QSM Incorporated

TRU-FLO Valves & Automation



TRU-FLO PRODUCT OVERVIEW

QSM Incorporated

Since its inception in 1996, Quality Sourced Manufacturing, Inc., the makers and suppliers of Tru-Flo Valves and Automation, has gained the attention of the food, pharmaceutical, beverage, pet food and personal care industries as a manufacturer of premium quality stainless steel valves and automation products. QSM, Inc. was one of the first manufacturers to bring the once costly options of our competitors, into the standard features into our valves. The Quality in our name and our continual commitment to quality comes from the top.

That philosophy filters down through the company in everything we do; from engineering, manufacturing and testing, to phone support, packing and shipping orders. You can trust in our desire to be the best in the industry. It is our sincere desire to serve our distributors and end-users by providing the highest quality product, the best possible price and to deliver our services, technical support and products with professional, ethical conduct.

To stay current in today's business, quality must be increased and designs streamlined. TRU-FLO by QSM, Inc. is economically minded with a focus on maintaining quality in design and intelligence in manufacturing and traceability. Being economical does not mean cheap or inferior products. It means being wise in the decisions being made during the manufacturing process. We also believe in superior customer service, excellence in manufacturing, motivation, initiative and communication with our customers.

For many years and for many customers, as well as several organizations, an acceptable quality and design standard was adopted for most all valve products purchased. When sanitary tri-clamp ended valves first came to the market, shorter ends, no mounting pad, endless polishing options that made your pocketbook hurt and frustrating deliveries were the norm. TRU-FLO provided one of the first uniquely designed full flow port to the market.

In current years, manufacturing has moved off-shore and many valve manufacturers have chosen to copy the old design without thinking about function, industry needs or technological advances. While many end-users choose to equate a familiar design with reliability and quality, the true test of a valve is not what is seen, but what the manufacturer includes in the mechanics and internals for the valve; durability, flexibility and interchangeability of parts and improved design technology. QSM/TRU-FLO believes in comprehensive testing and training being available to all customers. We can also provide optional end connections to meet customers' needs.

QSM. Inc./TRU-FLO SANITARY VALVES & AUTOMATION value and are committed to being involved and complying with the international standards organizations such as FDA, USDA, 3A, BPE and ASTM .



Quality is in our name...

In continuing product development, QSM reserves the right to modify information, dimensional details and/or dynamic features without permission.

www.tru-flo.com

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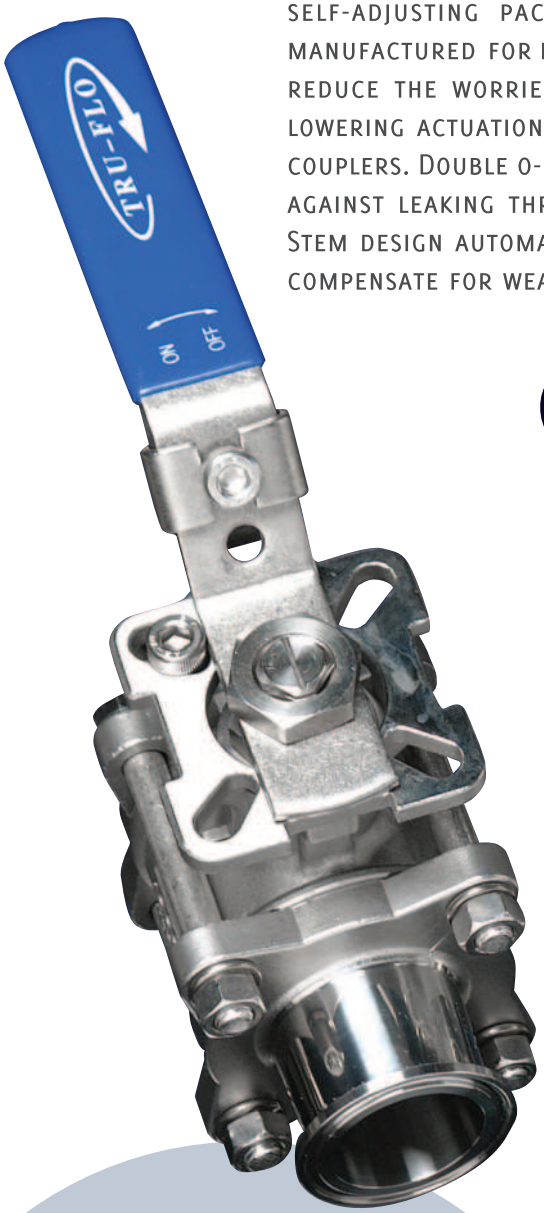
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SANITARY DIRECT MOUNT BALL VALVES



The next generation ball valves are live loaded with self-adjusting packing and a design that is specifically manufactured for high cycle applications. **Tru-Flo** products reduce the worries of routine maintenance expenses while lowering actuation costs by eliminating custom brackets and couplers. Double o-ring protection provides additional defense against leaking through stem and lowers operating torque. Stem design automatically adjusts compression of the seal to compensate for wear, pressure, and temperature.

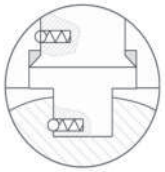


Features & Specifications

- ASTM 316/316L stainless steel
- 3-PC body design facilitates inspection and easy inline repair
- Full port flow to tube ID without tapering
- Highly-polished 8-12 Ra ID
- Live loaded, self-adjusting packing and Belleville washers provide better sealing and defense against leaking
- 3-PC, v-ring stem packing for superior sealing and lower torque
- Blowout-proof, bottom entry stem design and anti-static device
- ANSI B16/B2/B18, MSS-SP82, NSF 61 AWWA
- Using body cavity fillers meets FDA, USDA & 3A requirements
- Designed for high cycle automated applications
- Standard with Tri-Clamp® ends; other end configuration available
- 100% tested and inspected prior to shipping
- Full traceability of all components
- SST x PTFE seats available for high temperature applications
- Available in regular or cavity filled styles
- Standard seats are TFM-1600
- Cavity fillers are virgin PTFE-meets CFR 21
- Cavity Filled Are suitable for up to 50% vacuum applications
- ½"-2" have 4 bolts, 2½"-4" have 6 bolts, 6" and larger have 8 bolts

Available in STANDARD or CAVITY FILLED seats

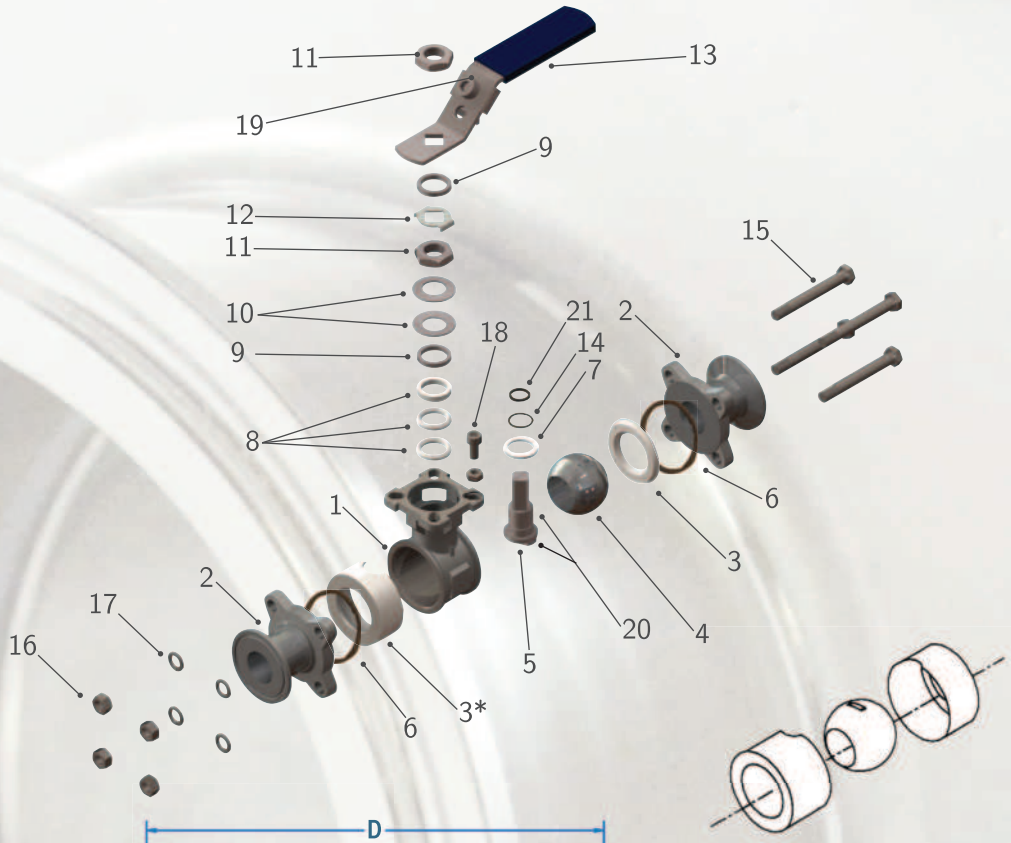




Pyramidal Stem, Double Sealing & Anti-Static Device

Pressure-Temperature Chart PT Page 22

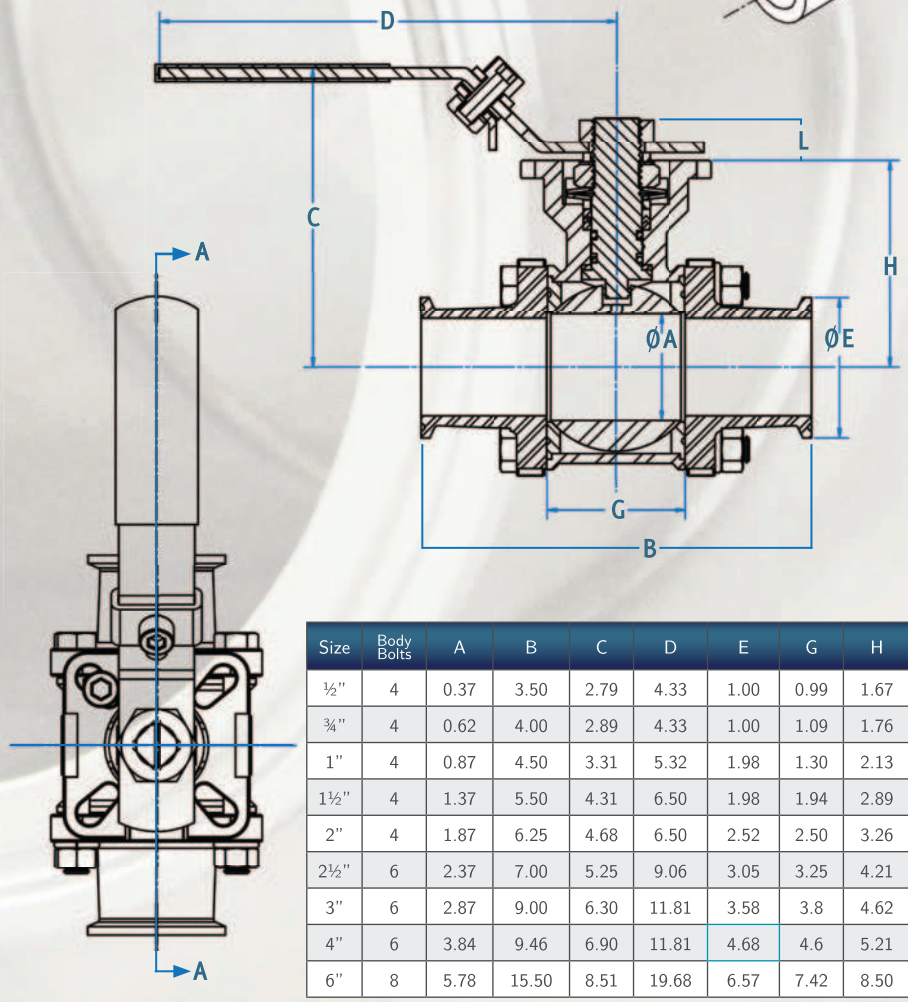
EA–33NF–SN

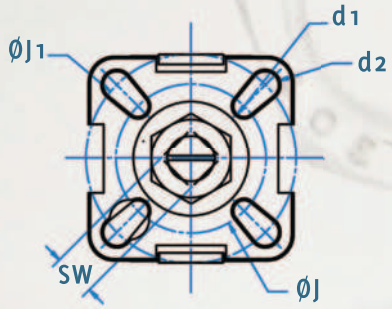


Item	Part (Qty)	Material
1	Body	CF8M/316
2	End Caps (2)	CF8M/316
3*	Seats (2)	PTFE
4	Ball	SUS 316
5	Stem	SUS 316
6	Body Seal (2)	PTFE
7	Stem Gasket	PTFE
8	Stem Seals (3)	PTFE
9	Gland Ring (2)	SUS 304
10	Belleville Spring Washer (2)	SUS 301
11	Lever Nut	SUS 304
12	Locking Tab	SUS 304
13	Handle	SUS 304
14	O-ring	VITON®
15	Bolts (4)	SUS 304
16	Bolts Nut (4)	SUS 304
17	Washer (4)	SUS 304
18	Stop Screw	SUS 304
19	Locking Device	SUS 304
20	Static Device (2)	SUS 316
21	O-ring	VITON®

