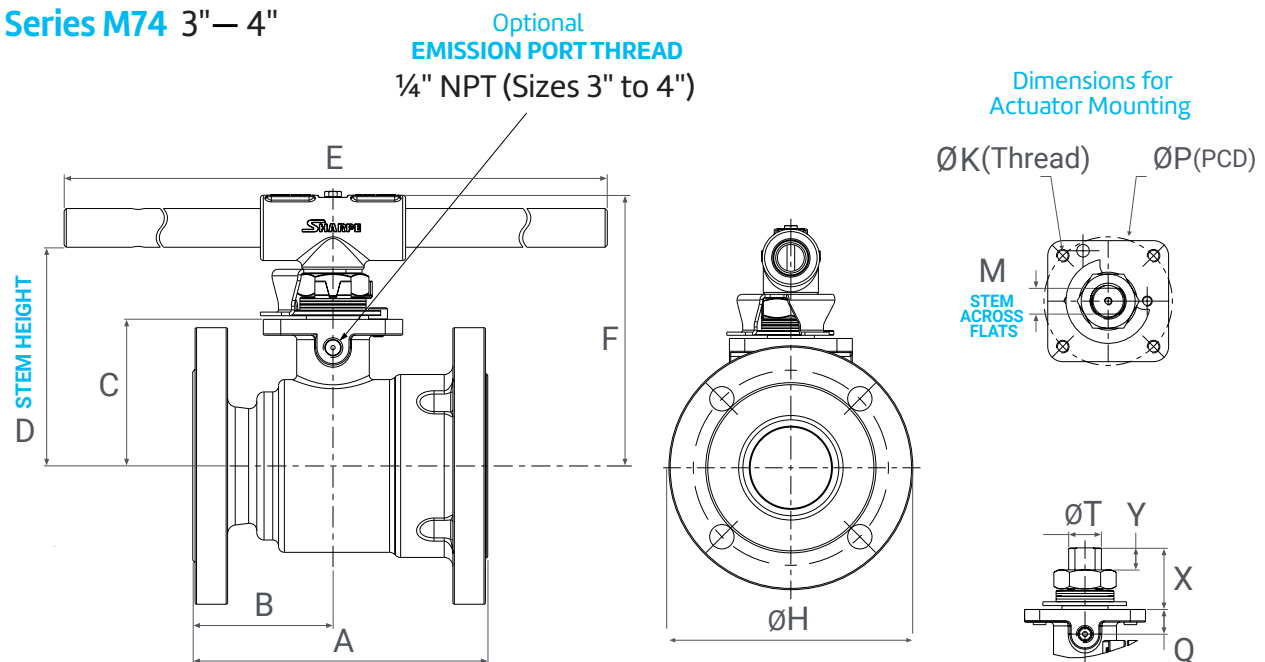
Size	ØPORT	Class 150	Class 300	Class 150	Class 300	C	D	E	F	Class 150	Class 300	K (Thread)	M	ØP (PCD)	Q	ØR	S	ØT	X	Y
		A	A	B	B					ØH	ØH									
1/2"	0.56	4.25	5.50	1.96	2.36	1.41	2.15	6.42	3.54	3.50	3.75	M5-P0.8	0.264	F04 (1.65)	0.27	1.18	0.051	0.394	0.74	0.33
3/4"	0.82	4.62	6.00	2.13	2.52	1.53	2.27	6.42	3.66	3.88	4.61	M5-P0.8	0.264	F04 (1.65)	0.37	1.18	0.051	0.394	0.74	0.33
1"	1.00	5.00	6.50	2.13	2.72	1.93	2.74	7.28	3.73	4.25	4.88	M6-P1.0	0.343	F05 (1.97)	0.39	1.38	0.059	0.472	0.81	0.30
1 1/2"	1.50	6.50	7.50	2.97	3.21	2.56	3.97	9.45	5.28	5.00	6.12	M8-P1.25	0.512	F07 (2.76)	0.47	2.17	0.059	0.709	1.41	0.48
2"	2.00	7.00	8.50	3.25	3.37	2.94	4.35	9.45	5.87	6.00	6.50	M8-P1.25	0.512	F07 (2.76)	0.47	2.17	0.059	0.709	1.41	0.48
2 1/2"	2.50	7.50	9.50	3.58	4.00	3.98	5.91	23.62	7.48	7.01	7.52	M10-P1.5	0.807	F10 (4.02)	0.77	-	-	1.024	1.92	0.65
3"	3.00	8.00	11.12	3.83	4.20	4.25	6.18	23.62	7.64	7.52	8.27	M10-P1.5	0.807	F10 (4.02)	0.77	-	-	1.024	1.93	0.65
4"	3.94	9.00	12.00	4.61	5.06	4.90	6.83	23.62	8.28	9.02	10.00	M10-P1.5	0.807	F10 (4.02)	0.77	-	-	1.024	1.93	0.65

Note: The dimensions above are for informational purposes only. Please contact Sharpe® Valves if you need dimensions for construction.

Series M74 1"–2"



Series M74 3"–4"



Dimensions (Inches)

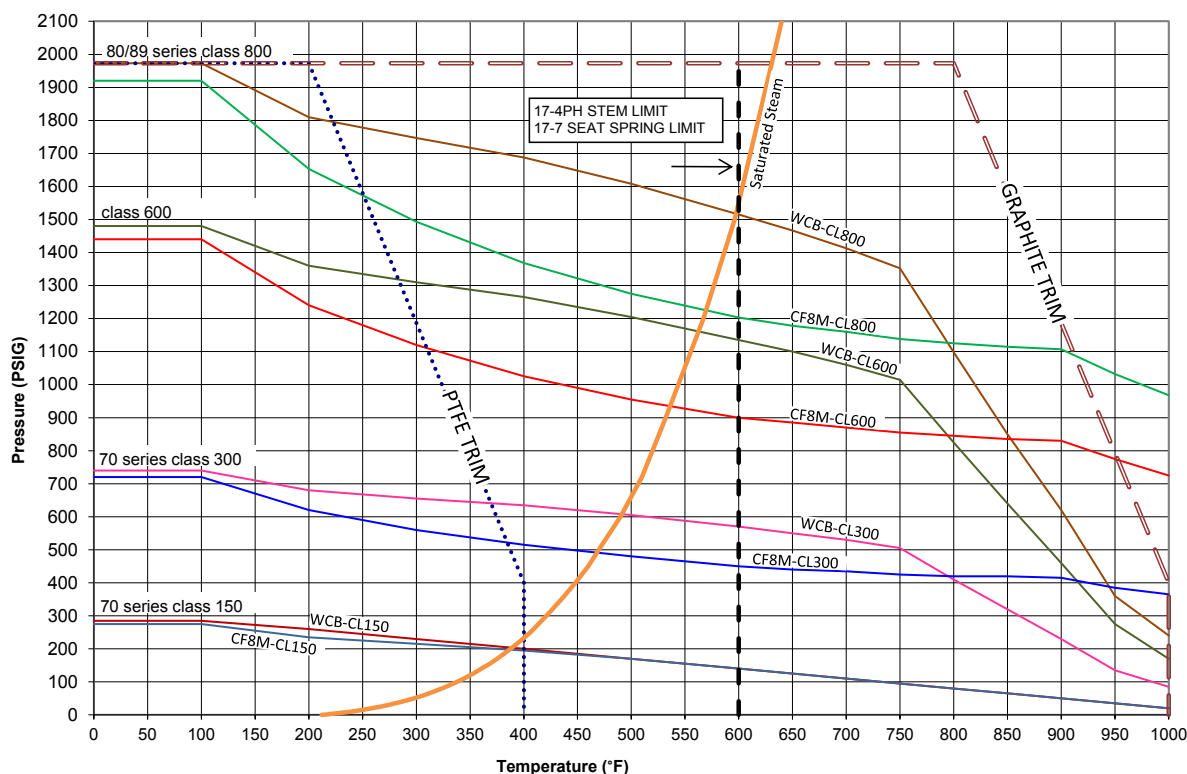
Size	Ø Port	Class 150	Class 300	Class 150	Class 300	C	D	E	F	Class 150	Class 300	K (Thread)	M	ØP (PCD)	Q	ØR	S	ØT	X	Y
		A	A	B	B					Ø H	Ø H									
1"	0.81	5.00	6.50	2.70	2.72	1.53	2.28	6.40	3.68	4.25	4.88	M5-P0.8	0.264	F04 (1.65)	0.57	1.181	0.394	0.394	0.74	0.37
1½"	1.24	6.50	7.50	3.35	3.21	2.40	3.82	9.45	5.35	6.10	6.12	M5-P1.25	0.512	F07 (2.76)	0.47	2.165	0.059	0.709	1.41	0.54
2"	1.50	7.00	8.50	3.86	5.35	2.56	3.98	9.45	5.51	6.50	6.50	M8-P1.26	0.512	F07 (2.76)	0.47	2.165	0.059	0.709	1.41	0.54
3"	2.50	8.00	11.12	3.82	6.93	3.98	5.90	23.6	7.36	7.52	8.27	M10-P1.5	0.807	F10 (4.02)	0.77	NA	NA	1.024	1.93	0.68
4"	3.25	9.00	12.00	4.80	7.79	4.59	6.50	23.6	7.95	9.02	10.0	M10-P1.5	0.807	F10 (4.02)	0.77	NA	NA	1.024	1.93	0.68

Note: The dimensions above are for informational purposes only. Please contact Sharpe® Valves if you need dimensions for construction.

Building connections that last™

Technical Information

Pressure-Temperature Ratings Series M80/M89 & M70/M74



Note:

The maximum pressure/temperature ratings of the valve assemblies are limited to lowest of the body or seat material fitted.
The valve body ratings are based on ASME B16.34 rating for materials.
The graphs are based on laboratory testing and our experience in the field.
The seat ratings depend on the material, design, application, and function.

Standard Port (84)
Class 600 ½" – 2½"
Class 300 3" – 4"

Full Port (99)
Class 600 ¼" – 2"
Class 300 2½" – 3"

Coating Options

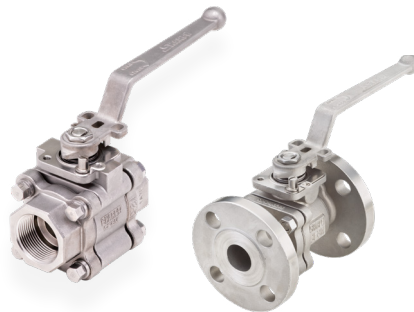
The standard combination is a hard chrome plated (HCP) stainless steel ball and stainless steel seats with Stellite™ 6 hard facing. Other optional coatings are available, please refer to Sharpe® for more information.

Shut Off Class

All the valves are tested to ANSI/FCI 70-2.
The seat standard leakage rates are Class V.

Size Range

	3-Piece
Standard Port (M80)	Class 800 ½" – 2½"
	Class 300 3" – 4"
Full Port (M89)	Class 800 ½" – 2"
	Class 300 2½" – 3"
	Flanged
Standard Port (M74)	Class 150 1" – 4"
	Class 300 1" – 4"
Full Port (M70)	Class 150 ½" – 4"
	Class 300 ½" – 4"



How to order Sharpe® Series M80/M89 & M70/M74

1"	M80	-	4	4	Z	G	G	Z	-	U	6GZ	-	TE/TE	-	L
Size	Series		Body	Ends	Stem	Body Seal	Stem Packing	Thrust Bearing		Flow	Seat Set		Ends		Options
										(see coding below)	(see coding below)		(80/89 only)		

Size	Series		Body & Ends		Stem Packing		End Style		Options	
1/4"	M80	3-piece S/P	2	Alloy 20*	G	Graphite	TE	Threaded	F1	1 Emission Port
3/8"	M89	3-piece F/P	4	Carbon Steel	M	TFM®	SW	Socketweld	F2	2 Emission Port
1/2"	M701	Flanged #150 S/P	6	316 Stainless Steel	N	NOVA	BW10	Buttweld SCH 10*	L	Lockable Stem Extension
3/4"	M703	Flanged #300 F/P	Stem		R	RTFE	BW40	Buttweld SCH 40	A	NACE
1"	M741	Flanged #150 S/P*			T	PTFE	BW80	Buttweld SCH 80	VB	Vented Ball
1 1/4"	M743	Flanged #300 S/P*	Z	Inconel 718	Thrust Bearing		1	150# Flanged RF*	SJ	Steam Jacket
1 1/2"			6	316 SS			3	300# Flanged RF*	SJ3	Steam Jacket With 3 Outlets
2"			7	17-4PH	C	Nitronic 60	6	600# Flanged RF*	TP	Tamper Proof Locking Device
2 1/2"			Body Seal		P	PEEK	EBW	Extended BW (Series 89 Only)		
3"					Z	Inconel 718	FB	Flush Bottom Tank Pad		
					G	Graphite				
					T	PTFE				
					V	Viton®				

Note:
*POA

When placing an order or requesting a quotation, please provide as many details on the application as possible such as media type, temperature, pressure, pipe size and etc.

Seat Set

Flow	Material (ball/seat)	Coating (ball/seat)	Seat Seal	Spring
U Uni-Directional	*6 316/316	HCP/S6	G Graphite	Z* Inconel 178
B Bi-Directional			T PTFE	3 300 Stainless Steel
			V Viton®	7 17-7PH Stainless Steel

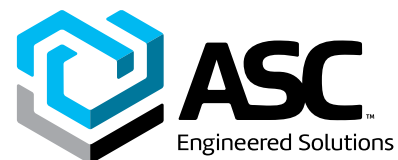
Bi-Directional Set (B)		Uni-Directional Set (U)		Applicable Standards	
B6T	316/316, HCP/S6, PTFE seat seal for temperatures up to 400°F	U6T	316/316, HCP/S6, PTFE seat seal, 17-7 spring for temperatures up to 400°F	Body Wall Thickness	ASME B16.34
B6V	316/316, HCP/S6, Viton® seat seal for temperatures up to 400°F	U6V7	316/316, HCP/S6, Viton® seat seal, 17-7 spring for temperatures up to 400°F	SW & Threaded Ends	ASME B16.11
B6G	316/316, HCP/S6, Graphite seat seal for temperatures up to 750°F		316/316, HCP/S6, Graphite seat seal, Inconel spring for temperatures up to 1000°F	Butt-Weld Ends	ASME B16.25
Definitions: HCP Hard Chrome Plated S6 Stellite™ 6 ** These items used as standard				Flange Dimensions	ASME B16.5
				Basic Design	ASME B16.34, API 608 5th Ed.
				Pressure Test	ANSI/FCI 70-2, API 598
				Mounting Dimensions	ISO 5211
				NACE	MR0175/ISO 15156
				Marking	MSS-SP 25

Note:
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3M™, Dyneon™, TFM® are trademarks owned by 3M.
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Building connections that last™

Building connections that last™



Sharpe® Series CL84/CL99

Chlorine Ball Valve



Design & Features

Body Material

Carbon Steel & Hastelloy C.

3-Piece Design

In-line serviceable swing-out center section allows easy access to internal valve components without disturbing alignment of pipe.

Stem Design

Live-loaded, bottom entry, blowout proof, anti-static stem featuring packing that extends valve cycle life over conventional ball valves and is best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Floating Ball Design

Precision engineered and machined solid stainless steel ball with relief hole in the stem slot prevents build-up of cavity pressure while the valve is open.

Encapsulated Body Bolts

Heavy duty stainless steel bolting is protected from outside environment assuring valve integrity.

Ideal for wash-downs.

Slotted Seat Design

Relief slots help equalize body pressure and assure leak-tight sealing.

Seats also provide a wiping action that cleans ball and seats each time valve is cycled.

Variety of End Combinations

A wide choice of end connections are available including, but not limited to; threaded, socket weld, butt weld and flanged ends.

ISO 5211 Integral Mounting Pad

Ideal for actuation.

Centering lip feature assures precise alignment of bracket, stem and coupler.

Actuators may be retrofitted on existing Sharpe® Series CL84/CL99 without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

Lockable Handle

All Sharpe® Series CL84/CL99 valves are supplied with lever or pipe handles and are designed to permit locking the valve in either the open or closed position.

Pressure Relief Hole

All Sharpe® Series CL84/CL99 valves are supplied with a relief hole in the side of the ball to vent pressure upstream.

Special Cleaning & Packing

All Sharpe® CL84 & CL99 valves are completely degreased and sealed in a bag for chlorine applications.

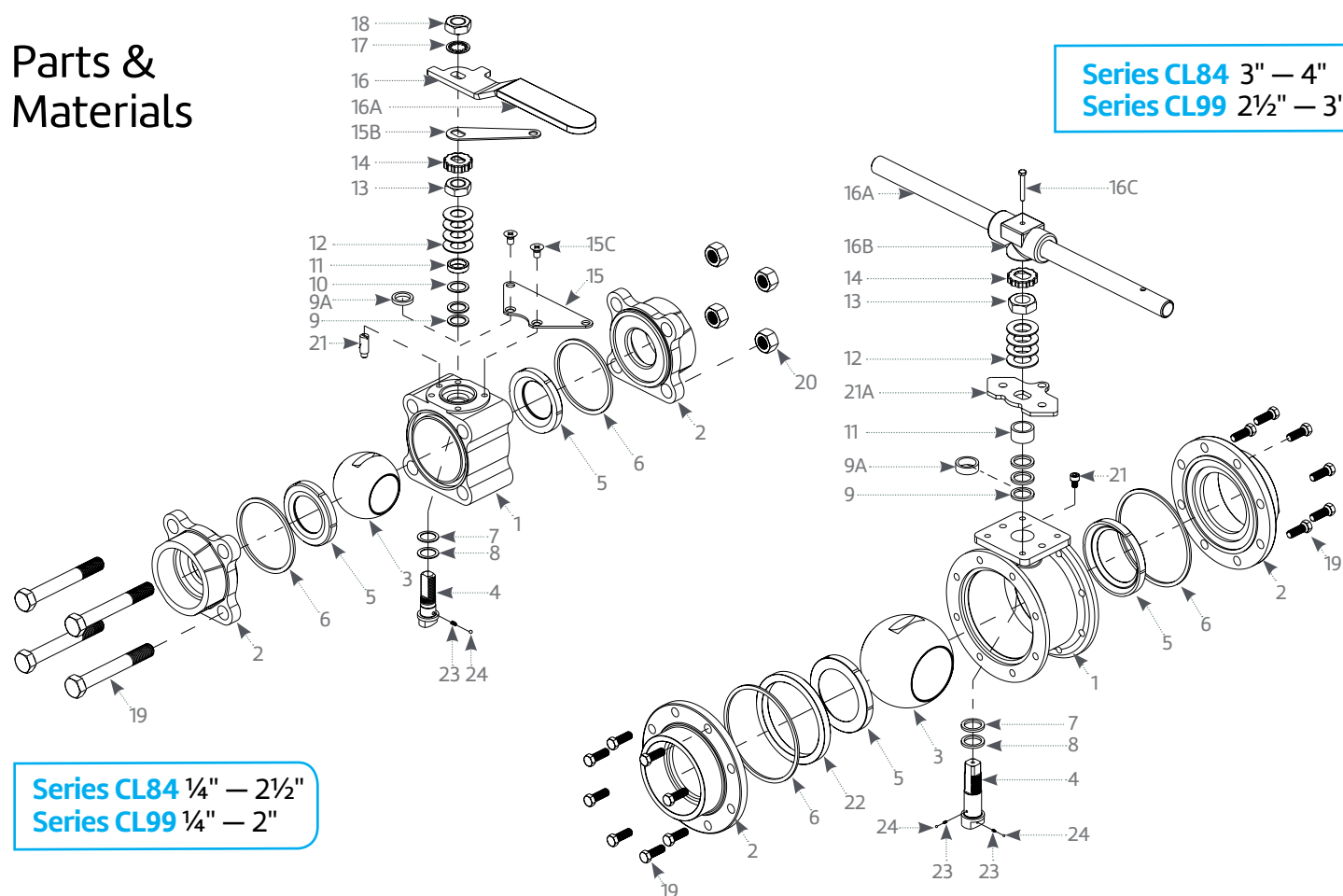
Traceability

Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.



Chlorine Ball Valve

Parts & Materials



No.	Part Name	Qty.	Material
1	Body	1	Carbon Steel: ASTM A216 WCB Hastelloy C*: ASTM A494 Gr. CW-12MW
2	Ends	2	Carbon Steel: ASTM A216 WCB Hastelloy C*: ASTM A494 Gr. CW-12MW
3	Ball with Upstream Vent	1	Hastelloy C, Monel
4	Stem	1	Hastelloy C, Monel
5	Seat	2	PTFE, RTFE, TFM®, NOVA
6	Body Seal	2	PTFE, Graphite
7	Thrust Bearing	1	Nova
8	Thrust Bearing	1	PEEK
9	Stem Packing	2	Nova
9A	Stem Packing	1-2	Graphite
10	Seal Protector	1	PEEK
10A	Washer	10	300 Series Stainless Steel
11	Gland	1	300 Series Stainless Steel
12	Belleville Washer	4	300 Series Stainless Steel
13	Packing Nut	1	300 Series Stainless Steel
14	Lock Tab	1	300 Series Stainless Steel
15	Lower Lock Latch	1	300 Series Stainless Steel

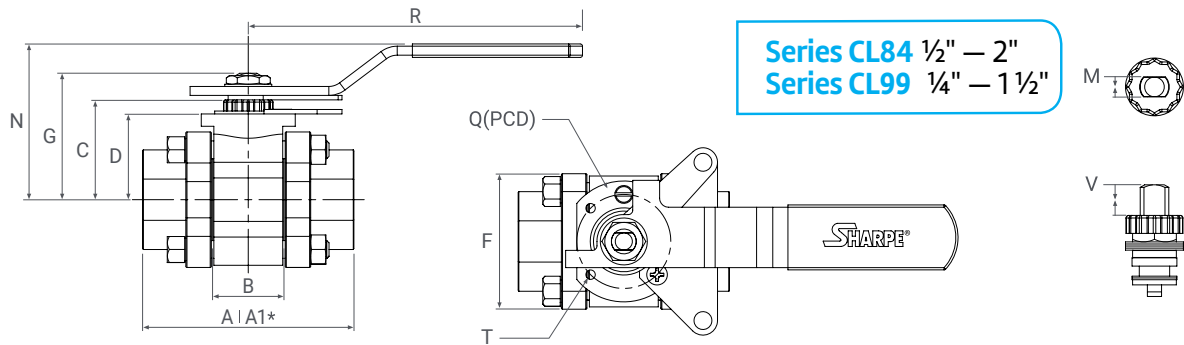
No.	Part Name	Qty.	Material
15B	Upper Lock Latch	1	300 Series Stainless Steel
15C	Latch Bolt	2	300 Series Stainless Steel
16	Handle (¼"-2")	1	300 Series Stainless Steel
16A	Wrench (3" & 4")	1	Galvanized
16B	Wrench Block	1	300 Series Stainless Steel
16C	Hex Head Bolt	1	300 Series Stainless Steel
17	Lock Washer	1	300 Series Stainless Steel
18	Handle Nut (¼"-2")	1	300 Series Stainless Steel
19	Body Bolts	4/16	304 Stainless Steel
20	Nuts	4	300 Series Stainless Steel
21	Stop Pin	1	300 Series Stainless Steel
21A	Stopper	1	300 Series Stainless Steel
22	Seat Retainer	1	300 Series Stainless Steel, Carbon Steel
23	Anti-Static Spring	1	Hard Drawn Stainless Steel
24	Anti-Static Ball	1	300 Series Stainless Steel

Note:

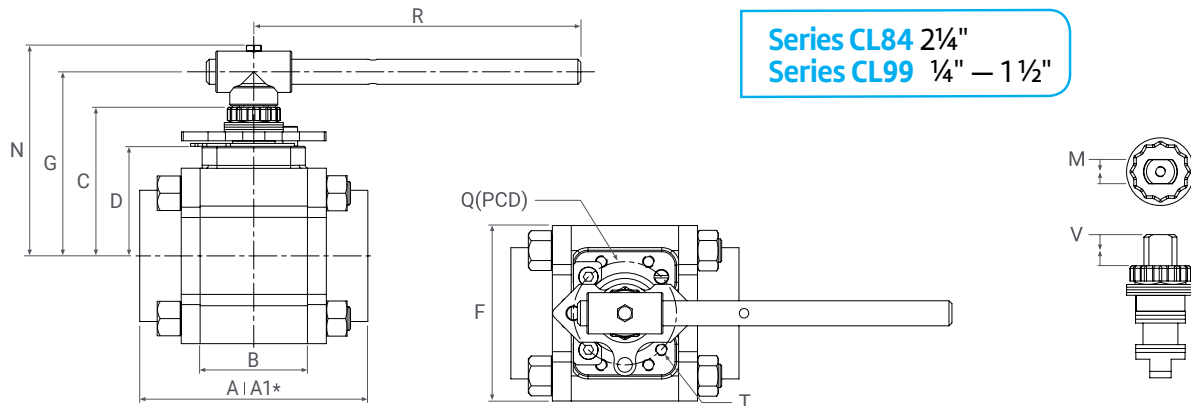
*POA.

Series CL84 — 2½" uses wrench & wrench block. Series CL99 — 2" uses wrench & wrench block.

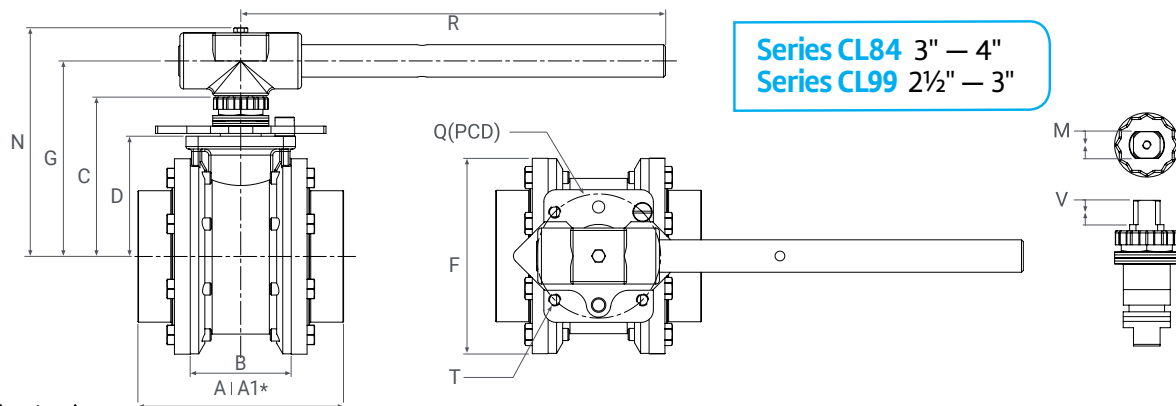
Series CL84/CL99 Chlorine Ball Valve



Series CL84 1/2" – 2"
Series CL99 1/4" – 1 1/2"



Series CL84 2 1/4"
Series CL99 1/4" – 1 1/2"



Series CL84 3" – 4"
Series CL99 2 1/2" – 3"

Dimensions (Inches)

Standard Port CL84	Full Port CL99	A*	A1*	B	C	D	F	G	L	M	N	øQ (ISO)	R	T	V
1/4", 3/8", 1/2"	1/4", 3/8"	2.62	2.62	0.82	1.22	1.06	1.81	1.58	3/8"-24 UNF	0.220	2.15	1.42 (F03)	4.53	M5 x P0.8	0.34
3/4"	1/2"	2.87	2.87	0.97	1.27	1.13	1.94	1.65	3/8"-24 UNF	0.220	2.28	1.42 (F03)	4.53	M5 x P0.8	0.39
1"	3/4"	3.72	3.72	1.25	1.73	1.51	2.38	2.23	7/16"-20 UNF	0.295	2.70	1.65 (F04)	5.79	M5 x P0.8	0.52
1 1/4"	1"	4.25	4.25	1.61	1.90	1.70	2.78	2.43	7/16"-20 UNF	0.295	2.89	1.65 (F04)	5.79	M5 x P0.8	0.53
1 1/2"	1 1/4"	4.58	4.50	1.90	2.17	1.73	3.12	2.90	9/16"-18 UNF	0.342	3.15	1.97 (F05)	6.78	M6 x P1.0	0.73
2"	1 1/2"	5.03	5.06	2.21	2.39	1.90	3.60	3.09	9/16"-18 UNF	0.342	3.37	1.97 (F05)	6.78	M6 x P1.0	0.73
2 1/2"	2"	5.88	5.87	2.93	3.98	2.85	4.77	4.88	M20 x P2.5	0.551	5.61	2.75 (F07)	8.73	M8 x P1.25	0.74
3"	2 1/2"	6.65	6.65	3.27	5.01	3.89	6.46	6.14	1" - 14 UNS	0.748	6.14	4.02 (F10)	13.74	M10 x P1.5	0.69
4"	3"	8.43	8.43	4.29	5.60	4.48	8.00	6.73	1" - 14 UNS	0.748	7.81	4.02 (F10)	13.74	M10 x P1.5	0.69

Note:

*A – CL84 Face to Face dimension for threaded, butt weld & socket weld ends.

*A1 – CL99 Face to Face dimension for threaded, butt weld & socket weld ends.

The dimensions above are for informational purpose only. Please refer to Sharpe® Valves if you need dimensions for construction.

Technical Information

Standard Port

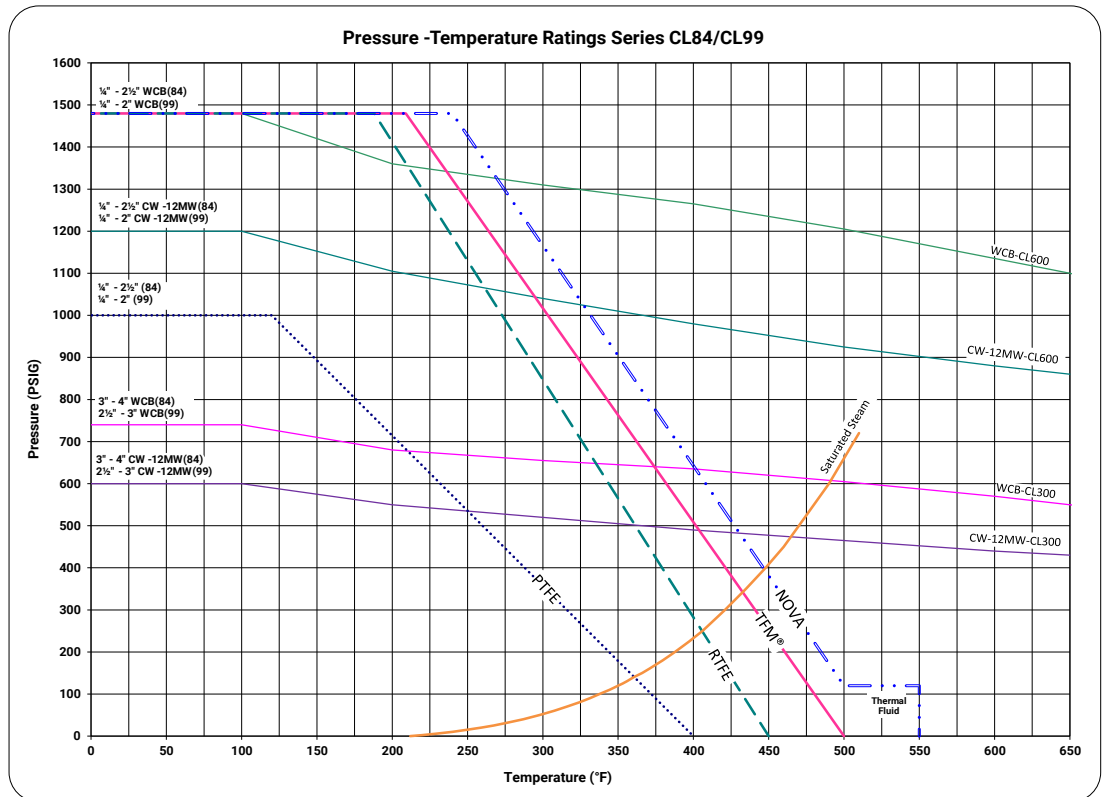
Class 600 ½" – 2½"

Class 300 3" – 4"

Full Port

Class 600 ¼" – 2"

Class 300 2½" – 3"



Material Recommendations

Environment	Service	Maximum Chlorine Conc., ppm of H2O	Recommendations for Ball & Stem Material
Clean - no chlorine in the external environment	In-line	20 ppm	Monel Ball & Stem
		50 ppm	Hastelloy C Ball, Monel Stem
		150 ppm	Hastelloy C Ball & Stem
Environment contains some chlorine	In-line	150 ppm	Hastelloy C Ball & Stem
Much chlorine in the environment	End of line	150 ppm	Hastelloy C Ball & Stem

Performance Data

CL84	CL99	C _v Flow Coefficient	Equivalent Length of Pipe (Feet)	Approx. Weight (Lbs.)	Port Size
¼"	-	8	1.9	1.20	.44
⅜"	¼"	8	1.9	1.20	.44
½"	⅜"	8	1.9	1.20	.44
¾"	½"	12	6.3	1.70	.56
1"	¾"	32	3.1	3.00	.81
1¼"	1"	46	6.3	4.00	1.00
1½"	1¼"	80	4.3	6.00	1.25
2"	1½"	120	7.5	8.00	1.50
2½"	2"	240	5.00	25.00	2.00
3"	2½"	350	8.3	30.00	2.50
4"	3"	720	10.4	50.20	3.25

Applicable Standards

Body Wall Thickness	ASME B16.34
SW & Threaded Ends	ASME B16.11
Butt-weld Ends	ASME B16.25
Flange Dimensions	ASME B16.5
Basic Design	ASME B16.34*
Testing (Options)	ASME B16.34 API 598

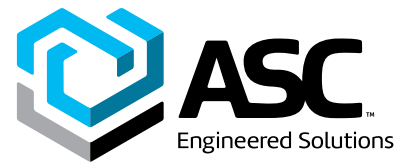


How to order
Sharpe® Series CL84/CL99

1"	CL84		-	2		2		R	G	-	TE		-	OH	
Size	Series		Body & Ends			Ball & Stem		Seat	Seal		Ends			Options	
Size	Valve Series		Seat			Ends		Options							
¼"	CL84	Standard Port	M	TFM®	TE	Threaded	OH	Oval Handle							
⅜"	CL99	Full Port	N	Nova	SW	Socketweld	L	Lockable Stem Extension							
½"	Body & Ends		R	RTFE	BW10	Buttweld SCH 10*	Ball with upstream vent (standard)								
¾"	4	Carbon Steel	T	PTFE	BW40	Buttweld SCH 40									
1"	5	Hastelloy C*	Body Seal		BW80	Buttweld SCH 80									
1¼"	Ball & Stem		G	Graphite	1	150# Flanged RF*									
1½"	3	Monel	T	PTFE	3	300# Flanged RF*									
2"	5	Hastelloy C					6	600# Flanged RF*							
2½"															
3"															
4"															

Note:
*POA
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Building connections that last™



Sharpe® Series V84

High Performance 3-Piece Ball Valve
V-Port Control Valve



Design & Features

Body Material

316 Stainless Steel & Carbon Steel.

3-Piece Design

In-line serviceable swing-out center section allows easy access to internal valve components without disturbing alignment of pipe.

Stem Design

Live-loaded, bottom entry, blowout proof, anti-static stem featuring packing that extends valve cycle life over conventional ball valves and is best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Floating Ball Design

Precision engineered and machined solid stainless steel ball with relief hole in the stem slot prevents build-up of cavity pressure while the valve is open.

Encapsulated Body Bolts

Heavy duty stainless steel bolting is protected from outside environment assuring valve integrity.

Ideal for wash-downs.

Slotted Seat Design

Relief slots help equalize body pressure and assure leak-tight sealing. Seats also provide a wiping action that cleans ball and seats each time valve is cycled.

Choice of Seats and Seals

A wide variety of seat and seal materials are readily available for the most demanding applications including; TFE, RTFE, TFM®, Nova, Delrin®, PEEK, EPDM and Viton®.

Variety of End Combinations

A wide choice of end connections are available including, but not limited to; threaded, socket weld, butt weld, flanged and flush bottom tank pad ends.

ISO 5211 Integral Mounting Pad

Ideal for actuation.

Centering lip feature assures precise alignment of bracket, stem and coupler.

Actuators may be retrofitted on existing Sharpe® Series V84 without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

V Port Balls

The Sharpe® Series V84 utilizes characterized V ported balls permitting the use of soft seats to achieve a class VI shut off.

No Play Coupler

Minimizes hysteresis between valve stem and actuator.

Traceability

Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.

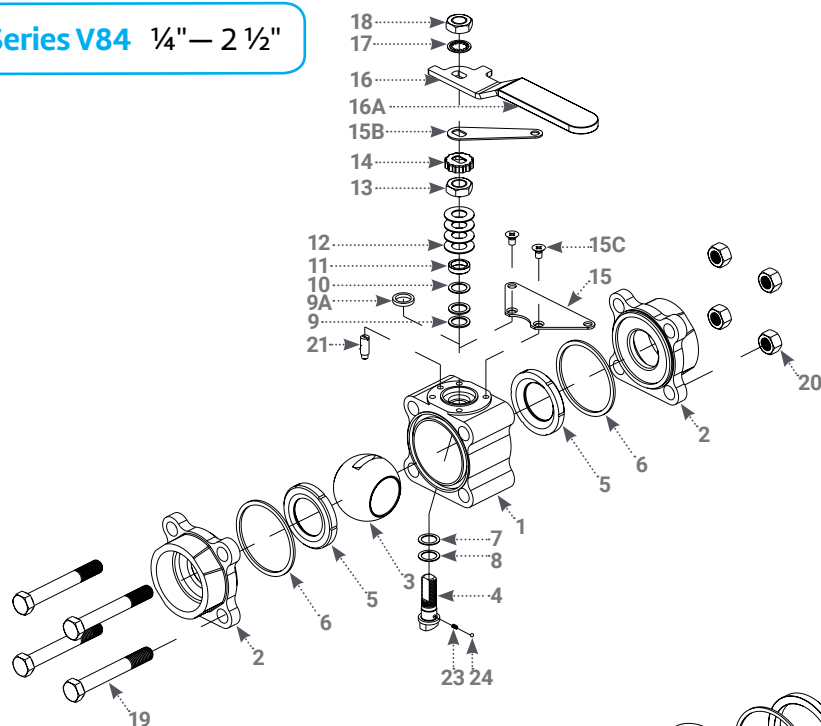


High Performance
3-Piece Ball Valve

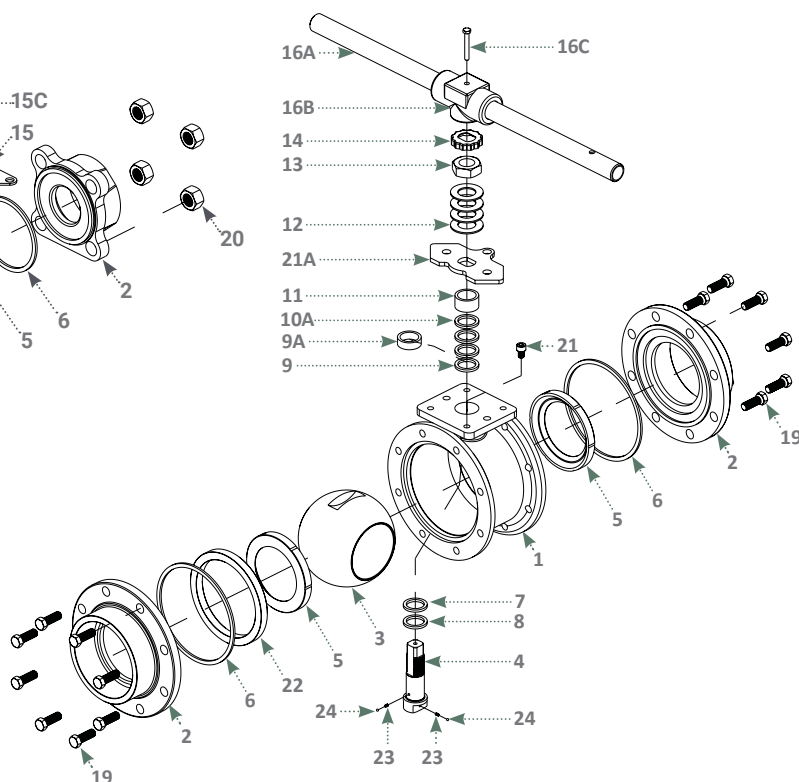
Building connections that last™

Parts & Materials

Series V84 ¼" – 2 ½"



Series V84 3" – 4"

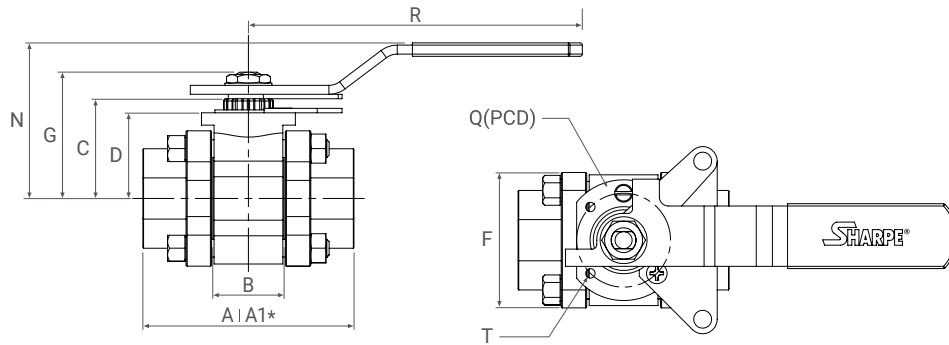


No.	Part Name	Qty.	Material
1	Body	1	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB
2	Ends	2	316L Stainless Steel ASTM A351 CF3M Carbon Steel ASTM A216 WCB
3	Ball	1	316 Stainless Steel
4	Stem	1	316 Stainless Steel 17-4PH
5	Seat	2	PTFE, TFM® UHMWPE RTFE, Nova, PEEK, Delrin®
6	Body Seal	2	PTFE, Graphite, UHMWPE, Buna, Viton®
7	Thrust Bearing	1	Nova (UHMWPE with UHMWPE Seats)
8	Thrust Bearing	1	PEEK (UHMWPE with UHMWPE Seats)
9	Stem Packing	2	Nova (UHMWPE with UHMWPE Seats)
9A	Stem Packing	1-2	Graphite
10	Seat Protector	1	PEEK
10A	Washer	1	316 Stainless Steel
11	Gland	1	300 Series Stainless Steel
12	Belleville Washer	4	300 Series Stainless Steel
13	Packing Nut	1	300 Series Stainless Steel

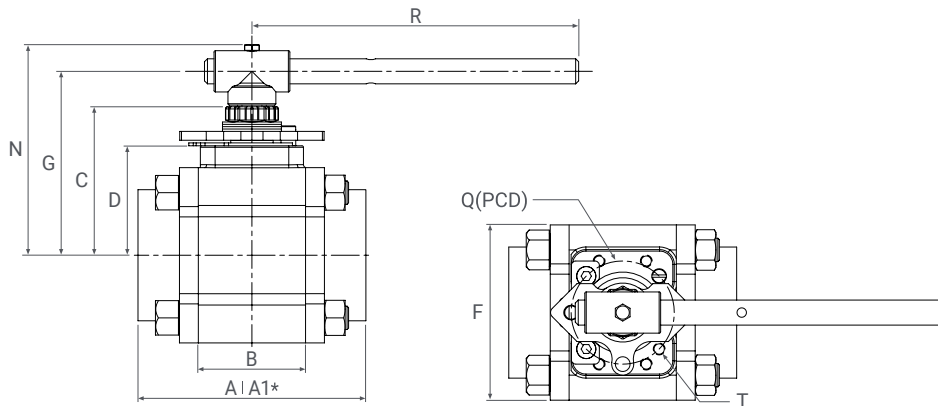
No.	Part Name	Qty.	Material
14	Lock Tab	1	300 Series Stainless Steel
15	Lower Lock Latch	1	300 Series Stainless Steel
15B	Upper Lock Latch	1	300 Series Stainless Steel
15C	Latch Bolt	2	300 Series Stainless Steel
16	Handle (¼" - 2")	1	300 Series Stainless Steel
16A	Wrench (3" & 4")	1	Galvanized
16B	Wrench Block	1	300 Series Stainless Steel
16C	Hex Head Bolt	1	300 Series Stainless Steel
17	Lock Washer	1	300 Series Stainless Steel
18	Handle Nut (¼" - 2")	1	300 Series Stainless Steel
19	Body Bolts	4/16	304 Stainless Steel
19A	Body Connector Bolt	4	300 Series Stainless Steel
20	Nuts	8	300 Series Stainless Steel
21	Stop Pin	1	300 Series Stainless Steel
21A	Stopper	1	300 Series Stainless Steel
22	Seat Retainer	1	300 Series Stainless Steel Carbon Steel
23	Anti-Static Spring	1	Hard Drawn Stainless Steel
24	Anti-Static Ball	1	300 Series Stainless Steel

Series V84 High Performance 3-Piece Ball Valve

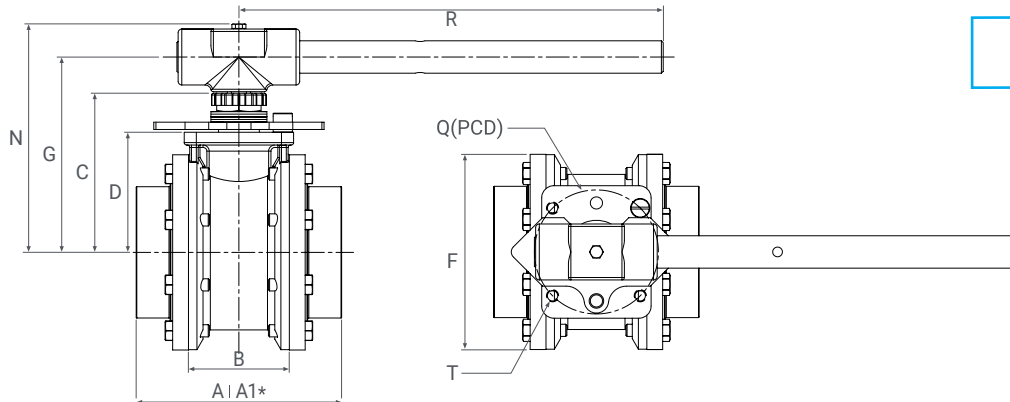
Series V84 ¼" – 2"



Series V84 2½"



Series V84 3" – 4"



Dimensions (Inches)

V84	A	B	C	D	F	G	L	M	N	Ø Q (ISO)	R	T	V
¼", ⅜", ½"	2.62	0.82	1.32	1.06	1.81	1.58	⅝"-24 UNF	0.220	2.15	1.42 (F03)	4.53	M5 x P0.8	0.31
¾"	2.87	0.97	1.27	1.13	1.94	1.65	⅝"-24 UNF	0.220	2.28	1.42 (F03)	4.53	M5 x P0.8	0.35
1"	3.72	1.25	1.73	1.51	2.38	2.23	⅝"-20 UNF	0.295	2.70	1.65 (F04)	5.79	M5 x P0.8	0.52
1¼"	4.25	1.61	1.90	1.70	2.78	2.43	⅝"-20 UNF	0.295	2.89	1.65 (F04)	5.79	M5 x P0.8	0.53
1½"	4.58	1.90	2.17	1.73	3.12	2.90	⅝"-18 UNF	0.342	3.15	1.97 (F05)	6.78	M6 x P1.0	0.73
2"	5.03	2.21	2.39	1.90	3.60	3.09	⅝"-18 UNF	0.342	3.37	1.97 (F05)	6.78	M6 x P1.0	0.73
3"	6.65	3.27	5.01	3.89	6.46	6.14	1" - 14 UNS	0.748	6.14	4.02 (F10)	13.74	M10 x P1.5	0.69
4"	8.43	4.29	5.60	4.48	8.00	6.73	1" - 14 UNS	0.748	7.81	4.02 (F10)	13.74	M10 x P1.5	0.69

Note: The dimensions above are for informational purpose only. Please refer to Sharpe® Valves if you need dimensions for construction.

Building connections that last™

Technical Information

Control Valve C_v Values

Valve Size	Valve Percent Open (Degree of Rotation)										
	0 (0)	10 (9)	20 (18)	30 (27)	40 (36)	50 (45)	60 (54)	70 (63)	80 (72)	90 (81)	100 (90)
½" - ¾" - V15		0.05	0.14	0.25	0.37	0.51	0.66	0.84	1.03	1.26	1.36
½" - ¾" - V30		0.05	0.15	0.29	0.48	0.65	0.91	1.30	1.60	2.03	2.19
½" - ¾" - V60		0.11	0.28	0.55	0.80	1.17	1.72	2.45	3.43	4.48	5.18
¼" - V15		0.12	0.26	0.41	0.58	0.80	1.05	1.32	1.65	1.93	2.02
¼" - V30		0.13	0.29	0.50	0.80	1.09	1.50	2.03	2.61	3.11	3.31
¼" - V60		0.21	0.44	0.80	1.28	1.91	2.77	3.70	5.33	6.71	7.31
1" - V15		0.13	0.36	0.63	0.90	1.33	1.84	2.37	2.97	3.53	3.78
1" - V30		0.14	0.41	0.77	1.27	2.01	2.83	3.87	5.03	6.08	6.66
1" - V60		0.25	0.69	1.34	2.31	3.59	5.34	7.55	10.29	13.28	15.04
1-¾" - V15		0.29	0.66	1.17	1.86	2.70	3.69	4.71	5.82	7.02	7.89
1-¾" - V30		0.33	0.88	1.75	2.89	4.42	6.23	8.31	9.97	12.19	13.91
1-¾" - V60		0.56	1.64	3.16	5.33	8.45	11.33	15.67	22.18	28.19	32.08
2" - V15		0.39	0.93	1.79	2.74	3.97	5.37	6.68	8.28	9.51	10.81
2" - V30		0.40	1.18	2.21	3.88	6.09	8.44	10.91	14.08	17.25	19.49
2" - V60		0.71	2.22	4.48	7.26	10.50	15.72	21.52	29.38	37.46	43.54
3" - V15		0.66	1.94	3.69	6.12	9.01	11.97	15.50	19.40	23.59	27.05
3" - V30		0.72	2.56	5.49	8.99	13.51	19.68	26.45	34.29	42.85	52.41
3" - V60		1.65	5.32	10.98	18.95	29.77	43.94	60.07	81.37	106.13	131.43
4" - V15		0.97	2.97	5.82	9.35	13.56	18.60	24.24	30.51	37.44	44.27
4" - V30		1.50	4.81	9.56	16.67	25.43	35.19	47.06	60.69	77.20	91.66
4" - V60		2.57	8.33	18.61	30.01	47.66	70.85	98.75	133.52	174.99	215.11

Note:

C_v is defined as the flow of liquid in gallons per minute through a valve with pressure drop of 1 psi across the valve.

Factor	Valve Percent Open (Degree of Rotation)										
	0 (0)	10 (9)	20 (18)	30 (27)	40 (36)	50 (45)	60 (54)	70 (63)	80 (72)	90 (81)	100 (90)
F _L	0	0.96	0.95	0.94	0.93	0.92	0.90	0.88	0.86	0.82	0.75
X _t	0	0.98	0.77	0.71	0.67	0.64	0.63	0.62	0.55	0.43	0.40

Note:

F_L – Liquid Pressure Recovery Factor.

X_t – Pressure Drop Ratio Factor (Gas).

Technical Information

Flow Efficient – C_v – Standard Seat Control Valve – Round Port

Valve Size	Valve Percent Open (Degree of Rotation)										
	0 (0)	10 (9)	20 (18)	30 (27)	40 (36)	50 (45)	60 (54)	70 (63)	80 (72)	90 (81)	100 (90)
¼" - ½"	0	0.15	0.29	0.46	0.70	1.09	1.76	2.60	4.30	6.40	8.00
¾"	0	0.21	0.43	0.70	1.05	1.62	2.64	4.00	6.40	9.60	12.00
1"	0	0.58	1.15	1.90	2.80	4.30	7.00	10.50	17.00	26.00	32.00
1-½"	0	1.48	2.95	4.75	7.20	11.00	18.00	27.00	44.00	65.50	80.00
2"	0	2.16	4.33	6.95	10.50	16.20	26.40	39.60	64.0	96.00	120
3"	0	6.40	12.60	20.20	31.10	47.40	77.80	1151	87	280	350
4"	0	13.10	26.00	42.10	63.10	97.20	159	238	385	575	720

Note:

C_v is defined as the flow of liquid in gallons per minute through a valve with pressure drop of 1 psi across the valve.

Valve Size	Valve Percent Open (Degree of Rotation)										
	0 (0)	10 (9)	20 (18)	30 (27)	40 (36)	50 (45)	60 (54)	70 (63)	80 (72)	90 (81)	100 (90)
F _L	0	0.92	0.91	0.91	0.90	0.86	0.86	0.72	0.65	0.61	0.50
X _t	0	0.78	0.74	0.71	0.67	0.62	0.56	0.49	0.38	0.26	0.15

Note:

F_L – Liquid Pressure Recovery Factor.

X_t – Pressure Drop Ratio Factor (Gas–Choked Flow).

"No Play" Coupling

- 304 Stainless Steel Two-Piece Coupling
- Designed for Process Control Critical High Cycle Automated Valves
- No Hysteresis or Lost Motion



Building connections that last™

Basic Flow Equations for Liquid Service

Pipe Reducer Coefficients Loss Coefficients

$$K1 = 0.5 \cdot \left[1 - \left[\frac{d}{D1} \right]^2 \right]^2$$

$$K2 = \left[1 - \left[\frac{d}{D2} \right]^2 \right]^2$$

Bernoulli Coefficients

$$Kb1 = 1 - \left[\frac{d}{D1} \right]^4$$

$$Kb2 = 1 - \left[\frac{d}{D2} \right]^4$$

Summation

$$\Sigma K = K1 + K2 + Kb1 - Kb2$$

Pipe Geometry (Reducer) Factor

$$Fp = \left[\frac{Cv^2 \cdot \Sigma K}{890 \cdot d^4} + 1 \right]^{-.5}$$

Basic Flow Equations Flow Rate

$$q = Fp \cdot Cv \cdot \left[\frac{\Delta P}{G} \right]^{.5}$$

$$w = 63.3 \cdot Fp \cdot Cv \cdot (\Delta P \cdot \gamma)^{.5}$$

Pressure Drop

$$P = G \cdot \left[\frac{q}{Fp \cdot Cv} \right]^2$$

$$\Delta P = \frac{1}{4010 \cdot \gamma} \cdot \left[\frac{w}{Fp \cdot Cv} \right]^2$$

Flow Coefficient

$$Cv = \frac{q}{Fp} \cdot \left[\frac{G}{\Delta P} \right]^{.5}$$

$$Cv = \frac{w}{63.3 \cdot Fp \cdot (\Delta P \cdot \gamma)^{.5}}$$

Nomenclature

Cv	=	Valve flow capacity coefficient
d	=	Valve inside diameter (in)
D1	=	Inside diameter of upstream pipe (in)
D2	=	Inside diameter of downstream pipe (in)
Fp	=	Piping geometry factor, dimensionless
K1	=	Pressure loss coefficient for inlet reducer, dimensionless
K2	=	Pressure loss coefficient for outlet reducer, dimensionless
Kb1	=	Pressure change (Bernoulli) coefficient for inlet reducer, dimensionless
Kb2	=	Pressure change (Bernoulli) coefficient for outlet reducer, dimensionless
G	=	Specific gravity of liquid relative to water at 70°F
ΔP	=	Pressure drop across the valve, or valve / reducer assembly (psi)
q	=	Volumetric flow rate, US gpm
w	=	Weight flow rate, lb/hr
γ	=	Weight density of liquid lb/ft ³

Basic Flow Equations for Gas and Vapor Service

Flow Rate

$$q = 1360 \cdot F_p \cdot C_v \cdot P_1 \cdot Y \left[\frac{x}{G \cdot T \cdot Z} \right]^{.5}$$

$$w = 63.3 \cdot F_p \cdot C_v \cdot Y (x \cdot P_1 \cdot \gamma_1)^{.5}$$

Pressure Drop

$$\Delta P = \frac{G \cdot T \cdot Z}{P_1} \cdot \left[\frac{q}{1360 \cdot F_p \cdot C_v \cdot Y} \right]^2$$

$$\Delta P = \frac{1}{\gamma_1} \cdot \left[\frac{w}{63.3 \cdot F_p \cdot C_v \cdot Y} \right]^2$$

Flow Capacity Coefficients

$$C_v = \frac{q}{1360 \cdot F_p \cdot P_1 \cdot Y} \cdot \left[\frac{G \cdot T \cdot Z}{x} \right]^{.5}$$

$$C_v = \frac{w}{63.3 \cdot F_p \cdot Y \cdot (x \cdot P_1 \cdot \gamma_1)^{.5}}$$

Factors Fk, x, and y

Ratio of Specific Heats Factor

$$F_k = \frac{k}{1.40}$$

Pressure Drop Ratio

$$x = \frac{\Delta P}{P_1}$$

Gas Expansion Factor

$$Y = 1 - \frac{x}{3 \cdot F_k \cdot x_t}$$

Nomenclature

Cv	=	Valve flow capacity coefficient
Fp	=	Piping geometry factor, dimensionless
G	=	Specific gravity of gas relative to air at standard conditions (60°F, 14.7 psia)
ΔP	=	Pressure drop across linesize valve, or valve/reducer assembly, psi
P1	=	Pressure at the inlet of a linesize valve, or valve/reducer assembly, psia
q	=	Volumetric flow rate at standard conditions, ft ³ /hr
T	=	Temperature at the inlet of a linesize valve, or valve/reducer assembly, °R
w	=	Weight flow rate, lb/hr
x	=	Ratio of pressure drop across linesize valve, or valve/reducer assembly to inlet pressure, dimensionless
x _t	=	Terminal value of x for choked flow in linesize valves, dimensionless
Y	=	Gas expansion factor, dimensionless
Z	=	Gas compressibility factor, dimensionless
γ ₁	=	Density at the inlet of a linesize valve, or valve/reducer assembly, lb/ft ³

Notes:

- 1) Use the same equations for calculating Fp as for liquid flow calculations.
- 2) The equations above are for informational purposes, and cover simple, linesize, valve gas flow solutions. Where reducer effects or choked flow become involved, these calculations become considerably more complex, and beyond the intent of this document.



How to order Sharpe® Series V84

1"	V84	-	6	6	R	G	-	TE	-	E	-	X
Size	Series		Body & Ends	Ball & Stem	Seat	Seal		Ends		V Port		Option

Size	Valve Series		Seat		Ends		Options	
¼"	V84	Control	M	TFM®	TE	Threaded Ends (NPT)	X	Oxygen Clean as per MFG's Standards
⅜"			N	Nova	SW	Socketweld		
½"			R	RTFE	BW10	Buttweld SCH 10*		
¾"			T	PTFE	BW40	Buttweld SCH 40		
1"			D	Delrin®	BW80	Buttweld SCH 80		
1¼"			P	Virgin PEEK	1	150# Flanged RF*	A	Round Port
1½"			U	UHMWPE	3	300# Flanged RF*	C	V-Ball V15
2"					6	600# Flanged RF*	D	V-Ball V30
3"							E	V-Ball V60
4"							F	V-Ball V90

Note:

*POA.

Viton® is a registered trademark of DuPont.

3M™, Dyneon™, TFM® are trademarks owned by 3M.

Delrin® is a registered trademark of DuPont.

Sharpe® Valve Solutions

Trusted Quality & Proven Performance



ASC Engineered Solutions™ is proud to offer Sharpe brand automated and isolation valves from general purpose to the most demanding applications.

Sharpe valves are featured in major U.S. plants and internationally in Latin America, Europe, Asia and the Middle East. The full line of valves are used across all industries; manufacturing, chemical processing, paper & pulp, petroleum, power generation, food & beverage, data centers, mining, and more.

Our readily available inventory allows for rapid order fulfillment through our nationwide distribution network and regional delivery centers. Our in-house design experts can customize valve assemblies according to customer specifications, design modifications and unique needs for even the most challenging application.

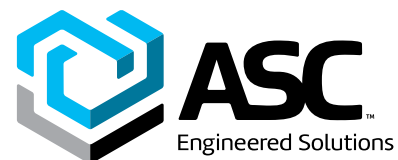
For more information about how Sharpe valves deliver reliable, cost-effective solutions, contact your local ASC Engineered Solutions sales representative or visit our website at www.asc-es.com.

Sharpe products are available in a wide range of materials and styles including:

- Stainless & carbon steel ball valves, including fire-safe
- Control valve packages
- Gate, globe & check valves
- Resilient seated butterfly valves
- Actuators and accessories
- Alloy 20, Hastelloy C, Monel & Brass valve materials available



Building connections that last™



Sharpe® Series W84/W99

High Performance 3-Piece Ball Valve



Design & Features



High Performance
3-Piece Ball Valve

Body Material

316 Stainless Steel, Carbon Steel, Hastelloy C & Alloy 20.

3-Piece Design

In-line serviceable swing-out center section allows easy access to internal valve components without disturbing alignment of pipe.

Stem Design

Live-loaded, bottom entry, blowout proof anti static stem features packing that extends valve cycle life over conventional ball valves and is the best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Encapsulated Body Bolts

Heavy duty stainless steel bolting is protected from outside environment assuring valve integrity.

Ideal for wash-downs.

Slotted Seat Design

Relief slots help equalize body pressure and assure leak-tight sealing. Seats also provide a wiping action that cleans ball and seats each time valve is cycled.

Choice of Seats and Seals

A wide variety of seat and seal materials are readily available for the most demanding applications including; TFE, RTFE, TFM®, Nova, Delrin®, PEEK, EPDM and Viton®.

Variety of End Combinations

A wide choice of end connections are available including, but not limited to; threaded, socket weld, butt weld, flanged and flush bottom tank pad ends.

ISO 5211 Integral Mounting Pad

Ideal for actuation.

Centering lip feature assures precise alignment of bracket, stem and coupler. Actuators may be retrofitted on existing Sharpe® Series 84/99 without disruption of line integrity. Allows for secondary containment unit to be added when necessary.

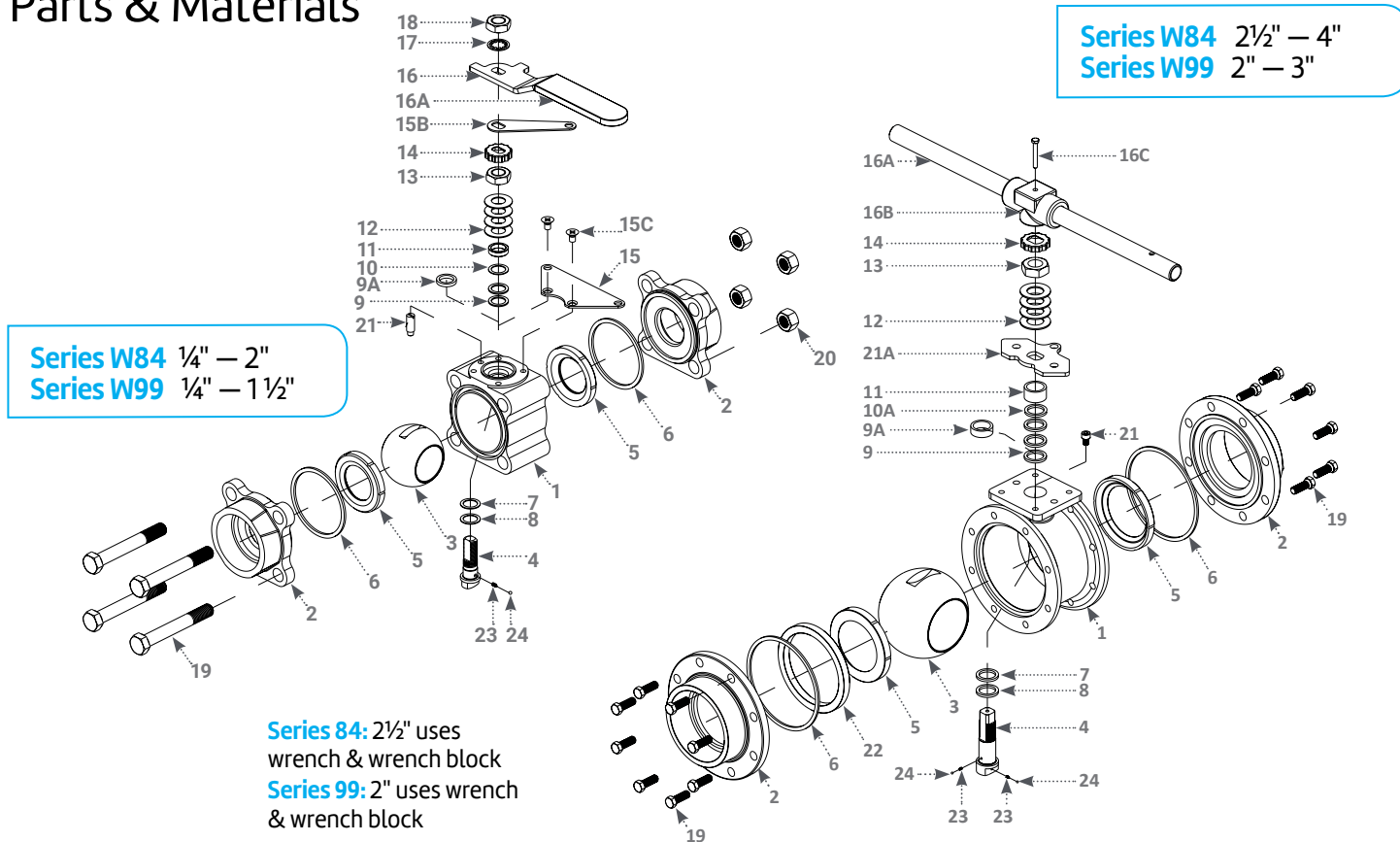
Lockable Handle

All Sharpe® Series 84/99 & FS84/FS99 valves are supplied with lever or pipe handles and are designed to permit locking the valve in either the open or closed position.

Traceability

Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.

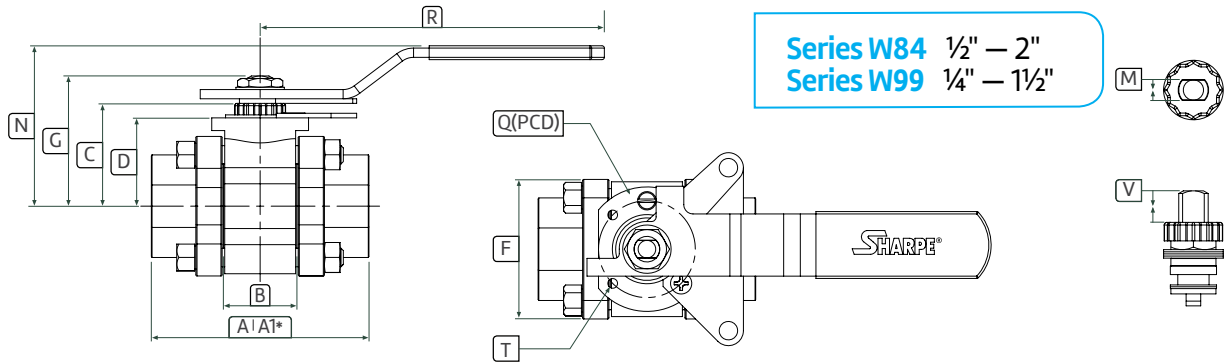
Parts & Materials



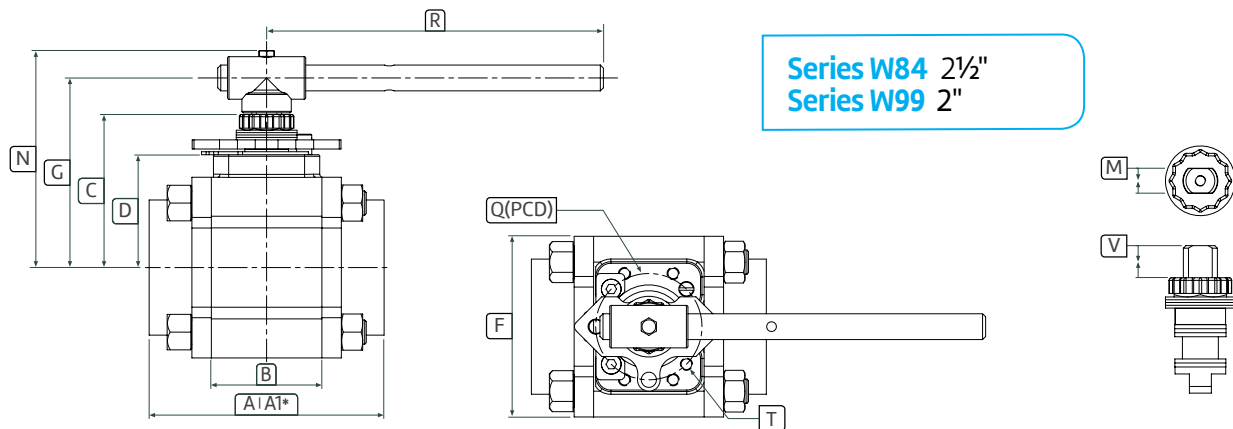
Part No.	Part	Qty.	Material
1	Body	1	316 Stainless Steel: ASTM A351 CF8M Carbon Steel: ASTM A216 WCB Alloy 20: ASTM A351 CN7M Hastelloy C: ASTM A494 Gr. CW-12MW
2	Ends Cap	2	316 Stainless Steel: ASTM A351 CF8M 316L Stainless Steel: ASTM A351 CF3M (used for stainless steel weld ends) Carbon Steel: ASTM A216 WCB Alloy 20: ASTM A351 CN7M Hastelloy C: ASTM A494 GR CS-12MW
3	Ball	1	316 Stainless Steel, Alloy 20, Hastelloy C
4	Stem	1	316 Stainless Steel, 17-4PH, Alloy 20, Hastelloy C
5	Seat	2	PTFE, RTFE, TFM®, Nova, Delrin®, UHMWPE, PEEK
6	Body Seal	2	PTFE, Graphite, UHMWPE, Buna, Viton®
7	Thrust Bearing	1	Nova (UHMWPE with UHMWPE Seats)
8	Thrust Bearing	1	PEEK (UHMWPE with UHMWPE Seats)
9	Stem Packing	2	Nova (UHMWPE with UHMWPE Seats)
9A	Stem Packing	1-2	Graphite (For Fire Safe & High Temperature Applications)
10	Seal Protector	1	PEEK
10A	Washer	1	300 Series Stainless Steel
11	Gland	1	300 Series Stainless Steel

Part No.	Part	Qty.	Material
12	Belleville Washer	4	300 Series Stainless Steel
13	Packing Nut	1	300 Series Stainless Steel
14	Lock Tab	1	300 Series Stainless Steel
15	Lower Lock Latch	1	300 Series Stainless Steel
15B	Upper Lock Latch	1	300 Series Stainless Steel
15C	Latch Bolt	2	300 Series Stainless Steel
16	Handle (¼" - 2")	1	300 Series Stainless Steel
16A	Wrench (3" - 4")	1	Galvanized
16B	Wrench Block	1	300 Series Stainless Steel
16C	Hex Head Bolt	1	300 Series Stainless Steel
17	Lock Washer	1	300 Series Stainless Steel
18	Handle Nut (¼" - 2")	1	300 Series Stainless Steel
19	Body Bolts	4/16	304 Stainless Steel
20	Nuts	4	300 Series Stainless Steel
21	Stop Pin	1	300 Series Stainless Steel
21A	Stopper	1	300 Series Stainless Steel
22	Seat Retainer	1	300 Series Stainless Steel Carbon Steel
23	Anti-Static Spring	1	Hard Drawn Stainless Steel
24	Anti-Static Ball	1	300 Series Stainless Steel

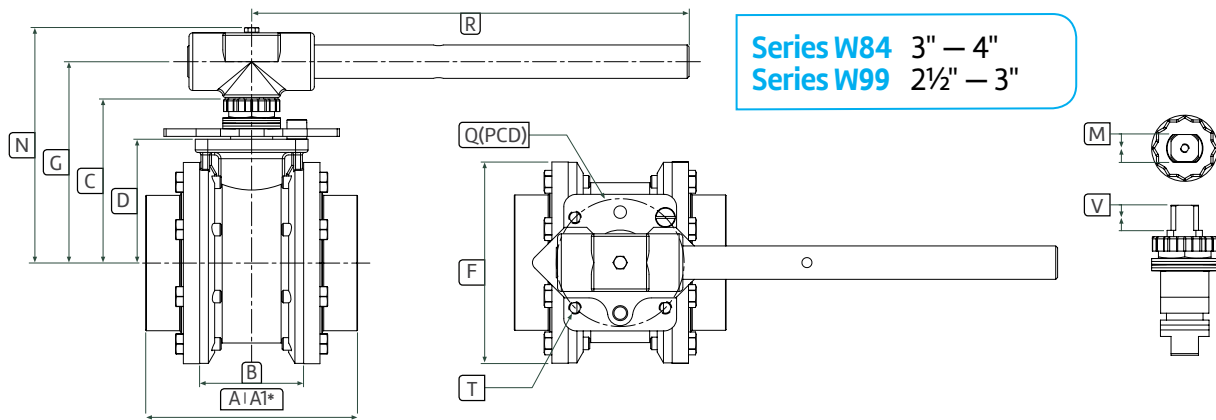
Series W84/W99 High Performance 3-Piece Ball Valve



Series W84 1/2" – 2"
Series W99 1/4" – 1 1/2"



Series W84 2 1/2"
Series W99 2"



Series W84 3" – 4"
Series W99 2 1/2" – 3"

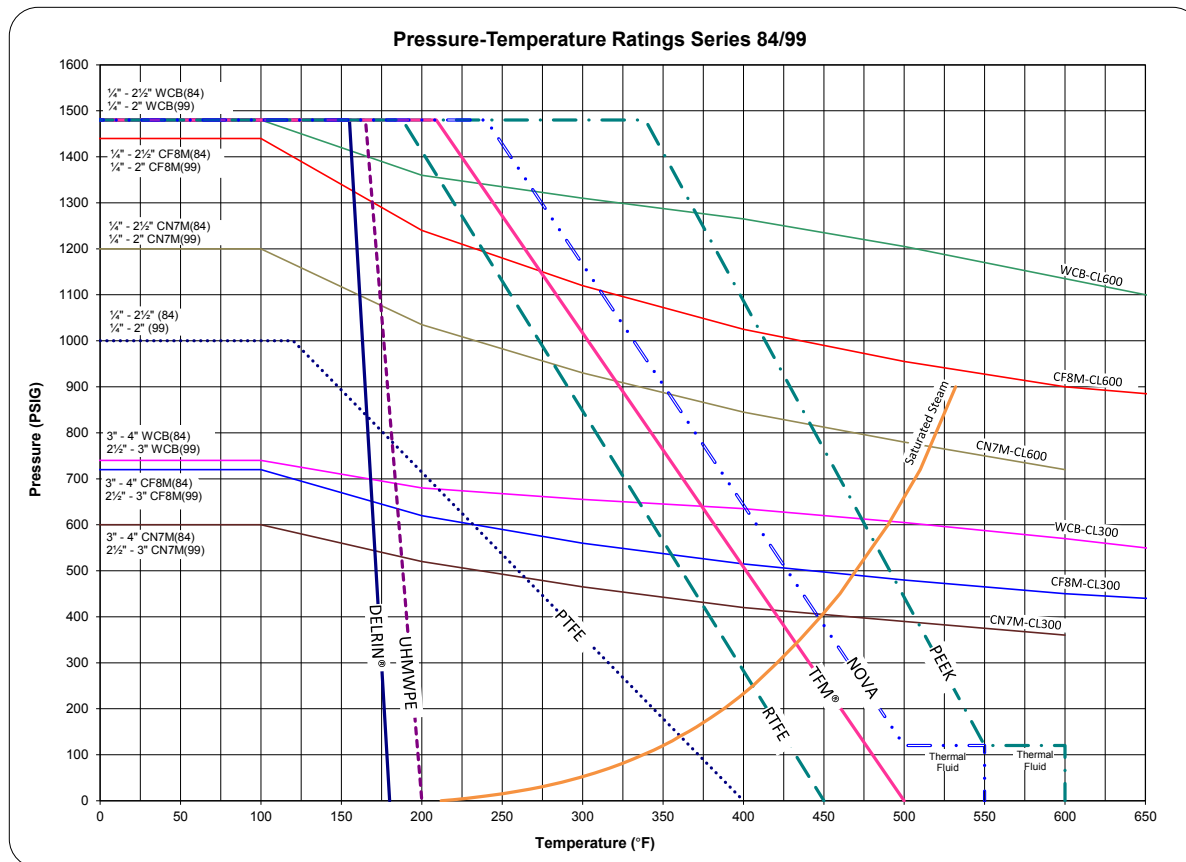
Dimensions (Inches)

84/FS84	99/FS99	A*	A1*	B	C	D	F	G	L	M	N	Q (ISO)	R	T	V
1/2"	1/4", 3/8"	2.62	2.62	0.82	1.32	1.06	1.81	1.58	3/8"-24 UNF	0.220	2.15	1.42 (F03)	4.53	M5 x P0.8	0.31
3/4"	1/2"	2.87	2.87	0.97	1.27	1.13	1.94	1.65	1/2"-24 UNF	0.220	2.28	1.42 (F03)	4.53	M5 x P0.8	0.35
1"	3/4"	3.72	3.72	1.25	1.73	1.51	2.38	2.23	1/2"-20 UNF	0.295	2.70	1.65 (F04)	5.79	M5 x P0.8	0.52
1 1/4"	1"	4.25	4.25	1.61	1.90	1.70	2.78	2.43	1/2"-20 UNF	0.295	2.89	1.65 (F04)	5.79	M5 x P0.8	0.53
1 1/2"	1 1/4"	4.58	4.50	1.90	2.17	1.73	3.12	2.90	3/4"-18 UNF	0.342	3.15	1.97 (F05)	6.78	M6 x P1.0	0.73
2"	1 1/2"	5.03	5.06	2.21	2.39	1.90	3.60	3.09	3/4"-18 UNF	0.342	3.37	1.97 (F05)	6.78	M6 x P1.0	0.73
2 1/2"	2"	5.88	5.87	2.87	3.98	2.93	4.77	4.88	M20 x P2.5	0.551	5.61	2.75 (F07)	8.73	M8 x P1.25	0.74
3"	2 1/2"	6.65	6.65	3.27	5.01	3.89	6.46	6.14	1" - 14 UNS	0.748	6.14	4.02 (F10)	13.74	M10 x P1.5	0.69
4"	3"	8.43	8.43	4.29	5.60	4.48	8.00	6.73	1" - 14 UNS	0.748	7.81	4.02 (F10)	13.74	M10 x P1.5	0.69

Note: *A – 84/FS84 Face to Face dimension for threaded, butt weld & socket weld ends | *A1 – 99/FS99 Face to Face dimension for threaded, butt weld & socket weld ends.
The dimensions above are for informational purpose only. Please refer to Sharpe® Valves if you need dimensions for construction.

Building connections that last™

Technical Data



Standard Port (W84)

Class 600 ½" – 2½"

Class 300 3" – 4"

Full Port (W99)

Class 600 ¼" – 2"

Class 300 2½" – 3"

Performance Data

W84	W99	Cv Flow Coefficient	Equivalent Length of Pipe (Feet)	Approx. Weight (lbs.)	Port Size
-	¼"	8	1.9	1.20	.44
½"	⅜"	8	1.9	1.20	.44
¾"	½"	12	6.3	1.70	.56
1"	¾"	32	3.1	3.00	.81
1¼"	1"	46	6.3	4.00	1.00
1½"	1¼"	80	4.3	6.00	1.25
2"	1½"	120	7.5	8.00	1.50
2½"	2"	240	5.00	25.00	2.00
3"	2½"	350	8.3	30.00	2.50
4"	3"	720	10.4	50.20	3.25

Applicable Standards

Body Wall Thickness	ASME B16.34
SW & Threaded Ends	ASME B16.11
Butt-weld Ends	ASME B16.25
Flange Dimensions	ASME B16.5
Basic Design	ASME B16.34 (Note 1)
Fire Safe	API 607 4th Edt. (FS84/FS99 only)
Testing (Options)	ASME B16.34 API 598

Note 1:

When specified, valves can be furnished in accordance with ASME B16.34 requirements.

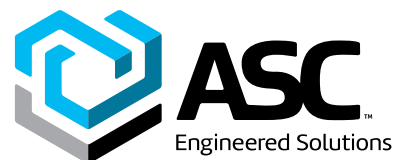


How to order
Sharpe® Series W84/W99

1"		W84		-		4		6		N		G		-		TE		-		OH	
Size		Series				Body & Ends		Ball & Stem		Seat		Seal				Ends				Options	
Size		Series				Body & Ends				Seat				Ends				Options			
W84	W99	W84	Standard Port	2	Alloy 20*	N	Nova	TE	Threaded	OH	Oval Handle up to 2"										
-	¼"	W99	Full Port	4	Carbon Steel	P	Virgin PEEK	SW	Socketweld	L	Lockable Stem Extension										
-	⅜"			6	316 Stainless Steel			BW10	Buttweld SCH 10*												
½"	½"			Ball & Stem		Body Seal		BW40	Buttweld SCH 40												
¾"	¾"			2	Alloy 20	G	Graphite Impregnated	BW80	Buttweld SCH 80												
1"	1"			6	316 Stainless Steel																
1¼"	1¼"																				
1½"	1½"																				
2"	2"																				
2½"	2½"																				
3"	3"																				
4"	-																				

Note:
*POA.

Building connections that last™



Sharpe® Series C80/FSC80 & C89/FSC89

Cryogenic,
3-Piece
Ball Valve



Design & Features

Cryogenic, 3-Piece
Ball Valve

Lockable handle (standard) for
padlocking valves in the open or
closed position

Integral ISO 5211 mounting pad
for mounting actuators and
other accessories.

Extended bonnet, securely bolted to the
valve's mounting pad, creates a gas column
that maintains stem packing performance by
separating stem seals from cryogenic fluid.

One-piece, cast bonnet (gas column)

- ✓ Not fabricated
- ✓ Not welded
- ✓ Not soldered

Extension length in accordance with BS 6364
and wall thickness complies with ASME
B16.34.

Solid, one-piece, 316 SS stem.

Larger and wider stem-to-ball contact
area, allows the valve to be used in higher
torque applications.

Cryogenic seats for extreme low
temperature fluids.

Overview

Valves designed
for extreme low
temperatures
incorporating
extended bonnets
to ensure stem
sealing integrity.

Building connections that last™

Design

The exceptional capabilities and superiority of Sharpe® cryogenic valves are highlighted in the demanding requirements of cryogenic applications. Continuous operation and sealing at temperatures down to -400°F (-240°C) require special attention to design, manufacturing and assembly.