*Option: Cavity Filled

Standard Grit	Ra		RMS		Class
	µin	µ	µin	µ	
240g	14–18	.34–.46	15–20	.38–.51	B
320g	8–10	.21–.25	9–11	.23–.28	A





Size	Body Bolts	A	B	C	D	E	G	H	L	J	J1	d1	d2	SW	ISO5211
½"	4	0.37	3.50	2.79	4.33	1.00	0.99	1.67	0.37	1.42	1.65	0.24	0.24	0.35	F03/F04
¾"	4	0.62	4.00	2.89	4.33	1.00	1.09	1.76	0.37	1.42	1.65	0.24	0.24	0.35	F03/F04
1"	4	0.87	4.50	3.31	5.32	1.98	1.30	2.13	0.39	1.65	1.97	0.24	0.28	0.43	F04/F05
1½"	4	1.37	5.50	4.31	6.50	1.98	1.94	2.89	0.58	1.97	2.76	0.28	0.35	0.55	F05/F07
2"	4	1.87	6.25	4.68	6.50	2.52	2.50	3.26	0.58	1.97	2.76	0.28	0.35	0.55	F05/F07
2½"	6	2.37	7.00	5.25	9.06	3.05	3.25	4.21	0.67	2.76	4.02	0.35	0.43	0.67	F07/F10
3"	6	2.87	9.00	6.30	11.81	3.58	3.8	4.62	0.67	2.76	4.02	0.35	0.43	0.67	F07/F10
4"	6	3.84	9.46	6.90	11.81	4.68	4.6	5.21	0.67	2.76	4.02	0.35	0.43	0.67	F07/F10
6"	8	5.78	15.50	8.51	19.68	6.57	7.42	8.50	1.06	4.02	4.92	0.47	0.55	1.06	F10/F12

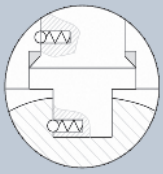
SANITARY DIRECT MOUNT BALL VALVES



Features & Specifications

- » ASTM 316/316L stainless steel; 316L extended butt-weld ends allow inline welding without disassembly of valve and are suitable for orbital welding
- » 3-PC body design facilities inspection and easy inline repair
- » Full port flow to tube ID without tapering
- » Highly polished 8-12 Ra ID
- » Live loaded, self-adjusting packing and Belleville washers provide better sealing and defense against leaking
- » 3-PC, v-ring stem packing for superior sealing and lower torque
- » Blowout-proof, bottom entry stem design and anti-static device
- » ANSI B16/B2/B18, MSS-SP82, NSF 61 AWWA
- » Using body cavity fillers meets FDA, USDA & 3A requirements
- » Designed for high cycle automated applications
- » 100% tested and inspected prior to shipping
- » Full traceability of all components
- » SST x PTFE seats available for high temperature applications
- » Available in regular or cavity filled styles
- » Standard seats are TFM-1600
- » Cavity fillers are virgin PTFE-meets CFR21
- » Sizes ½"–2" in 316L extended tube design
- » 2½"–6" available in short butt-weld design
- » Cavity Filled Are suitable for up to 50% vacuum applications
- » ½"-2" have 4 bolts, 2½"-4" have 6 bolts, 6" and larger have 8 bolts

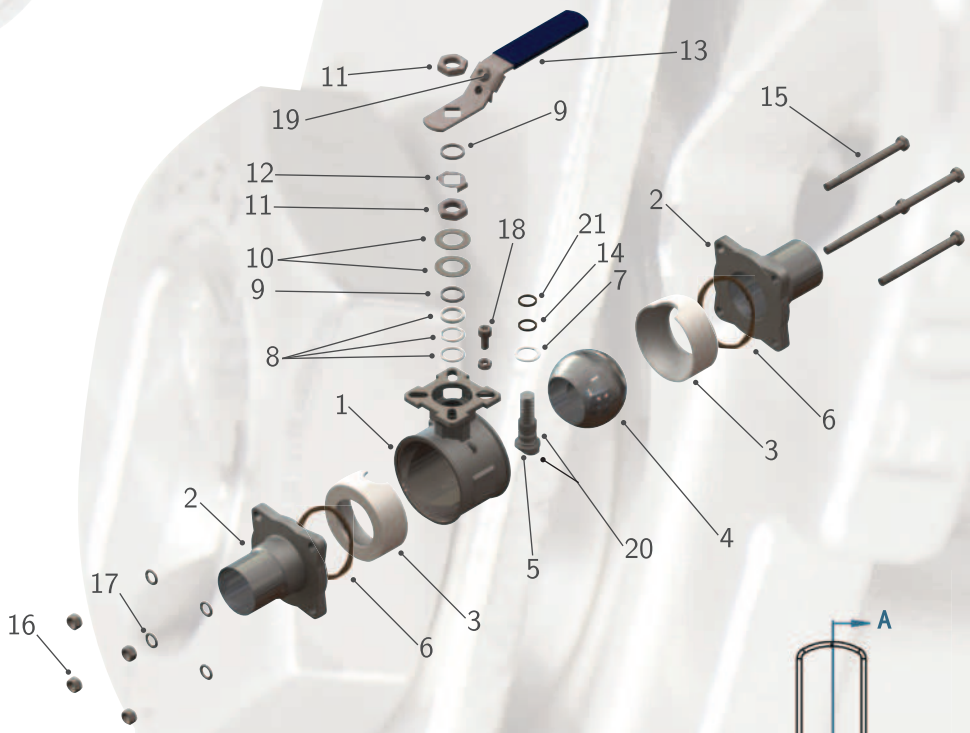
Pressure-Temperature Chart PT Page 22



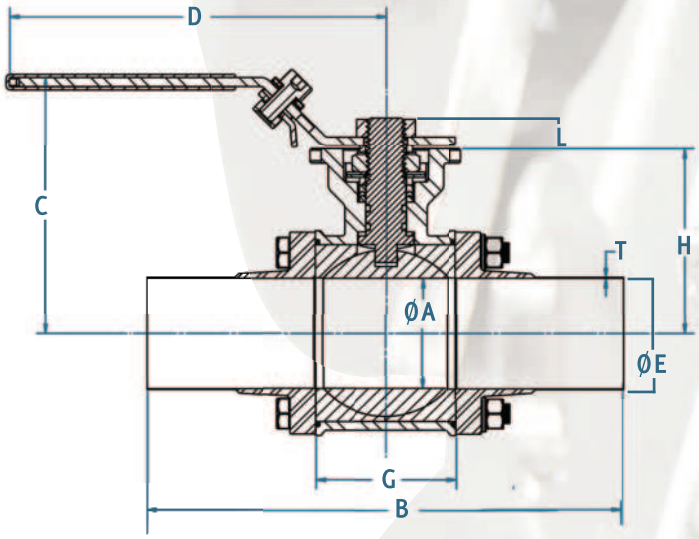
Pyramidal Stem, Double Sealing & Anti-Static Device

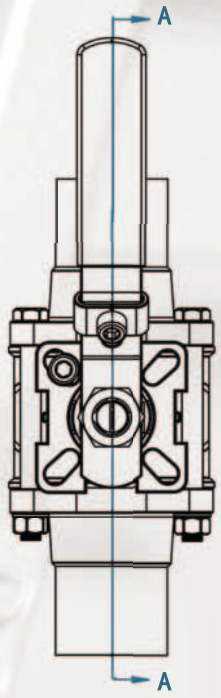


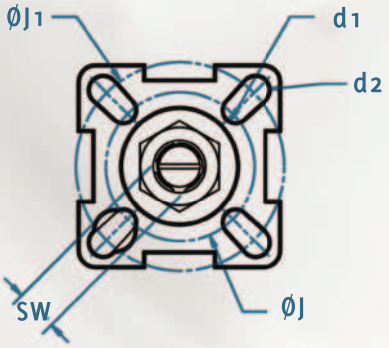
EA–33NF–EXT



Item	Part (Qty)	Material
1	Body	CF8M/316
2	End Caps (2)	CF8M/316
3	Seats (2)	PTFE
4	Ball	SUS 316
5	Stem	SUS 316
6	Body Seal (2)	PTFE
7	Gasket	PTFE
8	Seal	PTFE
9	Gland Ring (2)	SUS 304
10	Belleville Spring Washer (2)	SUS 301
11	Lever Nut	SUS 304
12	Locking Tab	SUS 304
13	Handle	SUS 304
14	O-ring	VITON®
15	Bolts (4)	SUS 304
16	Bolts Nut (4)	SUS 304
17	Washer (4)	SUS 304
18	Stop Screw	SUS 304
19	Locking Device	SUS 304
20	Static Device (2)	SUS 316
21	O-ring (2)	VITON®







Size	A	B	C	D	E	G	H	L	J	J1	d1	d2	SW	T	ISO5211
½"	0.37	6	2.79	4.33	0.50	0.99	1.67	0.37	1.42	1.65	0.24	0.24	0.35	0.07	F03/F04
¾"	0.63	6	2.89	4.33	0.76	1.09	1.76	0.37	1.42	1.65	0.24	0.24	0.35	0.07	F03/F04
1"	0.87	6.5	3.31	5.32	1.00	1.30	2.13	0.39	1.65	1.97	0.24	0.28	0.43	0.07	F04/F05
1½"	1.37	8	4.31	6.50	1.50	1.94	2.89	0.58	1.97	2.76	0.28	0.35	0.55	0.07	F05/F07
2"	1.87	8.5	4.68	6.50	2.00	2.50	3.26	0.58	1.97	2.76	0.28	0.35	0.55	0.07	F05/F07
2½"	2.37	7.25	5.25	9.06	2.50	3.25	4.21	0.67	2.76	4.02	0.35	0.43	0.67	0.07	F07/F10
3"	2.88	9.125	5.91	11.81	3.00	3.8	4.62	0.67	2.76	4.02	0.35	0.43	0.67	0.07	F07/F10
4"	3.84	9.75	6.90	11.81	4.00	4.6	5.21	0.67	2.76	4.02	0.35	0.43	0.67	0.08	F07/F10
6"	5.78	15.50	8.51	19.68	6.0	7.4	8.5	1.06	4.02	4.92	0.47	0.55	1.06	0.11	F10/F12

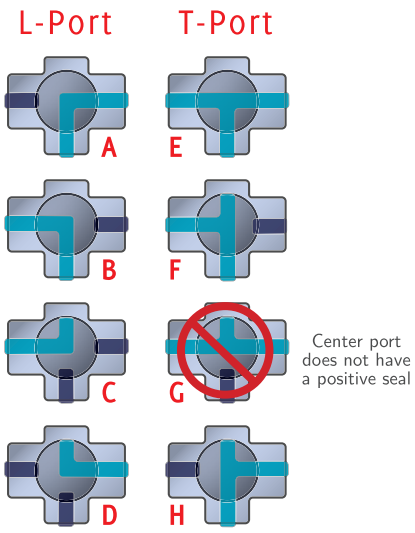
Note: Sizes 2½"–6" are short butt-weld.

DIVERTER 3–WAY SANITARY BALL VALVES

STANDARD WITH
CAVITY FILLED SEATS

Features & Specifications

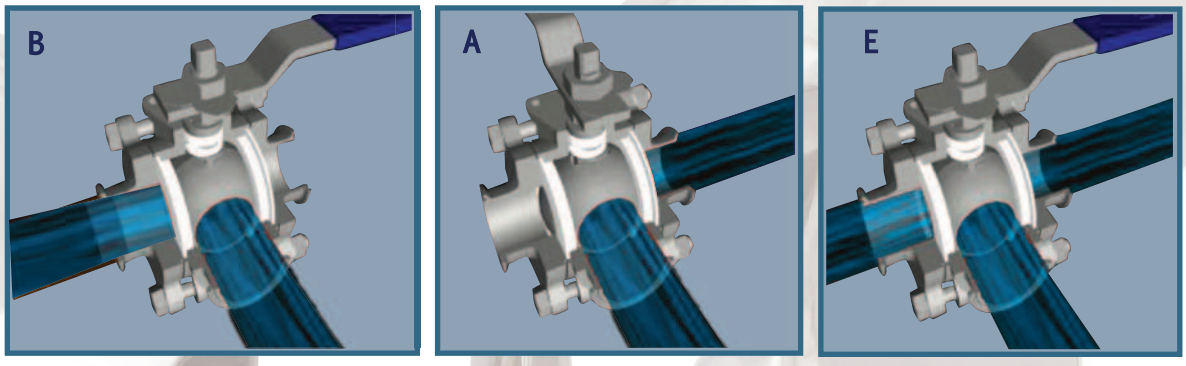
- ASTM 316/316L stainless steel construction, ANSI B16/B2/B18
- Meets FDA, USDA & 3A requirements
- High cycle stem design
- Live loaded, self-adjusting packing and blowout proof stem design
- Direct ISO mounting of actuation eliminates need for brackets and couplers
- Highly polished I.D., 8-12 Ra
- Full port, no internal taper
- High quality investment cast body and caps
- Standard with Tri-Clamp® ends, other ends available
- Diverts to L-port or T-port flow patterns
- Sizes 1"–4"
- Center port diverts flow eliminating the use of multiple valves
- Butt weld option available



Pressure-Temperature Chart PT Page 22

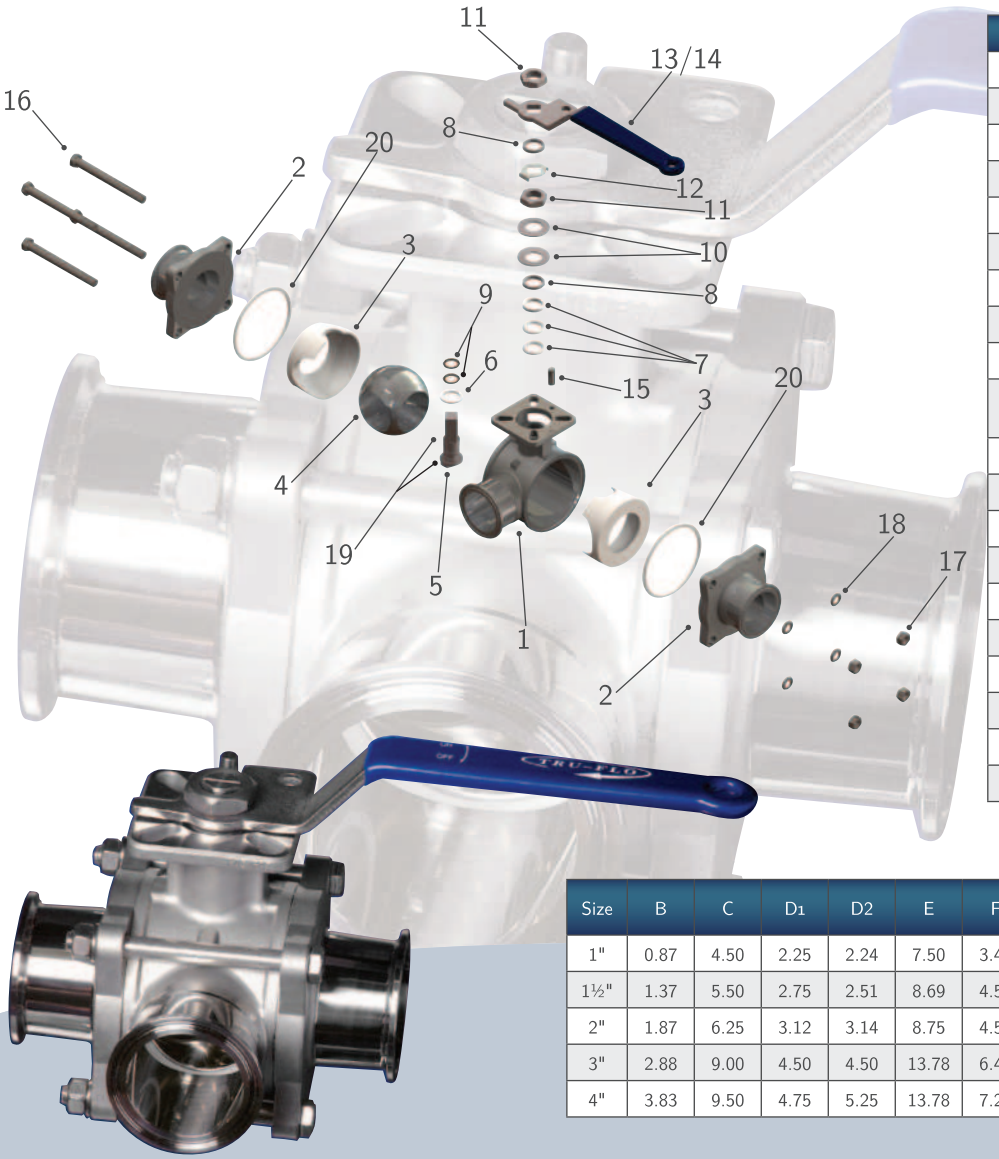
Diverter Port

*Center port remains open



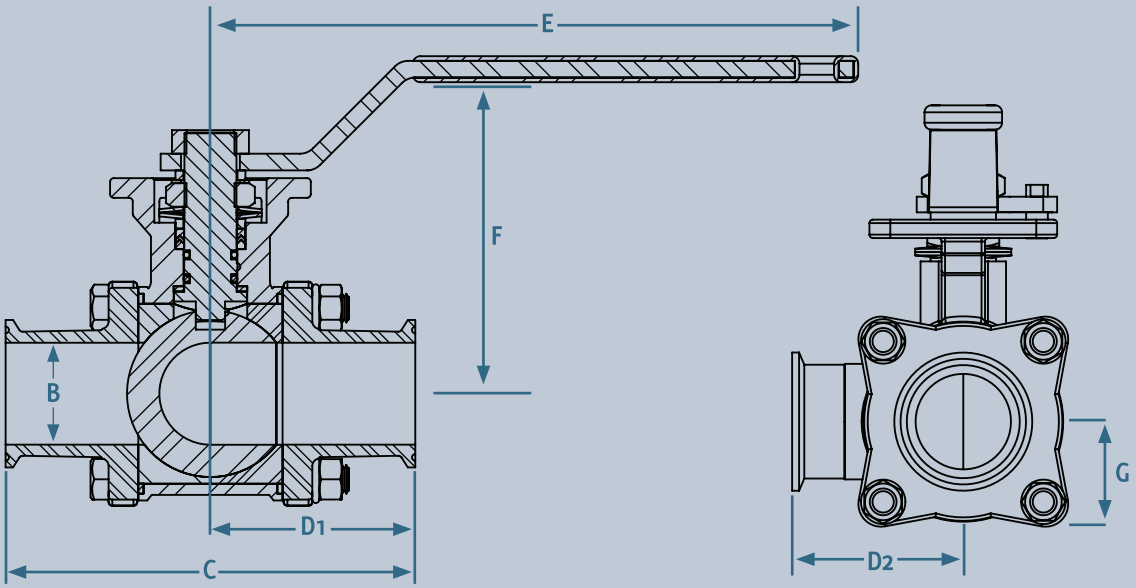
The **Tru-Flo** 3-way diverter port ball valve is designed to have the center port act as the common port and must be open at all times. You can use the L-port diverter to go from center to left (Fig. B) or to go from center to right (Fig. A). The T-port divertor can do the same configurations as the L-port but can also have all three ports opened at once (Fig. E).

EA-3308-SN-L/T *DIVERTER SERIES*



Item	Part (Qty)	Material
1	Body	CF3M/316L
2	End Caps (2)	CF3M/316L
3	Seats (2)	PTFE
4	Ball	SUS 316
5	Stem	SUS 316
6	Gasket	PTFE
7	Stem Seals (3)	PTFE
8	Gland Ring (2)	SUS 304
9	O-ring	VITON®
10	Belleville Spring Washer (2)	SUS 301
11	Lever Nut (2)	SUS 304
12	Locking Tab	SUS 304
13	Handle	SUS 304
14	Plastic Coating	Vinyl
15	Stop Screw	SUS 304
16	Bolts	SUS 304
17	Bolts Nut	SUS 304
18	Lock Washer	SUS 304
19	Static Device	SUS 316
20	Body Gaskets (2)	PTFE

Size	B	C	D1	D2	E	F	G	ISO5211	Stem (mm)	Weight (lbs)
1"	0.87	4.50	2.25	2.24	7.50	3.40	1.12	F04/F05	11	3.5
1½"	1.37	5.50	2.75	2.51	8.69	4.50	1.53	F05/F07	14	6
2"	1.87	6.25	3.12	3.14	8.75	4.50	1.92	F05/F07	14	9.5
3"	2.88	9.00	4.50	4.50	13.78	6.45	2.91	F07/F10	17	15
4"	3.83	9.50	4.75	5.25	13.78	7.25	3.50	F07/F10	17	23

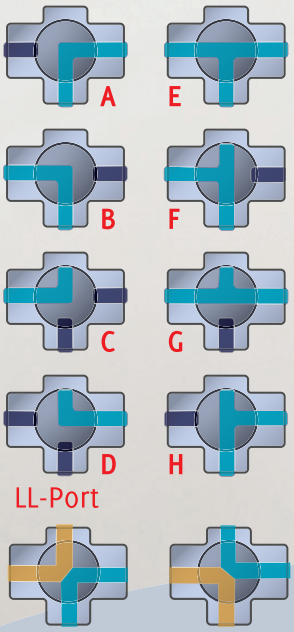


MULTIPORT 3–WAY SANITARY BALL VALVES

STANDARD WITH
CAVITY FILLED SEATS



L-Port T-Port



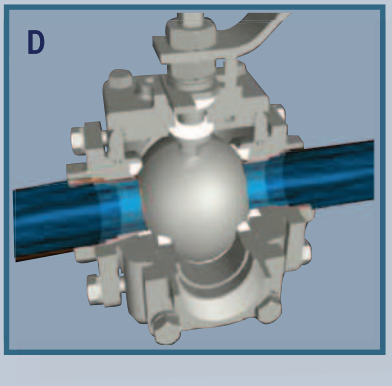
LL-Port

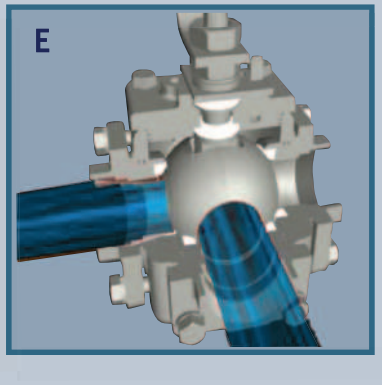
Features & Specifications

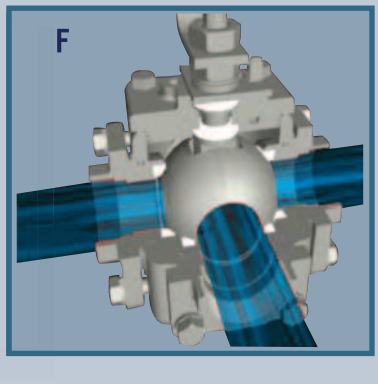
- Provides positive seal at every port
- Direct mounting ISO5211 pad facilitates easy automation and a smaller valve footprint for restrictive applications
- Spring loaded washers create live-loaded, self-adjusting stem assembly reducing maintenance costs
- Suitable for high cycle applications in manual or automated conditions–double seal leak protection
- 316/316L stainless steel, full port in 8–12 Ra finish
- Using body cavity fillers meets FDA, USDA & 3A requirements
- Available options: Tri-Clamp® or butt-weld; cavity filled is standard; L-Port or T-Port configuration; 4-way double LL ball available

Multiport

*All ports provide a positive seal

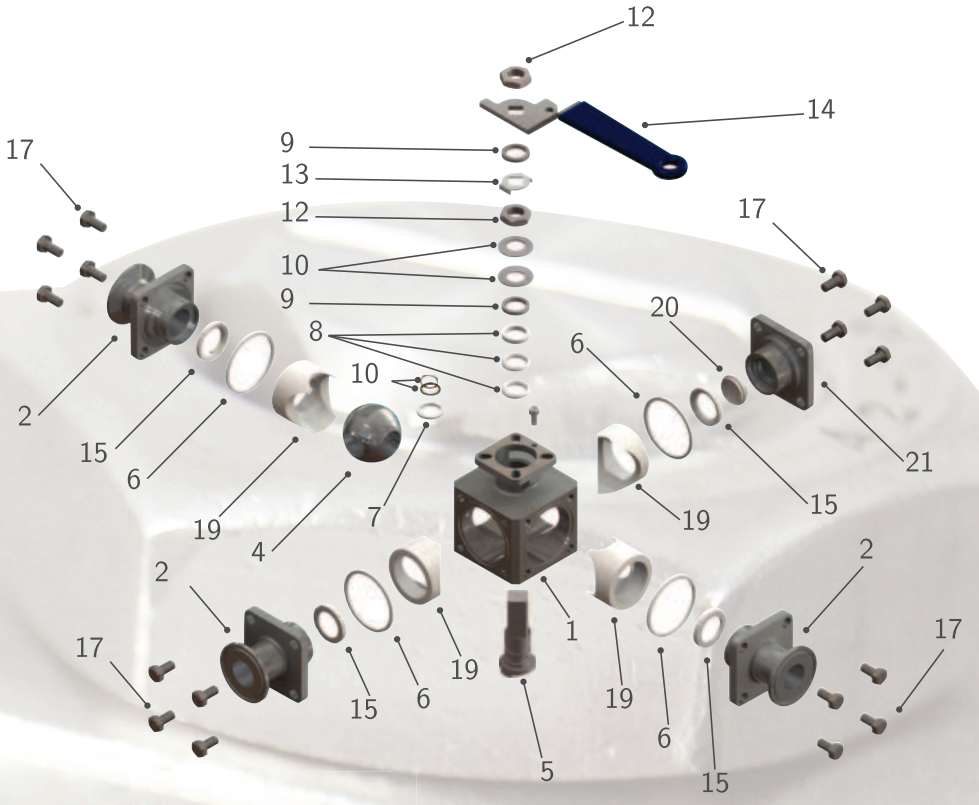




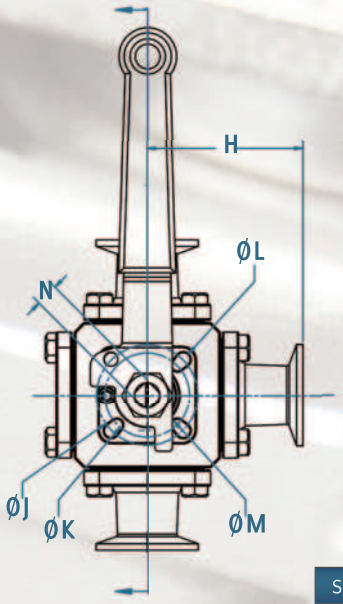


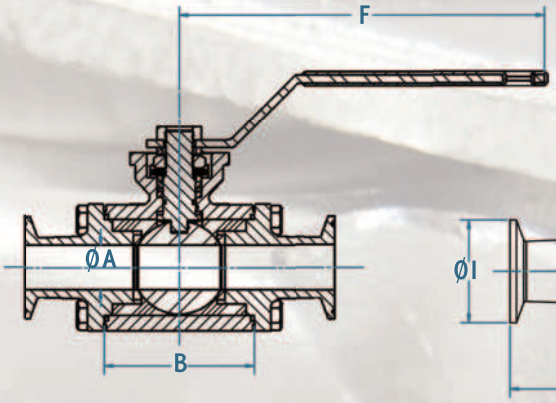
The multiport is designed for applications requiring a 3-way ball valve to close the center port and have the flow go straight through the valve (Fig. D). It allows for a positive seal thus eliminating the need for a common port. The L-port can go from center to left (Fig. E) or center to right. The T-port can do the above configurations in addition to all three ports opened at once (Fig. F).