Series C80 & FSC80 (fire-safe)

Cryogenic, 3-Piece,
Floating Ball Valve
ASME Class 600
(3" & 4" ASME 300)
Standard Full Port, Uni-Directional
Valve Sizes:
 $\frac{1}{2}$ ", $\frac{3}{4}$ ", 1", $1\frac{1}{2}$ ", 2", $2\frac{1}{2}$ ", 3", 4"

Series C89 & FSC89 (fire-safe)

Cryogenic, 3-Piece,
Floating Ball Valve
ASME Class 600
($2\frac{3}{4}$ " & 3" ASME 300)
Full Port, Uni-Directional
Valve Sizes:
 $\frac{1}{2}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ", 1", $1\frac{1}{4}$ ", 2", $2\frac{1}{2}$ ", 3"

Extension Bonnet

The cryogenic extension bonnet is securely bolted to the valve's mounting pad.

Visual Indication on Stem

Visual position indicator on the top of the stem provides easy identification of ball position and location of upstream vent in ball.

Stem Sealing

Increased stem sealing area assures tight sealing in the toughest applications.

Blow-Out Proof Stem (Safety)

One-piece blow-out proof stem design.

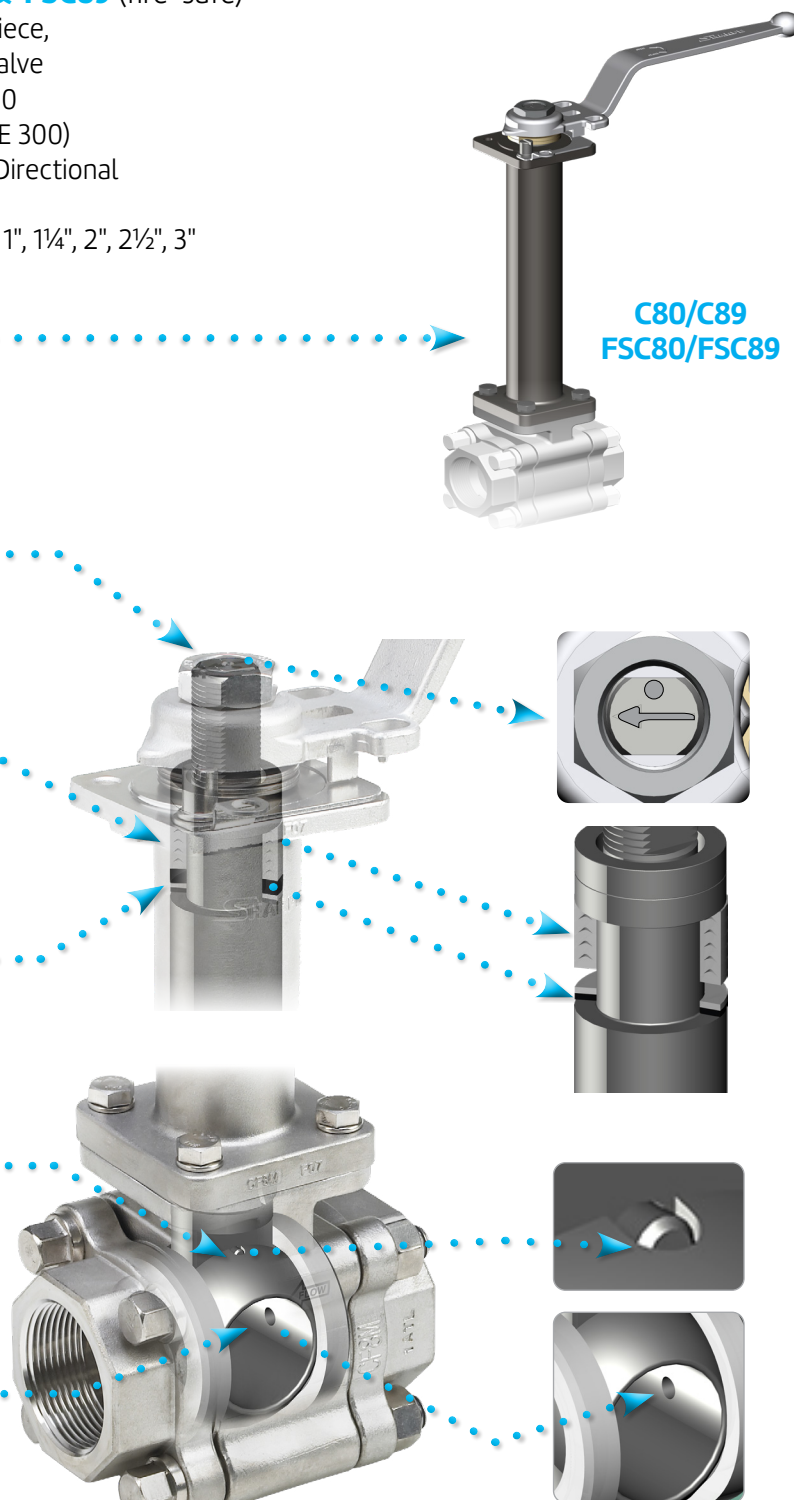
Reliable Installation and Repair

Alignment pin between the ball and stem assures proper orientation of the ball.

Upstream Vented Ball (Safety)

Upstream vent hole in the ball prevents excessive body cavity pressure build-up in closed position due to thermal expansion.

C80/C89
FSC80/FSC89



Features

Heavy Duty Stem Design

Enlarged stem diameters to meet the higher torque requirements of the most demanding applications.

Larger and wider stem-to-ball contact area allows the valve to be used in higher torque applications.

Design for 316 stainless steel stem material, rather than 17-4PH, for superior corrosion resistance.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly when installed per Sharpe® welding instructions.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure or cryogenic applications.

Larger Bolt Design

Larger diameter body bolts to comply with Class 600.

Stem Sealing

Live-Loaded Stem

Concave and opposing spring washers provide additional compensation for seal wear.

Wear Resistance

The thrust washers are PEEK and/or nova for use in lower temperature applications.

ISO 5211 Top-Works Compatibility

The top-works offer compatibility for mounting a wide range of accessories.

Sharpe® actuators and accessories may be retrofitted on existing valves without disruption of line integrity.

Available Options

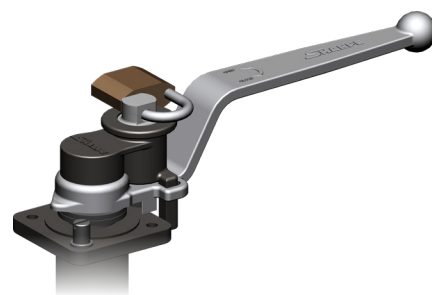
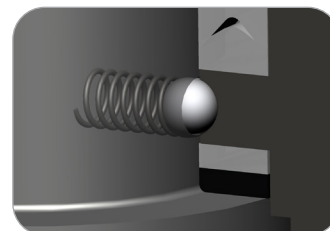
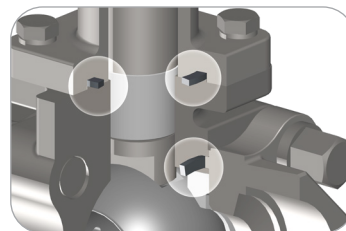
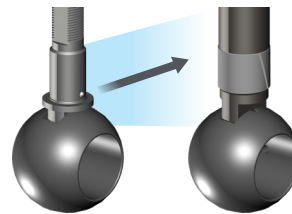
Anti-Static (standard with FS, fire-safe valves)

Static build-up is dissipated with an optional anti-static device in the stem.

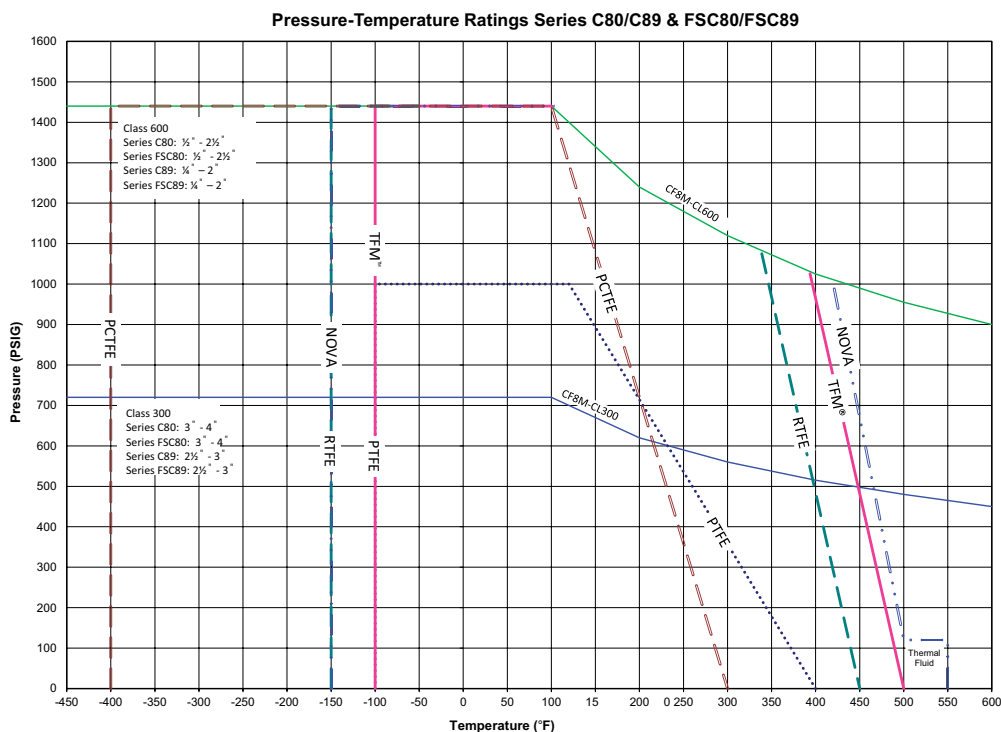
Tamper Proof Locking Device

Cryogenic 3-Piece ball valves come standard with a lockable handle.

The optional, Sharpe® exclusive, tamper proof locking device cannot be removed with a lock in place. When not being used with a lock its spring ensures the locking device snaps into place in the open or closed position to prevent unintended operation.



Technical Data



Note:

The practical pressure temperature rating of a valve is determined by the limitations of the body material and seat / seal material. The valve body ratings are based on ASME B16.34 rating for materials. The graphs are based on laboratory testing and our experience in the field. The seat ratings depend on the material, design, application, and function.

Sharpe® Seat Material

T – Virgin PTFE

Polytetrafluoroethylene is a Fluorocarbon-based polymer. This seating material has excellent chemical resistance and low coefficient of friction. Its temperature range is -100°F to 400°F (-73°C to 204°C). Color: white.

M – TFM™ PTFE

3M Dyneon TFM™ PTFE is a second generation PTFE with improved chemical and heat resistant properties over first generation PTFE and exhibits better stress recovery. Its temperature range is -100°F to 500°F (-73°C to 260°C). Color: white.

R – Reinforced Polytetrafluoroethylene (RTFE 15% Glass Filled). PTFE's mechanical properties are enhanced by adding filler material to provide improved strength, stability and wear resistance. Its temperature range is from -320°F to 450°F (-196°C to 204°C). Color: off-white

N – Nova

This is a Teflon base filled with glass amorphous carbon powder and graphite. It has a lower thermal contraction- expansion than PTFE, and is ideal for steam or thermal fluid applications. Its temperature range is from -50°F to 550°F (-45°C to 288°C). Color: black.

K – PCTFE

PCTFE is a fluorocarbon based polymer. It offers a unique combination of physical and mechanical properties: non-flammability, chemical resistance, and near zero moisture absorption. It has a temperature range of -400°F to 300°F (-240°C to 177°C). Note: PCTFE is frequently referred to as 3M's discontinued KEL-F® Brand.

Applications

Many processes are using cryogenic gases in different sectors of the industry.

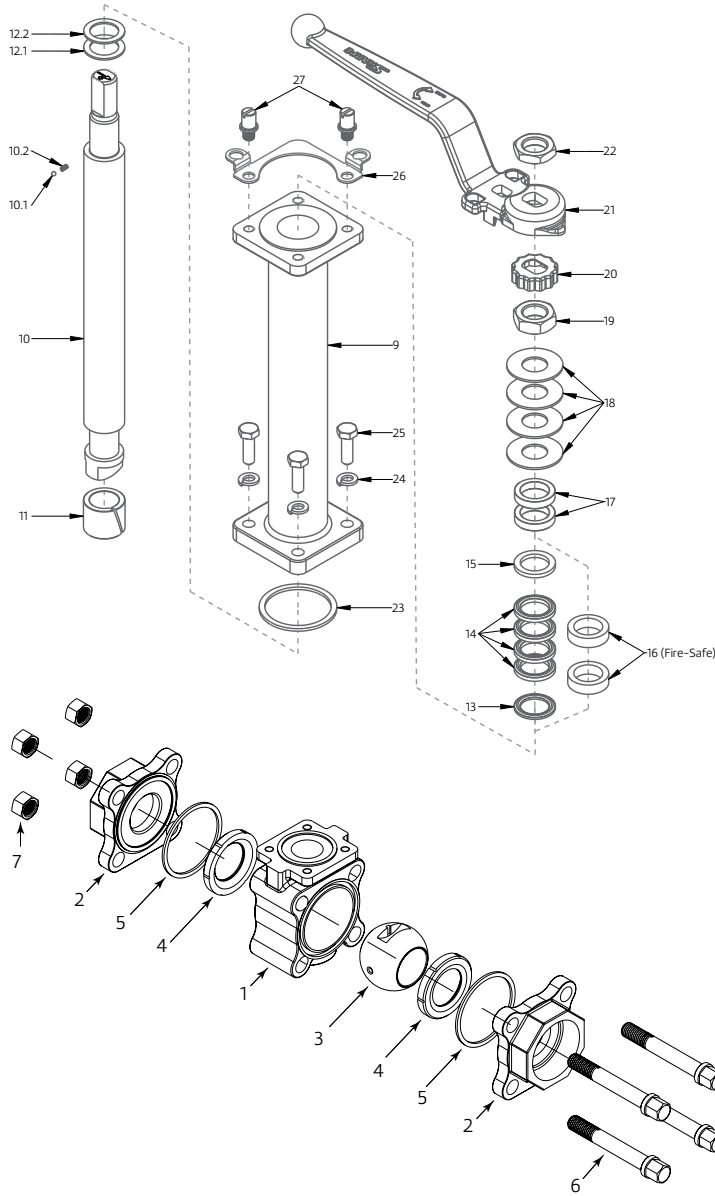
Terminal Unloading Stations	High Purity Cryogenic / Gas Systems
LNG Storage and Distribution	CO ₂ and Nitrogen Injection
Air Separation Plants	Liquid and Gaseous Oxygen For Steel Production
Gas Liquefaction	Transfer Lines
Food processing	Cryogenic Transportation Trailers

Boiling Point of Cryogenic Liquids

Gas	Formula	Boiling Point		Liquid Density (lb/ft ³)
		F°	C°	
Carbon Dioxide	CO ₂	-109	-78	50.6
Methane	CH ₄	-258	-161	26.2
Natural Gas	LNG	-270	-168	26
Oxygen	O ₂	-297	-183	71.2
Argon	Ar	-303	-186	87.4
Air		-318	-194	57.87
Nitrogen	N ₂	-320	-196	50.45
Hydrogen	H ₂	-423	-253	4.43
Helium	He	-452	-269	7.82
Absolute Zero		-460	-273	

Parts & Materials

Series C80 Sizes ½" – 2"
Series FSC80 Sizes ½" – 2"
Series C89 Sizes ¼" – 1½"
Series FSC89 Sizes ¼" – 1½"

**Notes:**

*Parts used in repair kits.

**Parts used with NS, Anti-Static option. NS suffix required with FS (fire-safe) valves.

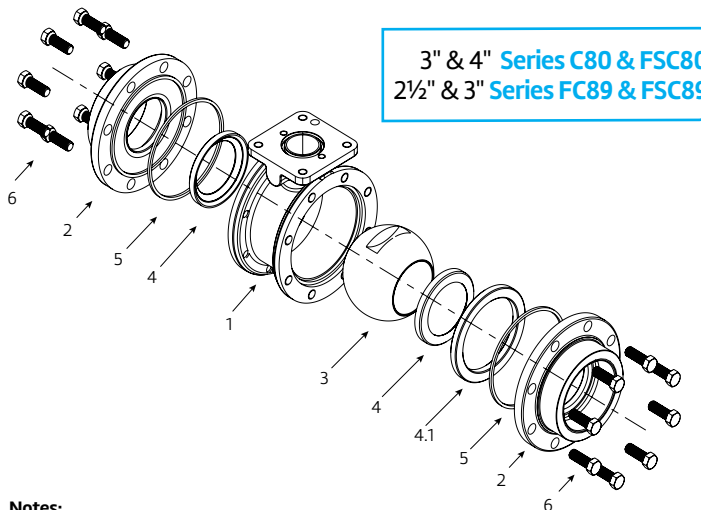
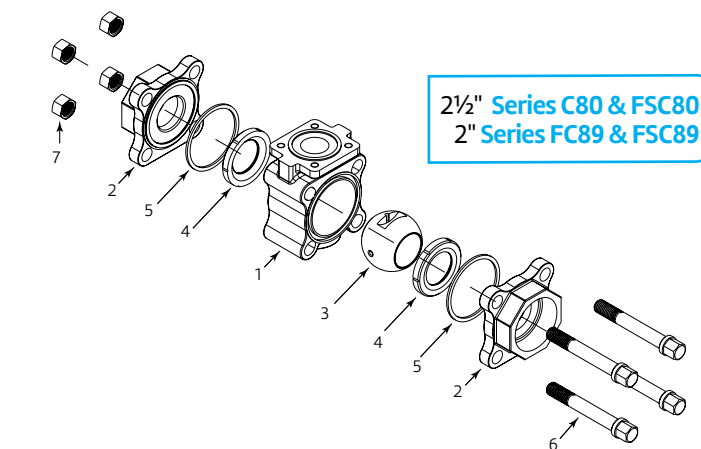
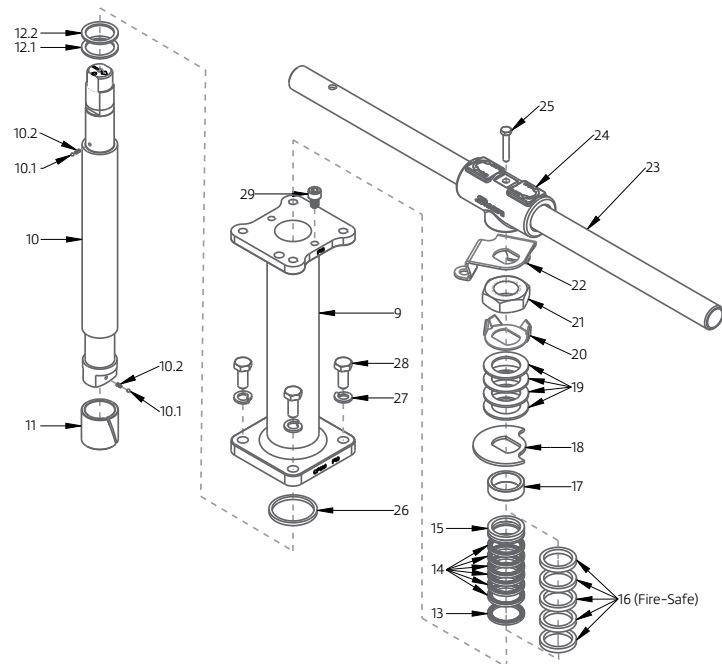
Item	Description	Material	Qty.
1	Body	ASTM A351 CF8M (~ 316 SS)	1
2	End Piece	ASTM A351 CF8M (~ 316 SS) ASTM A351 CF3M (~ 316L SS) for weld connections	2
3	Ball (vented)	316 Stainless Steel	1
4*	Seat	PCTFE, TFM™, NOVA, RTFE or PTFE FSC80/FSC89 (fire-safe): PCTFE	2
5*	Body Seal	Graphite	2
6	Body Bolt	A193 Gr. B8	4
7	Body Nut	300 Series Stainless	4
Tags	Flow Direction & ID Nameplate	300 Series Stainless Steel	1 Each

Cryogenic Extension

Item	Description	Material	Qty.
9	Bonnet Extension	ASTM A351 CF8M (~ 316 SS)	1
10	Stem	316 Stainless Steel	1
10.1**	Anti-Static mini-Ball	300 Series Stainless	0 - 1
10.2**	Anti-Static Spring	Hard Drawn Stainless	0 - 1
11*	Bearing	PTFE	1
12.1*	Thrust Bearing Bottom	PEEK FSC80/FSC89 (fire-safe): Nova	1
12.2*	Thrust Bearing Top	Nova	1
13*	Bottom Packing	PCTFE, TFM™, NOVA	1
14*	Middle Packing	PCTFE, TFM™, NOVA	3 - 4
15*	Top Packing	PCTFE, TFM™, NOVA	1
16*	Stem Packing	FSC80/FSC89 (fire-safe): Graphite	2
17	Gland	300 Series Stainless	1 - 2
18*	Belleville Washer	Stainless Steel FSC80/FSC89 (fire-safe): Inconel	2 or 4
19	Packing Nut	300 Series Stainless	1
20	Nut Lock	300 Series Stainless	1
21	Handle	ASTM A351 CF8 (~304 SS)	1
22	Handle Nut	300 Series Stainless	1
23*	Bonnet Seal	Graphite	1
24	Lock Washer	300 Series Stainless	4
25	Bonnet Bolt	304 Stainless Steel A2-70	4
26	Lock Plate	300 Series Stainless	1
27	Stop Pin	300 Series Stainless	2

Building connections that last™

Parts & Materials

**Notes:**

•Parts used in repair kits.

**Parts used with NS, Anti-Static option. NS suffix required with FS (fire-safe) valves.

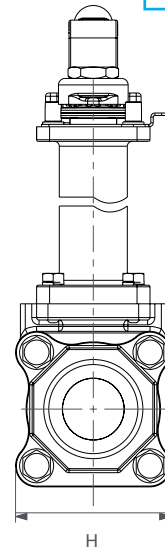
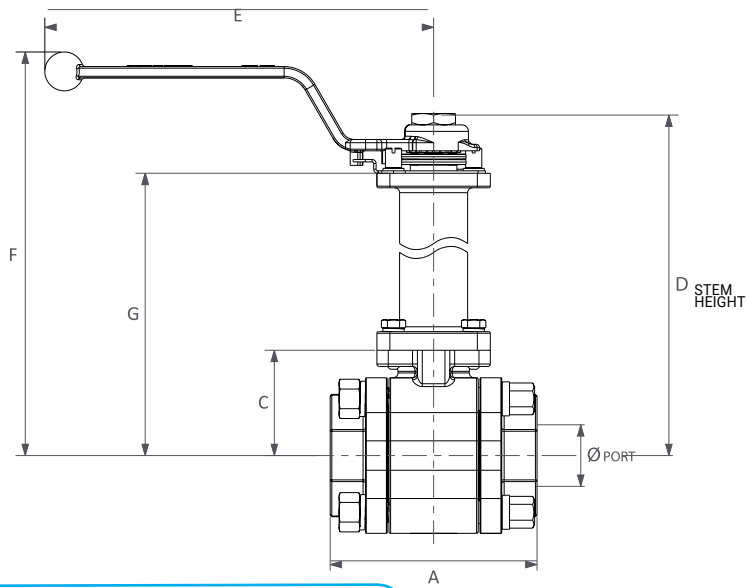
Series C80 Sizes 2½" — 4"
Series FSC80 Sizes 2½" — 4"
Series C89 Sizes 2" — 3"
Series FSC89 Sizes 2" — 3"

Item	Description	Material	Qty.
1	Body	ASTM A351 CF8M (~ 316 SS)	1
2	End Piece	ASTM A351 CF8M (~ 316 SS), ASTM A351 CF3M (~ 316L SS) for welded connections	2
3	Ball (Vented)	316 Stainless Steel	1
4*	Seat	PCTFE, TFM™, NOVA, RTFE or PTFE FSC80/FSC89 (fire-safe): PCTFE	2
4.1	Seat Ring (C80 & FSC80)	ASTM A351 CF8M (~ 316 SS)	0 - 1
5*	Body Seal	Graphite	2
6	Body Bolt/Stud	A193 Gr. B8	4 or 16
7	Body Nut	300 Series Stainless Steel	4
Tags	Flow Direction & ID Nameplate	300 Series Stainless Steel	1 Each

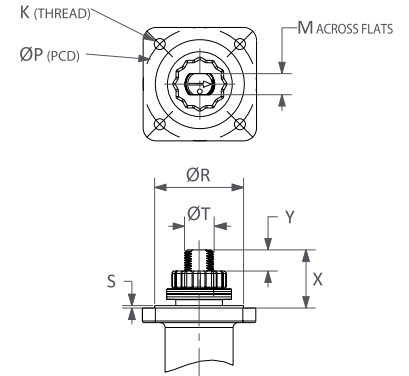
Cryogenic Extension

Item	Description	Material	Qty.
9	Bonnet Extension	ASTM A351 CF8M (~ 316 SS)	1
10	Stem	316 Stainless Steel	1
10.1**	Anti-Static mini-Ball	300 Series Stainless	0 - 2
10.2**	Anti-Static Spring	Hard Drawn Stainless	0 - 2
11*	Bearing	PTFE	1
12.1*	Thrust Bearing Bottom	PEEK FSC80/FSC89 (fire-safe): Nova	1
12.2*	Thrust Bearing Top	Nova	1
13*	Bottom Packing	PCTFE, TFM™, NOVA	1
14*	Middle Packing	PCTFE, TFM™, NOVA	4 - 6
15*	Top Packing	PCTFE, TFM™, NOVA	1
16*	Stem Packing	FSC80/FSC89 (fire-safe): Graphite	4 - 5
17	Gland	300 Series Stainless	1
18	Stop Plate	300 Series Stainless	1
19*	Belleville Washer	Stainless Steel FSC80/FSC89 (fire-safe): Inconel	4
20	Lock Tab	300 Series Stainless	1
21	Packing Nut	300 Series Stainless	1
22	Lock Plate	300 Series Stainless	1
23	Handle Pipe	300 Series Stainless	1
24	Wrench Block	ASTM A351 CF8 (~ 304 SS)	1
25	Wrench Bolt	300 Series Stainless	1
26*	Bonnet Seal	Graphite	1
27	Lock Washer	300 Series Stainless	4
28	Bonnet Bolt	300 Series Stainless	4
29	Stop Pin	300 Series Stainless	1

Series C80/FSC80 Sizes ½" — 2"
Series C89/FSC89 Sizes ¼" — 1½"

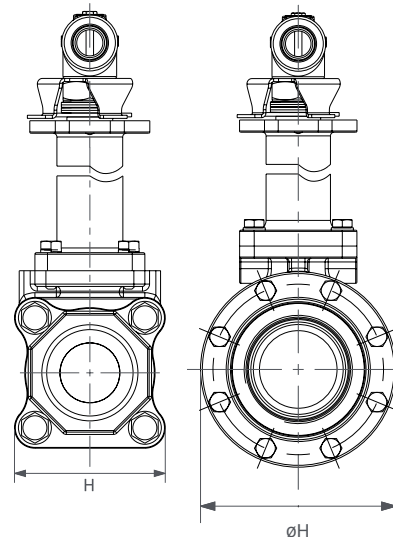
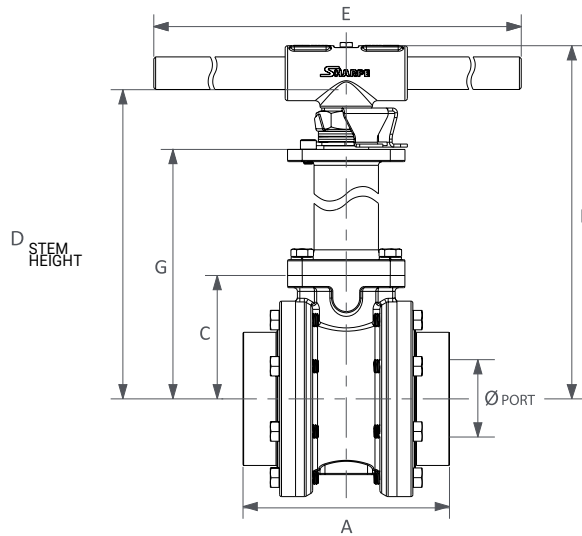


Dimensions for
Actuator Mounting

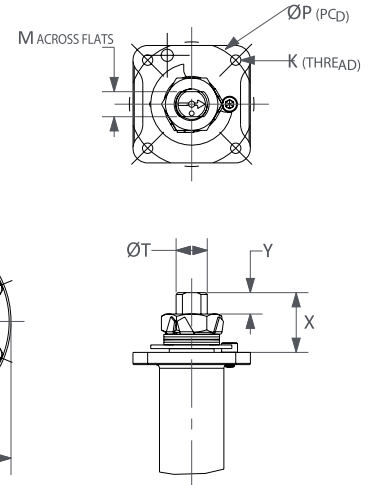


Series C80/FSC80 Sizes 2½" — 4"
Series C89/FSC89 Sizes 2" — 3"

2½" C80/FSC80 3" — 4"
2" C89/FSC89 2½" — 3"



Dimensions for
Actuator Mounting



Dimensions (Inches)

Standard Port	Full Port	ØPORT	TE/SW BW	Ext BW Full Port	C	D	E	F	G	H	K (Thread)	M	ØP (PCD)	ØR	S	ØT	X	Y
C80/ FSC80	C89/FSC89		A	A														
½"	¼", ⅜"	0.44	2.91	-	1.27	12.30	6.42	13.97	11.57	1.81	M5-P0.8	0.264	F04 (1.65)	1.18	0.051	0.394	0.74	0.33
¾"	½"	0.56	3.07	-	1.42	12.44	6.42	14.11	11.73	1.95	M5-P0.8	0.264	F04 (1.65)	1.18	0.051	0.394	0.74	0.33
1"	¾"	0.81	3.72	13.10	1.74	12.91	7.28	14.54	12.09	2.39	M6-P1.0	0.343	F05 (1.97)	1.38	0.059	0.472	0.83	0.37
1¼"	1"	1.00	4.25	13.25	1.91	13.07	7.28	14.71	12.24	2.85	M6-P1.0	0.343	F05 (1.97)	1.38	0.059	0.472	0.83	0.37
1½"	1¼"	1.24	4.57	13.61	2.40	14.37	9.45	16.29	12.99	3.15	M8-P1.25	0.512	F07 (2.76)	2.17	0.059	0.709	1.41	0.54
2"	1½"	1.50	5.04	13.90	2.56	14.57	9.45	16.45	13.15	3.78	M8-P1.25	0.512	F07 (2.76)	2.17	0.059	0.709	1.41	0.54
2½"	2"	2.00	6.34	14.21	3.58	16.02	15.75	17.15	14.33	4.92	M10-P1.5	0.630	F10 (4.02)	-	-	0.886	1.70	0.59
3"	2½"	2.50	6.65	14.87	3.98	16.65	23.62	18.17	14.72	6.30	M10-P1.5	0.807	F10 (4.02)	-	-	1.024	1.93	0.68
4"	3"	3.25	8.43	-	4.57	17.20	23.62	18.78	15.35	7.99	M10-P1.5	0.807	F10 (4.02)	-	-	1.024	1.93	0.68

Note: The dimensions above are for informational purposes only. Please refer to Sharpe® Valves if you need dimensions for construction.

Building connections that last™

Technical Data

Flow Data and Weight

Valve Size		C _v	Approx. Weight (lbs.)
C80/FCS80	C89/FCS89		
½"	¼", ¾"	8	4
¾"	½"	12	4
1"	¾"	32	6
1¼"	1"	46	8
1½"	1¼"	80	13
2"	1½"	120	16
2½"	2"	240	33
3"	2½"	350	38
4"	3"	720	59

Note: C_v values represent the flow of water at +60°F through the valve in U.S. gallons per minute at a pressure drop of 1 psi. The metric equivalent, K_v, is the flow of water at 16°C through the valve in cubic meters per hour at a pressure drop of 1 kg/cm². To convert C_v to K_v, multiply by 0.8569.

Applicable Standards

Basic Design	ASME B16.34, BS 6364
Body Wall Thickness	ASME B16.34
Butt-Weld Ends	ASME B16.25
SW & Threaded Ends	ASME B16.11
Mounting Dimensions	ISO 5211
Marking	MSS-SP 25
Pressure Test	API 598, MSS-SP 72
Fire Safe (FS Series)	API 607 7th Edition

Cryogenic Valve Preparation

All cryogenic valves are shell tested, then completely disassembled. All parts are cleaned and degreased, per Sharpe Standard, in our clean room. The dry parts are then assembled. The assembled valve undergoes a seat and seal pressure test with nitrogen. The completed tested valve is packaged in polyethylene bags before leaving the clean room.



Traceability

Heat numbers are provided on all valve bodies and ends. CMTR's (certified mill test reports) are available upon request.

Automated Assemblies

Valves, actuators, and accessories are designed to work together, delivering exceptional performance.

Visit our website to select pneumatic actuators, electric actuators, positioners, limit switches, and other accessories.



How to order Sharpe® Series C80/FSC80 & C89/FSC89

1.5"			FSC89		6		6		6		6		K		I		G		-		SW/TE		-		NSTP	
Size			Series		Body Material		End Material		Ball Material		Stem Material		Seat Material		Body Seal		Stem Packing				End Style				Suffixes & Options	
Size			Valve Series		Ball Material		Body Seal		End Style		Suffixes & Options															
C80 FSC80	C89 FSC89	Class	C80	Standard Port	6	316 Stainless Steel	I	Graphite	TE	Threaded Ends	For C80, C89															
-	¼"	600	FSC80	Standard Port Fire Safe					SW	Socketweld	HC	High Cycle Stem*														
-	⅜ "	600	C89	Full Port	6	316 Stainless Steel			BW10	Buttweld SCH 10*	NS	Anti-Static*														
½"	½"	600	FSC89	Full Port Fire Safe					BW40	Buttweld SCH 40	TP	Tamper Proof ** Locking Device														
¾"	¾"	600							Additional Ends		Ball with upstream vent (standard)															
1"	1"	600	Body Material		Seat Material		C80, C89		C89 & FSC89 Only																	
1¼"	1¼"	600	6	A351 CF8M (~316SS)	K	PCTFE (Note 1)	M	TFM™	BW80	Buttweld SCH 80	For FSC80, FSC89 Fire-safe Valves															
1½"	1½"	600	End Material		M	TFM™	N	NOVA																		
2"	2"	600	A351 CF8M (~316 SS)		N	NOVA	T	PTFE	EBW	Buttweld SCH 80 Extended	NS	Required - add code Anti-Static														
2½"	-	600	6 Weld Connections: A351 CF3M (~316 SS)		R	RTFE					TP	Tamper Proof Locking Device **														
-	2½"	300			T	PTFE	FSC80, FSC89				Ball with upstream vent (standard)															
3"	3"	300			FSC80, FSC89																					
4"	-	300			K	PCTFE (Note 1)																				

Note:

*Price On Application

**Series C80/FSC80:

2" & Smaller. Series

C89/FSC89: 1 1/2" & Smaller.

PCTFE is frequently referred to as 3M's discontinued KEL-F® Brand.

Note:

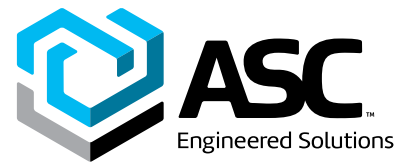
Other materials & options available, please contact us with your requirement.

Responsibility for proper selection, use and maintenance of any product remains solely with the purchaser and end user.

We reserve the right to modify or improve the designs or specifications of any product at any time without notice.

3M™ Dyneon™ TFM™ are trademarks owned by 3M.

Building connections that last™



Sharpe® Series 70/FS70

High Performance Flanged
Full Port Ball Valve



Design & Features



High Performance
Flanged Full Port Valve

Stem Sealing

Increased Stem Sealing Area

Allows for a range of sealing combinations for severe applications and other stringent design demands.

Live-Loaded Stem

Two pairs of concave and opposing spring washers provide additional compensation for seal wear.

Safe Design

Blowout proof stem ensures the stem cannot be blown out by accidental medium pressure rise.

Wear Resistance

The thrust washer is either metallic for higher temperatures and wear resistance, or PEEK for lower temperatures.

Anti-Static

Static build-up discharges by anti-static device in stem or the metallic thrust washer.

Stem Assemblies

Various stem assemblies are available based on application requirements.

Standard – A multiple pack of Chevron "V" shaped stem seals for better sealing in TFM® or Nova materials.

High Temperature – Double pack of flexible graphite seals for sealing under high temperature conditions.

Fugitive Emission – Two-pack stem seals in PTFE or graphite, with lantern ring to allow leak detection through the emission port(s).

High Cycle – Unique design for demanding high cycle applications that consist of multi-system sealing devices in the stem bonnet.

Building connections that last™

Stem Trim for Sizes Greater Than 3"

According to API 608 all valve sizes greater than 3" have an adjustable packing gland with thru bolt holes. Gland bolts pass through the holes and thread to the valve body. The position stops are bolted to the body and are not integral to the packing gland, gland flange or gland bolting.

Rugged Body

Rugged body, (316 Stainless Steel, Carbon Steel, or Alloy 20) with higher and deeper stem packing area to allow for more stem seals. Two cast bosses for optional fugitive emission ports. Larger ISO 5211 bolt pattern for handling higher valve torques.

Heavy Duty Stem Design

Stem diameters have been increased to meet the higher torque requirements of the most demanding applications. Stem to ball contact area is wider and larger, allowing the valve to be used for higher torque applications. Design allows for the use of 316 stainless steel stem material, rather than 17-4PH, for superior corrosion resistance.

Floating Ball Design

Solid stainless steel ball with wide selection of configurations for a variety of applications including; diverting, mixing, controlling, flushing, purging and more. Floating ball seals on the downstream seat, reducing torque and assuring a bubble-tight shutoff.

ISO 5211 Top-Works Compatibility

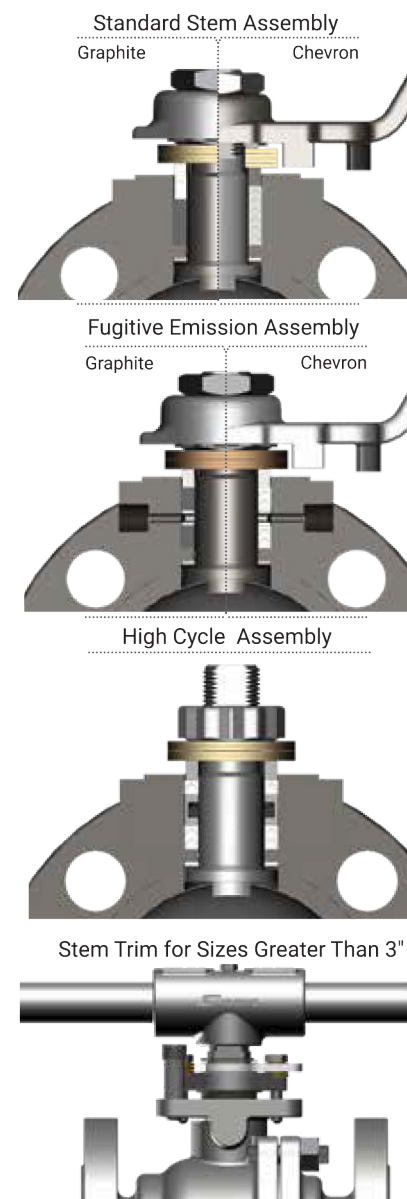
The top-works offer compatibility for mounting a wide range of accessories. Sharpe® actuators and accessories may be retrofitted on existing valves without disruption of line integrity.

Unique Handle

A unique cast stainless steel handle specially designed to accommodate locking devices and high operating torques. A comfortable, ergonomic, non-slip, hand grip design. Handle length according to API 608 requirements.

Tamper Proof Locking Device

All Sharpe® Valves come standard with a lockable handle. The optional, Sharpe® exclusive, tamper proof locking device cannot be removed with a lock in place. When not being used with a lock its springs ensure the locking device snaps into place in the open or closed position to prevent accidental operation.

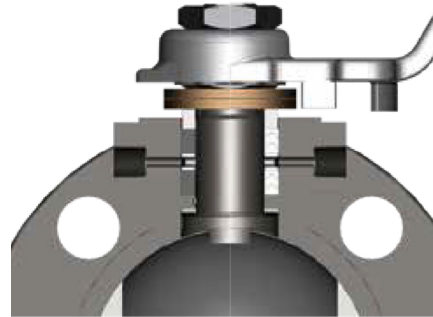


Accessories

Integrated Fugitive Emission Ports

One or two ports can be drilled and tapped into our specially designed body.

Ports align with a lantern ring precisely located between an upper and lower set of stem packing to allow monitoring of emissions.



Lockable Stem Extension

An option to move the valve top interface away from the pipe line to accommodate insulation.

Tamper Proof Locking Device

Upgrade from the standard locking device found on all Sharpe® Valves to our unique spring loaded Tamper Proof Locking Device.

Spring Return Handle

Spring return handle ensures that the valve cannot be left open (or closed).

Cast Mounting Brackets

Cast stainless steel brackets with hole patterns conforming to ISO 5211 on top and bottom for actuation mounting.

Safety locking holes for securing valves during maintenance (requires special coupler).

Aesthetic design offers wide tool clearance for installation and open visual.