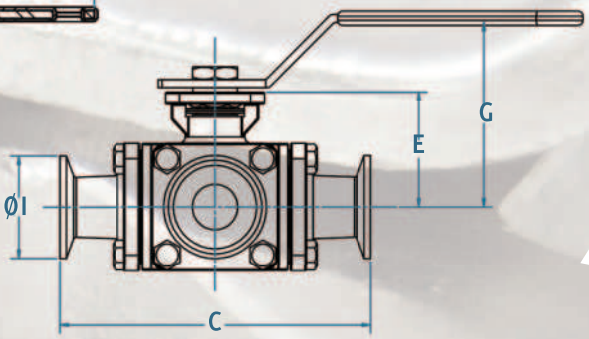
EA–407–SN



Item	Part (Qty)	Material
1	Body	CF3M
2	End Caps (3)	CF3M
3	Seats (4)	PTFE
4	Ball	SUS 316
5	Stem	SUS 316
6	Joint Gasket (4)	PTFE
7	Body Gasket	PTFE
8	Stem Seats (3)	PTFE
9	Gland Ring (2)	SUS 304
10	O-ring	VITON®
11	Belleville Spring Washer (2)	SUS 301
12	Lever Nut (2)	SUS 304
13	Locking Tab	SUS 304
14	Handle	SUS 304
15	Ball Seats	PTFE
16	Stop Screw	SUS 304
17	Bolts	SUS 304
18	Anti-Static Device	SUS 316
19	Cavity Fillers	PTFE
20	Back Plug	PTFE
21	Back Plate	CF3M







Size	A	B	C	E	F	G	H	I	J	K	L	M	N	ISO5211
½"	.37	1.05	4.33	1.54	5.19	2.36	2.16	1.00	1.95	1.40	6	3	9	F03/F04
¾"	.62	1.30	4.69	1.77	5.19	2.54	2.34	1.00	1.95	1.40	6	3	9	F03/F04
1"	0.87	2.88	6.00	2.27	7.28	3.61	3.00	1.80	1.97	1.65	7	6	11	F04/F05
1½"	1.37	3.84	7.50	3.02	8.66	4.34	3.75	1.80	2.76	1.97	9	7	14	F05/F07
2"	1.87	4.74	8.50	3.41	8.66	4.74	4.25	2.50	2.76	1.97	9	11	14	F05/F07
2½"	2.37	3.34	7.76	3.84	9.92	5.00	6.50	3.00	4.00	2.76	11	9	17	F07/F10
3"	2.88	6.77	12.00	4.86	13.78	6.63	6.00	3.57	4.00	2.76	11	9	17	F07/F10
4"	3.83	8.28	13.00	5.51	13.78	7.28	6.50	4.68	4.00	2.76	11	9	17	F07/F10

Pressure-Temperature Chart PT Page 22

HIGH PURITY SANITARY BALL VALVES

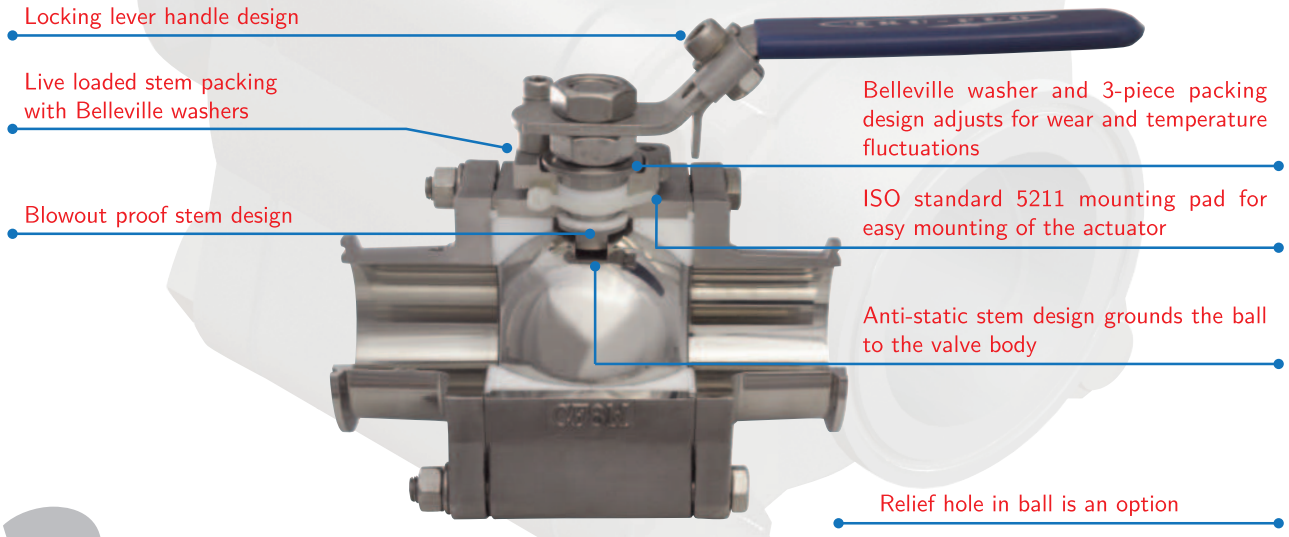


The TF-5308/5309 valve is designed for high purity applications in the pharmaceutical, biopharm, personal care products and food industries and offers a unique array of design features.

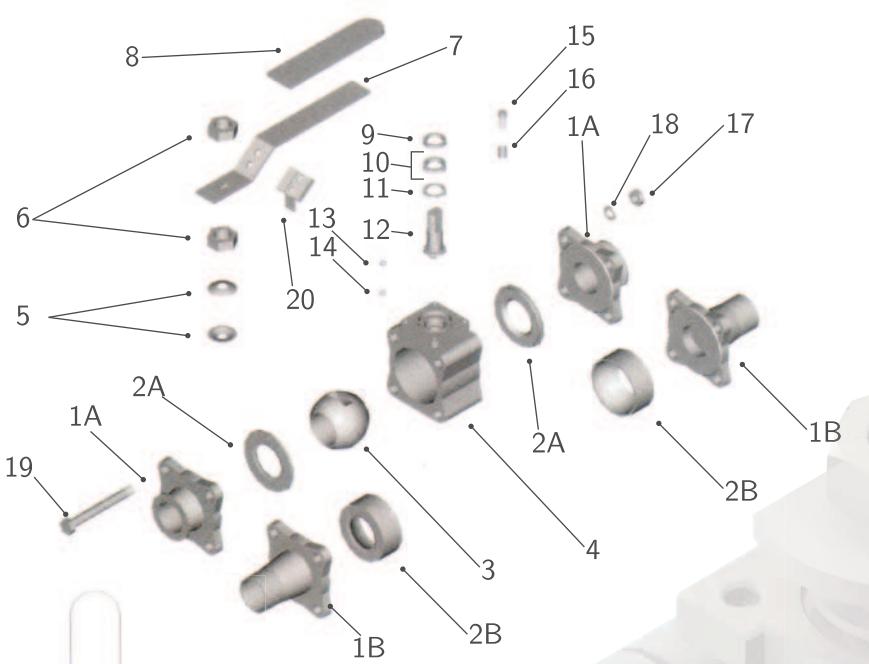
Features & Specifications



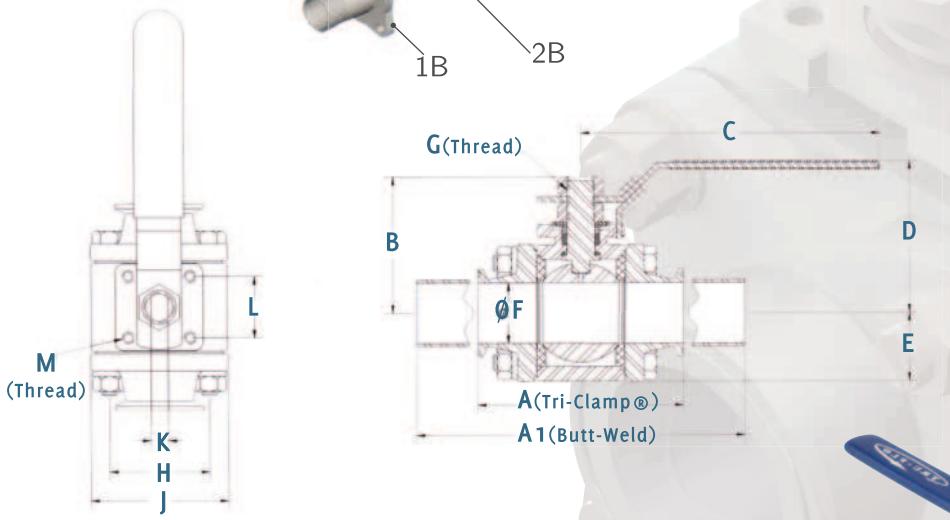
- ½"–2" sizes feature an enclosed body bolt design
- Live-loaded stem with self-adjusting packing and no internal tapers
- Designed for high cycle automated applications
- Highly polished internals and end caps 8-12 Ra
- All materials comply with FDA, USDA, & 3A requirements
- Manufacturer is ISO 9000 certified
- ASTM 316/316L stainless steel investment cast body and end caps
- Available with Tri-Clamp® or butt weld ends, butt weld ends have extended tangents for orbital welding
- 100% tested and inspected prior to shipping with full traceability of all component parts
- Weld end valves meet the ASME-BPE requirements for sulfur and carbon
- 3-PC body design for serviceability in line
- TFM1600 & PTFE components meet CFR Title 21 section 177.1550
- All valves meet MSS SP-25, SP-82, SP-110 and ANSI B16 standards
- Lubricant and silicone-free
- Valve is passivated 316L material in regular or cavity filled

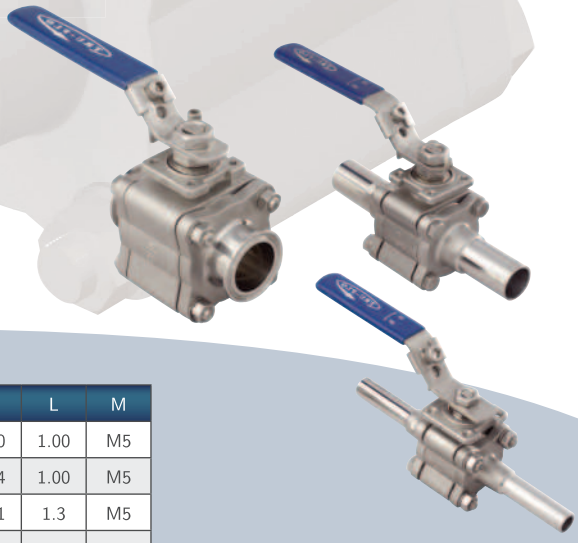


TF–5308/5309



Item	Part (Qty)	Material
1A	Tri-Clamp® End Cap (2)	T316L Stainless Steel
1B	Butt Weld End Cap (2)	T316L Stainless Steel
2A	Standard Seat (2)	TFM1600
2B	Cavity Fill Seat (2)	TFM1600
3	Ball	T316L Stainless Steel
4	Valve Body	T316L Stainless Steel
5	Belleville Washer (2)	T304 Stainless Steel
6	Lever Nut	T304 Stainless Steel
7	Handle	T304 Stainless Steel
8	Handle Cover	Vinyl
9	Gland Ring	Stainless Steel
10	Stem Seal (3)	TFM1600
11	Stem Gasket	TFM1600
12	Stem	T316L Stainless Steel
13	Springs (2)	T304 Stainless Steel
14	Static Device (2)	T304 Stainless Steel
15	Stop Screw	T304 Stainless Steel
16	Handle Stop	T303 Stainless Steel
17	Hex Nut (4)	T304 Stainless Steel
18	Spring Washer (4)	T304 Stainless Steel
19	Bolt (4)	T304 Stainless Steel
20	Handle Lock	T304 Stainless Steel