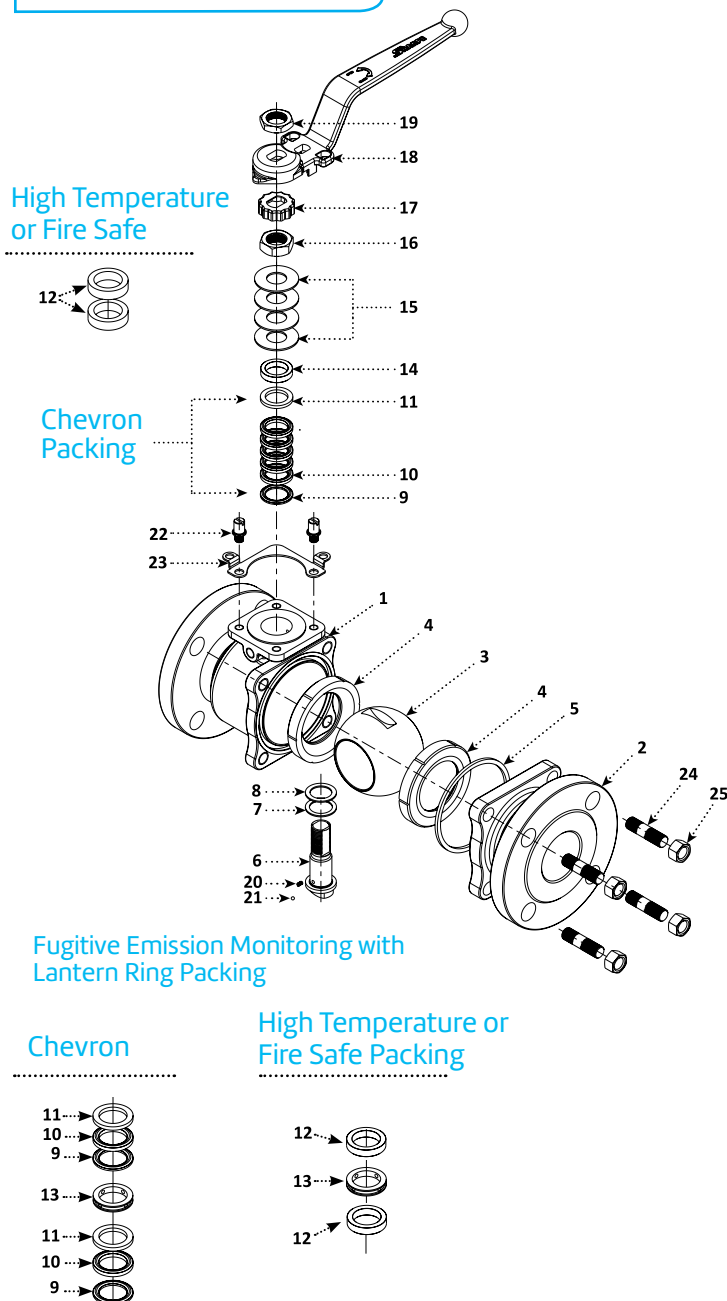
Steam Jackets

Steam jackets enables the valves to be kept at a controlled temperature.



Parts & Materials

Series 70/FS70 ½" — 2"



Sizes (½" — 2")

Item	Description	Material	Qty.
1	Body	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M Alloy 20 ASTM A351 CN7M ***	1
2	End Piece	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M Alloy 20 ASTM A351 CN7M ***	1
3	Ball	316 Stainless Steel Alloy 20 ***	1
4*	Seat	PTFE, RTFE, TFM®, Nova, PEEK, Super Nova	2
5*	Body Seal	PTFE, TFM®, Graphite, Impregnated Graphite	1
6	Stem	316 Stainless Steel 17-4PH Alloy 20 ***	1
7*	Thrust Bearing - Bottom	Nova, PEEK	1
8*	Thrust Bearing - Top	Nova	1
9*	Stem Packing - Bottom	PTFE, TFM®, Nova	2
10***	Stem Packing - Middle	PTFE, TFM®, Nova	2
11*	Stem Packing - Top	PTFE, TFM®, Nova	2
12*	Stem Packing	Graphite (FS or high temperature)	2
13	Lantern Ring	300 Series Stainless Steel	1
14	Gland	300 Series Stainless Steel	1
15*	Belleville Washer	17-7PH	4
16	Packing Nut	300 Series Stainless Steel	1
17	Lock Tab	300 Series Stainless Steel	1
18	Handle	304 Stainless Steel ASTM A351 CF8	1
19	Handle Nut	300 Series Stainless Steel	1
20	Anti - Static Ball	300 Series Stainless Steel	1
21	Anti - Static Spring	Hard Drawn Stainless Steel	1
22	Stop Pin	300 Series Stainless Steel	2
23	Lock Plate	300 Series Stainless Steel	1
24	Stud	A193 Gr. B8A	4
25	Nut	300 Series Stainless Steel	4

Note:

The quantities listed in the stem arrangement are for fugitive emission assemblies. Standard stem assemblies carry more seals and no lantern rings.

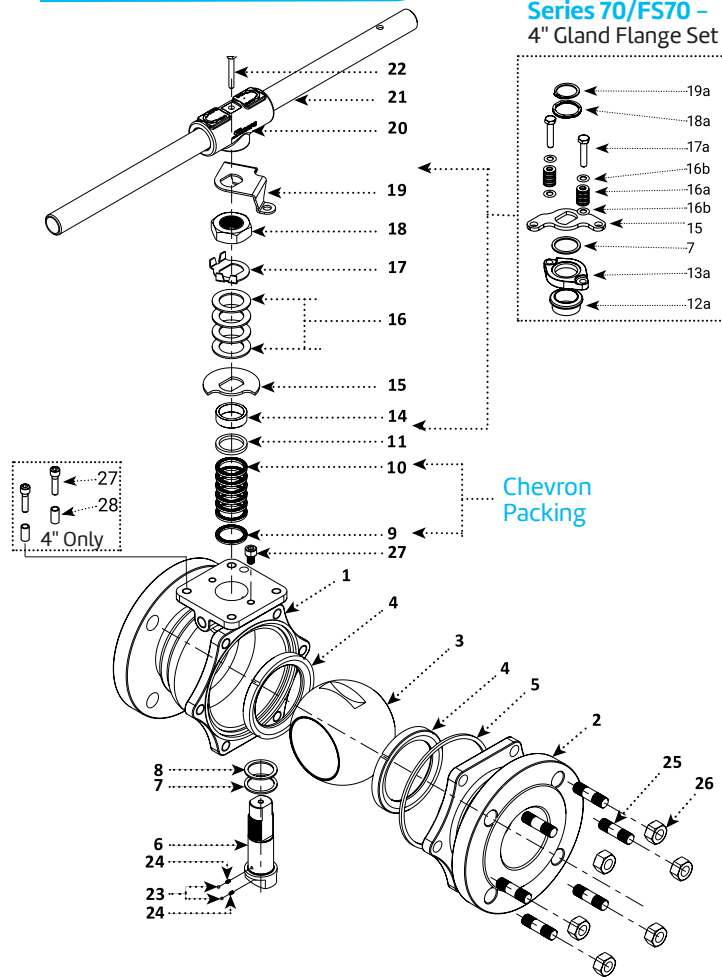
* Repair Kit item.

** Middle stem packing is only used from size 1-½" and above.

*** Other materials available, call to discuss your special requirements.

Series 70/FS70 2½" — 4"

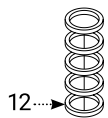
Series 70/FS70 – 4" Gland Flange Set



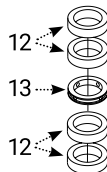
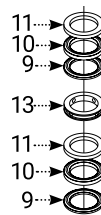
High Temperature or Fire Safe

Fugitive Emission Monitoring with Lantern Ring Packing

High Temperature or Fire Safe Packing



Chevron



Sizes (2½" — 4")

Item	Description	Material	Qty.
1	Body	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M Alloy 20 ASTM A351 CN7M	1
2	End Piece	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M Alloy 20 ASTM A351 CN7M	1
3	Ball	316 Stainless Steel Alloy 20	1

Parts & Materials

(Continued)

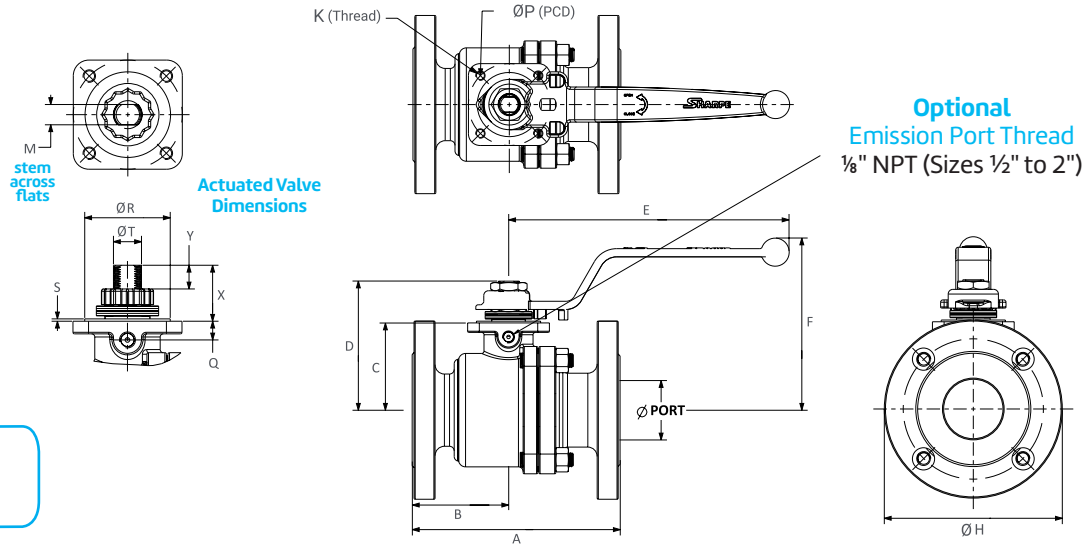
Item	Description	Material	Qty.
4*	Seat	PTFE, RTFE, TFM®, Nova, PEEK	2
5*	Body Seal	PTFE, Graphite	1
6	Stem	Stainless Steel 17-4PH Alloy 20	1
7*	Thrust Bearing - Bottom	Nova, PEEK	1
8*	Thrust Bearing - Top	Nova	1
9*	Stem Packing - Bottom	PTFE, TFM®, Nova	2
10*	Stem Packing - Middle	PTFE, TFM®, Nova	2
11*	Stem Packing - Top	PTFE, TFM®, Nova	2
12*	Stem Packing	Graphite (Fire safe or high temperature)	4
12a	Gland Position Ring	300 Series Stainless Steel	1
13	Lantern Ring	300 Series Stainless Steel	1
13a	Gland (size 4" only)	316 Stainless Steel A351 CF8M	1
14	Gland	300 Series Stainless Steel	1
15	Stop Plate	300 Series Stainless Steel	1
16*	Belleville Washer	17-7PH	4
16a	Belleville Washer	17-7PH	16
16b	Washer	300 Series Stainless Steel	4
17	Lock Tab	300 Series Stainless Steel	1
17a	Gland Bolt	300 Series Stainless Steel	2
18	Packing Nut	300 Series Stainless Steel	1
18a	Retainer Spring	300 Series Stainless Steel	1
19	Lock Plate	300 Series Stainless Steel	1
19a	Retainer Lock	300 Series Stainless Steel	1
20	Wrench Block	304 Stainless Steel ASTM A351 CF8	1
21	Handle Pipe	Stainless Steel Zinc Plated Carbon Steel	1
22	Wrench Bolt	300 Series Stainless Steel	1
23	Anti-Static Ball	300 Series Stainless Steel	2
24	Anti-Static Spring	Hard Drawn Stainless Steel	2
25	Body Stud	A193 Gr. B8A	6/8
26	Body Nut	300 Series Stainless Steel	6/8
27	Stop Pin	300 Series Stainless Steel	1/2
28	Stop Pin Sleeve	300 Series Stainless Steel	2

Note: The quantities listed in the stem arrangement are for fugitive emission assemblies. Standard stem assemblies carry more seals and no lantern rings.

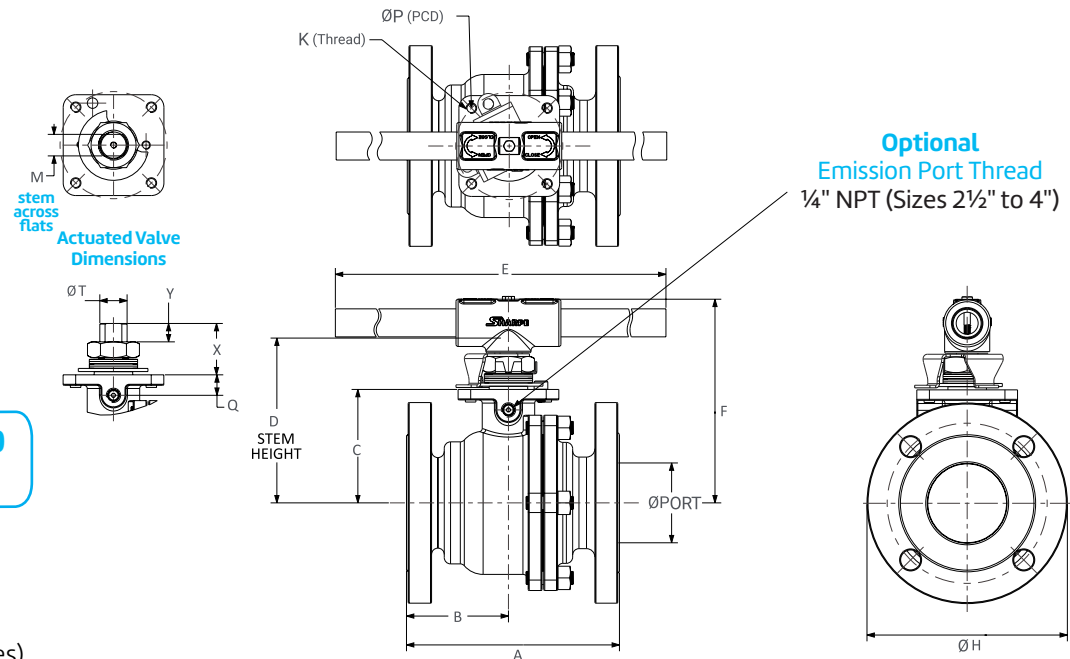
* Repair Kit item.

Series 70/FS70 High Performance Flanged Full Port Ball Valve

Series 70/FS70 1/2" – 2"



Series 70/FS70 2 1/2" – 4"



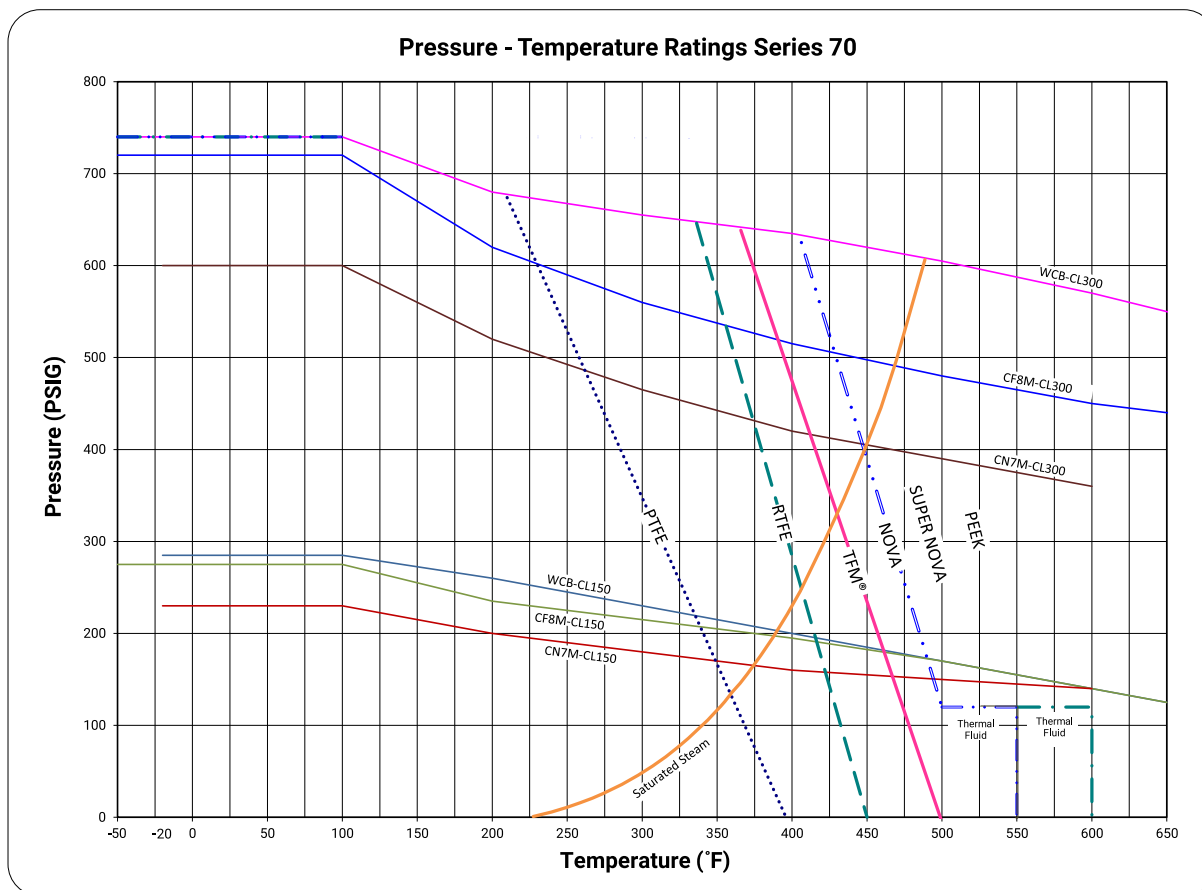
Dimensions (Inches)

SIZE	ØPORT	A Class 150	A Class 300	B Class 150	B Class 300	C	D	E	F	ØH Class 150	ØH Class 300	K (Thread)	M	ØP (PCD)	Q	ØR	S	ØT	X	Y
1/2"	0.56	4.25	5.50	1.96	2.36	1.41	2.15	6.42	3.54	3.50	3.75	M5-P0.8	0.264	F04 (1.65)	0.27	1.18	0.051	0.394	0.74	0.33
3/4"	0.82	4.62	6.00	2.13	2.52	1.53	2.27	6.42	3.66	3.88	4.61	M5-P0.8	0.264	F04 (1.65)	0.37	1.18	0.051	0.394	0.74	0.33
1"	1.00	5.00	6.50	2.13	2.72	1.93	2.74	7.28	3.73	4.25	4.88	M6-P1.0	0.343	F05 (1.97)	0.39	1.38	0.059	0.472	0.81	0.30
1 1/2"	1.50	6.50	7.50	2.97	3.21	2.56	3.97	9.45	5.28	5.00	6.12	M8-P1.25	0.512	F07 (2.76)	0.47	2.17	0.059	0.709	1.41	0.48
2"	2.00	7.00	8.50	3.25	3.37	2.94	4.35	9.45	5.87	6.00	6.50	M8-P1.25	0.512	F07 (2.76)	0.47	2.17	0.059	0.709	1.41	0.48
2 1/2"	2.50	7.50	9.50	3.58	4.00	3.98	5.91	23.62	7.48	7.01	7.52	M10-P1.5	0.807	F10 (4.02)	0.77	-	-	1.024	1.92	0.65
3"	3.00	8.00	11.12	3.83	4.20	4.25	6.18	23.62	7.64	7.52	8.27	M10-P1.5	0.807	F10 (4.02)	0.77	-	-	1.024	1.93	0.65
4"	3.94	9.00	12.00	4.61	5.06	4.90	6.83	23.62	8.28	9.02	10.00	M10-P1.5	0.807	F10 (4.02)	0.77	-	-	1.024	1.93	0.65

Note: The dimensions above are for informational purposes only. Please contact Sharpe® Valves if you need dimensions for construction.

Building connections that last™

Technical Data



Note:

The practical pressure-temperature rating of a valve is determined by the limitations of the body material and seat/seal material. An application's maximum pressure-temperature conditions must be below the body rating curve, and left of the seat material curve. The valve body ratings are based on ASME B16.34 rating for materials. The graph is based on laboratory testing and installed field experience. The seat ratings depend on the material, design, application and function.

Sharpe® Seat Materials

T – Virgin PTFE

Polytetrafluoroethylene is a Fluorocarbon-based polymer. This seating material has excellent chemical resistance and low coefficient of friction. Its temperature range is -100°F to 400°F (-73°C to 204°C). Color - white.

M – TFM® PTFE

Dyneon TFM® PTFE is a second generation PTFE with improved chemical and heat resistant properties over first generation PTFE and exhibits better stress recovery. Its temperature range is -100°F to 500°F (-73°C to 260°C). Color - white.

R – Reinforced Polytetrafluoroethylene (RTFE 15% Glass Filled).

PTFE's mechanical properties are enhanced by adding filler material to provide improved strength, stability, and wear resistance. Its temperature range is from -320°F to 450°F (-196°C to 204°C). Color-off-white.

N – Nova

A PTFE base filled with glass amorphous carbon powder and graphite. It has a lower thermal contraction / expansion than PTFE, and is ideal for steam or thermal fluid applications. Its temperature range is from -50°F to 550°F (-45°C to 288°C). Color - black.

B – Super Nova is a free-flowing compound based on TFM® containing electro-graphitized carbon. It features: increased thermal dimensional stability and surface hardness, improved deformation under load, reduced friction and wear, and good chemical stability. It has a high limiting oxygen index (LOI), low coefficient of friction, very good mechanical properties and exceptional temperature resistance. It is used as a seat material in chemical processing and automotive industries. It is ideal to use with steam and thermal fluid applications up to 550°F (288°C) and as low as -40°F (-40°C). Color - black.

P – PEEK (Unfilled) Polyetheretherketone

PEEK Polymer offers a unique combination of chemical, mechanical and thermal properties. Excellent for water and steam applications at elevated temperatures up to 600°F (315°C). Color - beige.

Other seat materials

Other seat material are available, please contact us with your requirements.

Technical Data

Technical Information

Size	Cv	Approx. Weight Lbs	
		Class 150	Class 300
½"	26	4	5
¾"	50	5	8
1"	94	7	10
1½"	260	15	20
2"	480	23	28
2½"	730	39	47
3"	1100	45	62
4"	2100	65	94



Applicable Standards

Wall Thickness	ASME B16.34
Face to Face Dimensions	ASME B16.10
Fugitive Emission	ISO 15848-1 (with I or N stem packing)
Flange Dimensions	ASME B16.5
Basic Design	ASME B16.34, API 608 5th Ed
Fire Safe	API 607 6th Ed (FS70 only)
Pressure Test	API 598, MSS-SP 72
Mounting Dimensions	ISO 5211
NACE (Only with 316 SS Stem)	MR-0175 / ISO 15156
Marking	MSS-SP 25

Notes:

3M™ Dyneon™ TFM™ are trademarks owned by 3M.

Series 70/FS70 High Performance Flanged Full Port Ball Valve



How to order
Sharpe® Series 70/FS70

3"	FS70	1	-	6	6	6	R	G	G	-	1/1	-		-
Size	Series	Class		Body/ Ends	Ball	Stem	Seat	Body Seal	Stem Packing		Ends		Service	Options

Size	Series		Body & Ends		Seat		Body Seal		Ends		Options	
½"	70	Full Port	4	Carbon Steel (WCB)	B	Super Nova	G	Graphite	1/1	Class 150 Flanged RF	OH	Oval Handle†
¾"	FS70	Fire Safe					I	Impregnated Graphite	3/3	Class 300 Flanged RF	F1	1 Emission Port
1"	CF70	Cavity Fill	6	Stainless Steel (CF8M) ~316 SS	R	RTFE 15% Glass Filled	M	TFM®	1F/1F	Class 150 Flanged FF	F2	2 Emission Ports
1½"	Fire Safe valve must use: Graphite or Impregnated Graphite Body Seals and Stem Packing. PTFE, RTFE, TFM®, Nova, Super Nova Seats.		2	Alloy 20 (CN7M)*	M	TFM®	T	PTFE	3F/3F	Class 300 Flanged FF	L	Lockable Stem Extension‡
Ball			N	Nova	Stem Packing		Service		VB	Vented Ball		
6			316 Stainless Steel	P	Virgin PEEK	G	Graphite	MN	Ammonia Service (1)(2)	SJ	Oil Jacket with 2 Ports	
2			Alloy 20*	T	PTFE	I	Impregnated Graphite	SF	Silicone Free (1)(3)	SJ3	Steam Jacket with 3 Ports	
2½"	Cavity Filler Seats available in PTFE.		Stem				M	TFM®	U	Vacuum (1)(3)	TP	Tamper Proof Locking Device
6			316 Stainless Steel			N	Nova	X	Oxygen Service (1)(3)(4)	DMH	Spring Return Handle§	
7			17-4PH			T	PTFE			HC	High Cycle Stem	
2			Alloy 20*							PN4	Packing Nut Design 4" Only (Not API 608)	
3"	Class											
4"	1	150										
	3	300										

*** (1) Per Sharpe Standard (2) 70 or F570 (3) 70 or CF70**

† Up to 1½"

‡ ¾" up to 1" valves. 4" on larger valves

§ Call Sharpe® Valves for sizing / application of DMH (up to 1")

Note:

* POA.

Other materials / options available, please contact us with your requirement.

Neither ASC Engineered Solutions nor any of its affiliated entities assumes responsibility for the selection, use, and maintenance of any product. Responsibility for the selection, use, and maintenance of any product remains solely with the purchaser and end user.

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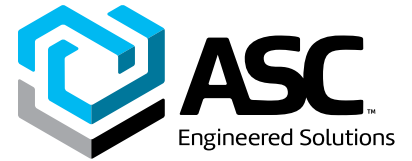
*(1) Per Sharpe Standard
(2) 70 or FS70
(3) 70 or CF70
(4) No impregnated graphite

† Up to 1½"

‡ 3¼" up to 1" valves.
4" on larger valves

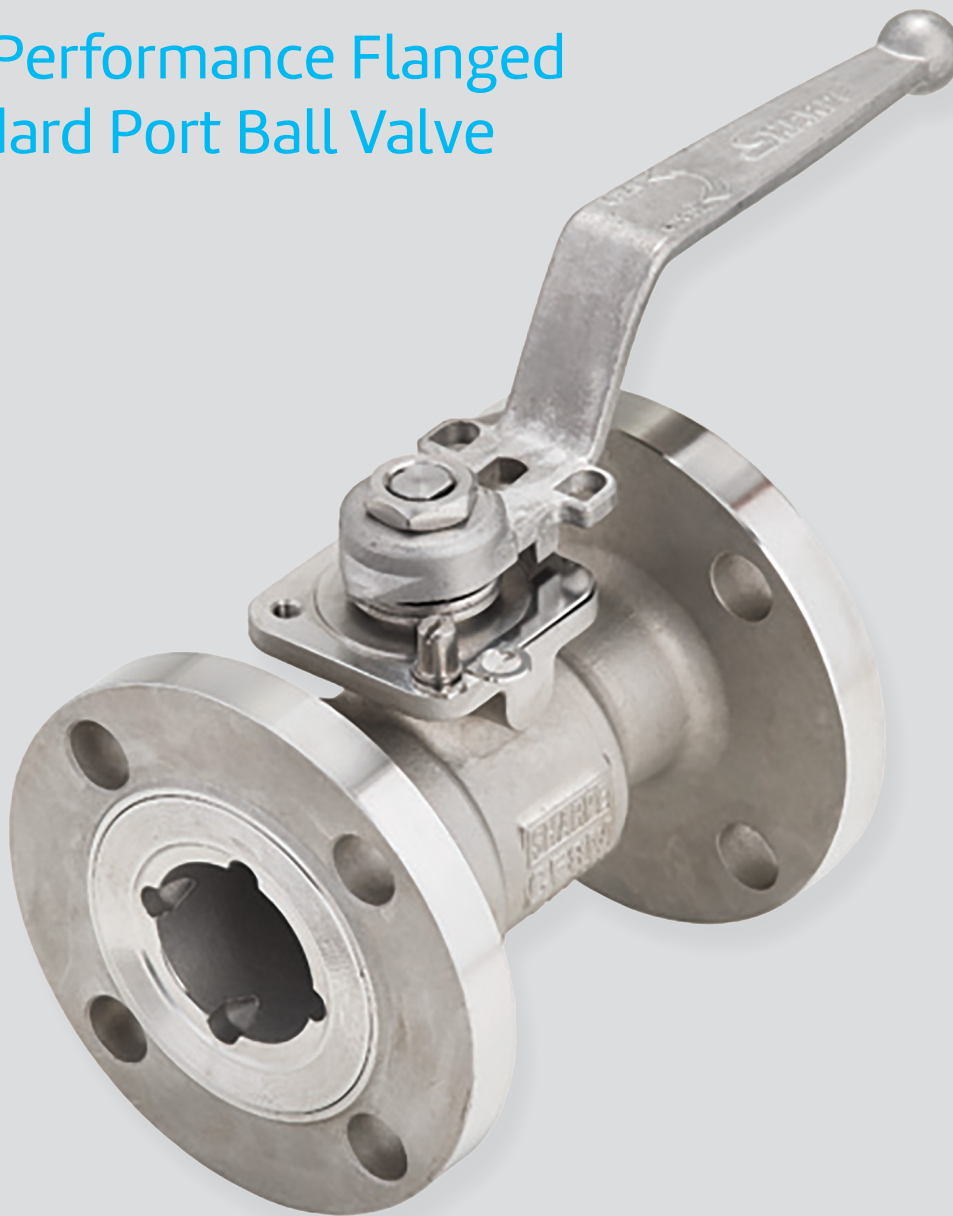
§ Call Sharpe® Valves for sizing / application of DMH (up to 1")

Building connections that last™

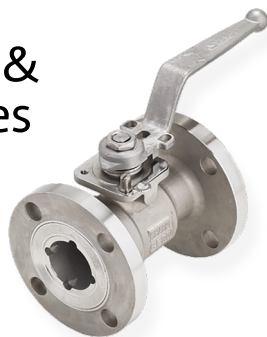


Sharpe® Series 74/FS74

High Performance Flanged
Standard Port Ball Valve



Design & Features



High Performance
Flanged Standard
Port Ball Valve

Stem Sealing

Increased Stem Sealing Area

Allows for a range of sealing combinations for severe applications and other stringent design demands.

Live-Loaded Stem

Two pairs of concave and opposing spring washers provide additional compensation for seal wear.

Safe Design

Blowout proof stem ensures the stem cannot be blown out by accidental medium pressure rise.

Wear Resistance

The thrust washer is either metallic for higher temperatures and wear resistance, or PEEK for lower temperatures.

Anti-Static

Static build-up discharges by anti-static device in stem or the metallic thrust washer.

Stem Assemblies

Various stem assemblies are available based on application requirements.

Standard – A multiple pack of Chevron "V" shaped stem seals for better sealing in TFM® or Nova materials.

High Temperature – Double pack of flexible graphite seals for sealing under high temperature conditions.

Fugitive Emission – Two-pack stem seals in PTFE or graphite, with lantern ring to allow leak detection through the emission port(s).

High Cycle – Unique design for demanding high cycle applications that consist of multi-system sealing devices in the stem bonnet.

Stem Trim for Sizes Greater Than 3" –

According to API 608 all valve sizes greater than 3" have an adjustable packing gland with thru bolt holes. Gland bolts pass through the holes and thread to the valve body. The position stops are bolted to the body and are not integral to the packing gland, gland flange or gland bolting.

Rugged Body

Rugged body, (316 Stainless Steel, Carbon Steel, or Alloy 20) with higher and deeper stem packing area to allow for more stem seals. Two cast bosses for optional fugitive emission ports. Larger ISO 5211 bolt pattern for handling higher valve torques.

Heavy Duty Stem Design

Stem diameters have been increased to meet the higher torque requirements of the most demanding applications. Stem to ball contact area is wider and larger, allowing the valve to be used for higher torque applications. Design allows for the use of 316 stainless steel stem material, rather than 17-4PH, for superior corrosion resistance.

Floating Ball Design

Solid stainless steel ball with wide selection of configurations for a variety of applications including; diverting, mixing, controlling, flushing, purging and more.

Floating ball seals on the downstream seat, reducing torque and assuring a bubble-tight shutoff.

ISO 5211 Top-Works Compatibility

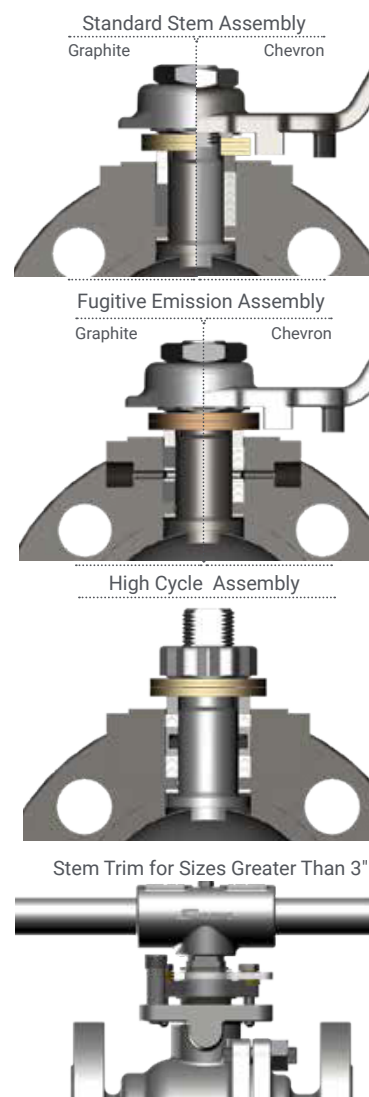
The top-works offer compatibility for mounting a wide range of accessories. Sharpe® actuators and accessories may be retrofitted on existing valves without disruption of line integrity.

Unique Handle

A unique cast stainless steel handle specially designed to accommodate locking devices and high operating torques. A comfortable, ergonomic, non-slip, hand grip design. Handle length according to API 608 requirements.

Tamper Proof Locking Device

All Sharpe® Valves come standard with a lockable handle. The optional, Sharpe® exclusive, tamper proof locking device cannot be removed with a lock in place. When not being used with a lock its springs ensure the locking device snaps into place in the open or closed position to prevent accidental operation.

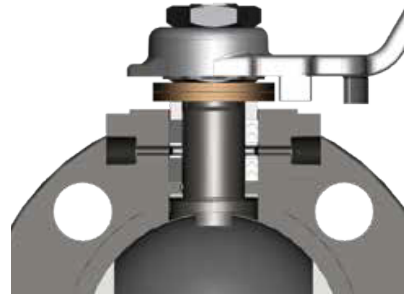


Building connections that last™

Accessories

Integrated Fugitive Emission Ports

One or two ports can be drilled and tapped into our specially designed body. Ports align with a lantern ring precisely located between an upper and lower set of stem packing to allow monitoring of emissions.



Lockable Stem Extension

An option to move the valve top interface away from the pipe line to accommodate insulation.

Tamper Proof Locking Device

Upgrade from the standard locking device found on all Sharpe® Valves to our unique spring loaded Tamper Proof Locking Device.

Spring Return Handle

Spring return handle ensures that the valve cannot be left open (or closed).

Cast Mounting Brackets

Cast stainless steel brackets with hole patterns conforming to ISO 5211 on top and bottom for actuation mounting.

Safety locking holes for securing valves during maintenance (requires special coupler).

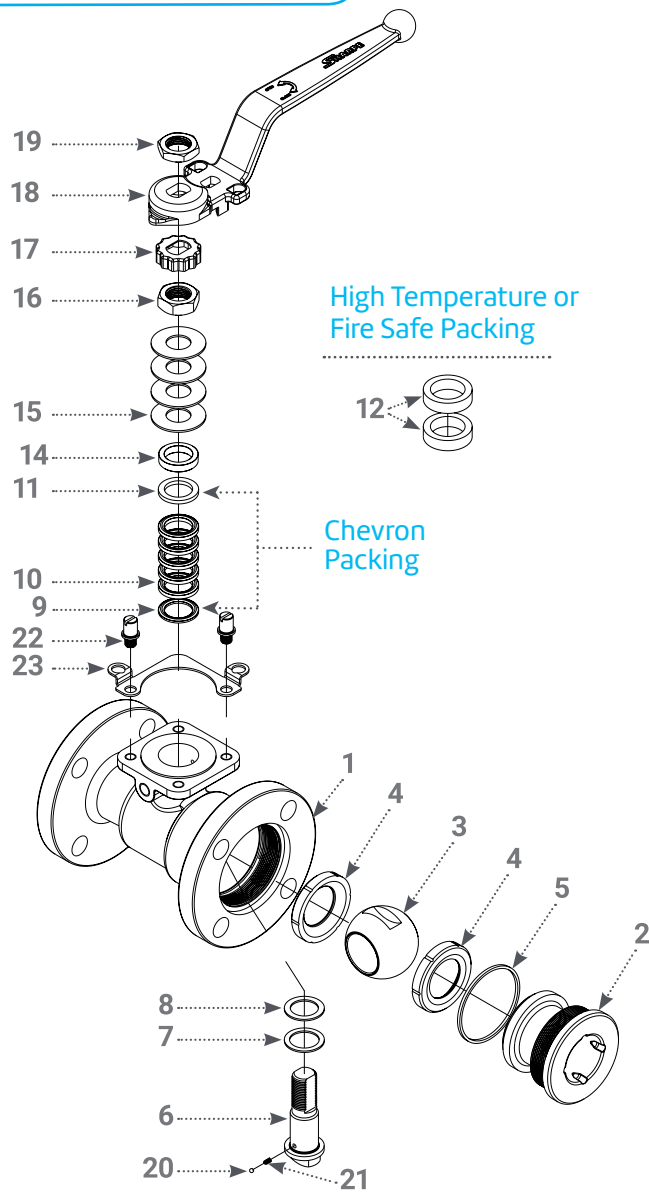
Aesthetic design offers wide tool clearance for installation and open visual.

Steam Jackets

Steam jackets enables the valves to be kept at a controlled temperature.



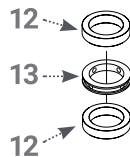
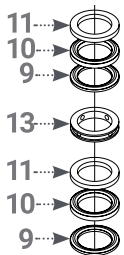
Series 74/FS74 1" – 2"



Fugitive Emission Monitoring
with Lantern Ring Packing

Chevron

High Temperature
or Fire Safe



Parts & Materials

Sizes (1" – 2")

Item	Description	Material	Qty.
1	Body	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M Alloy 20 ASTM A351 CN7M ***	1
2	End Piece	Carbon Steel ASTM A216 WCB 316 Stainless Steel ASTM A351 CF8M Alloy 20 ASTM A351 CN7M ***	1
3	Ball	316 Stainless Steel Alloy 20 ***	1
4*	Seat	PTFE, RTFE, TFM®, Nova, PEEK	2
5*	Body Seal	PTFE, Graphite	1
6	Stem	316 Stainless Steel 17-4PH Alloy 20 ***	1
7*	Thrust Bearing - Bottom	Nova, PEEK	1
8*	Thrust Bearing - Top	Nova	1
9*	Stem Packing - Bottom	PTFE, TFM®, Nova	2
10*,**	Stem Packing - Middle	PTFE, TFM®, Nova	2
11*	Stem Packing - Top	PTFE, TFM®, Nova	2
12*	Stem Packing	Graphite (FS or high temperature)	2
13	Lantern Ring	300 Series Stainless Steel	1
14	Gland	300 Series Stainless Steel	1
15*	Belleville Washer	17-7PH	4
16	Packing Nut	300 Series Stainless Steel	1
17	Lock Tab	300 Series Stainless Steel	1
18	Handle	304 Stainless Steel ASTM A351 CF8	1
19	Handle Nut	300 Series Stainless Steel	1
20	Anti - Static Ball	300 Series Stainless Steel	1
21	Anti - Static Spring	Hard Drawn Stainless Steel	1
22	Stop Pin	300 Series Stainless Steel	2
23	Lock Plate	300 Series Stainless Steel	1

Note:

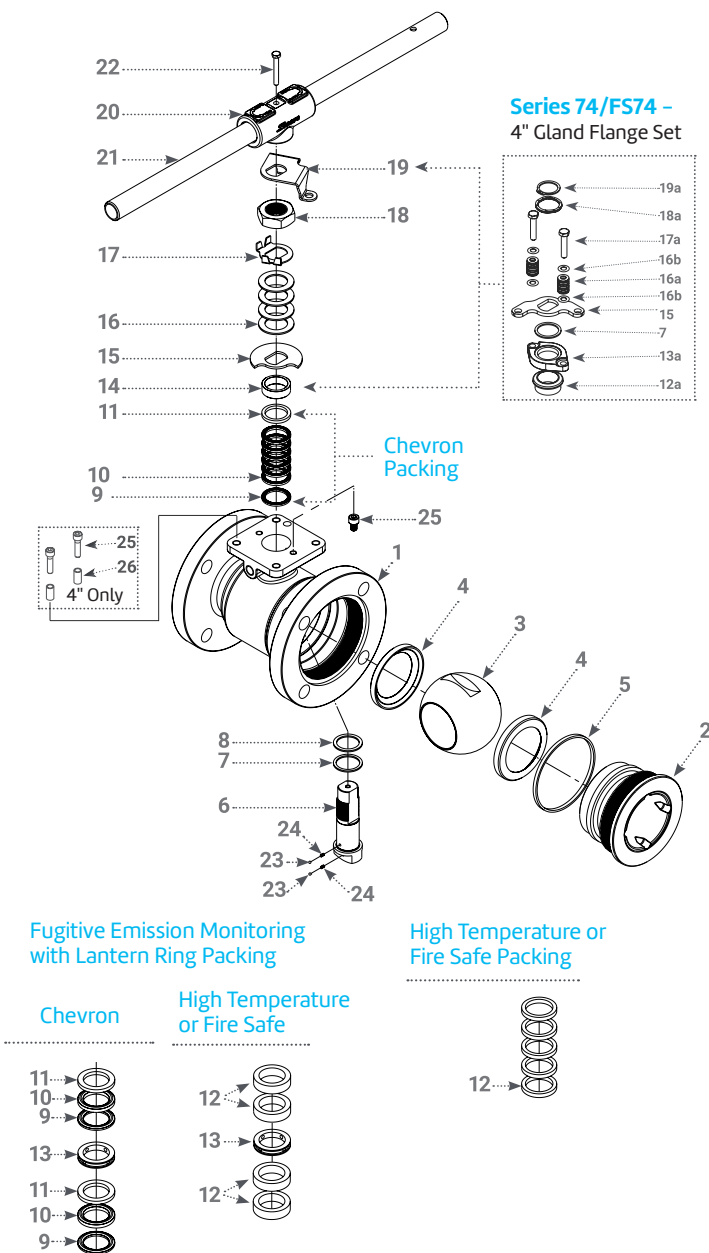
The quantities listed in the stem arrangement are for fugitive emission assemblies. Standard stem assemblies carry more seals and no lantern rings.

* these parts are used in repair kits.

** middle stem packing is only used from size 1-1/2" and above.

*** Other materials available, call to discuss your special requirements.

Series 74/FS74 3" — 4"



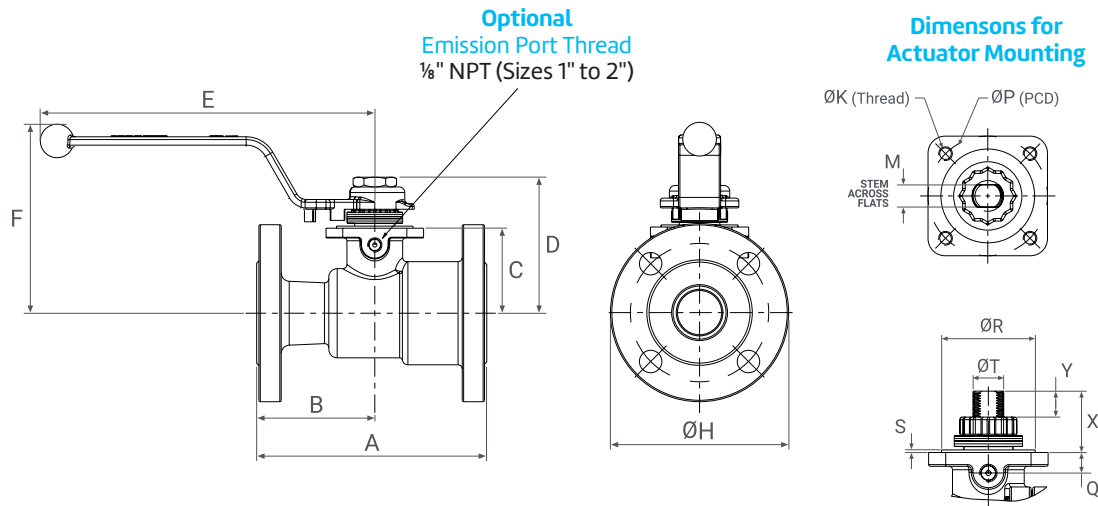
Parts & Materials

Item	Description	Material	Qty.
3	Ball	316 Stainless Steel Alloy 20	1
4*	Seat	PTFE, RTFE, TFM®, Nova, PEEK	2
5*	Body Seal	PTFE, Graphite	1
6	Stem	Stainless Steel 17-4PH Alloy 20	1
7*	Thrust Bearing - Bottom	Nova, PEEK	1
8*	Thrust Bearing - Top	Nova	1
9*	Stem Packing - Bottom	PTFE, TFM®, Nova	2
10*	Stem Packing - Middle	PTFE, TFM®, Nova	2
11*	Stem Packing - Top	PTFE, TFM®, Nova	2
12*	Stem Packing	Graphite (FS or high temperature)	4
12a	Gland Position Ring	300 Series Stainless Steel	1
13	Lantern Ring	300 Series Stainless Steel	1
13a	Gland (size 4" only)	316 Stainless Steel A351 CF8M	1
14	Gland	300 Series Stainless Steel	2
15	Stop Plate	300 Series Stainless Steel	1
16	Belleville Washer	17-7PH	4
16a	Belleville Washer	17-7PH	16
16b	Washer	300 Series Stainless Steel	4
17	Lock Tab	300 Series Stainless Steel	1
17a	Gland Bolt	300 Series Stainless Steel	2
18	Packing Nut	300 Series Stainless Steel	1
18a	Retainer Spring	300 Series Stainless Steel	1
19	Lock Plate	300 Series Stainless Steel	1
19a	Lock Plate	300 Series Stainless Steel	1
20	Wrench Block	304 Stainless Steel ASTM A351CF8	1
21	Handle Pipe	Stainless Steel Zinc Plated Carbon Steel	1
22	Wrench Bolt	300 Series Stainless Steel	1
23	Anti-Static Ball	300 Series Stainless Steel	2
24	Anti-Static Spring	Hard Drawn Stainless Steel	2
25	Stop Pin	300 Series Stainless Steel	1/2
26	Stop Pin Sleeve	300 Series Stainless Steel	2

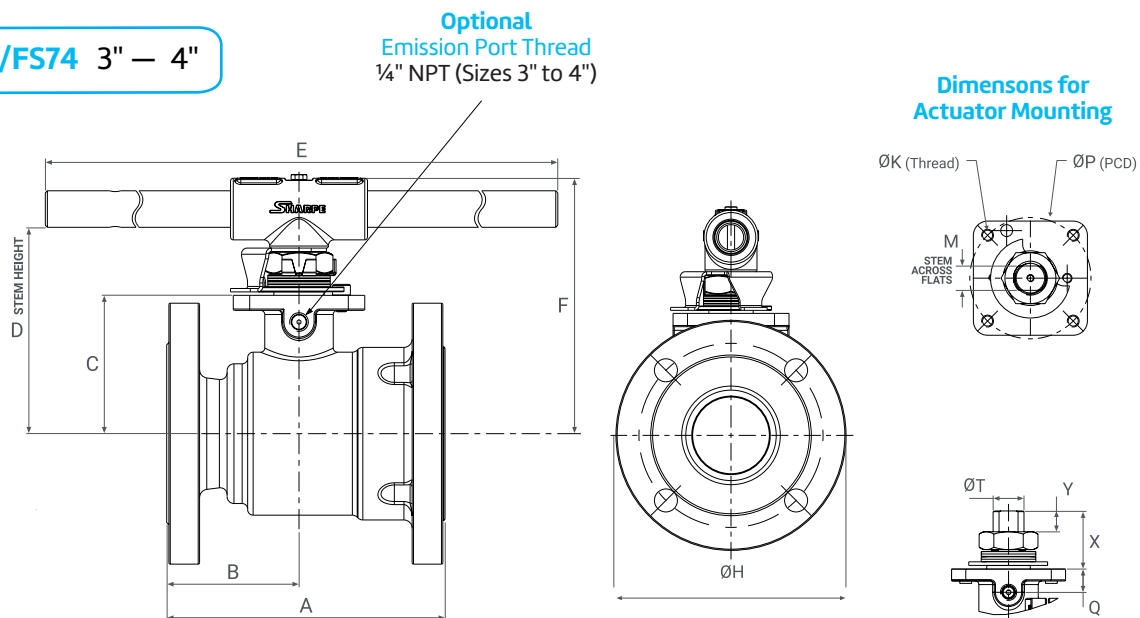
Note: The quantities listed in the stem arrangement are for fugitive emission assemblies. Standard stem assemblies carry more seals and no lantern rings.

* these parts are used in repair kits.

Series 74/FS74 1" – 2"



Series 74/FS74 3" – 4"

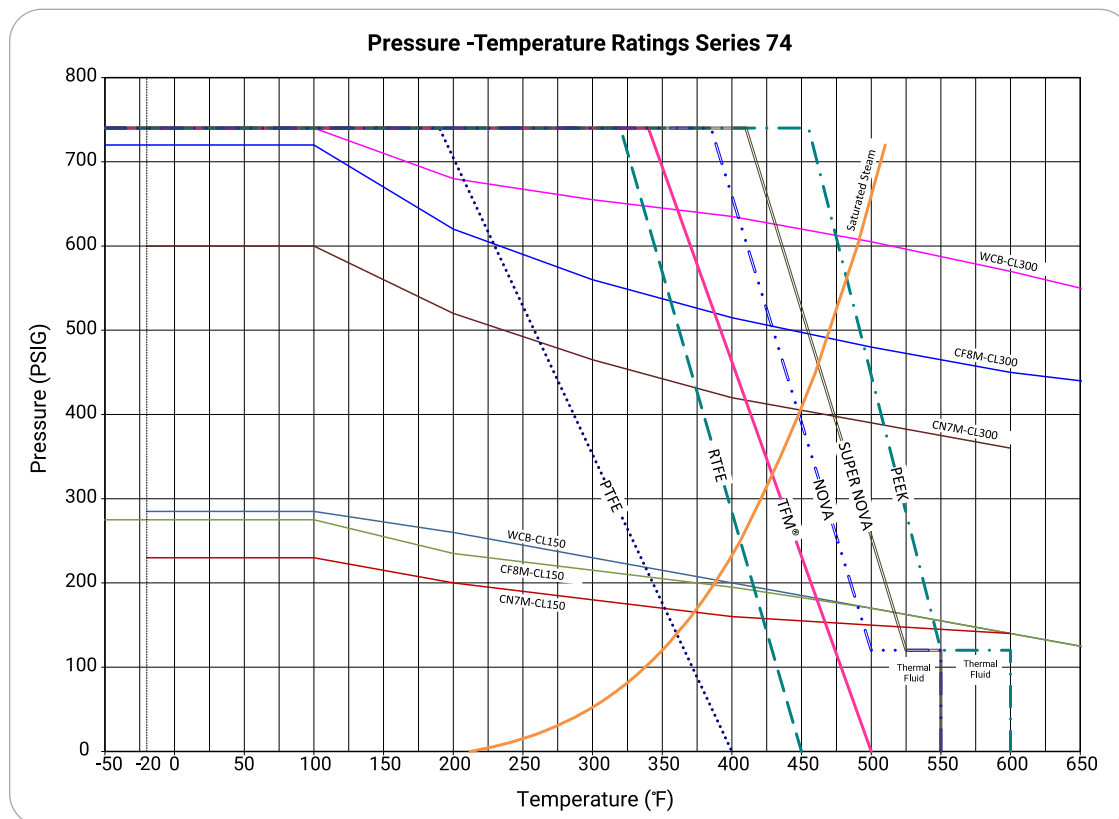


Dimensions (Inches)

Size	ØPORT	A Class 150	A Class 300	B Class 150	B Class 300	C	D	E	F	ØH Class 150	ØH Class 300	K (Thread)	M	ØP (PCD)	Q	ØR	S	ØT	X	Y
1"	0.81	5.00	6.50	2.70	2.72	1.53	2.28	6.40	3.68	4.25	4.88	M5-P0.8	0.264	F04 (1.65)	0.57	1.181	0.394	0.394	0.74	0.37
1½"	1.24	6.50	7.50	3.35	3.21	2.40	3.82	9.45	5.35	6.10	6.12	M8-P1.25	0.512	F07 (2.76)	0.47	2.165	0.059	0.709	1.41	0.54
2"	1.50	7.00	8.50	3.86	5.35	2.56	3.98	9.45	5.51	6.50	6.50	M8-P1.26	0.512	F07 (2.76)	0.47	2.165	0.059	0.709	1.41	0.54
3"	2.50	8.00	11.12	3.82	6.93	3.98	5.90	23.6	7.36	7.52	8.27	M10-P1.5	0.807	F10 (4.02)	0.77	NA	NA	1.024	1.93	0.68
4"	3.25	9.00	12.00	4.80	7.79	4.59	6.50	23.6	7.95	9.02	10.0	M10-P1.5	0.807	F10 (4.02)	0.77	NA	NA	1.024	1.93	0.68

Note: The dimensions above are for informational purposes only. Please refer to Sharpe® Valves if you need dimensions for construction.

Technical Information



Sharpe® Seat Materials

T – Virgin PTFE

Polytetrafluoroethylene is a Fluorocarbon-based polymer. This seating material has excellent chemical resistance and low coefficient of friction. Its temperature range is -100°F to 400°F (-73°C to 204°C). Color - white.

M – TFM® PTFE

Dyneon TFM® PTFE is a second generation PTFE with improved chemical and heat resistant properties over first generation PTFE and exhibits better stress recovery. Its temperature range is -100°F to 500°F (-73°C to 260°C). Color - white.

R – Reinforced Polytetrafluoroethylene

(RTFE 15% Glass Filled). PTFE's mechanical properties are enhanced by adding filler material to provide improved strength, stability and wear resistance. Its temperature range is from -320°F to 450°F (-196°C to 204°C). Color-off-white.

N – Nova

This is a Teflon base filled with glass amorphous carbon powder and graphite. It has a lower thermal contraction/expansion than PTFE, and is ideal for steam or thermal fluid applications. Its temperature range is from -50°F to 550°F (-45°C to 288°C). Color - black.

B – Super Nova

A free-flowing compound based on TFM® containing electro-graphitized carbon. It features: increased thermal dimensional stability and surface hardness, improved deformation under load, reduced friction and wear, and good chemical stability. It has a high limiting oxygen index (LOI), low coefficient of friction, very good mechanical properties and exceptional temperature resistance. It is used as a seat material in chemical processing and automotive industries. It is ideal to use with steam and thermal fluid applications up to 550°F (288°C) and as low as -40°F (-40°C). Color - black.

P – PEEK (Unfilled) Polyetheretherketone

PEEK Polymer offers a unique combination of chemical, mechanical and thermal properties. Excellent for water and steam applications at elevated temperatures up to 600°F (315°C). Color - beige.

Other seat materials

Other seat material are available according to the application, such as very high temperature or cryogenic conditions.

Building connections that last™

Technical Information

Technical Information

Valve Size	Flow Coeff.Cv	Approx. Weight Lbs	
		Class 150	Class 300
1"	30	8	11
1½"	82	18	24
2"	120	21	25
3"	350	39	49
4"	720	65	85



Applicable Standards

Wall Thickness	ASME B16.34
Face to Face Dimensions	ASME B16.10
Fugitive Emission	ISO 15848-1 (with I or N stem packing)
Flange Dimensions	ASME B16.5
Basic Design	ASME B16.34, API 608 5th Edt.
Fire Safe	API 607 6th Edt. (FS74 only)
Pressure Test	API 598, MSS-SP 72
Mounting Dimensions	ISO 5211
NACE (Only with 316 SS Stem)	MR-0175 / ISO 15156
Marking	MSS-SP 25

Notes: TFM® is a registered trademark of Dyneon, LLC.

Series 74/FS74 High Performance Flanged Standard Port Ball Valve



How to order Sharpe® Series 74/FS74

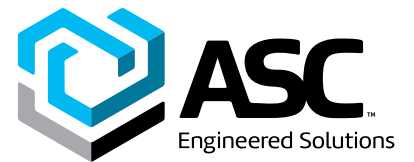
1"	FS74	1	-	6	6	6	R	G	G	-	1/1	-	X	-	OH
Size	Series	Class		Body/Ends	Ball	Stem	Seat	Body Seal	Stem Packing		Ends		Service		Options

Size	Series		Body & Ends		Seat		Body Seal		Ends		Options		
1"	74	Reduced Port	2	Alloy 20*	B	Super Nova	G	Graphite	1	Class 150 Flanged RF	OH	Oval Handle*	
1½"		FS74	Fire Safe	4		Carbon Steel	I	Impregnated Graphite	1F	Class150 Flanged FF	F1	1 Emission Port	
2"	Fire Safe valve must use: Graphite or Impregnated Graphite Body Seals and Stem Packing. PTFE, RTFE, TFM®, Nova, Super Nova Seats.			6	316 Stainless Steel	R	15% Glass Filled	M	TFM®	3	Class 300 Flanged RF	F2	2 Emission Port
3"					M		TFM®			3F	Class 300 Flanged FF	L	Lockable Stem Extension**
4"						N	Nova	Stem Packing				VB	Vented Ball
						T	PTFE	G	Graphite			SJ	Steam Jacket
						P	Virgin PEEK	I	Impregnated Graphite			SJ3	Steam Jacket With 3 Outlets
								M	TFM®			TP	Tamper Proof Locking Device
								N	Nova			DMH	Spring Return Handle***
								T	PTFE			HC	High Cycle Stem
												PN4	Packing Nut Design 4" Only

Note:

Responsibility for proper selection, use and maintenance of any product remains solely with the purchaser and end user. We reserve the right to modify or improve the designs or specifications of any product, at any time without notice. Other materials & options are available, please contact us with your requirements.

Building connections that last™



Sharpe® Series 75

High Purity Tube Full Port
3 & 4-Way Ball Valve



Design & Features



High Purity Tube
Full Port 3 &
4-Way Ball Valve

Body Material

316 Stainless Steel.

Four Seat Design

Three & four way Series 75 valves utilize four seats to securely support the ball.

Flow Plans

A variety of flow plans are available in both "T" and "L" port configurations.

Stem Design

Live-loaded, bottom entry, blowout proof, anti-static stem featuring packing that extends valve cycle life over conventional ball valves and is best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

ISO 5211 Integral Mounting Pad

Direct mount pad eliminates need for brackets and couplers*.

Ideal for actuation.

Actuators may be retrofitted on existing Sharpe® Series 75 without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

End Connections

Clamp ends are readily available.

Polish

Ball and ends are polished to a minimum 20Ra.

Lockable Handle

All Sharpe® Series 75 valves are supplied with lockable lever or pipe handles.

Traceability

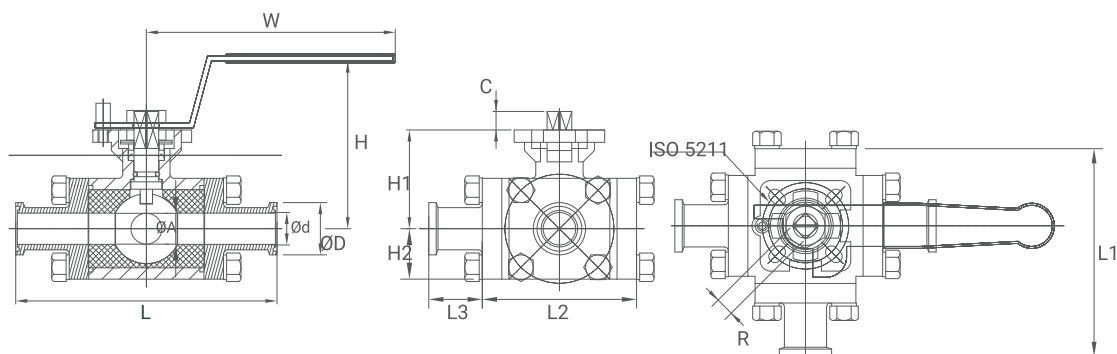
Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.

Note:

*Mounting bracket must be used for high temperature (>180°F) and steam applications.

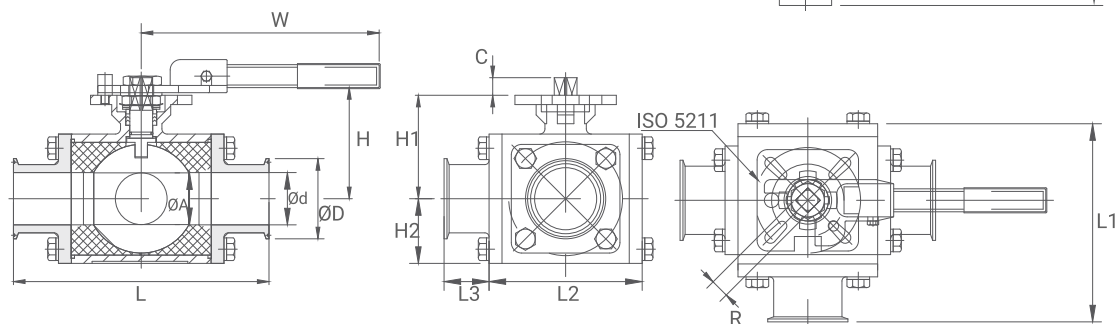
Three-Way Design

½" – 2"



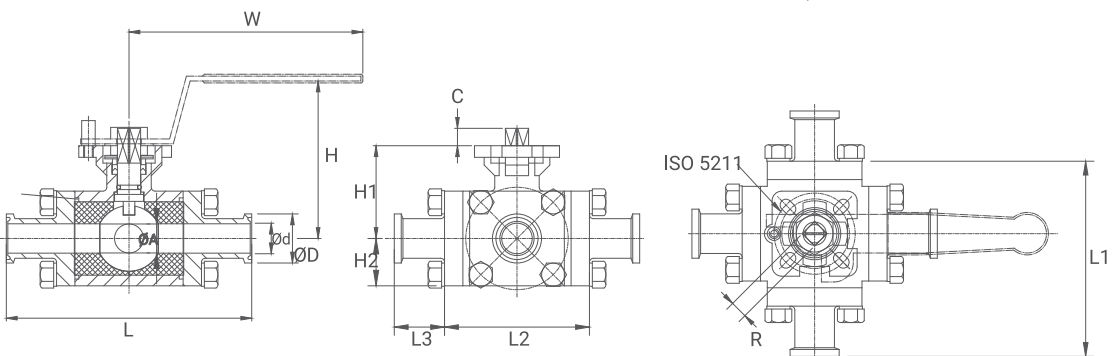
Three-Way Design

3"



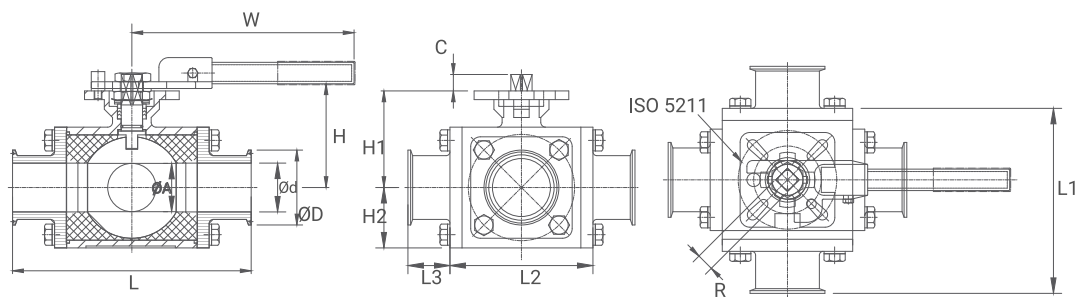
4-Way Design

½" – 2"



4-Way Design

3"

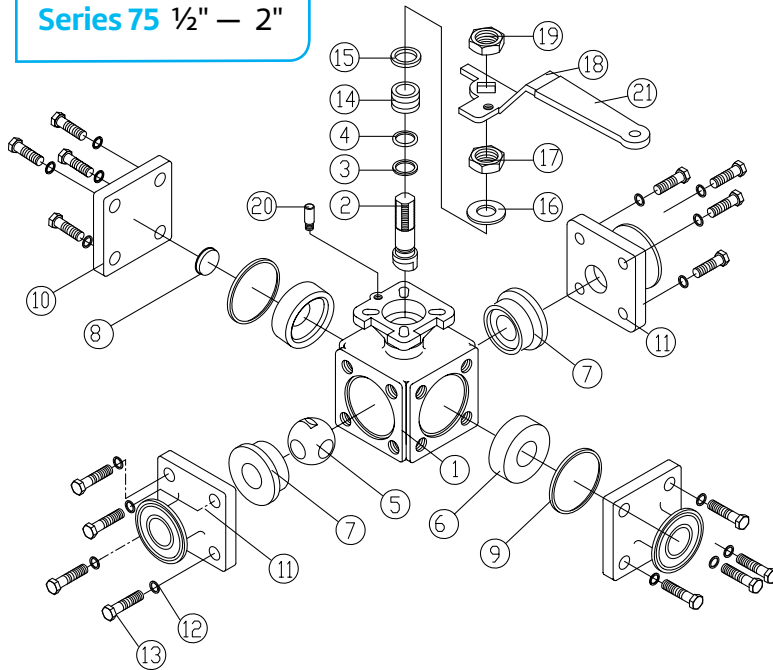


Dimensions (Inches)

Size	L	L1	L2	L3	H	H1	H2	ØA	Ød	ØD	C	W	ISO	R
½	4.65	3.58	2.66	0.92	3.07	1.75	0.93	0.37	0.37	1.00	0.35	4.76	F03 / F04	M12*1.75 - 9
¾	5.00	3.88	2.87	1.00	3.23	1.89	1.02	0.62	0.62	1.00	0.35	4.76	F03 / F04	M12*1.75 - 9
1	6.00	4.62	3.33	1.30	3.54	2.32	1.20	0.87	0.87	0.80	0.43	5.39	F04 / F05	M14*P2 - 11
1-½	6.89	5.48	4.21	1.27	4.09	2.83	1.57	1.38	1.38	1.98	0.55	7.17	F05 / F07	M18*P2.5 - 14
2	7.93	6.55	5.18	1.37	4.51	3.23	1.97	1.87	1.87	2.52	0.55	7.17	F05 / F07	M18*P2.5 - 14
3	10.26	8.03	6.18	1.85	5.28	4.94	2.91	2.87	2.87	3.58	0.91	15.75	F10 / F12	1-½*12UNF

Parts & Materials

Series 75 ½" – 2"

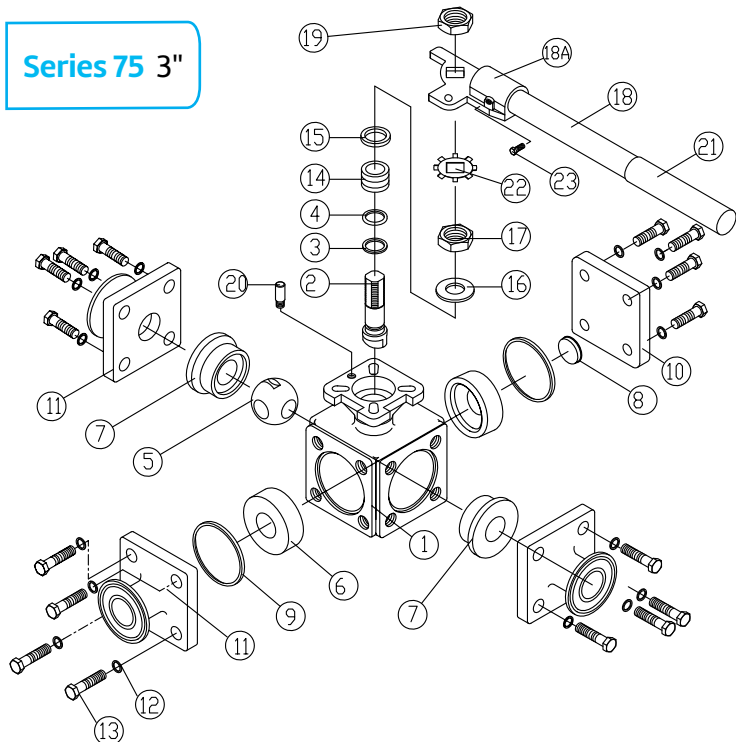


No.	Part Name	Qty.	Material
1	Body	1	316 Stainless Steel, ASTM 351 CF8M
2	Stem	1	316 Stainless Steel
3	Thrust Washer	1	PTFE
4	O-Ring	1	Viton®
5	Ball	1	316 Stainless Steel, ASTM 351 CF8M
6	Seat 1	1/2	TFM®, TFM® Cavity Fill
7	Seat 2	1/2	TFM®, TFM® Cavity Fill
8	Seat Cap	0/1	TFM®, TFM® Cavity Fill
9	Gasket	2	PTFE
10	End Cap	0/1	316 Stainless Steel, ASTM 351 CF8M
11	Cap	3/4	316 Stainless Steel, ASTM 351 CF8M
12	Spring Washer	16	300 Series Stainless Steel
13	Bolt	16	300 Series Stainless Steel
14	Stem Packing	1	PTFE
15	Ring	1	300 Series Stainless Steel
16	Bellville Washer	2	300 Series Stainless Steel
17	Stem Nut	1	300 Series Stainless Steel
18	Handle	1	300 Series Stainless Steel
18A	Handle Head	1	300 Series Stainless Steel
19	Handle Nut	1	300 Series Stainless Steel
20	Stop Pin	1	300 Series Stainless Steel
21	Handle Cover	1	Plastic
22	Lock Washer	1	300 Series Stainless Steel
23	Handle Bolt	1	300 Series Stainless Steel

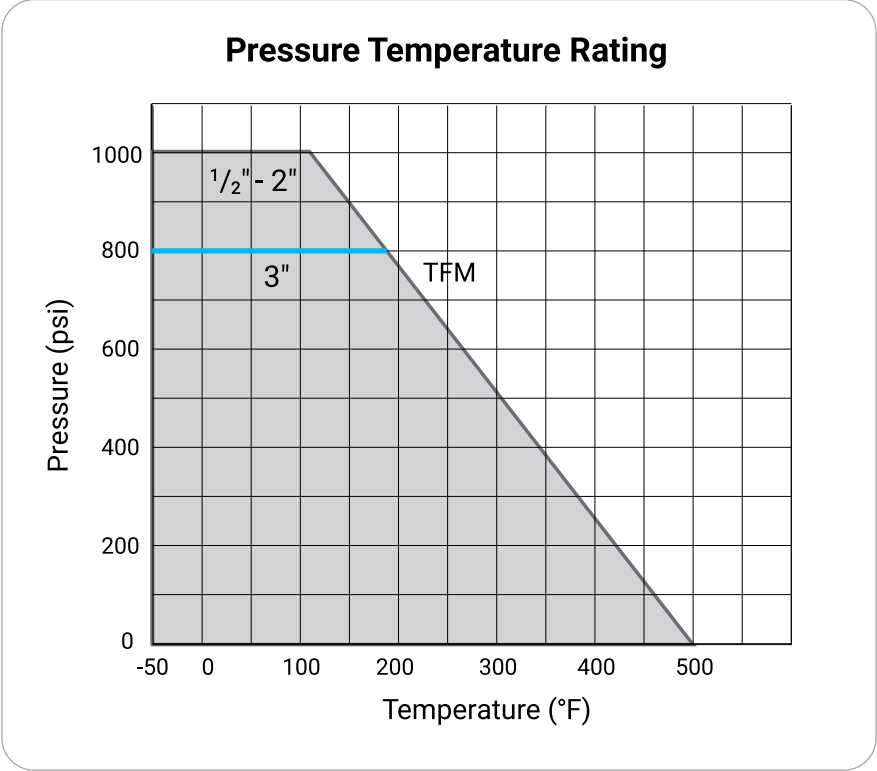
Note:

Shown in cavity fill configuration.

Series 75 3"



Technical Information



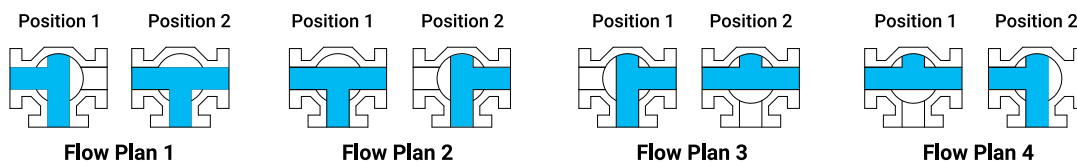
Technical Information

Size	Torque
	in/lbs
1/2	63
3/4	68
1	88
1-1/2	232
2	544
3	1278

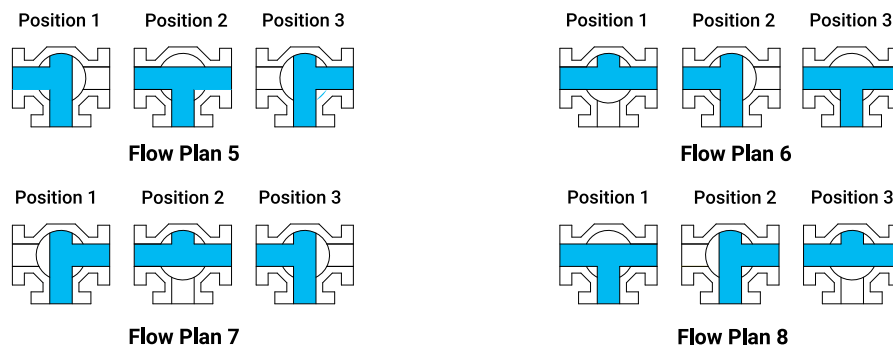
Size	Port Diameter (in.)	L Port	T Port Through	T Port Branched
1/2	0.37	3.5	5.3	3.0
3/4	0.62	11	16	9.2
1	0.87	22	33	16
1-1/2	1.37	56	85	49
2	1.87	110	160	93
3	2.87	270	410	240

Technical Information

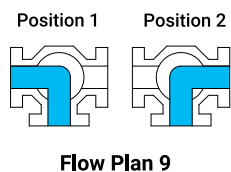
T-Port 90° Turn



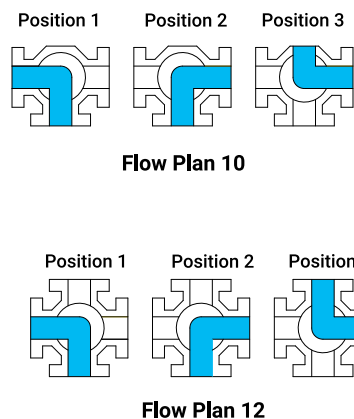
T-Port 180° Turn



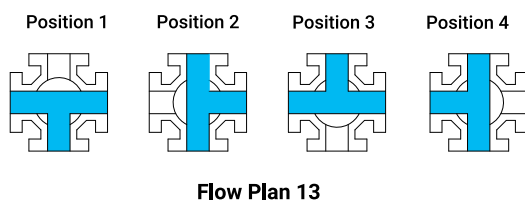
L-Port 90° Turn



L - Port 180° Turn



T-Port 270° Turn



Note: *Not to be used as an isolation valve.

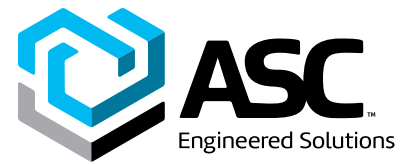


How to order
Sharpe® Series 75

Size	Series	Body		Ball & Stem		Seat		Seal		End Connection	Flow Plan		Options	
1/2	75	6	316 Stainless Steel	6	316 Stainless Steel	M	TFM® Seat**	T	PTFE	8CE 316 Stainless Steel Clamp Ends	1	7	EP	Electro Polish*
3/4						C	TFM® Cavity Fill				2	8	3	15RA Polish*
1											3	9	SF	Silicone Free* (as per mfg's standard)
1-1/2											4	10		
2											5	12		
3										6	13			

Note:
*POA
**TFM is a registered trademark of Dyneon, LLC
Due to continuous development of our product range, we reserve the right to change the dimensions and information for this product as required.

Building connections that last™



Sharpe® Series 76

High Performance Three-Way Ball Valve



Design & Features



High Performance
3-Way Ball Valve

Body Material

316 Stainless Steel.

Four Seat Design

Three way Series 76 valves utilize four seats to securely support the ball.

Flow Plans

A variety of flow plans are available in both "T" and "L" port configurations.

Stem Design

Live-loaded, bottom entry, blowout proof, anti-static stem featuring packing that extends valve cycle life over conventional ball valves and is best choice for actuation

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

ISO 5211 Integral Mounting Pad

Direct mount pad eliminates need for brackets and couplers*.

Ideal for actuation.

Actuators may be retrofitted on existing Sharpe® Series 76 without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

End Connections

Threaded and Socket Weld end connections are available.

Lockable Handle

All Sharpe® Series 76 valves are supplied with lockable lever handles.

Traceability

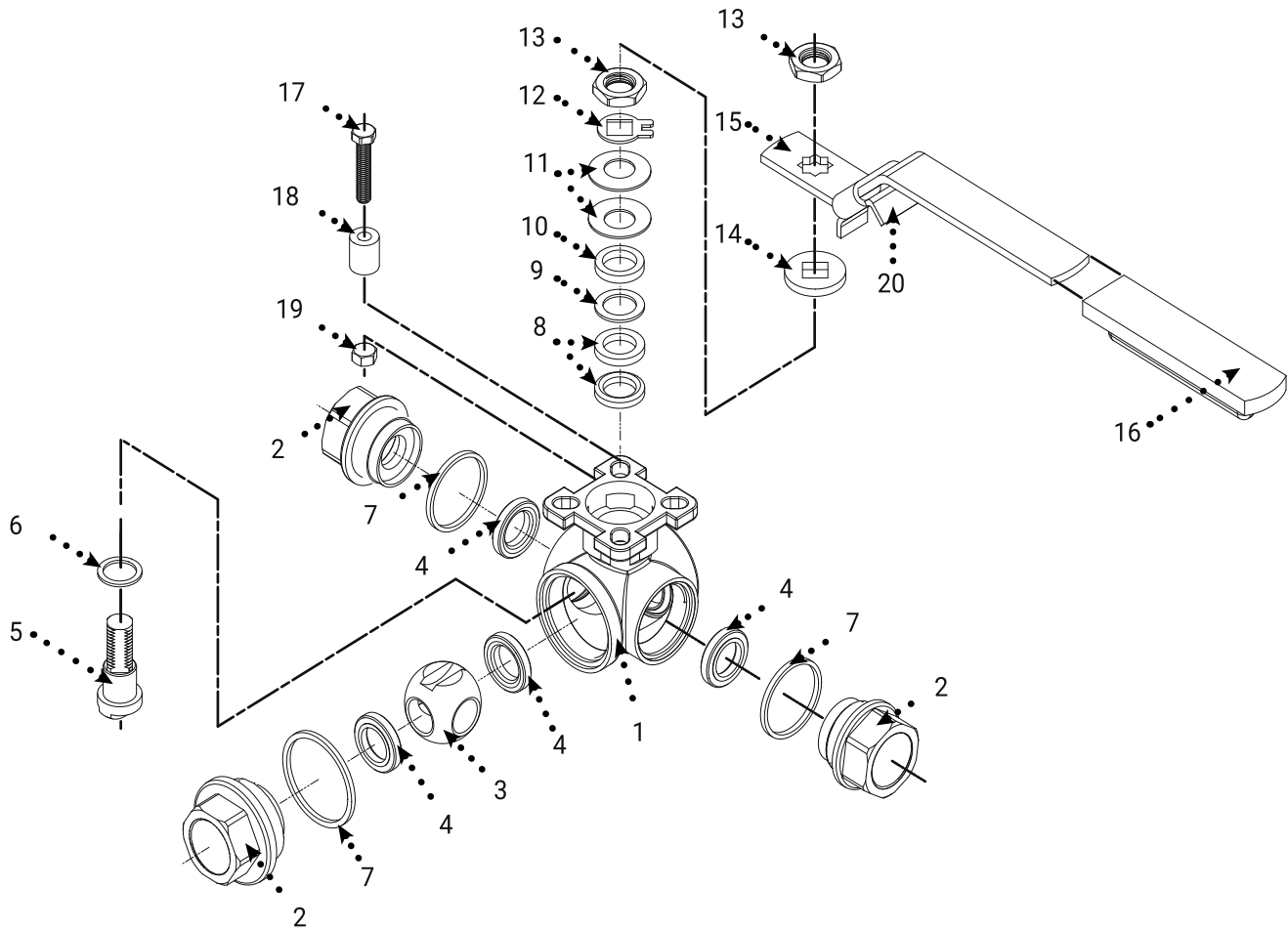
Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.

Note:

*Mounting bracket must be used for high temperature (>180°F) and steam applications.