1/2" to 2"

Size	A	A1	B	C	D	E	F	G	H	J	K	L	M
½"	3.50	6.06	1.75	4.33	2.05	0.75	0.37	5/16-24	1.18	1.62	0.20	1.00	M5
¾"	3.50	6.06	1.87	4.33	2.27	1.00	o.63	3/8-24	1.43	2.00	0.24	1.00	M5
1"	3.50	6.55	2.50	5.32	2.93	1.06	0.87	½-20	1.68	2.25	0.31	1.3	M5
1½"	4.50	8.06	3.18	6.50	3.50	1.50	1.37	5/8-18	2.38	3.00	0.39	1.4	M6
2"	5.00	8.56	3.38	6.50	3.96	1.75	1.87	5/8-18	2.88	3.65	0.39	1.5	M6

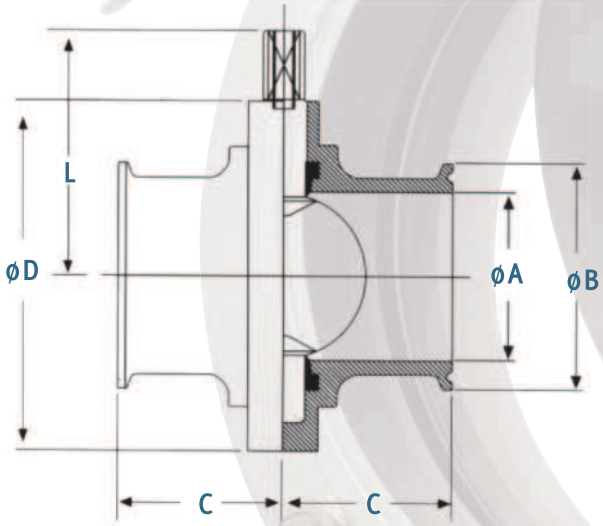
SANITARY 316L BUTTERFLY VALVES



NOW UP TO 12" AVAILABLE FOR IMMEDIATE DELIVERY!

Features & Specifications

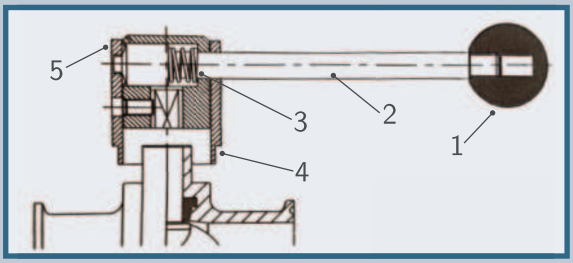
- » ASTM 316L grade stainless steel
- » Surface finish 25 Ra meets 3-A, FDA & USDA standards
- » 316L mirror finish disc provides an even flow preventing obstructions and restrictions
- » Opposing body bolt design prevents loosening between body sections due to vibration and operation, and provides positive sealing
- » Bolting is flush with body surface (½"–6")
- » FDA approved available options: silicone, EPDM and VITON®
- » Multi-position, 304SS, spring loaded lock handle
- » Standard: Tri-Clamp® or butt weld ends; other options available
- » Suitable for actuation with pneumatic, electric, or canister actuators
- » 110 PSI @ 200°F (Approx. 95°C)
- » Not recommended for vacuum



Tri-Clamp® Standard

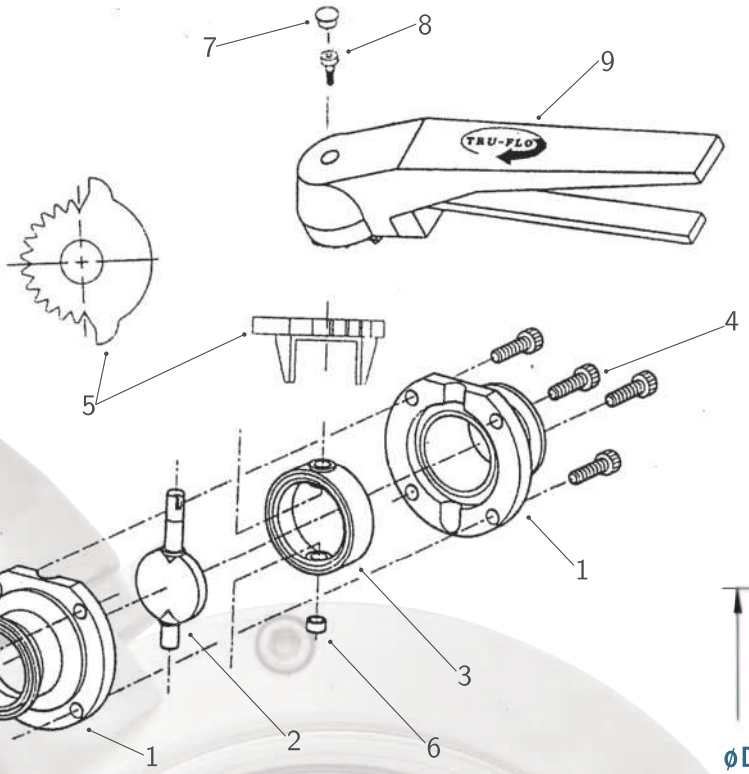
Size	A	B	C	D	L
½	0.38	1.00	1.75	3.10	2.16
¾	0.62	1.00	1.75	3.10	2.16
1	0.87	1.99	1.75	3.11	2.40
1½	1.37	1.99	1.75	3.35	2.53
2	1.87	2.52	1.75	4.13	2.93
2½	2.37	3.05	1.88	4.41	3.06
3	2.84	3.58	2.0	4.92	3.32
4	3.84	4.69	2.38	6.18	4.00
6	5.84	6.57	3.00	8.20	6.35
6–DJ	5.84	6.57	2.87	8.46	6.36
8	7.78	8.57	3.25	11.22	7.83
10	9.70	10.57	3.28	13.5	8.95
12	11.70	12.56	2.87	13.46	9.09

Item	Part	Material
1	Knob	Technopolymer
2	Steel Bar	Stainless Steel
3	Spring	Stainless Steel
4	Casing	Stainless Steel
5	Holder	Stainless Steel

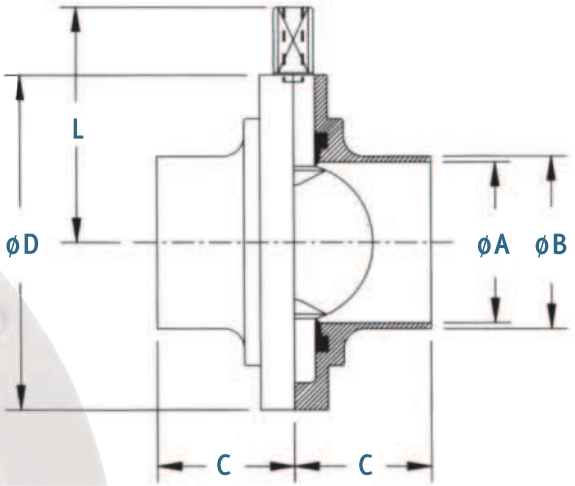


Handle for sizes 8"–12"

BFY–316L & WBFY–316L



Item	Part (Qty)	Material
1	Body Half (2)	316L
2	Disc	316L
3	Seal	Silicone/EPDM/VITON®
4	Body Bolts (4)	304 SS
5	Notch Plate	316 SS
6	Body Cap	BUNA–N
7	Handle Cap	BUNA–N
8	Handle Screw	304 SS
9	13-Position Handle	304 SS





Standard Short Butt-Weld

Size	A	B	C	D	L
1	0.87	1.0	1.0	3.43	2.40
1½	1.37	1.50	1.0	3.82	2.53
2	1.87	2.00	1.0	4.30	2.93
2½	2.37	2.50	1.0	4.33	3.06
3	2.84	3.00	1.25	4.92	3.32
4	3.84	4.00	1.25	6.18	4.00
6	5.84	6.00	2.75	8.20	8.35
6–DJ	5.84	6.00	1.77	8.46	6.36
8	7.93	8.00	1.77	11.22	7.83
10	9.90	10.00	1.77	11.22	8.95
12	11.90	12.00	1.77	13.46	9.09

Optional Long Butt-Weld

Size	A	B	C	D	L
1	0.87	1.00	1.75	3.42	2.40
1½	1.37	1.50	1.75	3.82	2.53
2"	1.87	2.00	1.75	4.30	2.93
2½	2.37	2.50	1.88	4.33	3.06
3	2.84	3.00	2.00	4.92	3.32
4	3.84	4.00	2.38	6.18	4.00
6	5.84	6.00	2.75	8.20	6.36
6–DJ	5.84	6.00	2.63	8.46	6.36
8	7.78	8.00	3.25	11.22	7.83
10	9.70	10.00	3.28	13.5	8.95
12	11.7	12.00	2.87	13.46	9.09

Sanitary Butterfly Valve Seal Chart
SC
Page 22

304SS CANISTER ACTUATOR K1111 SERIES

Features & Specifications

- Constructed of 304 stainless steel
- Available as Air/Spring or Air/Air operated
- Solenoid and proximity switches are available
- K1111–1 (non-solenoid) equipped with friction fit plastic top
- K1111–2 has secured NEMA 4 stainless cover with solenoid and mechanical limit switch
- K1111-3 NAMUR solenoid and magnetic proximity switch
- Designed specifically to actuate up to 4" butterfly valves
- Protected NEMA 4 dome ideal for locations requiring washdown without damaging sensitive electronics
- Suitable for pharmaceutical and food processing applications
- Actuator available sizes from ½" to 4"
- Air connections are ⅛" BPT

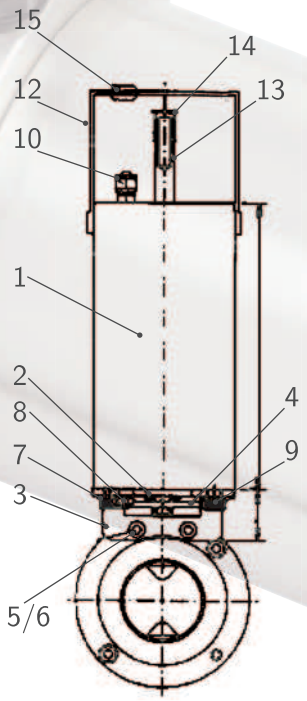




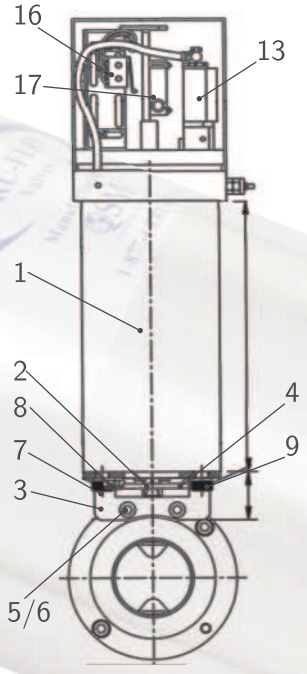
New Feature

- New light ring allows 360 degree visual indication of valve position from a distance of over 20 feet
- Easy wiring with option for M12 cord set

Item	Part (Qty)	Material
1	Body	304 SS
2	Coupling Axle Piece	304 SS
3	Mounting Bracket	304 SS
4	Plastic Positioning Ring	304 SS
5	M6x30 Stainless Steel Screw (2)	304 SS
6	M6 Nut (2)	304 SS
7	M8x12 Stainless Steel Screw (2)	304 SS
8	Air Outlet Filter	Teflon®
9	Piston O-ring	Teflon®
10	Air Connection	Copper
11	Connection	304 SS
12	Cover	304 SS
13	Inox Piston Stem	304 SS
14	Stem Protection Plug	304 SS
15	Air Flow Tube Guide	304 SS
16	Micro Switch	304 SS
17	Proximity Detector	304 SS
18	Solenoid	304 SS



K1111–1



K1111–2
Solenoid & Mechanical Limit Switch

K1111–3
Solenoid & Magnetic Proximity Switch

SANITARY CLAMPS 13-MH SERIES



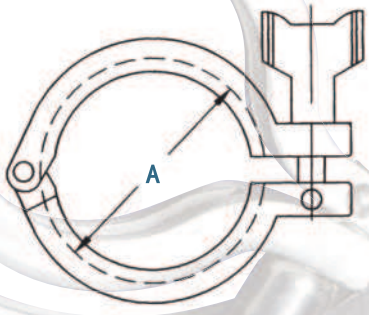
13-MHM

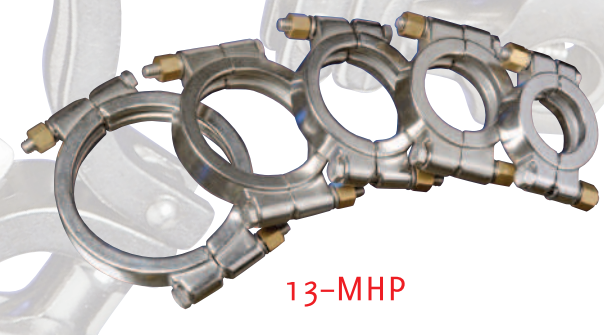
Features & Specifications

- Constructed of 304 stainless steel
- High quality product ensured with 100% factory inspection
- Various wing nut styles available