Building connections that last™

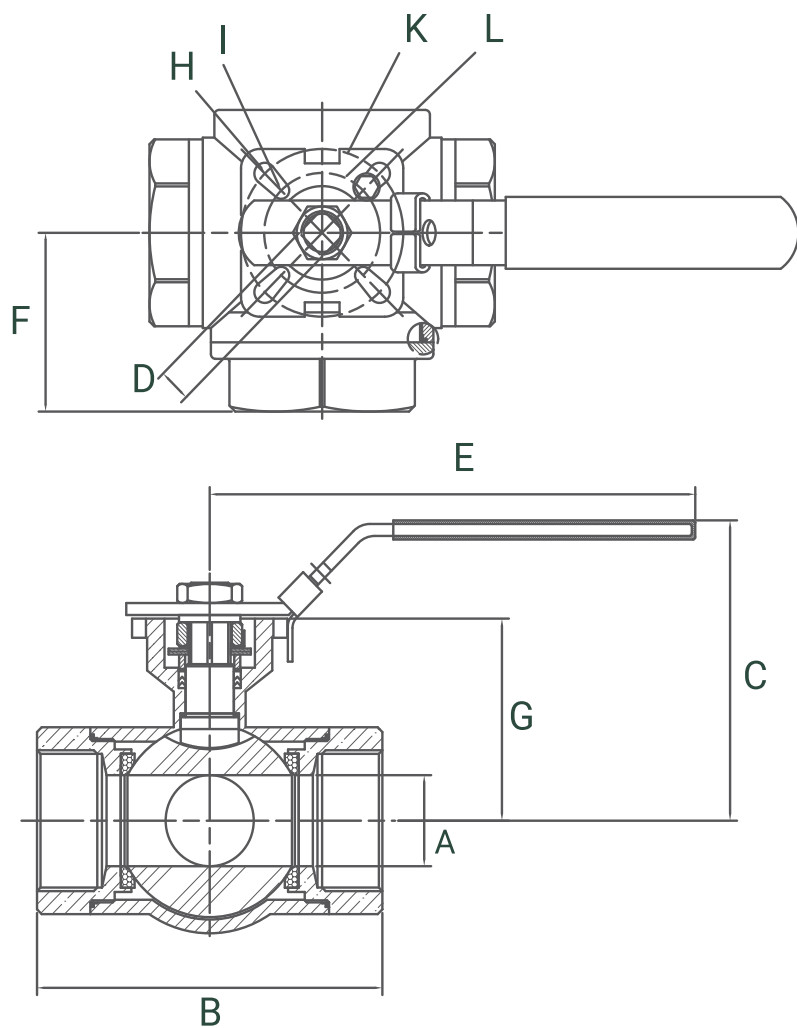
Parts & Materials



No.	Part Name	Qty.	Material
1	Body	1	316 Stainless Steel ASTM A351 CF8M
2	Ends	3	316 Stainless Steel ASTM A351 CF8M
3	Ball	1	316 Stainless Steel
4	Seat	4	TFM®
5	Stem	1	316 Stainless Steel
6	Thrust Washer	1	PTFE
7	End Seals	3	PTFE
8	Stem Packing	2	PTFE
9	Thrust Washer	1	TFM®
10	Gland	1	300 Series Stainless Steel

No.	Part Name	Qty.	Material
11	Belleville Washer	2	300 Series Stainless Steel
12	Lock Tab	1	300 Series Stainless Steel
13	Handle Nut	2	300 Series Stainless Steel
14	Washer	1	300 Series Stainless Steel
15	Handle	1	300 Series Stainless Steel
16	Handle Sleeve	1	Vinyl Grip
17	Stopper	1	300 Series Stainless Steel
18	Stopper Sleeve	1	300 Series Stainless Steel
19	Stopper Nut	1	300 Series Stainless Steel
20	Locking Device	1	300 Series Stainless Steel

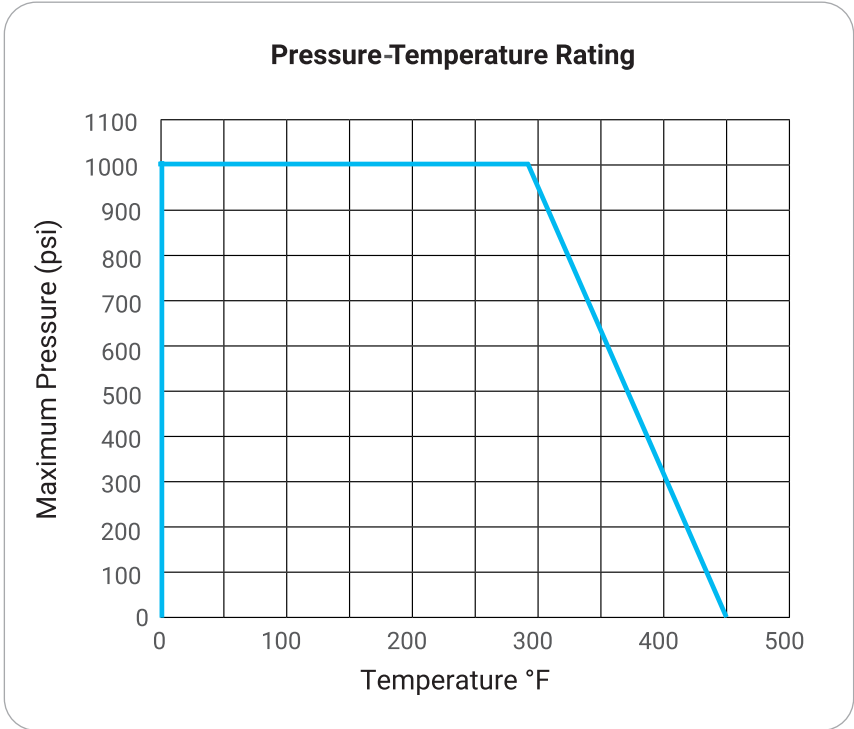
Building connections that last™



Dimensions (Inches)

Size	A	B	C	D	E	F	G	I	H	J	K	L
1/4	0.43	2.98	2.56	0.35	5.20	1.51	1.45	0.24	0.24	0.32	F04	F03
3/8	0.43	2.98	2.56	0.35	5.20	1.51	1.45	0.24	0.24	0.32	F04	F03
1/2	0.49	2.98	2.56	0.35	5.20	1.51	1.45	0.24	0.24	0.32	F04	F03
3/4	0.63	3.41	2.82	0.35	5.20	1.76	1.74	0.24	0.24	0.35	F04	F03
1	0.79	4.06	3.71	0.43	7.09	2.00	2.17	0.24	0.28	0.45	F05	F04
1-1/4	0.98	4.65	3.94	0.43	7.09	2.27	2.39	0.24	0.28	0.45	F05	F04
1-1/2	1.26	4.95	4.56	0.55	8.86	2.46	2.96	0.28	0.35	0.59	F07	F05
2	1.50	5.87	4.92	0.55	8.86	2.93	3.32	0.28	0.35	0.59	F07	F05

Technical Information

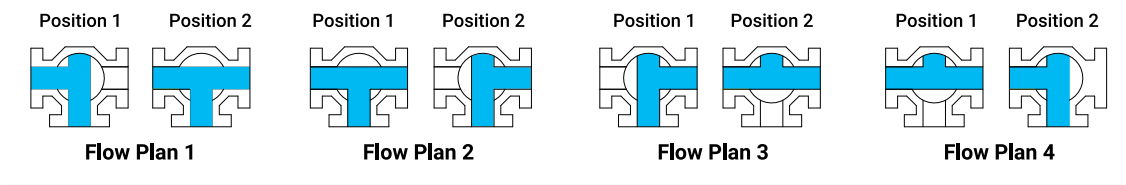


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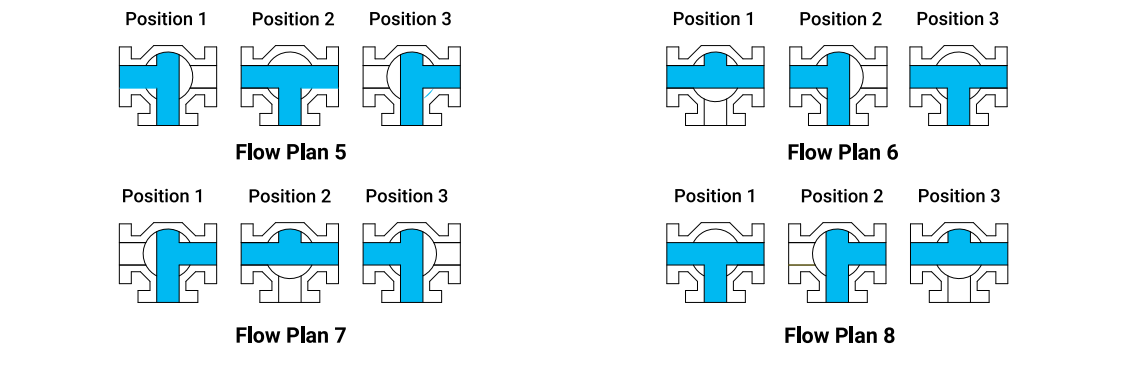
Size	CV T Port	CV L Port	Torque in/Lbs		Weight Lbs
			PTFE "T" Seat	TFM® "M" Seat	
1/4	5	3	35	40	1.65
3/8	6	3	35	40	1.65
1/2	8	4	35	40	1.65
3/4	13	7	70	73	2.65
1	22	12	82	100	3.97
1-1/4	35	20	182	183	5.51
1-1/2	59	34	235	241	7.94
2	88	51	495	501	12.79

Technical Information

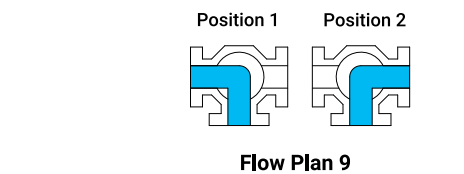
T-Port 90° Turn



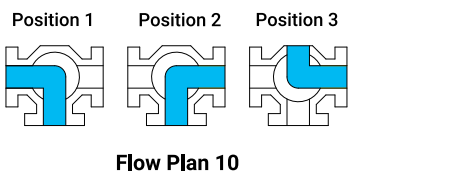
T-Port 180° Turn



L-Port 90° Turn



L - Port 180° Turn



Note: *Not to be used as an isolation valve.



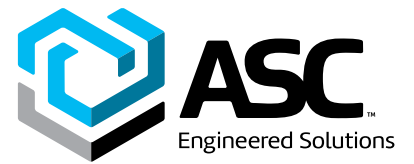
How to order
Sharpe® Series 76

Size	Series	Body & Ends		Ball & Stem		Seat		Seal		Ends		Flow Plan	
1/4	76	6	316 Stainless Steel	6	316 Stainless Steel	T	PTFE	T	PTFE	TE	Threaded	1	6
3/8						M	TFM® Seat			SW	Socket Weld	2	7
1/2												3	8
3/4												4	9
1												5	10
1-1/4													
1-1/2													
2													

Note:

TFM is a registered trademark of Dyneon, LLC
Due to continuous development of our product range, we reserve the right to change the dimensions and information for this product as required.

Building connections that last™



Sharpe® Series 77

3 & 4-Way High
Performance Ball Valve



Design & Features



3 and 4-Way High Performance Ball Valve

Body Material

316 Stainless Steel & Carbon Steel.

Full Port Design

All sizes from ½" through 4" are full port designs at all connections.

Bodies rated to 600 CWP.

3-Piece Design

In-line serviceable swing-out center section allows easy access to internal valve components without disturbing alignment of pipe.

Stem Design

Live-loaded, bottom entry, blowout proof, anti-static stem featuring packing that extends valve cycle life over conventional ball valves and is the best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

ISO 5211 Integral Mounting Pad

Ideal for actuation.

Centering lip feature assures precise alignment of bracket, stem and coupler.

Actuators may be retrofitted on existing Sharpe® Series 77 without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

Multi-Port Configurations

The Sharpe® Series 77 Valves are ideal choices for many piping designs involving diverting or mixing.

In certain applications a single Series 77 valve can replace two, three or four two-way valves, reducing cost and saving space.

Four-Seat Design

Three-way and 4-Way Series 77 valves utilize four seats to securely support the ball.

Trunnion Support Ball

Sizes 2" and larger valves incorporate a trunnion supported ball for positive centering and reduced seat wear.

End Connections

Series 77 valves are available in many end connections, including threaded, socket weld and 150# flanged.

Lockable Handle

All Sharpe Series 77 valves are supplied with lockable lever or pipe handles.

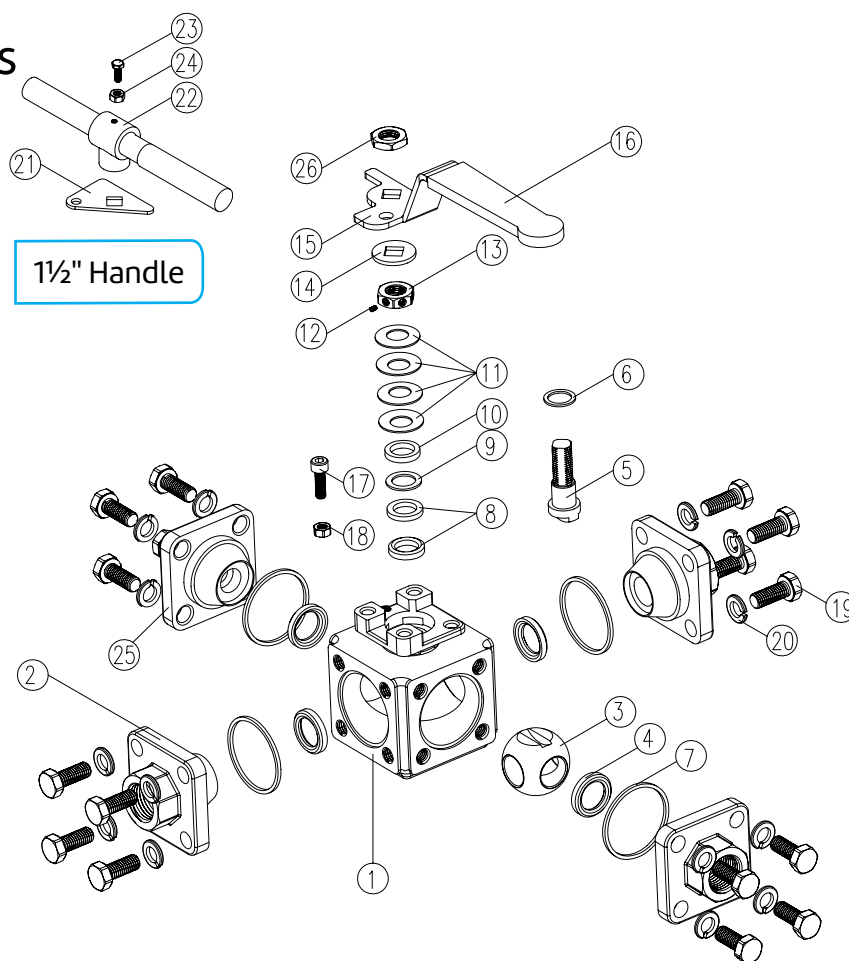
Traceability

Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.

Note:

*Mounting bracket must be used for high temperature (>180°F) and steam applications.

Parts & Materials



Sizes (1/2" — 1 1/2")

No.	Part Name	Qty.	Material
1	Body	1	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**
2	Ends	3 or 4	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**
3	Ball	1	316 Stainless Steel
4	Seat	4	TFM™ 1600/TFM™ Cavity Filler
5	Stem	1	316 Stainless Steel
6	Lower Thrust Washer	1	TFM™ 1600
7	Body Seal	4	PTFE
8	Chevron Steam Packing	1 set	PTFE
9	Thrust Washer	1	TFM™ 1600
10	Gland	1	300 Series Stainless Steel
11	Belleville Washer	4	SUS304-CSP
12	Socket Set Screws	1	300 Series Stainless Steel
13	Stem Nut	1	300 Series Stainless Steel

No.	Part Name	Qty.	Material
14	Washer	1	300 Series Stainless Steel
15	Handle	1	300 Series Stainless Steel
16	Handle Sleeve	1	Vinyl
17	Stop Bolt	1	300 Series Stainless Steel
18	Stop Nut	1	A2-70
19	Bolts	16	300 Series Stainless Steel
20	Bolt Washer	16	300 Series Stainless Steel
21	Stop Plate	1	300 Series Stainless Steel
22	Handle Adapter	1	300 Series Stainless Steel
23	Bolt	1	300 Series Stainless Steel
24	Nut	1	300 Series Stainless Steel
25	Body Flange	1/0*	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**
26	Nut	1	300 Series Stainless Steel

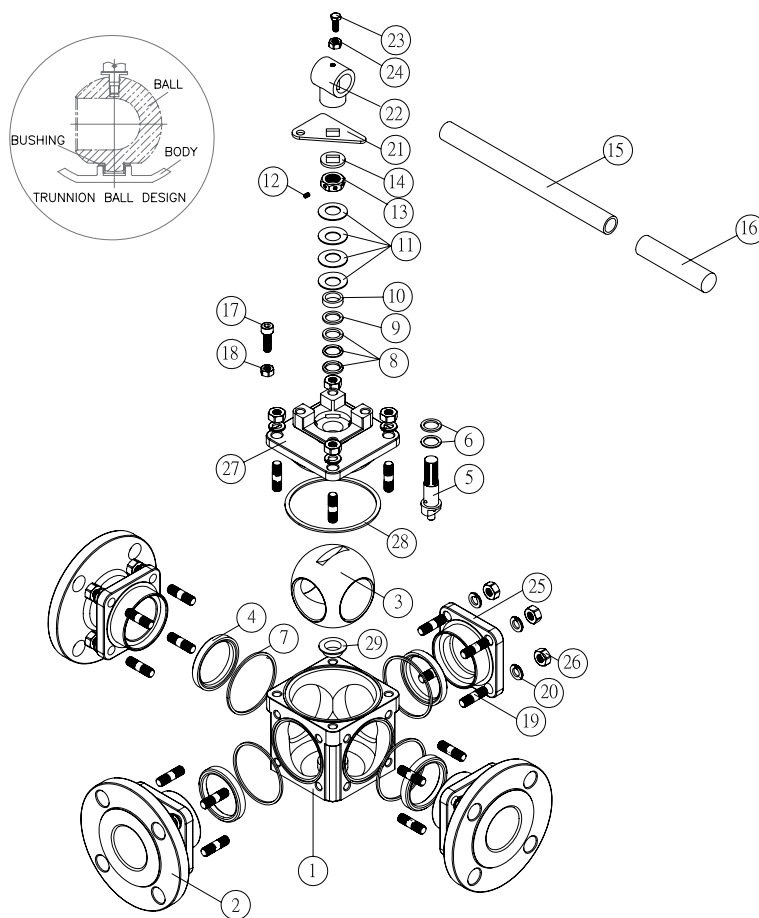
Note:

*1 for three-way, 0 for 4-Way.

**POA.



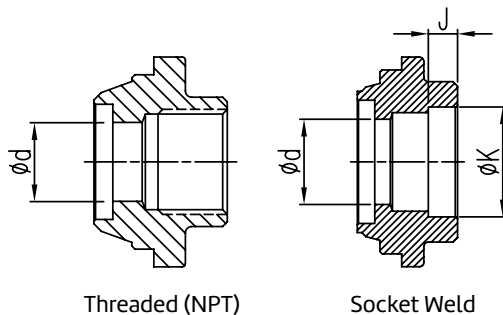
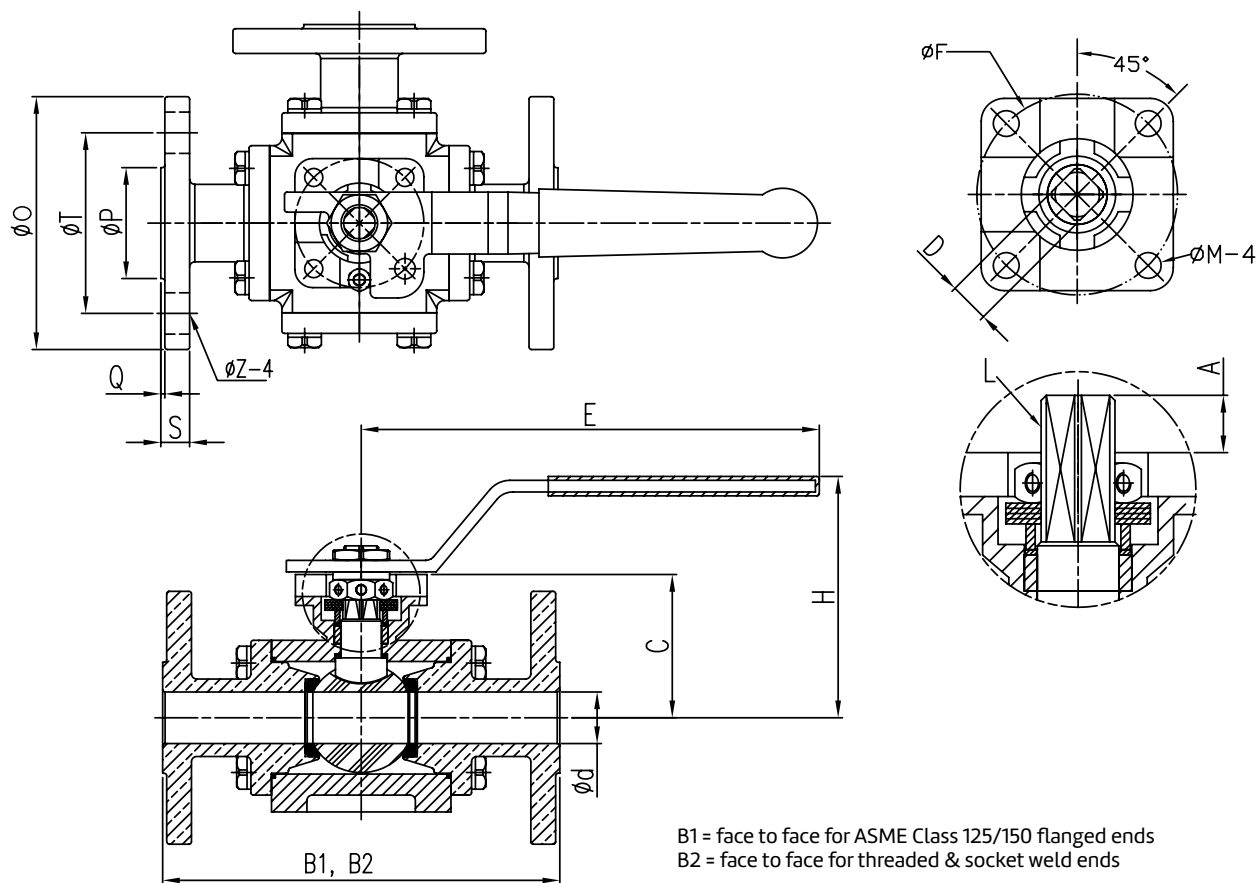
Parts & Materials



Sizes (2" — 4")

No.	Part Name	Qty.	Material	No.	Part Name	Qty.	Material
1	Body	1	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**	16	Handle Sleeve	1	Vinyl
2	Ends	3 or 4	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**	17	Stop Bolt	1	300 Series Stainless Steel
3	Ball	1	316 Stainless Steel ASTM A351 CF8M	18	Stop Nut	1	A2-70
4	Seat	4	TFM™ 1600/ TFM™ Cavity Filler	19	Stud	20	300 Series Stainless Steel
5	Stem	1	316 Stainless Steel	20	Stud Washer	20	300 Series Stainless Steel
6	Lower Thrust Washer	2	TFM™ 1600	21	Stop Plate	1	300 Series Stainless Steel
7	Body Seal	4	PTFE	22	Handle Adapter	1	300 Series Stainless Steel
8	Chevron Stem Packing	1 set	PTFE	23	Bolt	1	300 Series Stainless Steel
9	Thrust Washer	1	TFM™ 1600	24	Nut	1	300 Series Stainless Steel
10	Gland	1	300 Series Stainless Steel	25	Body Flange	1/0*	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**
11	Belleville Washer	4	SUS304-CSP	26	Stud Nut	20	300 Series Stainless Steel
12	Socket Set Screws	1	300 Series Stainless Steel	27	Body Cover	1	316 Stainless Steel ASTM A351 CF8M Carbon Steel ASTM A216 WCB**
13	Stem Nut	1	300 Series Stainless Steel	28	Cover Seal	1	PTFE
14	Washer	1	300 Series Stainless Steel	29	Bushing	1	TFM™ 1600
15	Handle	1	300 Series Stainless Steel				

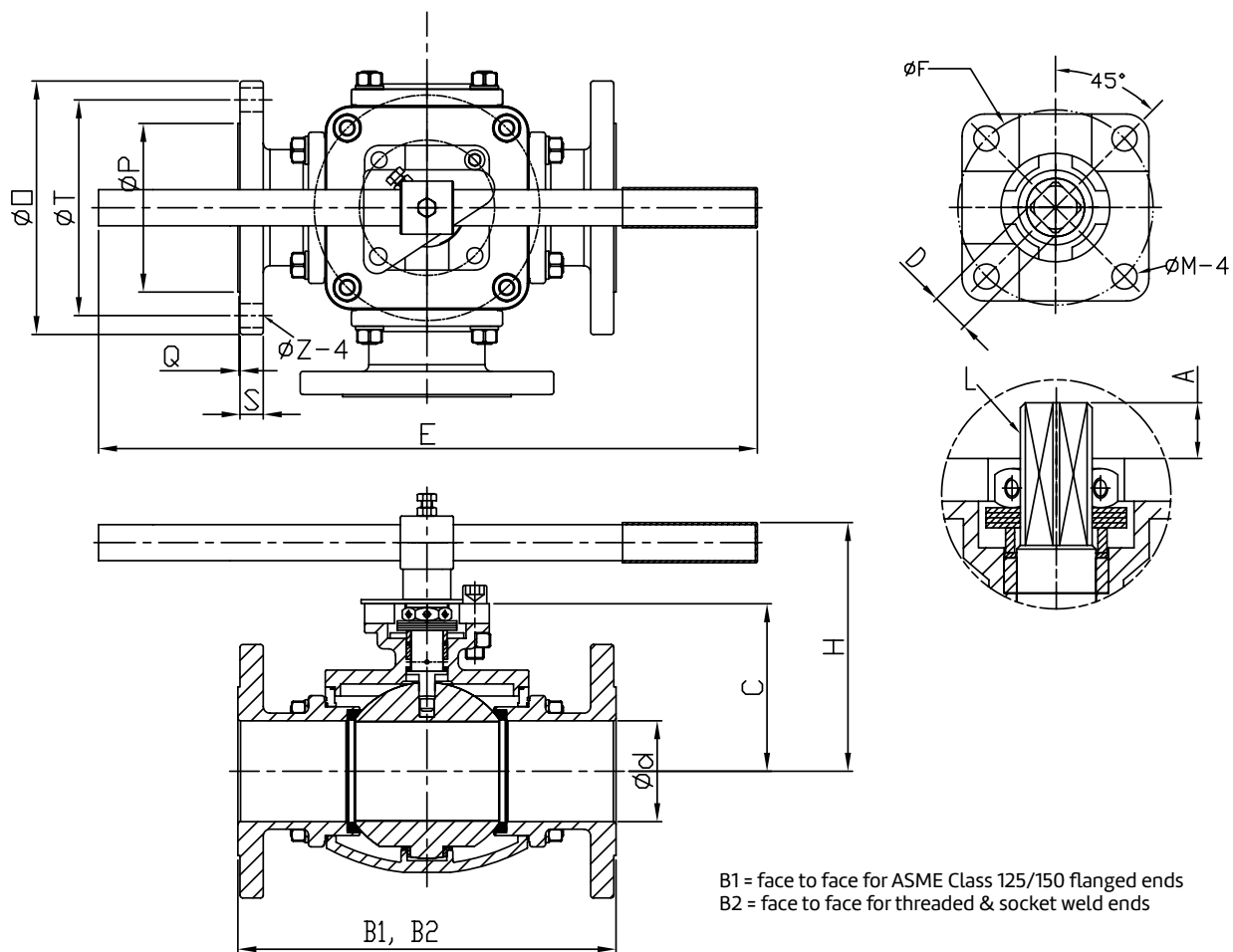
Building connections that last™



Dimensions (1/2" — 1 1/2")

Size	A	B1	B2	C	Ød	D	E	ØF	H	J	K	L	M	Ø0	ØP	Q	S	ØT	ØZ
1/2	0.35	5.84	4.20	1.74	0.610	0.354	5.30	1.65 (F04)	3.19	0.394	0.858	7/16-20 UNF	0.236	3.50	1.38	0.06	0.44	2.38	0.63
3/4	0.43	6.06	4.35	2.19	0.787	0.433	6.99	1.97 (F05)	3.72	0.512	1.079	9/16-18 UNF	0.276	3.86	1.69	0.06	0.44	2.75	0.63
1	0.43	6.63	4.98	2.37	0.984	0.433	6.99	1.97 (F05)	3.90	0.512	1.343	9/16-18 UNF	0.276	4.25	2.00	0.06	0.44	3.13	0.63
1-1/2	0.59	8.36	6.05	3.32	1.496	0.551	9.90	2.75 (F07)	5.16	0.512	1.929	M18x2.5	0.354	5.00	2.88	0.06	0.56	3.88	0.63

Note: The dimensions above are for information only. Please refer to Sharpe® Valves if you need dimensions for construction.

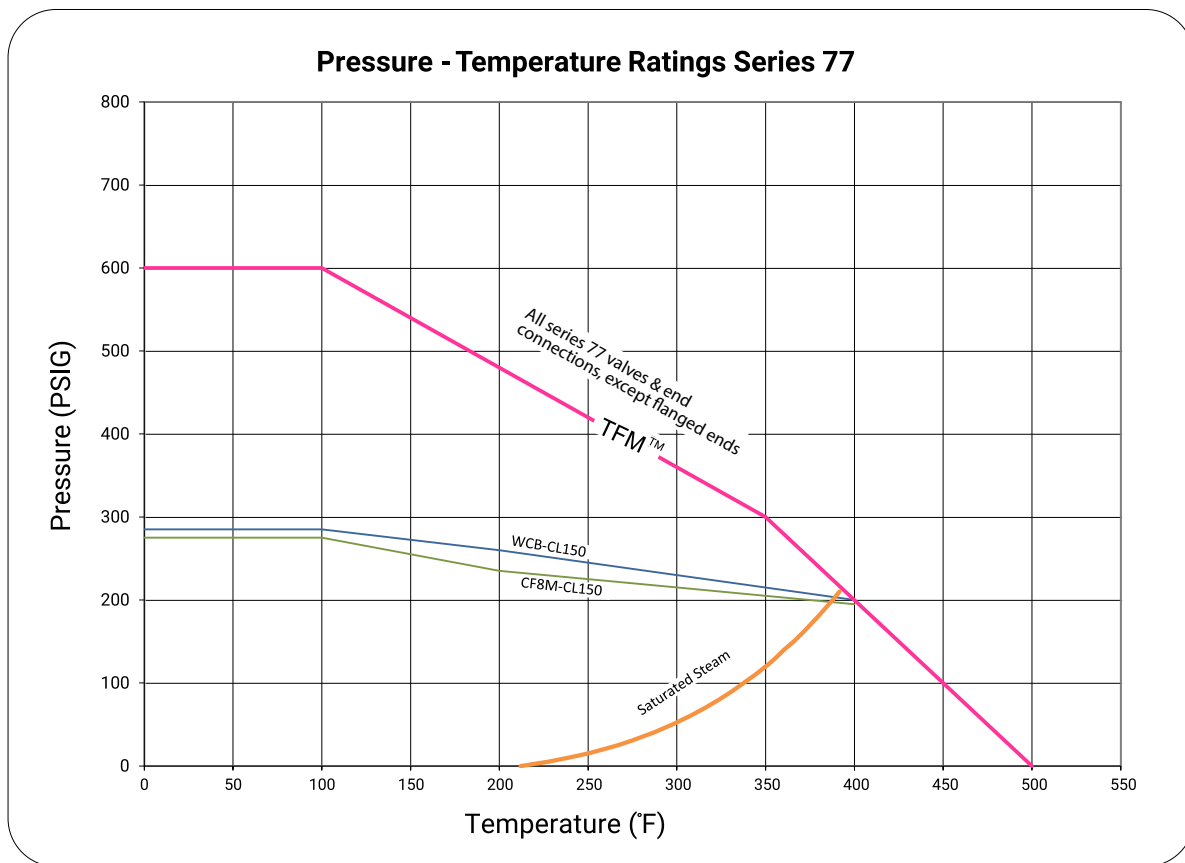


Dimensions 2" – 4"

Size	A	B1	B2	C	Ød	D	E	ØF	H	J	K	L	M	ØO	ØP	Q	S	ØT	ØZ
2	0.60	8.66	6.73	3.59	2.008	0.551	9.90	2.75 (F07)	5.43	0.630	2.402	M18x2.5	0.354	6.00	3.62	0.06	0.63	4.75	0.75
2½	1.05	11.22	9.42	4.97	2.559	0.669	19.55	4.02 (F10)	7.38	0.630	3.031	¾-14 UNF	0.472	7.00	4.13	0.06	0.69	5.50	0.75
3	1.05	11.22	9.42	4.97	2.992	0.669	19.55	4.02 (F10)	7.38	0.630	3.551	¾-14 UNF	0.472	7.52	5.00	0.06	0.75	6.00	0.75
4	1.20	13.66	11.38	5.95	3.937	0.866	23.48	4.02 (F10)	8.39	1.181	4.543	1½-12 UNF	0.472	9.02	6.18	0.06	0.94	7.50	0.75

Note: The dimensions above are for information only. Please refer to Sharpe® Valves if you need dimensions for construction.

Technical Information



C_v Data

Valve Size	T Port	L Port
1/2	13	8
3/4	22	13
1	35	21
1-1/2	85	49
2	160	93
2-1/2	267	154
3	365	211
4	649	375

Torque (at 600 CWP)

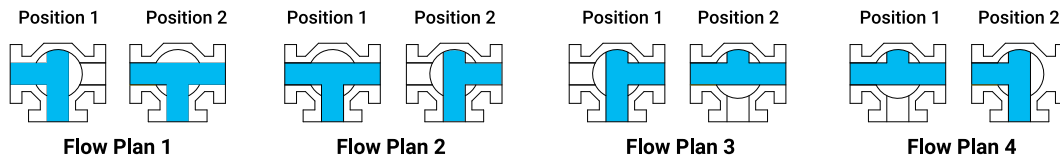
Valve Size	IN-LB
1/2	113
3/4	165
1	312
1-1/2	538
2	755
2-1/2	1475
3	1475
4	1736

Approx. Weight (Lbs.)

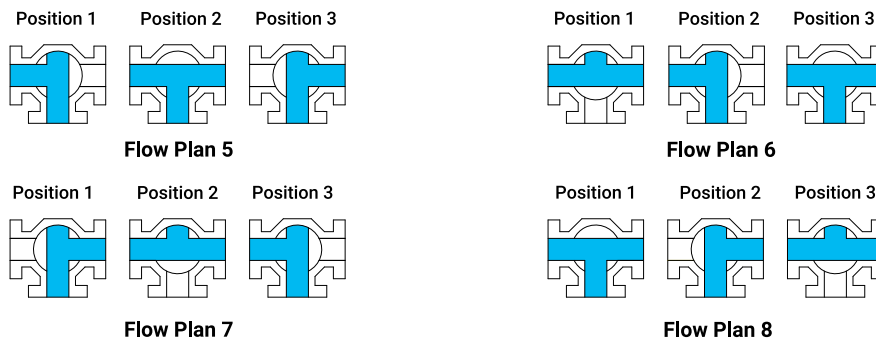
Valve Size	Body	Threaded, Socket Weld, Butt Weld	Flanged End		Clamp End	Blind End
			CL150	CL300		
1/2"	2.00	0.60	1.60	2.00	0.80	0.50
3/4"	2.50	0.80	2.00	3.20	0.95	0.50
1"	3.10	1.30	2.70	4.25	1.60	0.95
1-1/2"	5.50	1.80	5.00	8.22	2.20	1.65
2"	5.50	2.70	6.00	8.20	2.90	1.90
2-1/2"	8.20	-	10.00	12.90	3.90	3.00
3"	11.50	-	11.00	16.60	4.20	3.20
4"	21.50	-	21.90	30.00	9.70	8.30

Technical Information

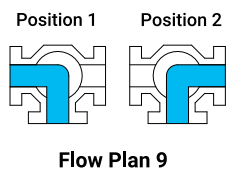
T-Port 90° Turn



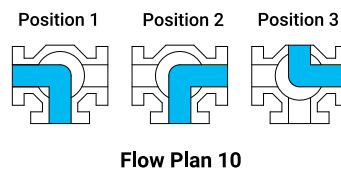
T-Port 180° Turn



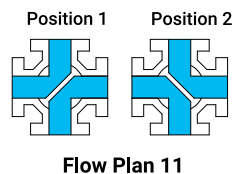
L-Port 90° Turn



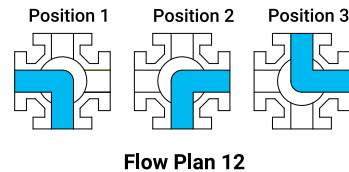
L-Port 180° Turn



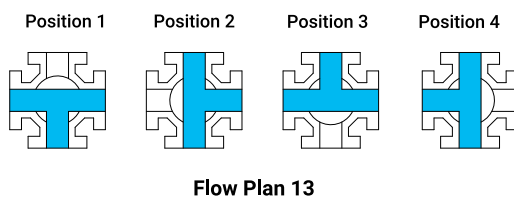
LL-Port 90° Turn



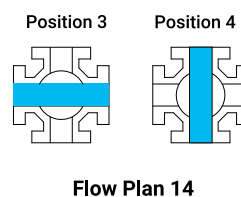
L-Port 180° Turn



T-Port 270° Turn



Four-Way 90° Turn



Note:

*Series 77 Valves are not to be used as an isolation valve.



How to order Sharpe® Series 77

Example:

A 3" flanged (code D) 3-way ball valve design (flow plan 9), with cast ASTM A351 CF8M body & end connections, stainless ball & stem, TFM seats, and PTFE seals, is: **3 77-66MT6D9**.

3	77	-	6	6	M	T	6	D	9
Size	Series		Body Material	Ball & Stem Material	Seat Material	Seal Material	End Material	End Connection	Flow Plan
1/2	77		6 Stainless Steel (cast ASTM A351 CF8M)	6 316 Stainless Steel	M TFM™ Seat	T PTFE	6 Stainless Steel (cast ASTM A351 CF8M)	D ASME Class 125/150 RF Flange	1 8
3/4									2 9
1			4 Carbon Steel (cast A216 WCB)**		C TFM™ Cavity Fill			A Threaded Ends (2-1/2" - 4")**	3 10
1-1/2									4 11
2							4 Carbon Steel (cast A216 WCB)**	B Socket Weld (2-1/2" - 4")**	5 12
2-1/2									6 13
3								C Butt-weld Sch. 10, 40, & 80**	7 14
4									

Note:

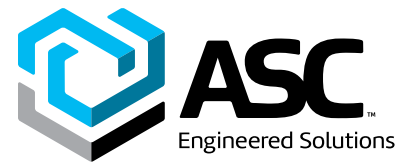
**POA.

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Responsibility for proper selection, use and maintenance of any product remains solely with the purchaser and end user.

We reserve the right to modify or improve the designs or specifications of any product at any time without notice.

Building connections that last™



Sharpe® Series D84

3-Piece Diverter Ball Valve



Design & Features



Diverter Ball Valve

Body Material

316 Stainless Steel & Carbon Steel.

3-Piece Diverter Design

In-line serviceable swing-out center section allows easy access to internal valve components without disturbing alignment of pipe.

Stem Design

Live-loaded, bottom entry, blowout proof, anti-static stem featuring packing that extends valve cycle life over conventional ball valves and is the best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Encapsulated Body Bolts

Heavy duty stainless steel bolting is protected from outside environment assuring valve integrity.

Ideal for wash-downs.

ISO 5211 Integral Mounting Pad

Ideal for actuation.

Centering lip feature assures precise alignment of bracket, stem and coupler.

Actuators may be retrofitted on existing Sharpe® Series D84 without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

Lockable Handle

All Sharpe® Series D84 valves are supplied with lever or pipe handles and are designed to permit locking the valve in either the open or closed position.

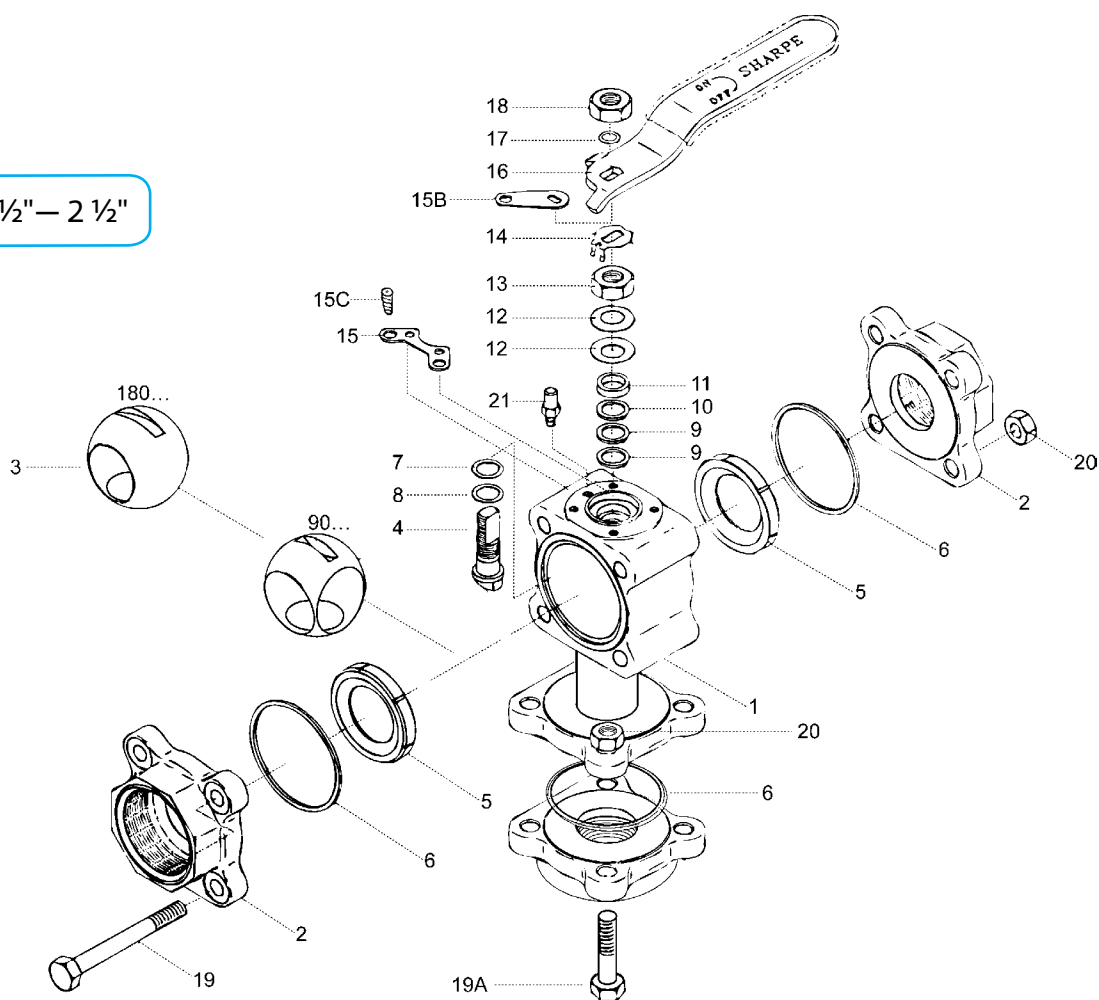
Traceability

Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.

Building connections that last™

Parts & Materials

Series D84 ½" – 2 ½"



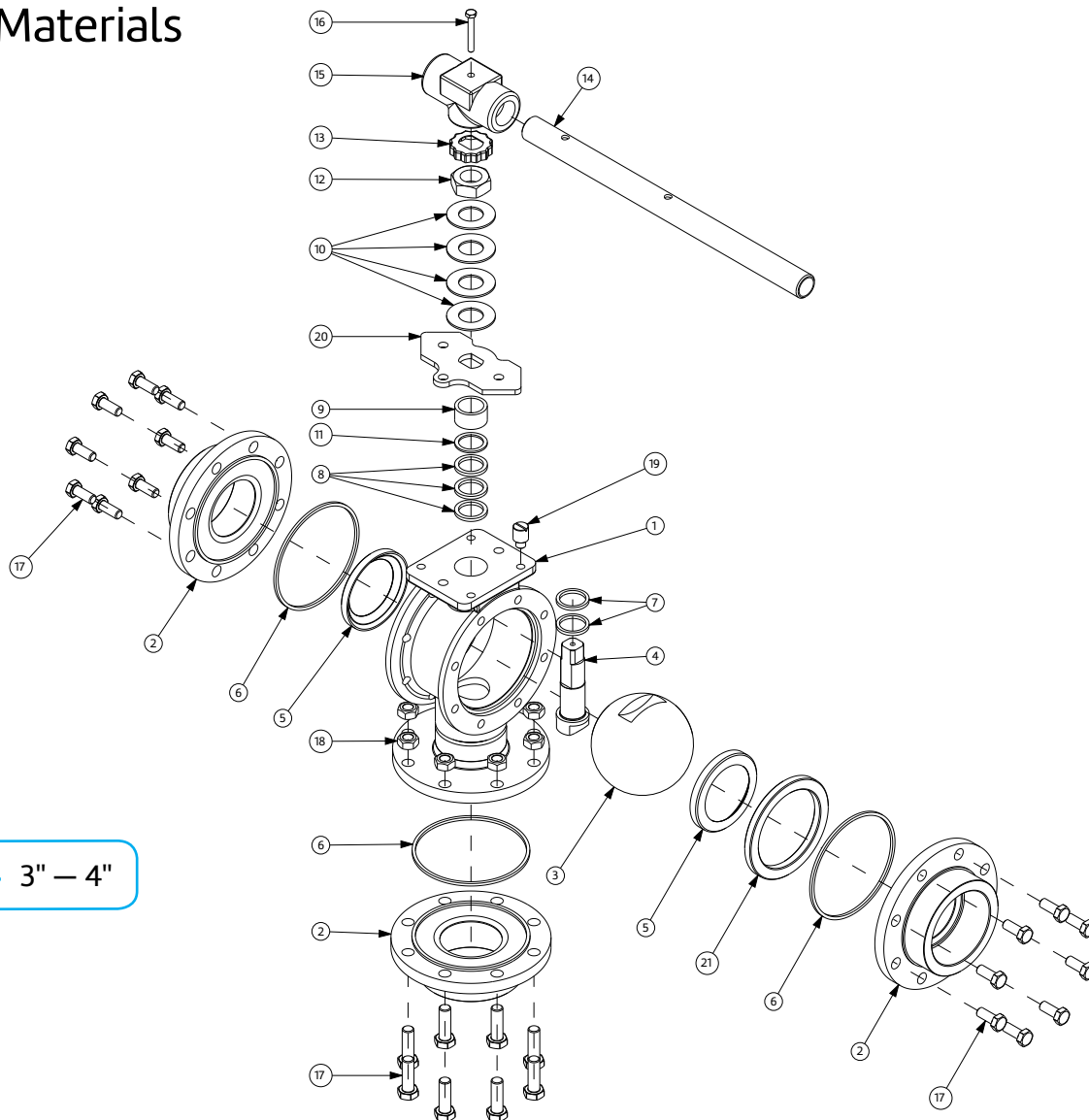
Sizes (½" – 2 ½")

No.	Part Name	Qty.	Material
1	Body	1	316 Stainless Steel ASTM A351 CF8M
2	Pipe Ends	3	316 Stainless Steel ASTM A351 CF8M 316L Stainless Steel ASTM A351 CF3M Carbon Steel, ASTM A216 WCB
3	Ball	1	316 Stainless Steel
4	Stem	1	316 Stainless Steel, 17-4 PH SS
5	Valve Seat	2	PTFE, TFM®, UHMWPE RTFE, Nova, PEEK, Delrin®
6	Body Seal	3	PTFE, TFM®, Grafoil, Buna, Neoprene, UHMWPE, EPDM, Viton®
7	Thrust Bearing	1	Nova (UHMWPE with UHMWPE Seats)
8	Thrust Bearing	1	PEEK (UHMWPE with UHMWPE Seats)
9	Stem Packing	2	Nova (UHMWPE with UHMWPE Seats)
10	Seat Protector	1	PEEK
11	Gland	1	300 Series Stainless Steel

No.	Part Name	Qty.	Material
12	Belleville Washer	2 Sets	300 Series Stainless Steel
13	Packing Nut	1	300 Series Stainless Steel
14	Lock Tab	1	300 Series Stainless Steel
15	Lower Lock Latch	1	300 Series Stainless Steel
15B	Upper Lock Latch	1	300 Series Stainless Steel
15C	Latch Bolt	2	300 Series Stainless Steel
16	Handle (¼" - 2")	1	300 Series Stainless Steel
17	Lock Washer	1	300 Series Stainless Steel
18	Handle Nut (¼" - 2")	1	300 Series Stainless Steel
19	Body Bolts	4	300 Series Stainless Steel
19A	Body Connector Bolt	4	300 Series Stainless Steel
20	Nuts	8	300 Series Stainless Steel
21	Stop Pin (¼" - ½")	1	300 Series Stainless Steel
		2	300 Series Stainless Steel

Building connections that last™

Parts & Materials



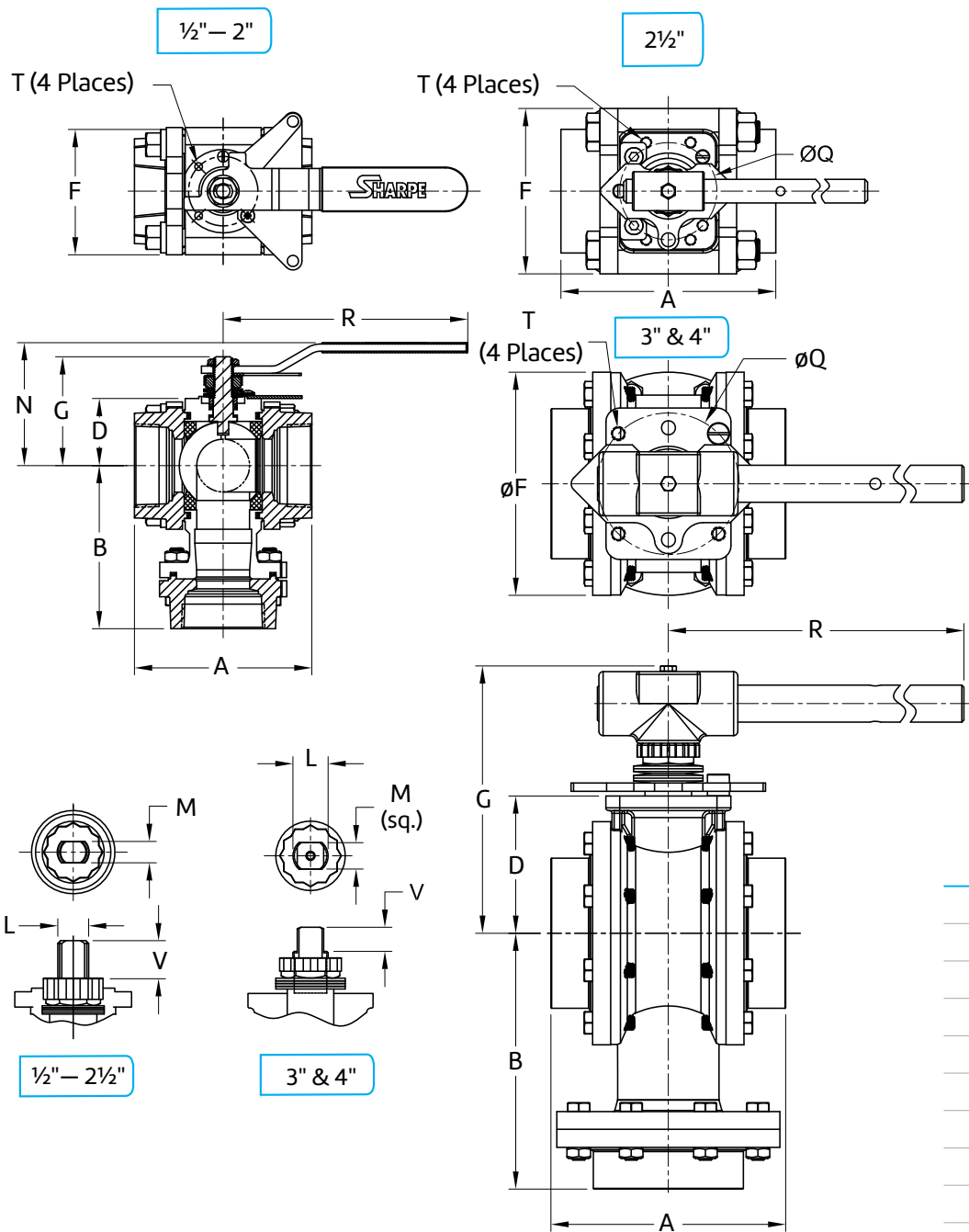
Series D84 3" – 4"

Sizes (Sizes 3" – 4")

No.	Part Name	Qty.	Material
1	Body	1	316 Stainless Steel: ASTM A351 CF8M
2	Pipe Ends	3	316 Stainless Steel: ASTM A351 CF8M 316L Stainless Steel: ASTM A351 CF3M Carbon Steel: ASTM A216 WCB
3	Ball	1	316 Stainless Steel
4	Stem	1	316 Stainless Steel, 17-4 PH SS
5	Valve Seat	2	PTFE, TFM®, RTFE, UHMWPE Nova, PEEK, Delrin®
6	Body Seal	3	TFE, TFM®, Grafoil, Buna, Neoprene UHMWPE, EPR, Viton®
7	Thrust Bearing	1	Nova (UHMWPE with UHMWPE Seats)
8	Stem Seal	1	Nova (UHMWPE with UHMWPE Seats)
9	Gland	1	300 Series Stainless Steel

No.	Part Name	Qty.	Material
10	Belleville Washer	1	300 Series Stainless Steel
11	Washer	4	300 Series Stainless Steel
12	Stem Nut	1	300 Series Stainless Steel
13	Lock Tab	1	300 Series Stainless Steel
14	Handle	1	Galvanized Steel
15	Wrench Block	1	300 Series Stainless Steel
16	Hex Head Bolt	1	300 Series Stainless Steel
17	Body Bolt	24	300 Series Stainless Steel
18	Nuts	8	300 Series Stainless Steel
19	Stop Pin	1	300 Series Stainless Steel
20	Stopper	1	300 Series Stainless Steel
21	Seat Retainer	1	300 Series Stainless Steel, Carbon Steel

Series D84 3-Piece Diverter Ball Valve



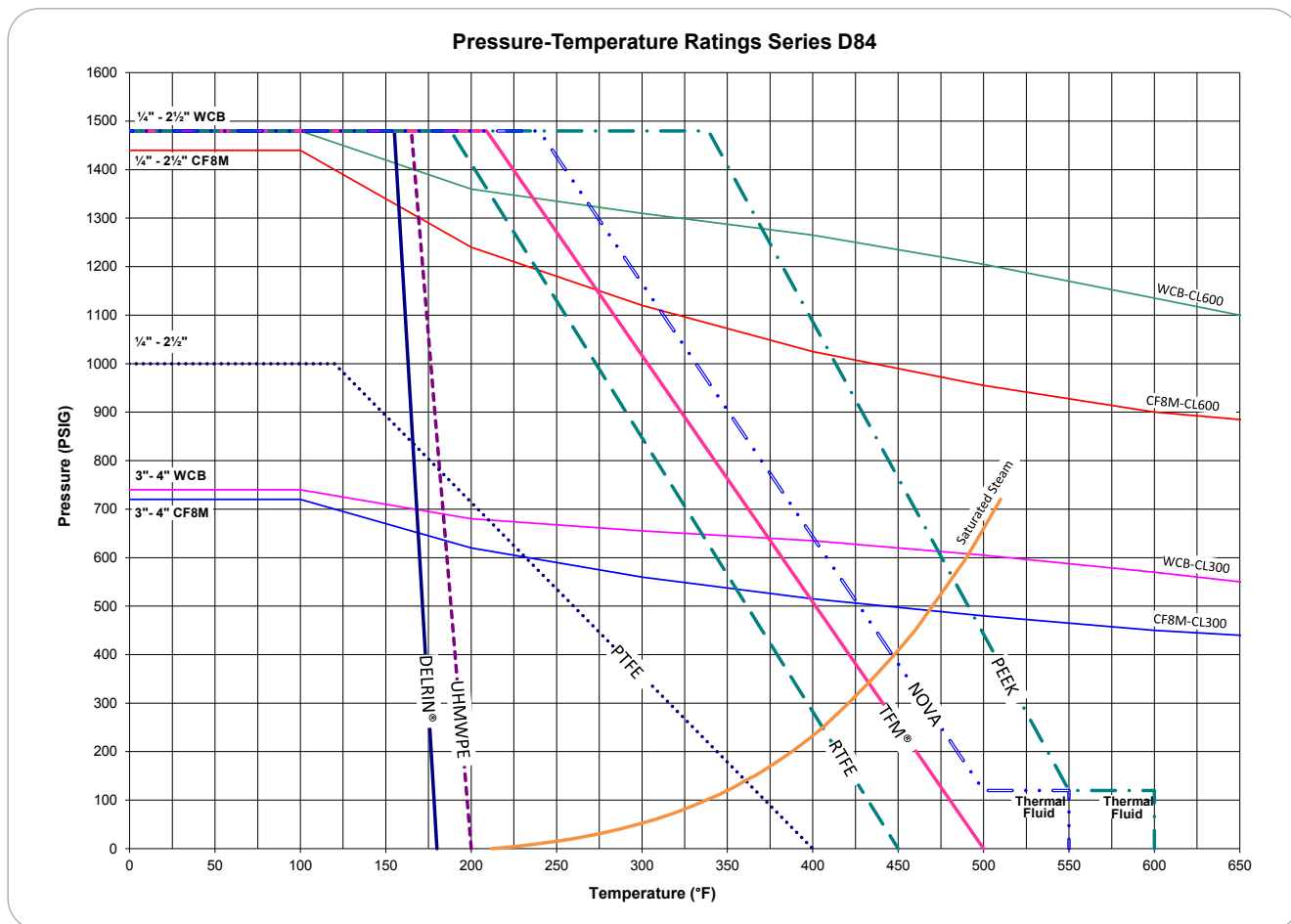
Dimensions (Inches)

Size	A	B	C	D	F	G	L	M	N	Q	R	T	V
1/2	2.59	2.72	0.98	1.06	1.81	1.66	3/8-24	0.220	2.14	1.42 (F03)	4.50	M5x.8	0.26
3/4	2.87	2.87	0.98	1.17	1.95	1.65	3/8-24	0.220	2.24	1.42 (F03)	4.50	M5x.8	0.35
1	2.71	3.49	1.18	1.51	2.38	2.23	7/16-20	0.300	2.69	1.65 (F04)	5.75	M5x.8	0.47
1-1/2	4.57	4.15	1.38	1.73	3.06	2.90	9/16-18	0.350	3.16	1.97 (F05)	6.78	M6x1.0	0.69
2	5.00	4.62	1.38	1.90	3.59	3.09	9/16-18	0.350	3.35	1.97 (F05)	6.78	M6x1.0	0.67
2-1/2	5.86	5.86	2.16	2.93	4.68	4.56	M20x2.5	0.551	5.48	2.75 (F07)	8.73	M8x1.25	1.14
3	6.66	7.25	-	3.89	6.46	5.76	1-14	0.748	6.82	4.01 (F10)	13.74	M10x1.5	0.69
4	8.42	8.98	-	4.45	8.11	6.37	1-14	0.748	7.43	4.01 (F10)	13.74	M10x1.5	0.69

Note: The dimensions above are for information only. Please refer to Sharpe® Valves if you need dimensions for construction.

Building connections that last™

Technical Information

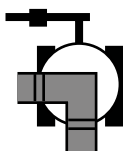


Standard Port

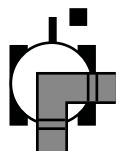
Class 600 1/2" - 2 1/2"

Class 300 3" - 4"

P1:** 90° Rotation flow from center to right or left.

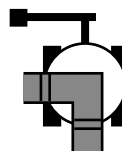


Flow Left



Flow Right

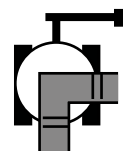
P2:** 180° Rotation flow from center to right or left or shut-off position.



Flow Left



Shut Off



Flow Right

Note: **Not to be used as an isolation valve.



How to order Sharpe® Series D84

Example:

3/4	D84	-	6	6	R	M	TE	TE	P1
Size	Series		Body & End Material	Ball & Stem Material	Seat Material	Seal Material	End Connection (Sides)	End Connection (Bottom)	Flow Plan

Size	Series	Seat Material	End Connection (Side)	Flow Plan
1/2	D84	T PTFE	TE Threaded	P1 90° Rotation flow from center to left or right
3/4		R RTFE	SW Socket Weld	P2 180° Rotation flow from center to left or right or shut-off position
1	Body & End Material	M TFM®	BW5 Schedule 5 Butt-weld*	
1-1/2	4 Carbon Steel (ends only)	D Delrin®**	BW10 Schedule 10 Butt-weld*	
2	6 316 Stainless Steel	N Nova	BW40 Schedule 40 Butt-weld	
2-1/2	Ball & Stem Material	P Peek**	BW80 Schedule 80 Butt-weld*	
3	6 316 Stainless Steel	U UHMWPE		
4	7 17-4 PH SS Stem, 316 SS Ball		End Connection (Bottom)	
		Seal Material	TE Threaded	
		T PTFE	SW Socket Weld	
		M TFM®	BW5 Schedule 5 Butt-weld*	
		G Grafoil	BW10 Schedule 10 Butt-weld*	
		B Buna	BW40 Schedule 40 Butt-weld	
		N Neoprene	BW80 Schedule 80 Butt-weld*	
		V Viton®		
		U UHMWPE		
		E Ethylene Propylene Rubber (EPR)		

Notes:

*POA.

**Requires 17-4 PH SS stem.

Viton® is a resisted trademark of E.I. DuPont.

Delrin® is a resisted trademark of E.I. DuPont.

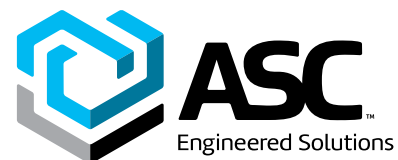
TFM® is a registered trademark of Dyleon, LLC.

Responsibility for proper selection, use and maintenance of any product remains solely with the purchaser and end user.

We reserve the right to modify or improve the designs or specifications of any product at any time without notice.

Building connections that last™

Building connections that last™



Sharpe® Series D54

Flanged Standard Port Diverter
Ball Valve Class 150



Design & Features



Flanged Standard
Port Diverter Ball
Valve Class 150

Body Material

316 Stainless Steel.

Stem Design

Live-loaded, bottom entry, blowout proof, anti-static stem featuring packing that extends valve cycle life over conventional ball valves and is the best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

ISO 5211 Integral Mounting Pad

Ideal for actuation.

Centering lip feature assures precise alignment of bracket, stem and coupler.

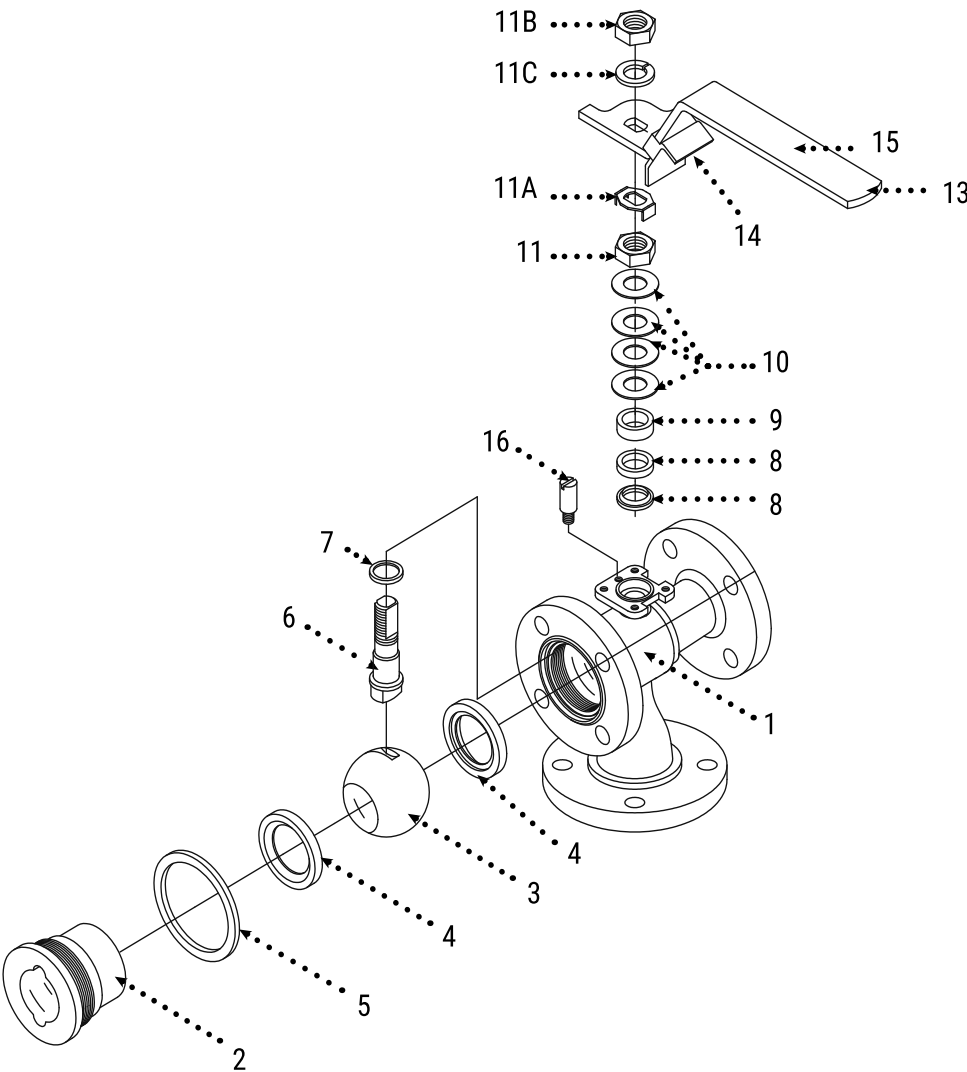
Actuators may be retrofitted on existing Sharpe® Series D54 without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

Lockable Handle

All Sharpe® Series D54 valves are supplied with lockable lever or pipe handles.

Parts & Materials



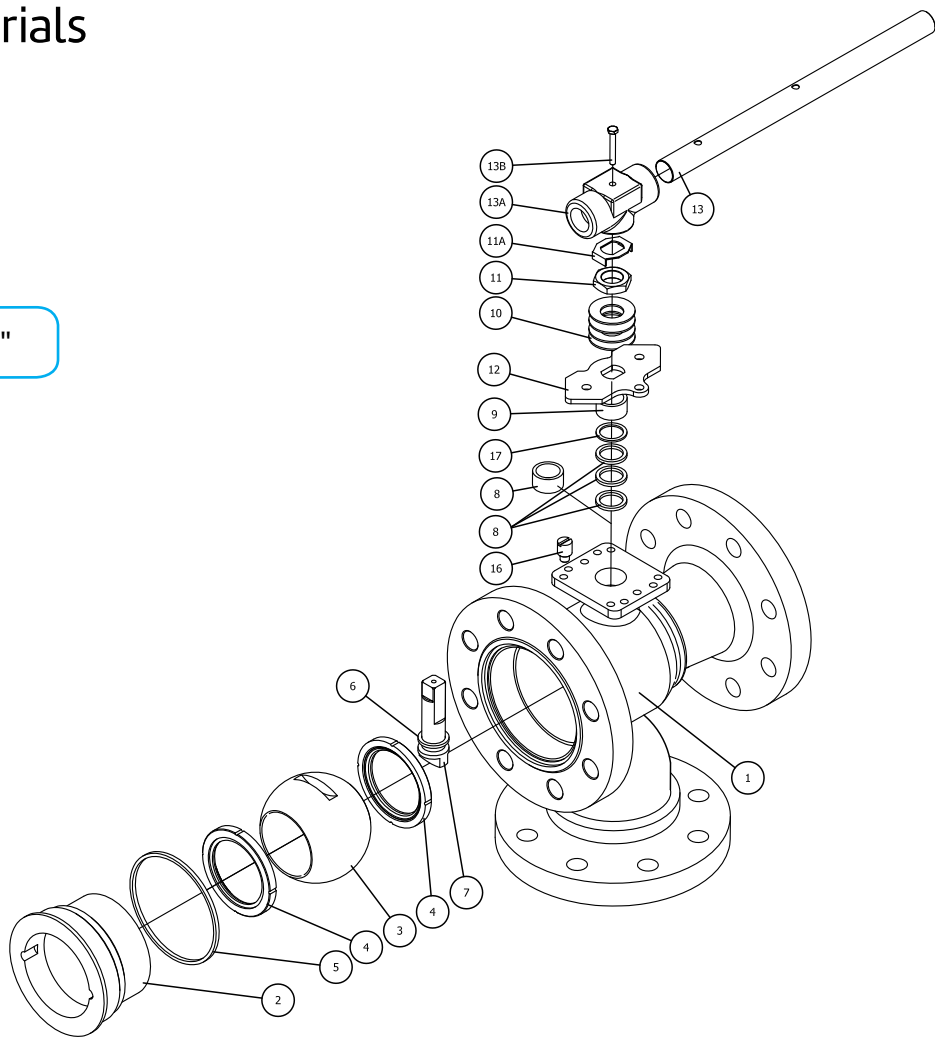
Sizes (1" – 2½")

No.	Part Name	Qty.	Material
1	Body	1	316 Stainless Steel ASTM A351 CF8M
2	End Piece	1	316 Stainless Steel ASTM A351 CF8M
3	Ball	1	316 Stainless Steel
4	Seat	2	TFM™, PTFE, Nova
5	Body Seal	1	PTFE or Graphite
6	Stem	1	316 Stainless Steel
7	Thrust Bearing	1	RTFE
8	Stem Packing	2/3	RTFE
9	Gland	1	300 Series Stainless Steel
10	Belleville Washer	4	300 Series Stainless Steel

No.	Part Name	Qty.	Material
11	Packing Nut	1	300 Series Stainless Steel
11A	Lock Tab	1	300 Series Stainless Steel
11B	Handle Nut	1	300 Series Stainless Steel
11C	Lock Washer	1	300 Series Stainless Steel
13	Handle	1	300 Series Stainless Steel (1" - 2") Galvanized Steel (2-½")
14	Locking Device (1" - 2")	1	300 Series Stainless Steel
15	Sleeve	1	PVC
16	Stop Pin	1	300 Series Stainless Steel

Parts & Materials

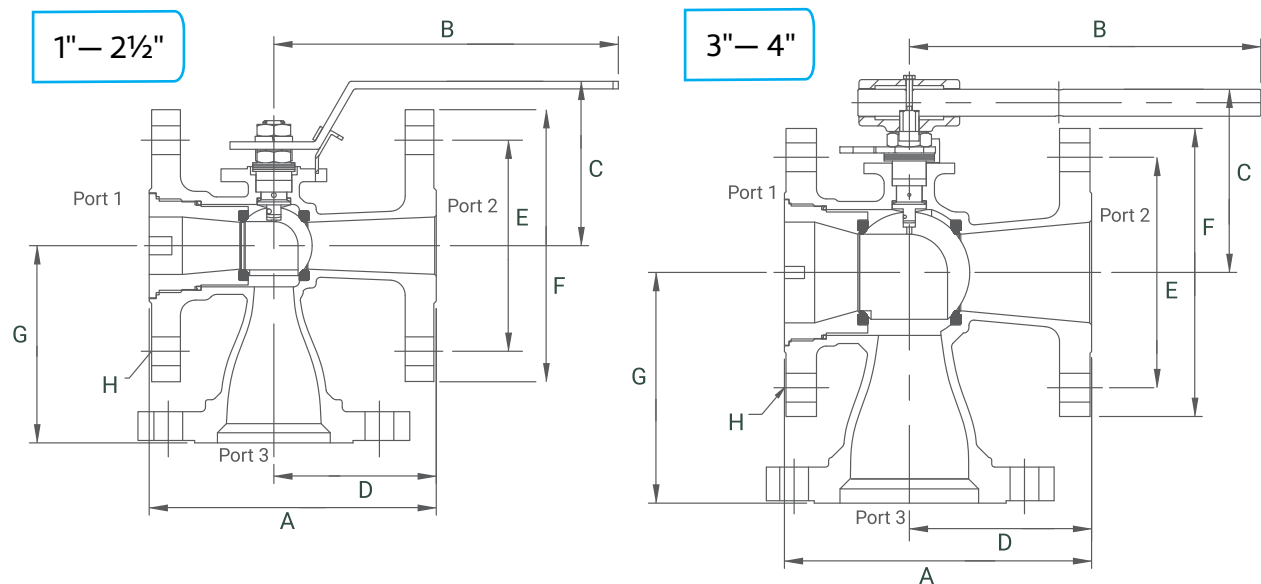
Series D54 3" – 4"



Sizes (3" – 4")

No.	Part Name	Qty.	Material
1	Body	1	316 Stainless Steel ASTM A351 CF8M
2	End Piece	1	316 Stainless Steel ASTM A351 CF8M
3	Ball	1	316 Stainless Steel
4	Seat	2	TFM™, PTFE, RTFE or Nova
5	Body Seal	1	PTFE or Graphite
6	Thrust Bearing	1	RTFE
7	Stem	1	316 Stainless Steel
8	Stem Packing	1/2/3	RTFE or Graphite
9	Gland	1	300 Series Stainless Steel

No.	Part Name	Qty.	Material
10	Belleville Washer (1" to 4")	4	300 Series Stainless Steel
11	Packing Nut (1" to 4")	1	300 Series Stainless Steel
11A	Lock Tab (1" to 4")	1	300 Series Stainless Steel
12	Stopper	1	300 Series Stainless Steel
13	Handle	1	Galvanized Steel
13A	Wrench Block	1	300 Series Stainless Steel
13B	Hex Head Bolt	1	300 Series Stainless Steel
16	Stop Pin	1	300 Series Stainless Steel
17	Stem Locking Ring	1	300 Series Stainless Steel

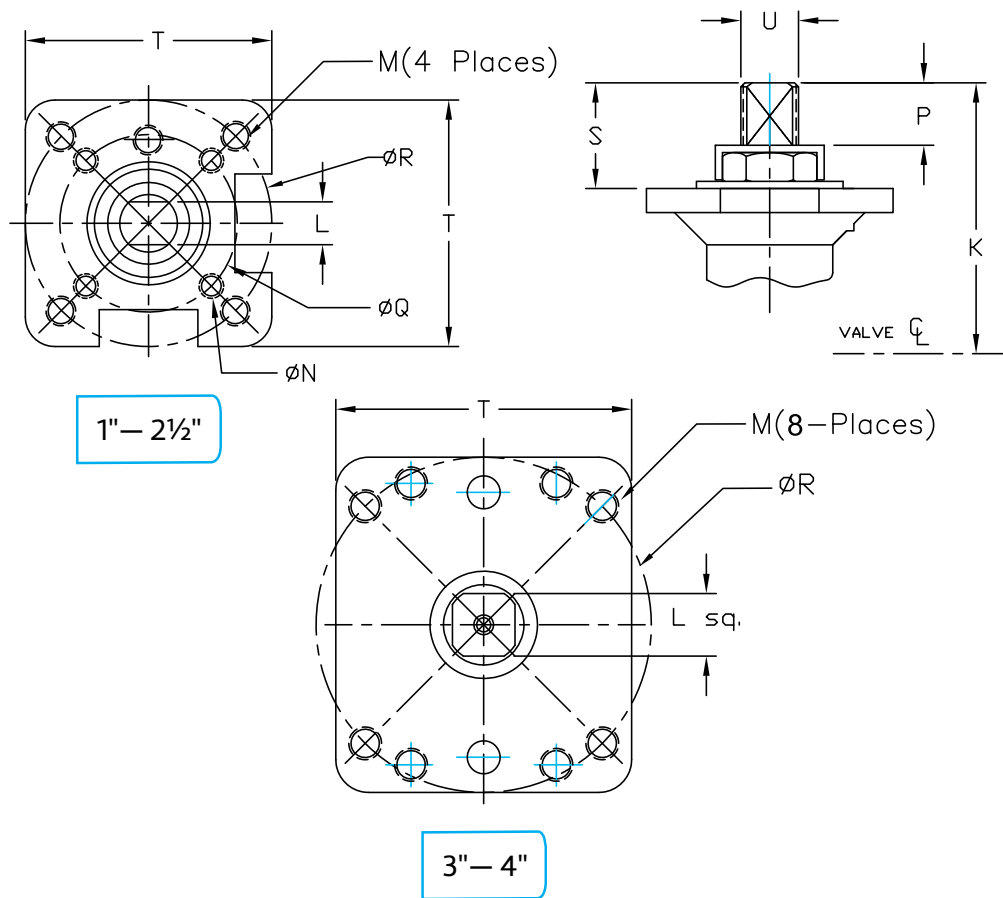


Dimensions (Inches)

Size	A	B	C	D	E	F	G	H
1	5.00	4.75	3.60	2.50	3.12	4.25	3.13	4
1-½	6.50	9.00	4.00	3.64	3.88	5.00	4.00	4
2	7.00	9.00	4.50	4.41	4.75	6.00	5.00	4
2-½	7.50	9.00	5.50	3.94	5.50	7.00	5.50	4
3	8.00	13.74	6.57	4.00	6.00	7.50	6.00	4
4	9.00	13.74	6.95	4.49	7.50	9.00	7.15	8

Size	Port 1 Port 2	Port 3	Approx. Weight (lbs.)	C _v
1	0.79	0.62	8.5	15
1-½	1.20	1.05	13.9	36
2	1.50	1.38	22.4	54
2-½	2.00	1.61	40.8	90
3	2.50	2.07	46.8	195
4	3.00	2.47	67.3	360

Note:
The dimensions above are for information only. Please refer to Sharpe® Valves if you need dimensions for construction.

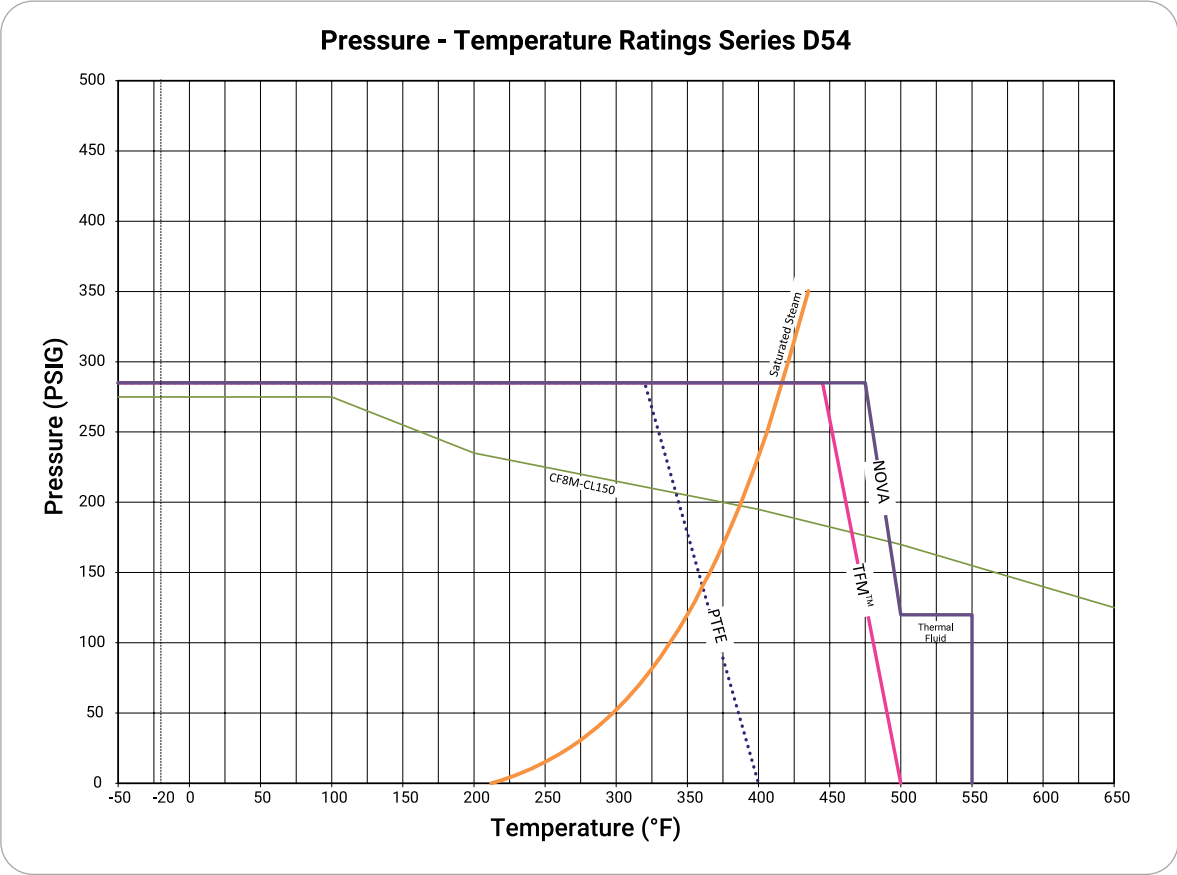


Dimensions (Inches)

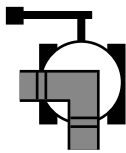
Size	K	L	M	P	R	S	T	U
1	2.22	.224	M6 x 1.0	0.35	1.67 (F05)	0.75	1.69	0.375
1-½	3.24	.343	M8 x 1.25	0.71	2.75 (F07)	1.23	2.75	0.563
2	3.48	.343	M8 x 1.25	0.56	2.75 (F07)	1.10	2.75	0.563
2-½	3.74	.343	M8 x 1.25	0.58	2.75 (F07)	1.10	2.75	0.563
3	5.71	.748	M10 x 1.5	0.69	4.02 (F10)	1.87	3.54	0.748
4	6.15	.748	M10 x 1.5	0.69	4.02 (F10)	1.87	3.54	0.748

Note:
The dimensions above are for information only. Please refer to Sharpe® Valves if you need dimensions for construction.

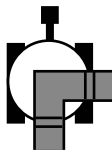
Technical Data



Side View of Valve (handle position shown)
P1*: 90° Rotation. Flow from center to right or left.



Flow Left



Flow Right

Left to Right: Handle turned counterclockwise
** Not to Be used as an isolation valve.

Applicable Standards

Wall Thickness	ASME B16.34
Face to Face Dimensions	ASME B16.10
Flange Dimensions	ASME B16.5
Pressure Test	API 598

Note: 3M™ Dyneon™ TFM™ are trademarks owned by 3M.

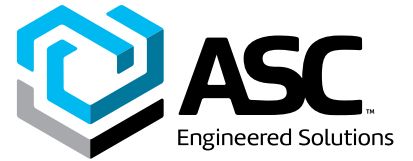


How to order
Sharpe® Series D54

Size	Series	Class		Alloy		Seat		Seal		Flow Plan	
1	D54	11	150	6	Stainless Steel	T	PTFE	T	PTFE	P1	90° Rotation. Flow from center to left or right
1-½	The series D54 is a diverter valve and should not be used as an isolation valve.					M	TFM™	G	Graphite		
2						N	Nova				
2-½											
3											
4											

Note:
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Building connections that last™



Sharpe® Series D88

High Purity Tube Diverter
Ball Valve



Design & Features



High Purity Tube
Diverter Ball Valve

Body Material

316L Stainless Steel.

Three Piece Diverter Design

In-line serviceable swing-out center section allows easy access to internal valve components without disturbing alignment of pipe.

Stem Design

Live-loaded, bottom entry, blowout proof, anti-static stem featuring packing that extends valve cycle life over conventional ball valves and is best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Encapsulated Body Bolts

Heavy duty stainless steel bolting is protected from outside environment assuring valve integrity.