13-MHM Size	A
½"	1.13
¾"	1.13
1"	2.12
1½"	2.12
2"	2.65
2½"	3.19
3"	3.72
4"	4.82
6"	6.71
8"	8.70
10"	10.71

* Single Pin





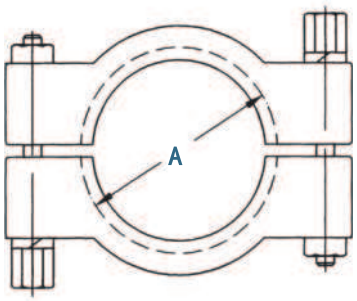
13-MHP



13-MHHS

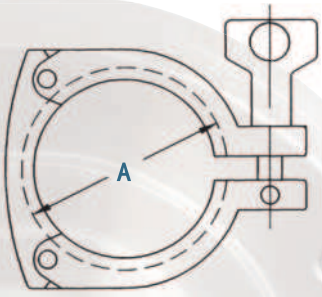
13-MHP Size	A
1"	2.05
1½"	2.05
2"	2.58
2½"	3.11
3"	3.64
4"	4.74
6"	6.71

* High Pressure



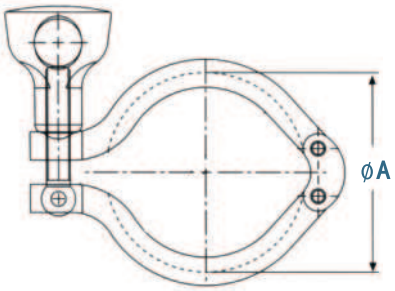
13-MHHS Size	A
½"	1.13
¾"	1.13
1½"	2.12
2"	2.65
2½"	3.19
3"	3.72
4"	4.82
6"	6.71
8"	8.70

*3-Segment



13-MHHM Size	A
1"	2.12
1½"	2.12
2"	2.65
2½"	3.19
3"	3.72
4"	4.82

* Double Pin

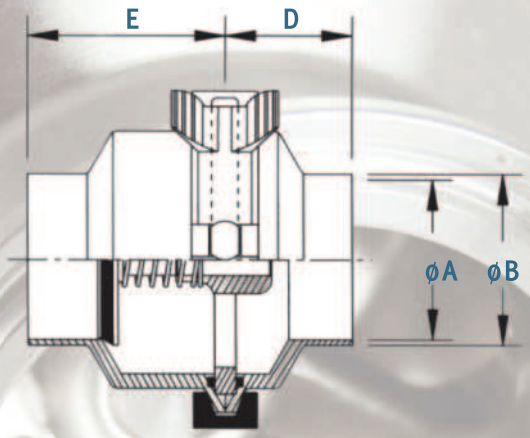


316L SS CHECK VALVE CSE-316L-V

Features & Specifications

- Precision machined ASTM 316L body, stem and disc
- 25 Ra polished body and internals
- Angle design for precision open and close
- Suitable with viscous liquids
- Stainless steel spring in both Tri-Clamp® and weld end designs
- Standard VITON® seal ring, EPDM available option
- Ideal for food, pharmaceutical, dairy and other sanitary industries
- 150 PSI @ 250˚F (Approx. 121˚C)
- ½"– 6", 4" & 6" use body bolts
- Vertical installation only
- 0.5 lb crack; 1 lb open





#1324

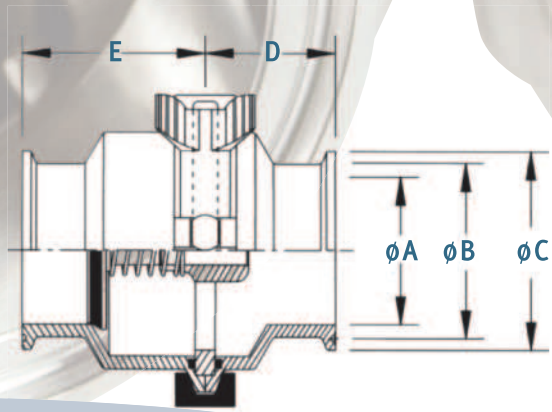
Weld Ends

Size	A	B	D	E
1"	0.87	1.01	1.50	2.32
1½"	1.37	1.51	1.50	2.32
2"	1.87	2.01	1.50	2.32
2½"	2.37	2.51	1.50	2.32
3"	2.87	3.01	1.50	2.32
4"	3.82	4.13	1.73	1.97
6"	Call Factory for Details			



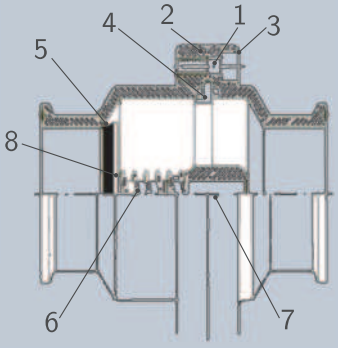
Tri-Clamp® Ends

Size	A	B	C	D	E
½"	0.37	0.69	1.00	1.10	1.54
¾"	0.63	0.69	1.00	1.10	1.54
1"	0.87	1.71	1.99	1.65	2.32
1½"	1.37	1.71	1.99	1.65	2.32
2"	1.87	2.22	2.52	1.65	2.32
2½"	2.37	2.78	3.05	1.65	2.32
3"	2.87	3.29	3.58	1.65	2.32
4"	3.82	4.43	4.69	2.32	2.60
6"	5.7"	6.09	6.57	na	na



NEW GUIDED CHECK VALVE DISK





Item	Part (Qty)	Material
1	Short Body	316L SS
2	Long Body	316L SS
3	Screw (4" & 6")	316L SS
4	Body O-ring	EPDM
5	Seal Ring	VITON®
6	Spring	316L SS
7	Flow Support Plate	316L SS
8	Disc	316L SS

SANITARY CHECK VALVE 3A-CV-CC

NEW DESIGN WHEN SUPERIOR FLOW CONTROL IS NEEDED



Features & Specifications

- Streamlined body design
- Spring operated disc
- Angled body to disc design ensures absolute seating
- Standard VITON® seal ring, EPDM available option
- Highly polished internals to 15 Ra reduces turbulence and minimizes bacteria traps
- Superior seal between body components provides positive sealing at higher temperatures and pressures
- Meets FDA, USDA & 3A standards
- Full material traceability
- Precision machined 316L stainless steel
- Vertical installation only
- 0.5 lb crack; 1 lb open

3A® #1324

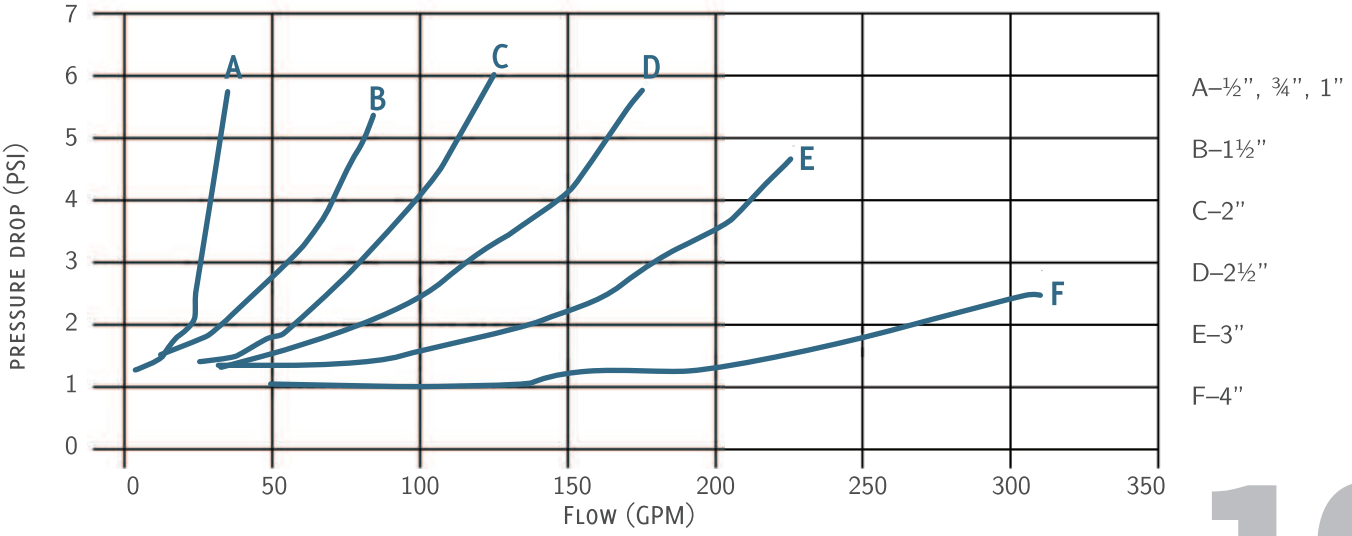
Weld Ends

Size	A	B	C	D
1"	0.87	1.01	1.38	1.93
1½"	1.37	1.51	1.46	1.93
2"	1.87	2.01	1.46	1.93
2½"	2.37	2.51	1.46	1.93
3"	2.87	3.01	1.46	1.93
4"	3.82	4.13	1.89	2.16

Tri-Clamp® Ends

Size	A	B	C	D	E
1"	0.87	1.71	1.99	1.37	1.92
1½"	1.37	1.71	1.99	1.44	1.92
2"	1.87	2.22	2.52	1.44	1.92
2½"	2.37	2.78	3.05	1.44	1.92
3"	2.87	3.29	3.58	1.44	1.92
4"	3.82	4.43	4.69	1.88	2.15

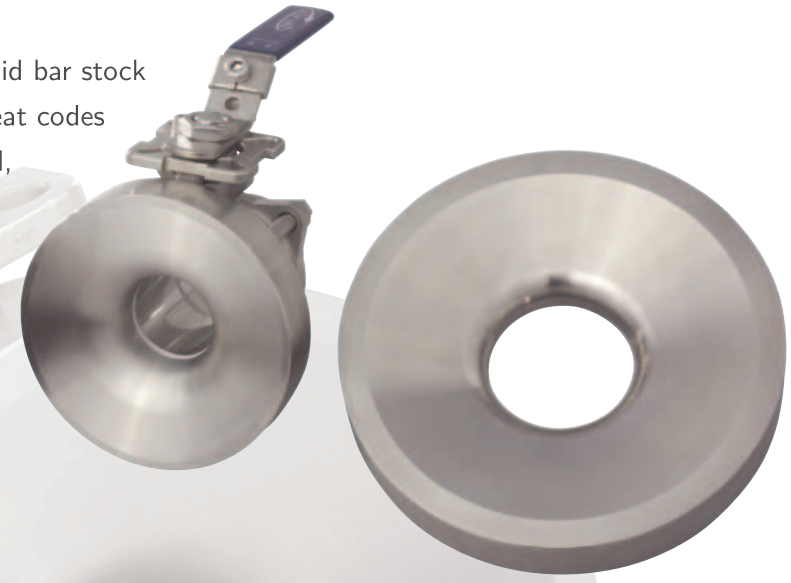
Spring Check Valve Pressure Drop

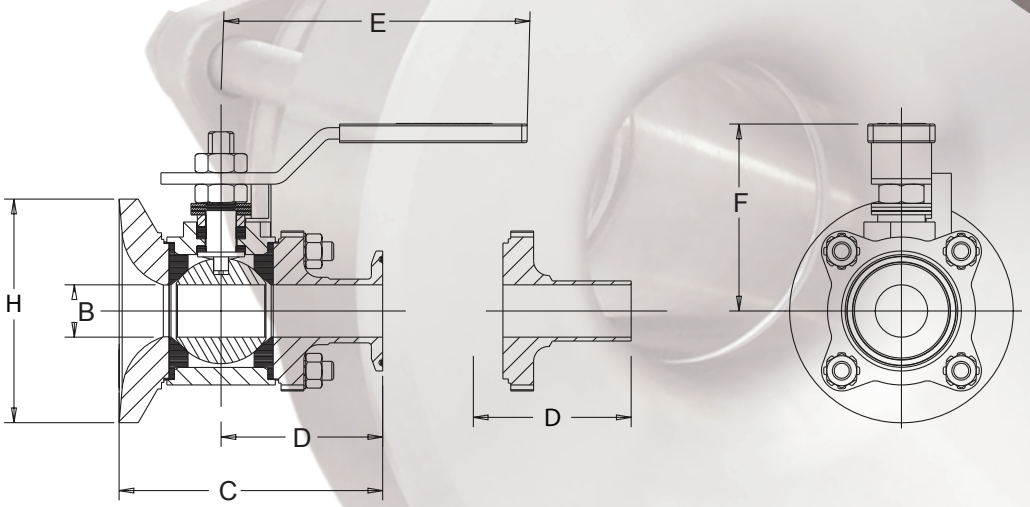


TANK VALVE EA-33NF-SN-TK

Features & Specifications

- Tru-flo Flush Bottom Tank Valve in sizes ½" to 6"
- Available for Tru-flo 2 Way EA-33NF series in sanitary and industrial valves
- ASTM 316L Stainless Steel, machined from solid bar stock
- Highly polished 8-12 RA with fully traceable heat codes
- End Connections: Buttweld, NPT, Socket Weld, Sanitary Tubb Butt weld & Tri-clamp
- Standard TFM™ - PTFE seats / seals
- ISO 5211 Integral Mounting Pad-Simple to automate
- Full port flow without tapering