Ideal for wash-downs.

ISO 5211 Integral Mounting Pad

Ideal for actuation.

Centering lip feature assures precise alignment of bracket, stem and coupler.

Actuators may be retrofitted on existing Sharpe® Series D88 without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

Lockable Handle

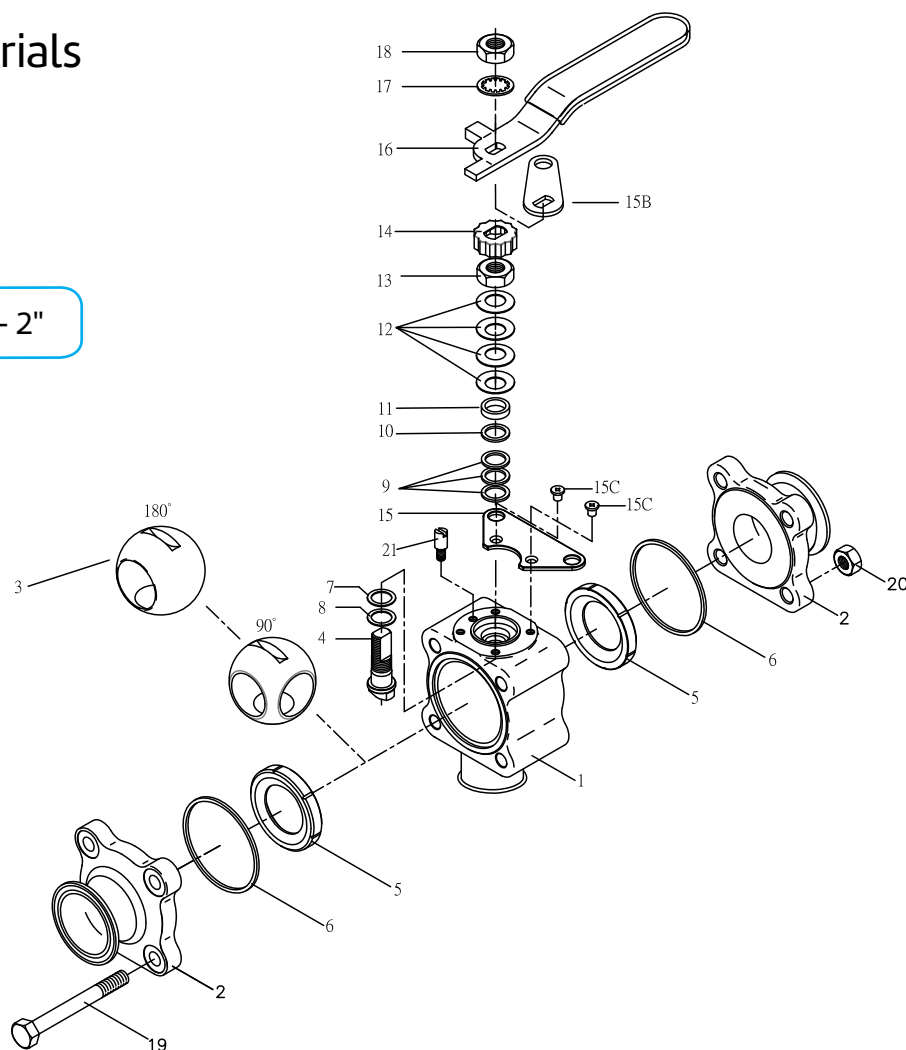
All Sharpe® Series D88 valves are supplied with lockable lever or pipe handles.

Traceability

Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.

Parts & Materials

Series D88 ½" – 2"



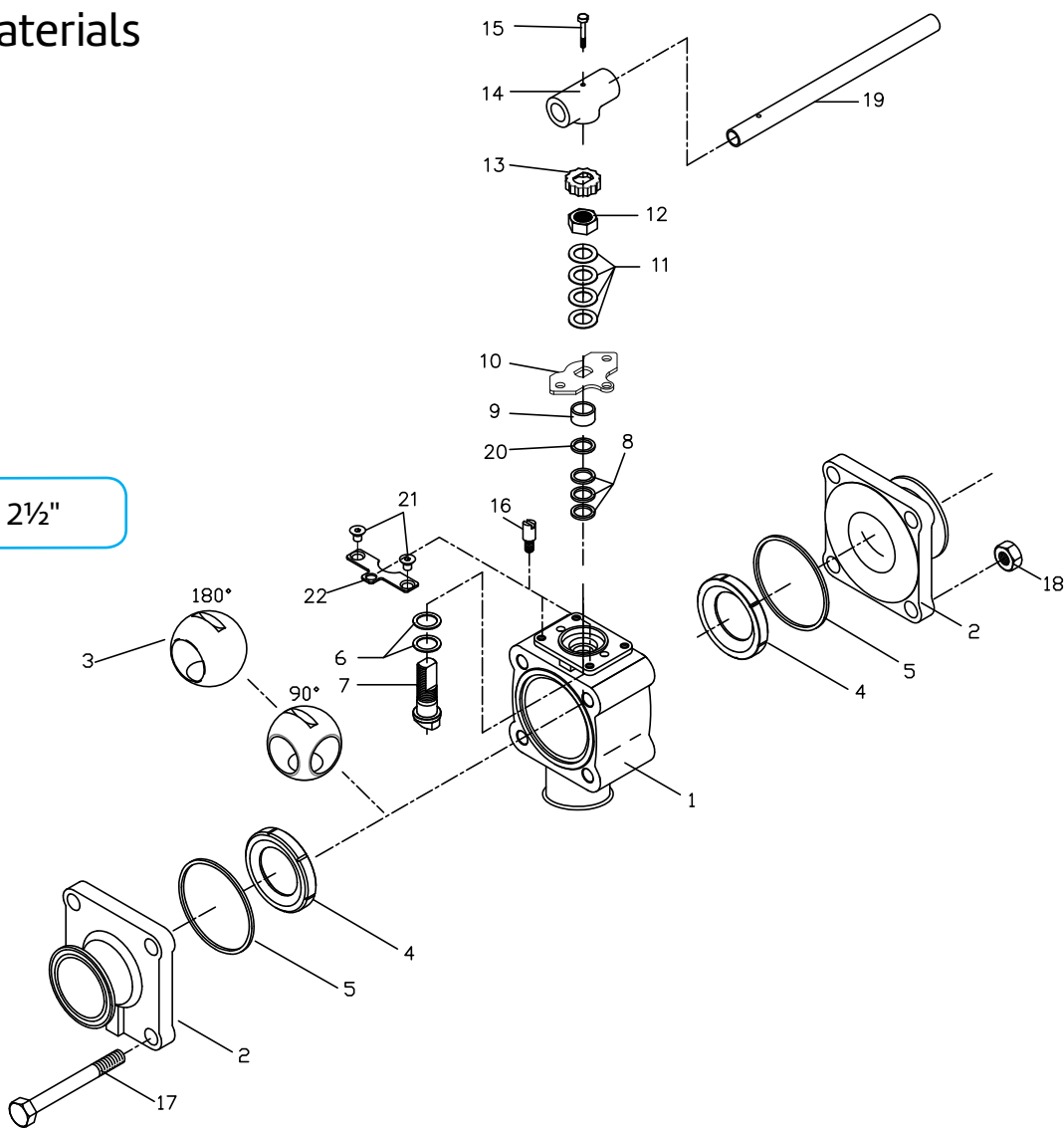
Sizes (½" – 2")

No.	Part Name	Qty.	Materials
1	Body	1	316L Stainless Steel ASTM A351 CF3M
2	Pipe Ends	2	316L Stainless Steel ASTM A351 CF3M
3	Ball	1	316L Stainless Steel
4	Stem	1	316L Stainless Steel
5	Seat	2	TFM®, PTFE/RTFE/Cavity Filler PTFE
6	Body Seal	2/3	PTFE, TFM®
7	Thrust Bearing	1	TFM®
8	Thrust Bearing	1	TFM®
9	Stem Packing	3	TFM®
10	Seal Protector	1	TFM®
11	Gland	1	300 Series Stainless Steel
12	Belleville Washer	4	300 Series Stainless Steel

No.	Part Name	Qty.	Materials
13	Packing Nut	1	300 Series Stainless Steel
14	Lock Tab	1	300 Series Stainless Steel
15	Lower Lock Latch	1	300 Series Stainless Steel
15B	Upper Lock Latch	1	300 Series Stainless Steel
15C	Latch Bolt	2	300 Series Stainless Steel
16	Handle	1	300 Series Stainless Steel
17	Lock Washer	1	300 Series Stainless Steel
18	Handle Nut (¼"-2")	1	300 Series Stainless Steel
19	Body Bolts	4/8	300 Series Stainless Steel
20	Nuts	4/8	300 Series Stainless Steel
21	Stop Pin (½")*	1/2	300 Series Stainless Steel

Parts & Materials

Series D88 2½"



Sizes (2½")

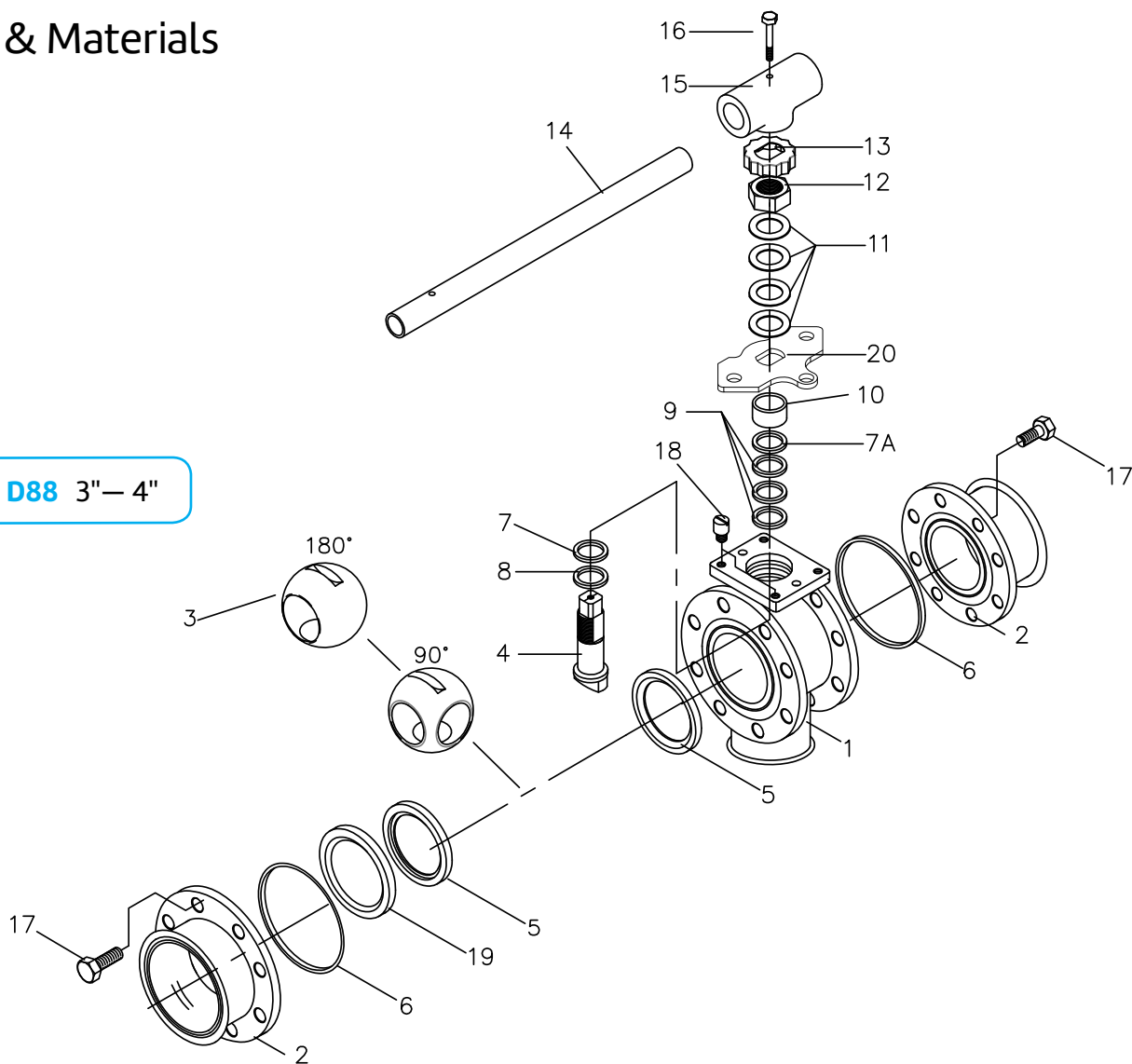
No.	Part Name	Qty.	Materials
1	Body	1	316L Stainless Steel ASTM A351 CF3M
2	Pipe Ends	2	316L Stainless Steel ASTM A351 CF3M
3	Ball	1	316L Stainless Steel
4	Seat	2	TFM®, PTFE/RTFE/Cavity Filler PTFE
5	Body Seal	2/3	PTFE, TFM®
6	Thrust Bearing	2	TFM®
7	Stem	1	316L Stainless Steel
8	Stem Seal	3	TFM®
9	Gland	1	300 Series Stainless Steel
10	Stopper	1	300 Series Stainless Steel
11	Belleville Washer	4	300 Series Stainless Steel

No.	Part Name	Qty.	Materials
12	Packing Nut	1	300 Series Stainless Steel
13	Lock Tab	1	300 Series Stainless Steel
14	Wrench Block	1	300 Series Stainless Steel
15	Handle Bolt	1	300 Series Stainless Steel
16	Stop Pin	1	300 Series Stainless Steel
17	Body Bolts	4/8	304 Stainless Steel
18	Body Nuts	4/8	300 Series Stainless Steel
19	Handle	1	300 Series Stainless Steel
20	Gland Washer	1	300 Series Stainless Steel
21	Screw	2	304 Stainless Steel
22	Lower Stopper	1	316 Stainless Steel

Building connections that last™

Parts & Materials

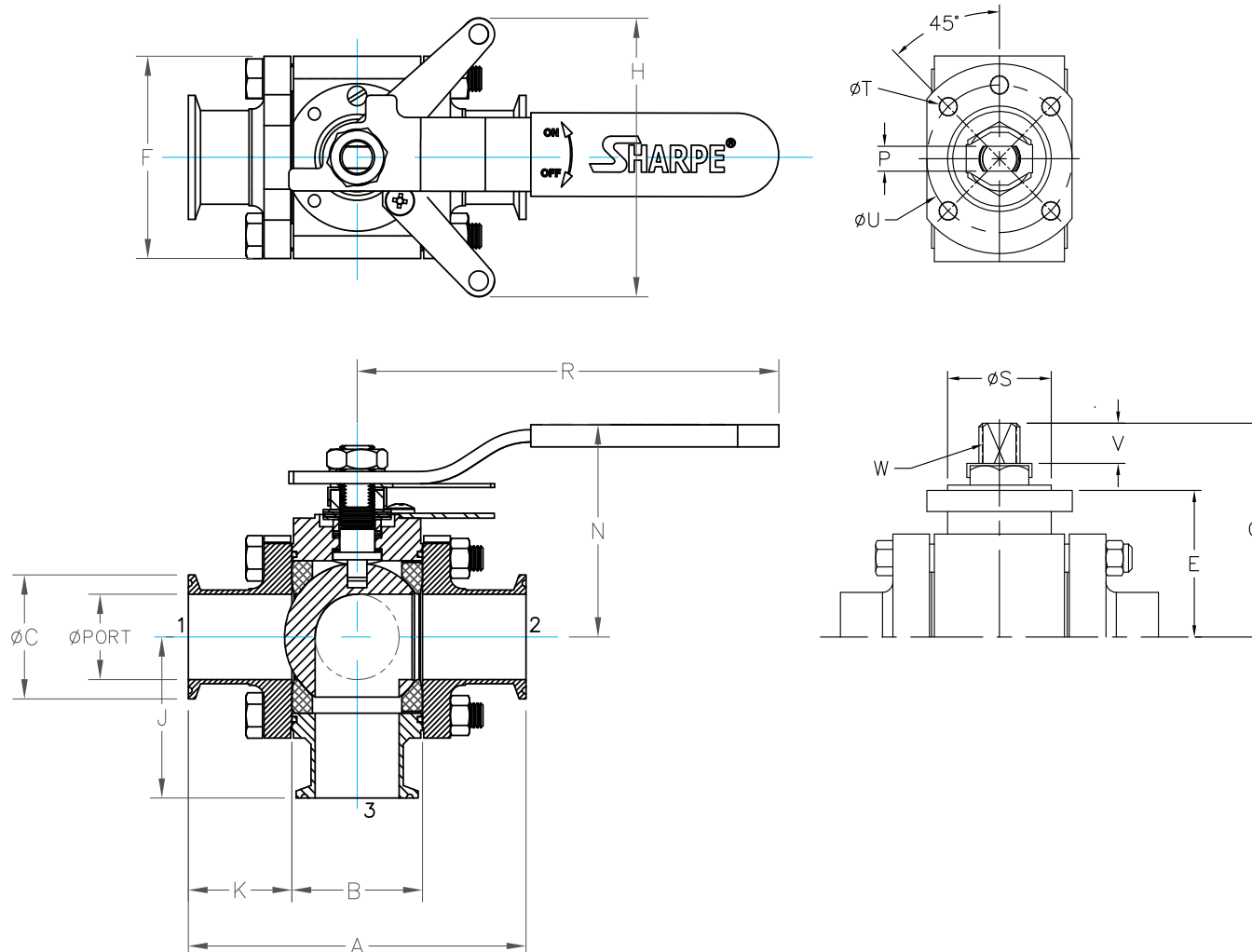
Series D88 3" – 4"



Sizes (3" – 4")

No.	Part Name	Qty.	Material
1	Body	1	316L Stainless Steel ASTM A351 CF3M
2	Pipe Ends	2	316L Stainless Steel ASTM A351 CF3M
3	Ball	1	316L Stainless Steel
4	Stem	1	316L Stainless Steel
5	Seat	2	TFM®, PTFE / RTFE / Cavity Filler PTFE
6	Body Seal	2/3	PTFE, TFM®
7	Thrust Bearing	1	TFM®
7a	Stem Location Ring	1	300 Series Stainless Steel
8	Thrust Bearing	1	TFM®
9	Stem Packing	3	TFM®
10	Gland	1	300 Series Stainless Steel

No.	Part Name	Qty.	Material
11	Belleville Washer	4	300 Series Stainless Steel
12	Packing Nut	1	300 Series Stainless Steel
13	Lock Tab	1	300 Series Stainless Steel
14	Handle	1	300 Series Stainless Steel
15	Wrench Block	1	300 Series Stainless Steel
16	Hex Head Bolt	1	300 Series Stainless Steel
17	Body Bolts	16/24	304 Series Stainless Steel
18	Stop Pin	1	300 Series Stainless Steel
19	Seat Retainer	1	300 Series Stainless Steel
20	Stopper	1	300 Series Stainless Steel



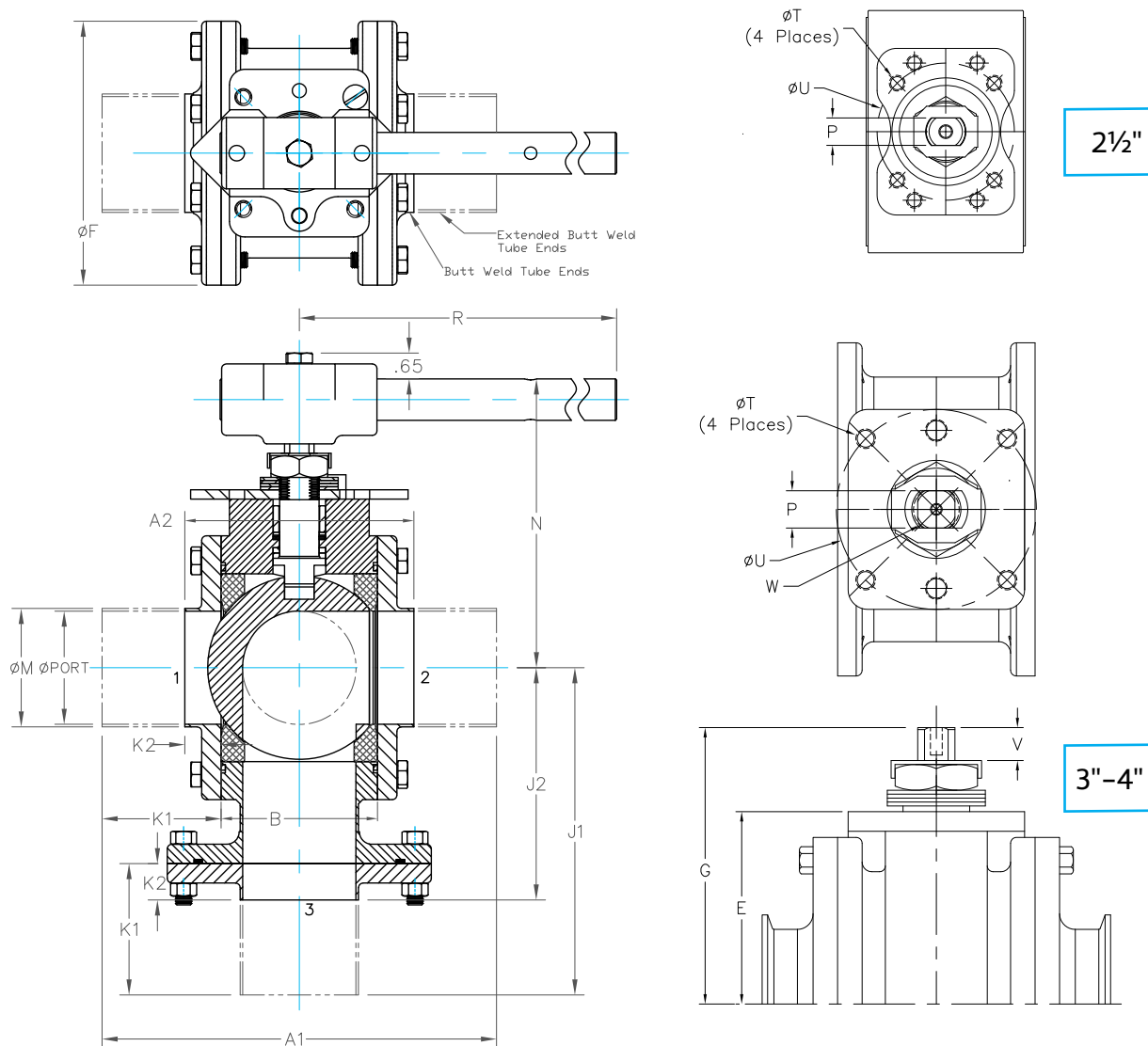
Dimensions (Sizes ½"– 2")

Size	Port	A	A1	A2	B	C	E	F	G	H	J	J1	J2	K	K1	K2	M	N	P	R	S	T	U	V	W
½	0.370	3.50	5.50	2.51	0.97	0.99	1.10	1.75	1.55	-	1.89	4.15	2.65	1.26	2.27	0.77	0.50	2.14	0.220	4.50	0.98	M5 x .8	1.42 (F03)	0.45	⅜-24
¾	0.618	4.00	6.00	3.03	1.05	0.99	1.16	2.05	1.62	2.18	1.97	4.32	2.84	1.47	2.47	0.99	0.75	2.20	0.220	4.50	0.98	M5 x .8	1.42 (F03)	0.39	⅜-24
1	0.870	4.50	6.50	3.54	1.54	1.98	1.62	2.42	2.31	3.30	2.15	4.56	3.08	1.47	2.48	1.00	1.00	2.59	0.295	5.75	1.18	M5 x .8	1.65 (F04)	0.65	7/16-20
1-½	1.366	5.50	7.50	4.51	2.13	1.98	1.90	3.16	3.07	4.08	2.80	5.45	3.95	1.69	2.69	1.19	1.50	3.18	0.343	7.00	1.38	M6 x 1.0	1.97 (F05)	0.63	7/16-20
2	1.870	6.25	8.00	5.29	2.65	2.52	2.23	3.56	3.42	4.08	2.90	5.91	4.54	1.80	2.69	1.32	2.00	3.52	0.343	7.00	1.38	M6 x 1.0	1.97 (F05)	0.67	9/16-20

Note: Due to continuous development of our product range, we reserve the right to change the dimensions and information for this product as required.

Building connections that last™

Series D88 2½" – 4"

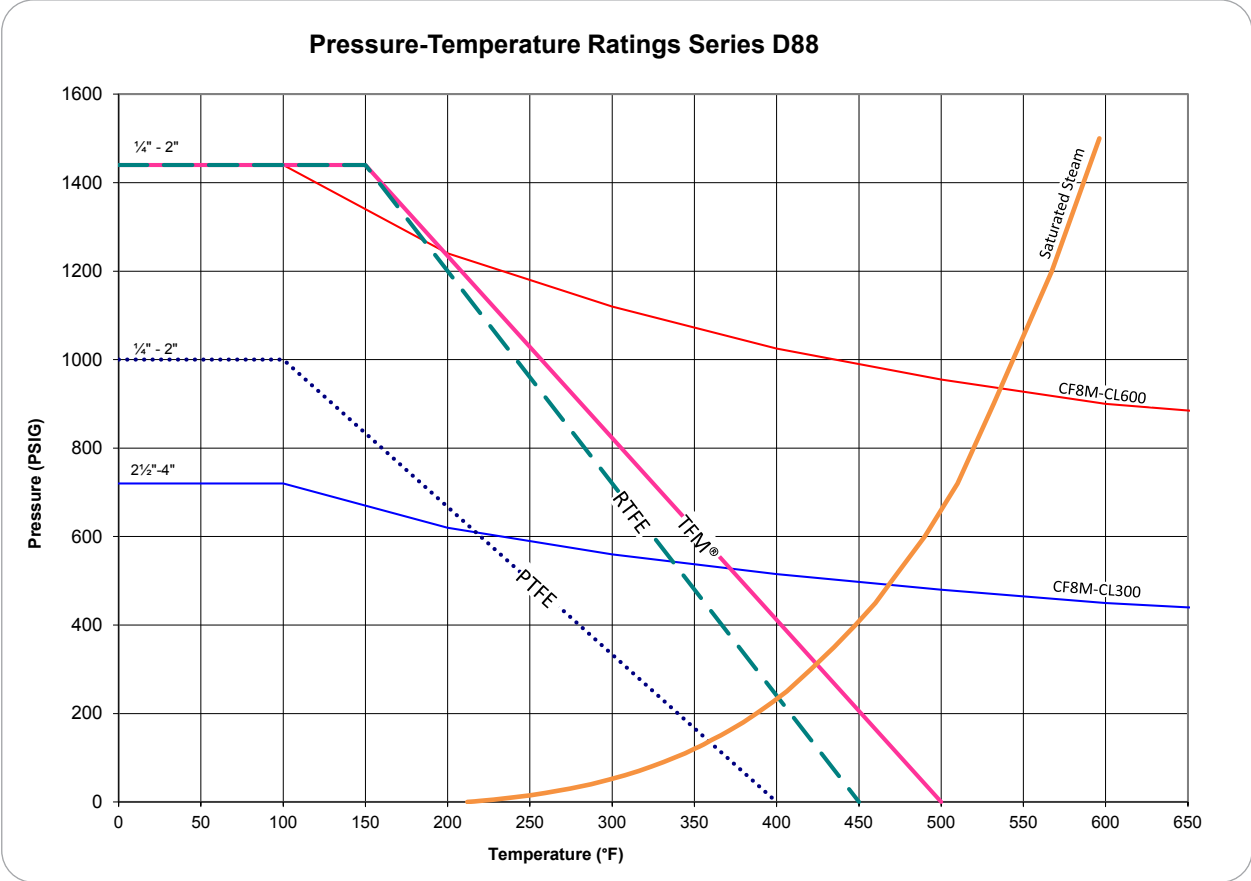


Dimensions (Sizes 2½" – 4")

Size	Port	A	A1	A2	B	C	E	F	G	J	J1	J2	K	K1	K2	M	N	P	R	S	T	U	V	W
2-½	2.370	6.75	10.00	5.77	3.19	3.05	3.25	4.57	4.85	3.45	6.34	4.94	1.77	2.69	1.29	2.50	5.73	0.551	8.74	2.16	M8 x 1.25	2.75 (F07)	0.44	M20 x 2.5
3	2.870	6.75	10.62	5.80	3.96	3.58	4.28	6.44	6.02	5.00	8.30	5.89	1.39	3.33	0.92	3.00	7.04	0.748	13.74	-	M10 x 1.5	4.01 (F10)	0.75	1-14 UNS
4	3.831	8.25	11.39	7.07	4.73	4.68	4.81	8.12	6.61	5.00	9.50	7.34	1.76	3.33	1.17	4.00	7.57	0.748	13.74	-	M10 x 1.5	4.01 (F10)	0.89	1-14 UNS

Note: The dimensions above are for information only. Please refer to Sharpe® Valves if you need dimensions for construction.

Technical Information



Note:
*Ratings are for the valve body, specific ends may cause the ratings to change.

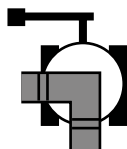
Technical Information

Size	C _v
1/2	3.2
3/4	5
1	10
1-1/2	24
2	36
2-1/2	60
3	130
4	240

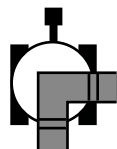
Technical Information

Flow Pattern

P1: 90° Rotation flow from center to right or left

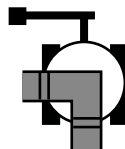


Flow Left



Flow Right

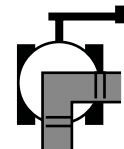
P2: 180° Rotation flow from center to right or left or shut-off position



Flow Left



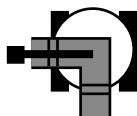
Shut Off



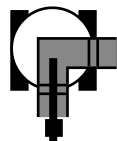
Flow Right

P3: 90° Rotation flow from center to right or left.

HORIZONTAL FLOW



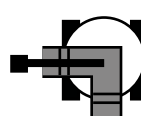
Flow Left



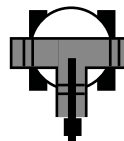
Flow Right

P4: 180° Rotation flow from center to right or left or shut-off position.

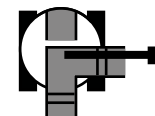
HORIZONTAL FLOW



Flow Left



Shut Off



Flow Right

Note:

The Series D88 Valves are not to be used as an isolation valve.

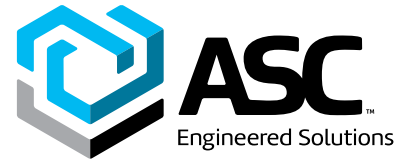


How to order
Sharpe® Series D88

Size	Series		Seat		Ends (Side)		Options	
½	D88		R	RTFE	CE	Clamp	PP	Purge Port*
¾			T	PTFE	XBTE	Butt-weld Tube Extended		
1	Body & Ends		M	TFM®	BW	Butt-weld Tube Short		
1-½	6	316L Stainless Steel	C	Cavity Filler - PTFE				
2	Ball & Stem				Flow Plan			
2-½			Seal		P1	See Chart Above		
3			T	PTFE	P2	See Chart Above		
4			M	TFM®	P3	See Chart Above		
					P4	See Chart Above		
					Flow Plan			
					1	240 Grit		
					2	320 Grit*		
					3	240 Grit EP*		
					4	320 Grit EP*		

Note:
*POA
TFM® is a registered trademark of Dyleon, LLC .
Due to continuous development of our product range, we reserve the right to change the dimensions and information for this product as required.

Building connections that last™



Sharpe® Flush Bottom Tank

High Performance
3-Piece Ball Valve



Design & Features



High Performance
3-Piece Ball Valve

Body Material

316 Stainless Steel.

Tank Pads Made From Solid Bar

Machined from 316L Stainless Steel, eliminating porosity.

3-Piece Design

In-line serviceable swing-out center section allows easy access to internal valve components without disturbing alignment of pipe.

Stem Design

Live-loaded, bottom entry, blowout proof, anti-static stem featuring packing that extends valve cycle life over conventional ball valves and is the best choice for actuation.

Stem seals are live-loaded using Belleville springs to provide consistent sealing forces, reducing or eliminating the need for frequent seal adjustment.

Tongue and Groove Design

Fully encapsulated body seals, allowing ends to be welded in-line, without time consuming and labor intensive disassembly.

Design compensates for bolt expansion and reduces the chance of external leakage.

Helps prevent seal ruptures in high pressure, cryogenic or steam applications.

Encapsulated Body Bolts

Heavy duty stainless steel bolting is protected from outside environment assuring valve integrity.

Ideal for wash-downs.

Slotted Seat Design

Relief slots help equalize body pressure and assure leak-tight sealing.

Seats also provide a wiping action that cleans ball and seats each time valve is cycled.

Choice of Seats and Seals

A wide variety of seat and seal materials are readily available for the most demanding applications including; TFE, RTFE, TFM®, Nova, Delrin, PEEK, EPDM and Viton®.

Variety of End Combinations

A wide choice of end connections are available including, but not limited to; threaded, socket weld, butt weld and flanged.

ISO 5211 Integral Mounting Pad

Ideal for actuation.

Centering lip feature assures precise alignment of bracket, stem and coupler.

Actuators may be retrofitted on existing Sharpe® Flush Bottom Tank Valves without disruption of line integrity.

Allows for secondary containment unit to be added when necessary.

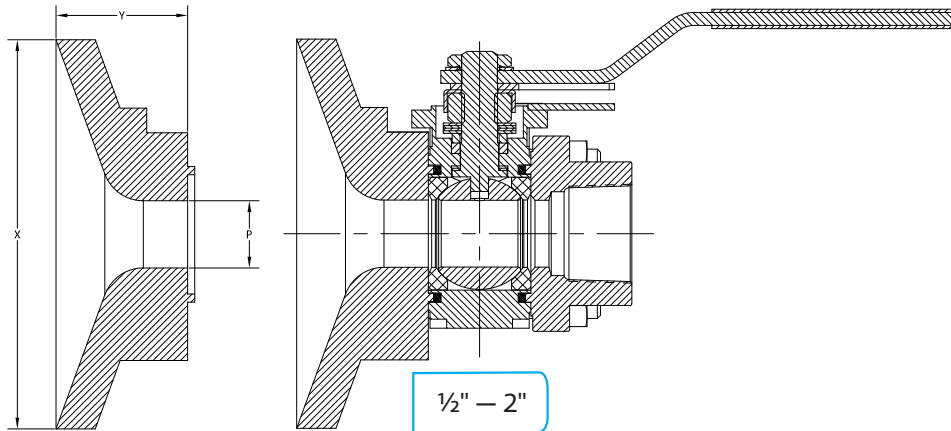
Lockable Handle

All Sharpe® Flush Bottom Tank Valves are supplied with lever or pipe handles and are designed to permit locking the valve in either the open or closed position.

Traceability

Body and end piece castings are marked with heat codes providing traceability to the chemical analysis and material test reports performed at the foundry. CMTR's (Certified Material Test Reports) are available upon request.

Dimensions



Series 84

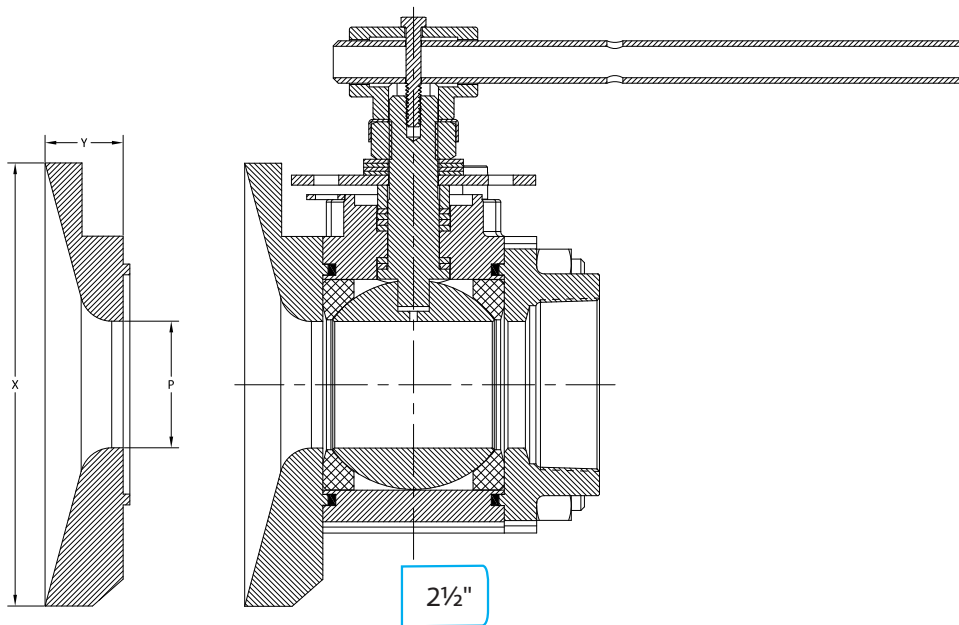
Size	X	Y	P
1"	4.75	1.61	0.82
1¼"	4.75	0.79	1.00
1½"	5.50	1.50	1.25
2"	5.50	1.10	1.50

Series 88

Size	X	Y	P
1"	3.74	0.79	0.87
1¼"	3.74	0.79	1.12
1½"	5.50	1.10	1.37
2"	5.50	1.14	1.87

Series 99

Size	X	Y	P
1"	4.75	0.79	1.00
1¼"	5.50	1.50	1.25
1½"	5.50	1.10	1.50



Series 84

Size	X	Y	P
2½"	7.00	1.32	2.00

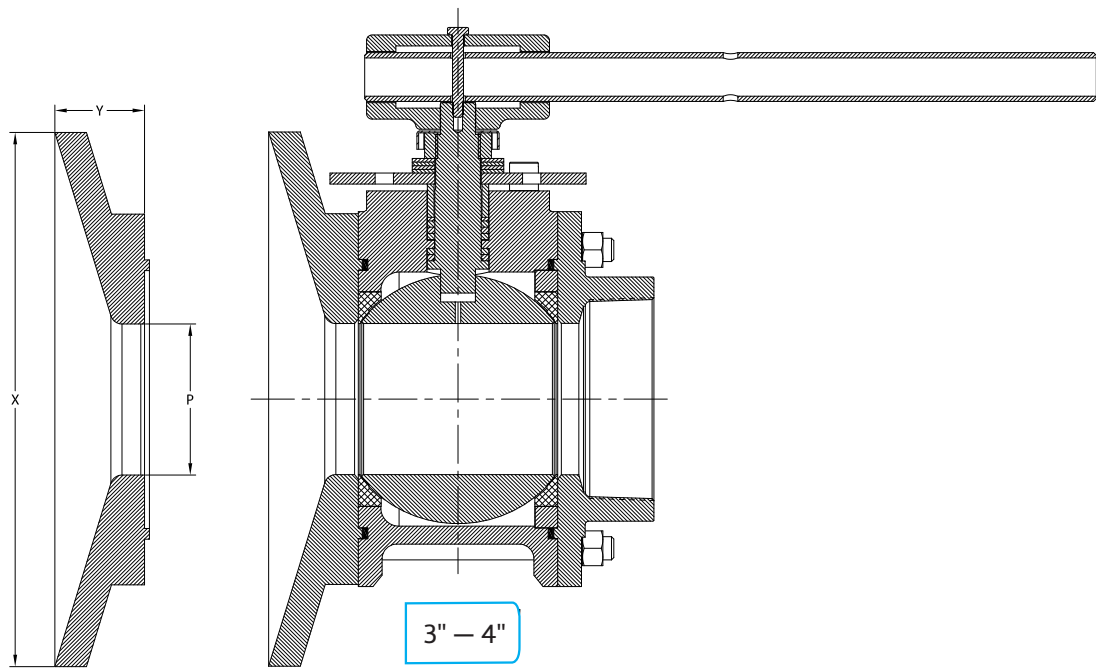
Series 88

Size	X	Y	P
2½"	7.00	1.34	2.37

Series 99

Size	X	Y	P
2"	7.00	1.32	2.00

Dimensions



Series 84

Size	X	Y	P
3"	10.00	2.16	2.50
4"	11.50	1.93	3.25

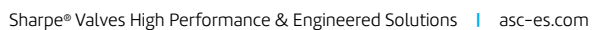
Series 88

Size	X	Y	P
3"	10.00	1.69	2.87
4"	11.50	1.93	3.83

Series 99

Size	X	Y	P
2½"	10.00	2.16	2.50
3"	11.50	1.93	3.25

Note: The dimensions above are for information only. Please refer to Sharpe® Valves if you need dimensions for construction.



About ASC Engineered Solutions

ASC Engineered Solutions is defined by quality—in its products, services and support. With nearly 2,000 employees, the company's portfolio of precision-engineered piping support, valves and connections provides products to more than 4,000 customers across industries, such as mechanical, industrial, fire protection, oil and gas, and commercial and residential construction. Its portfolio of leading brands includes ABZ Valve®, AFCON®, Anvil®, Anvil EPS, Anvil Services, Basic-PSA, Beck®, Catawissa, Cooplet®, FlexHead®, FPPI®, Gruvlok®, J.B. Smith, Merit®, North Alabama Pipe, Quadrant®, SCI®, Sharpe®, SlideLOK®, SPF®, SprinkFLEX®, Trenton Pipe and VEP. With headquarters in Oak Brook, IL, ASC also has ISO 9001:2015 certified production facilities in PA, TN, IL, TX, AL, LA, KS, and RI.



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Building connections that last™