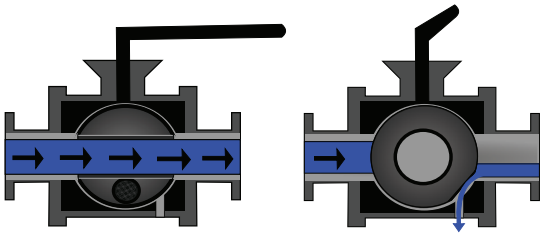




B		C		D		F	E	H	
Valve Size	Port dia.	Face-to-Face		CL to Face		CL to Top of Handle	Handle Length from CL	Pad Dia.	Pad Thickness
		Tri-Clamp	Butt-Weld	Tri-Clamp	Butt-Weld				
1/2"	0.37	3.02	4.3	1.75	3.0	2.79	4.33	2.78	1.12
3/4"	0.62	3.35	4.4	2.00	3.0	2.89	4.33	2.8	1.12
1"	0.87	4.13	5.1	2.25	3.25	3.31	5.31	3.75	1.20
1.5"	1.37	5.0	6.2	2.8	4.0	4.3	6.50	5.0	1.25
2"	1.87	5.6	6.7	3.13	4.25	4.68	6.50	6.10	1.20
3"	2.87	7.8	7.8	4.5	4.5	6.30	11.81	9.00	1.4
4"	3.83	8.7	8.7	4.7	4.7	6.90	11.81	11.50	1.7

Venting Options

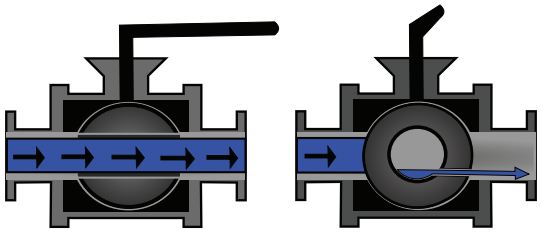
Vent to Atmosphere



Vent to atmosphere is when the valve is open, product flows through the valve. No venting occurs because the vent passage is isolated from the flow path.

When the valve is closed, shutoff occurs only on the upstream side. Downstream product flows through the vent passage to the vent port and are released to atmosphere.

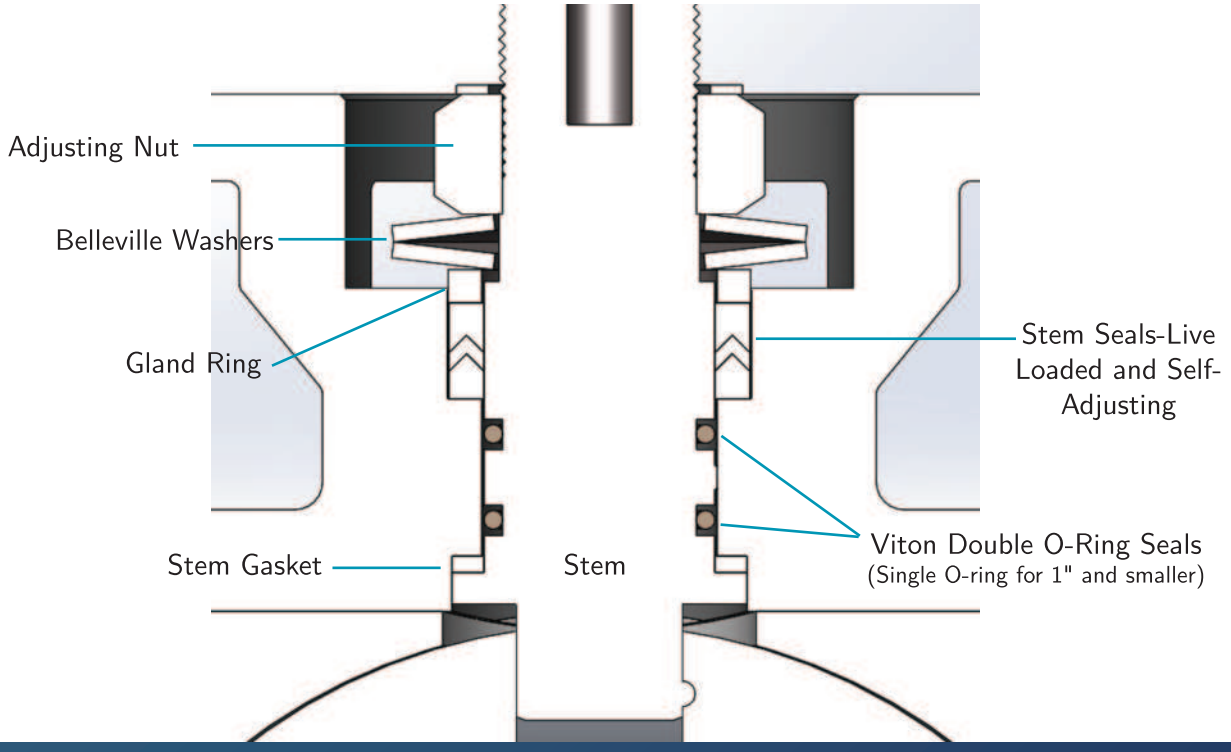
Vent to Downstream



When the valve is open, system fluids flow through the valve. The vent passage allows pressure inside the valve to remain equal to system pressure.

When the valve is closed, the vent passage faces downstream, allowing pressure to equalize between the body and the downstream system.

Anatomy of a Ball Valve Stem

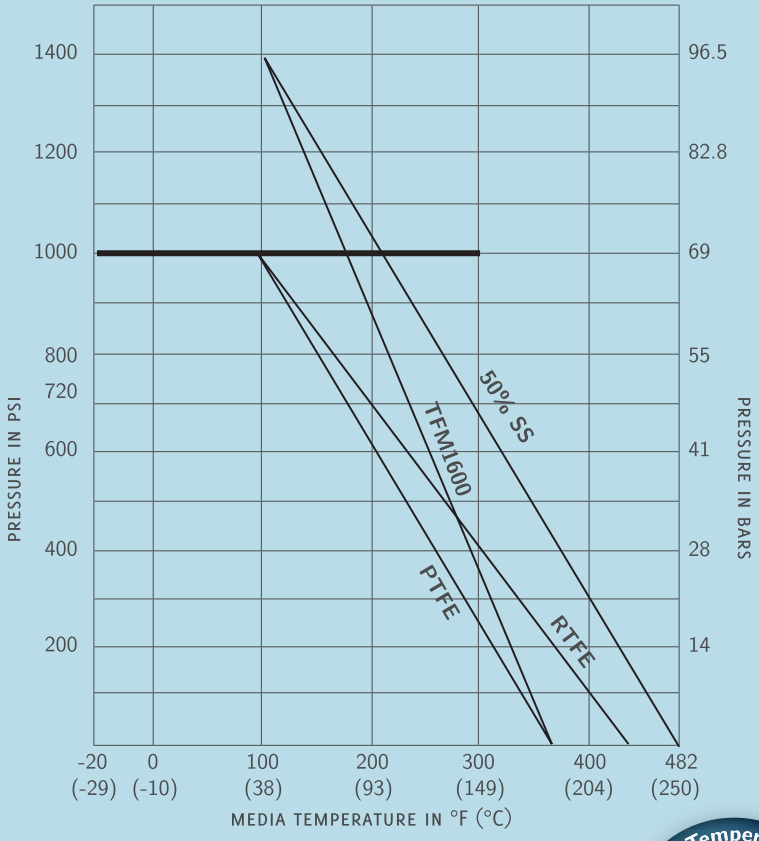


Sanitary Butterfly Valve Seal Chart

Property		EPDM (black)	VITON® (brown, grey, white, black)	SILICONE (red)
Temperature		-55°–275°F	-20°–400°F	-80°–450°F
Resistance to	Acid	Good–Excellent	Good	Good
	Alkali	Good–Excellent	Poor–Good	Poor–Good
	Petroleum Oil	Poor	Excellent	Good
	Vegetable Oil	Good	Excellent	Good
	Abrasion	Good–Excellent	Good	Good–Excellent
Compression Set		Fair	Good–Excellent	Good–Excellent

Sanitary Butterfly Valve Seal Chart SC Page 22

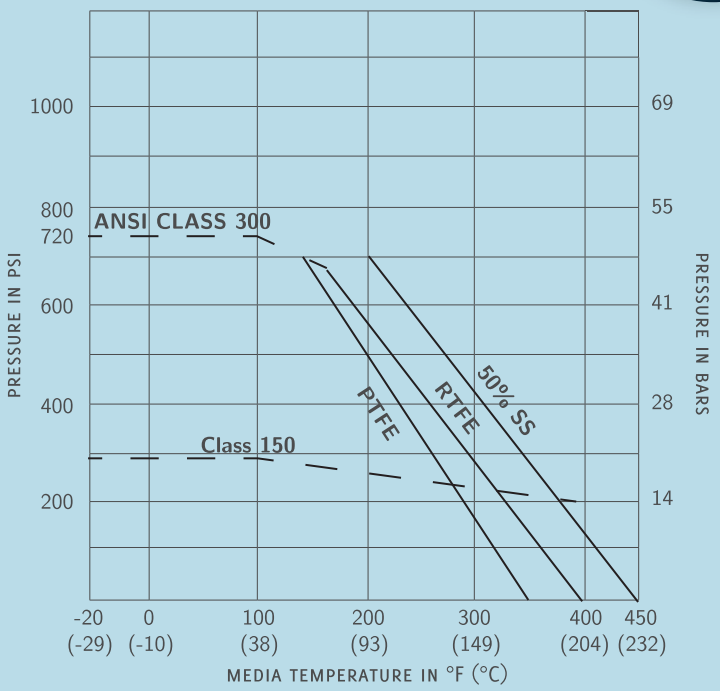
Ball Valve



Pressure-Temperature Chart PT Page 22

Flanged Valve

ANSI 150# & 300#



Material	Description	Color
Reinforced Teflon® (RPTFE)	Reinforced Polytetrafluoroethylene (RPTFE) is the standard seat used in most non-cavity Tru-Flo ball valves. 15% glass filled reinforced Teflon® offers good chemical resistance and improved cycle life. The service temperature range is -50°F to 450°F.	Chalky White
Virgin Teflon® (PTFE)	Polytetrafluoroethylene (PTFE) has excellent chemical compatibility for almost all applications. The service temperature range is -50°F to 400°F.	White
TFM1600	High performance TFE offers better creep resistance, lower coefficient of friction than regular PTFE. Ideal for semi-conductor and high purity service. The service temperature range is -50°F to 500°F.	Semi-Translucent White
Stainless Steel Impregnated Teflon® (50/50)	Stainless Steel Impregnated Teflon® Seats combine the strength of metal with the lubricity of PTFE. 50% 316SS powder combined with 50% PTFE by weight, 15% SS by volume offers abrasion resitance of metal with higher pressure and temperature ratings than RPTFE. It is often used in steam and hot oil applications. The service temperature range is -20°F to 550°F.	Grey
UHMWPE	Ultra-high Molecular Weight Polyethylene is ideal for use in low level radiation service. It also meets the requirements of the tobacco industry where Teflon® is prohibited and it offers excellent abrassive resistance. The service temperature range is -70°F to 200°F.	Semi-Translucent White
Cavity Filler (PTFE, 50/50, UHMWPE)	Designed to reduce the possiblity of contamination by entrapment of process fluids in the void normally found behind the ball and the valve body in ball valves. Ideal for applications where cross contamination is a concern. It is often used in food and viscous applications.	See Above
Accrolon® 5207	Accrolon® 5207's unique properties are the result of a proprietary process in which synthetically manufactured mica is chemically linked to PTFE. This bonding results in properties not normally attainable in reinforced PTFE. Seals made from Accrolon® 5207 have unmatched dimensional stability, excellent creep resistance and white color that uniquely position them to serve in FDA regulated applications. They are non-permeable in steam and comply with the FDA regulation 21 CFR 175.300. They also have a relative wear rate of 1/20 compared to PTFE below 300°F. Recommended for steam applications. Service temperature range: -58°F to 500°F	White

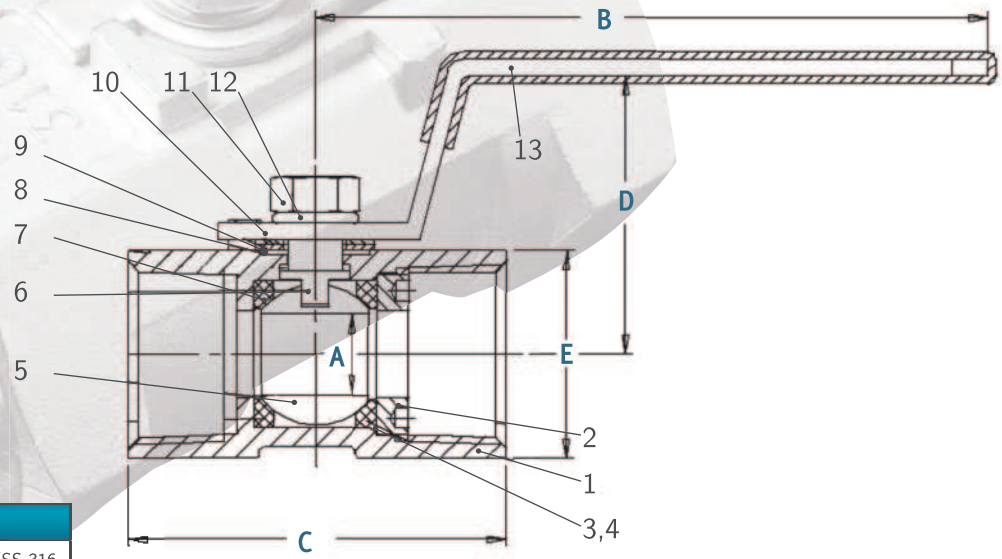


1-PC INDUSTRIAL BALL VALVES EA–102A–SE



Features & Specifications

- General purpose industrial application
- 1-piece 316 SS investment cast unibody
- Locking handle
- 800–1000 PSI WOG rating
- Reduced port design, NPT
- For use up to 450°F
- ANSI B16.31, ASTM A351
- Available in ¼"–2"
- RTFE seat



Item	Part (Qty)	Material
1	Body	ASTM A351 CF8M/SS 316
2	Seat Retainer	SS 316
3	Seat	PTFE+15% G.F.
4	Special Seat	PTFE+15% G.F.
5	Ball	ASTM A351 CF8M/SS 316
6	Stem	SS 316
7	Gasket	PTFE+15% G.F.
8	Thin Gasket	PTFE+15% G.F.
9	Flat Washer	420J1
10	Handle	SS 304
11	Nut	SS 304
12	Level Spring Washer	SS 304
13	Handle Cover	Vinyl

Pressure-Temperature Chart PT Page 22

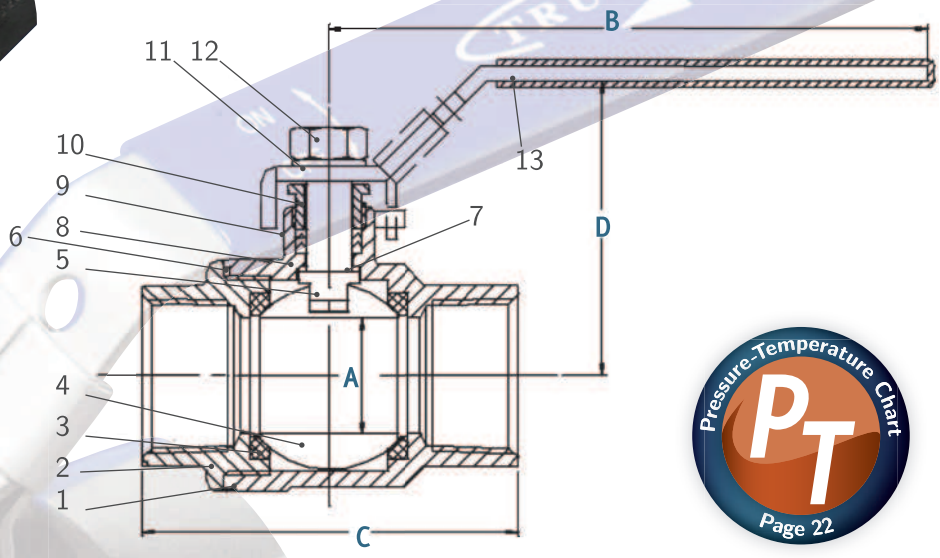
Size	A	B	C	D	E
¼"	0.20	2.28	1.52	1.07	0.67
⅜"	0.28	2.76	1.74	1.14	0.82
½"	0.35	3.35	2.19	1.44	0.98
¾"	0.49	3.35	1.45	1.57	1.24
1"	0.59	3.94	2.71	1.93	1.50
1¼"	0.79	3.94	3.08	2.11	1.85
1½"	0.97	4.92	3.39	2.42	2.09
2"	1.26	4.92	4.04	2.66	2.57

2-PC INDUSTRIAL BALL VALVES EA–207A–SE



Features & Specifications

- 2-piece 316 SS investment cast body
- 1000 PSI WOG rating
- Blowout proof stem design
- Full ported design, NPT
- Industrial/Chemical applications
- Reinforced PTFE seat & seals
- ANSI B16.34, ASTM A351
- Available in ¼"–2"



Pressure-Temperature Chart PT Page 22

Size	A	B	C	D
¼"	0.39	3.15	1.94	1.63
⅜"	0.49	3.15	1.94	1.63
½"	0.59	3.15	2.32	1.77
¾"	0.79	3.94	2.70	2.15
1"	0.97	4.92	3.09	2.57
1¼"	1.26	4.92	3.67	2.79
1½"	1.50	6.30	4.06	3.31
2"	1.97	6.30	4.85	3.67

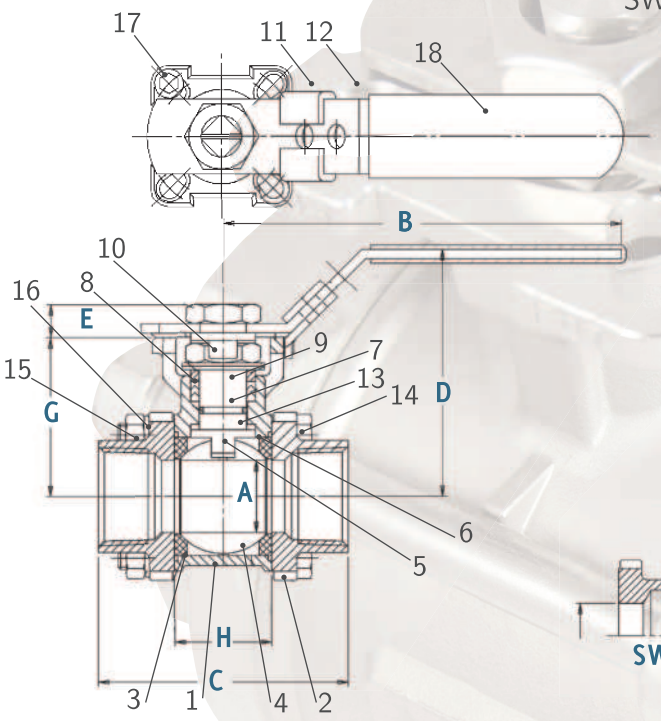
Item	Part (Qty)	Material
1	Body	ASTM A351 GR CF8M
2	End Caps	ASTM A351 GR CF8M
3	Seats (2)	PTFE+15% G.F.
4	Ball	ASTM A351 GR CF8M
5	Stem	SS 316
6	Joint Gasket	PTFE
7	Gasket	PTFE
8	Seal	PTFE
9	Packing Gland	SS 304
10	Handle	SS 304
11	Lever Spring Washer	SS 304
12	Lever Nut	SS 304
13	Handle Cover	Vinyl

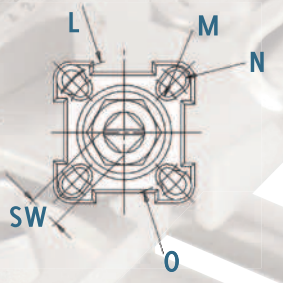
3-PC DIRECT MOUNT EA–33NF–SE/SW/BW

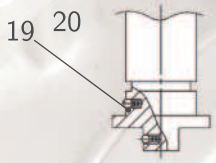
Features & Specifications



- 3-piece 316 SS investment cast body and components
- Maintenance free live loaded, self adjusting stem packing
- 1000 PSI WOG rating
- Cavity filled and regular seating available in various stocked materials: RPTFE, VPTFE, TFM1600, UHMWPE, SSTxPTFE
- Optimum sealing for high cycle applications with V-ring chevron packing, belleville washers, and two VITON® o-rings as a secondary defense against leaking
- Blowout proof stem full port, split body design
- ISO 5211 direct mounting to actuator
- Option: 150# Flanged Ends for regular & cavity filled styles
- SE ANSI B2.1, B16.34 Threaded (NPT)
  BW ANSI B16.25 Butt Weld
  SW ANSI B16.11 Socket Weld









Item	Part (Qty)	Material
1	Body	CF8M/316 SS
2	End Caps (2)	CF8M/316 SS
3	Seat	PTFE
4	Ball	SUS 316
5	Stem	SUS 316
6	Gasket	PTFE
7	Seal	PTFE
8	Gland Ring	SUS 304
9	Belleville Washer (2)	SUS 301
10	Lever Nut	SUS 304
11	Locking Tab	SUS 304
12	Handle	SUS 304
13	O-ring	VITON®
14	Bolts (4)	SUS 304
15	Bolt Nuts (4)	SUS 304
16	Spring Washer (4)	SUS 304
17	Stop Screw	SUS 304
18	Handle Cover	Vinyl
19	Static Device (2)	SUS 316
20	Spring (2)	SUS 316

Size	A	B	C-SE	C-SW	C-BW	D	E	F	G	H	I	K	L	M	N	O	SW	ISO5211
¼	0.394	4.005	2.15	2.15	2.17	1.83	.28	0.5	0.83	0.72	0.38	0.67	NA	M5	NA	1.43	*	F03
⅜	0.492	4.005	2.15	2.16	2.14	1.83	.28	0.7	1.36	0.72	0.49	0.67	NA	M5	NA	1.43	*	F03
½	0.63	4.33	2.55	2.55	2.55	2.79	0.37	0.86	1.67	0.99	0.67	0.88	1.65	0.24	0.24	1.42	0.35	F03/F04
¾	0.79	4.33	2.96	2.96	2.92	2.89	0.37	1.07	1.76	1.09	0.87	1.11	1.65	0.24	0.24	1.42	0.35	F03/F04
1	0.96	5.31	3.32	3.34	3.32	3.48	0.39	1.34	2.13	1.30	1.10	1.33	1.97	0.24	0.28	1.65	0.43	F04/F05
1¼	1.26	5.31	3.93	3.93	3.91	3.69	0.39	1.68	2.33	1.62	1.46	1.73	1.97	0.24	0.28	1.65	0.43	F04/F05
1½	1.50	6.50	4.29	4.28	4.30	4.23	0.58	1.92	2.89	1.94	1.69	2.00	2.76	0.28	0.35	1.97	0.55	F05/F07
2	1.97	6.50	5.11	5.11	5.07	4.57	0.58	2.41	3.26	2.50	2.13	2.46	2.76	0.28	0.35	1.97	0.55	F05/F07
2½	2.50	11.81	7.27	7.27	7.49	6.07	0.67	3.03	4.21	3.23	2.70	3.00	4.02	0.35	0.43	2.76	0.67	F07/F10
3	3.00	13.19	8.08	8.08	8.08	6.48	0.67	3.54	4.62	3.77	3.17	3.50	4.02	0.35	0.43	2.76	0.67	F07/F10
4	4.00	13.19	9.44	9.44	10.60	7.05	0.67	4.47	5.21	4.64	4.18	4.50	4.02	0.35	0.43	2.76	0.67	F07/F10

* Call Factory

Pressure-Temperature Chart PT Page 22

V-PORT BALL VALVES



TRU-FLO'S 3-PC SANITARY AND INDUSTRIAL VALVES ARE MANUFACTURED WITH DURABILITY, RELIABILITY AND QUALITY AS THEIR CORE FEATURES. THE TECHNICAL DESIGN PROVIDED IN THE STEM OF THE VALVE VIRTUALLY GUARANTEES LEAK-FREE, LOW TORQUE OPERATION.

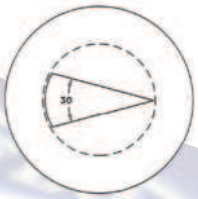
THE LIVE LOADED TECHNOLOGY AUTOMATICALLY COMPENSATES FOR STEM SEAL WEAR DURING THE LIFE OF THE VALVE. THIS DESIGN ADJUSTS FOR THERMAL CHANGES, HIGH CYCLE APPLICATIONS, AND ENSURES COMPLETE FUGITIVE EMISSION CONTROL.

THIS MAKES **TRU-FLO** VALVES AN EXCELLENT CHOICE WHEN NEEDING CAPACITY CONTROL, MODULATION, EASY AUTOMATION, AND A RELIABLE ALTERNATIVE TO A GLOBE VALVE.

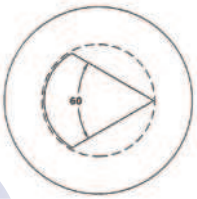
A VARIETY OF SEATING MATERIALS ARE AVAILABLE AND STOCKED IN REGULAR AND ENCAPSULATED STYLES; RTFE, TFM1600 (ENHANCED TFE), PTFE, AND OUR HIGHLY RECOMMENDED SST X PTFE.

V-Port available in sanitary*, 3PC industrial*, and flanged valves.

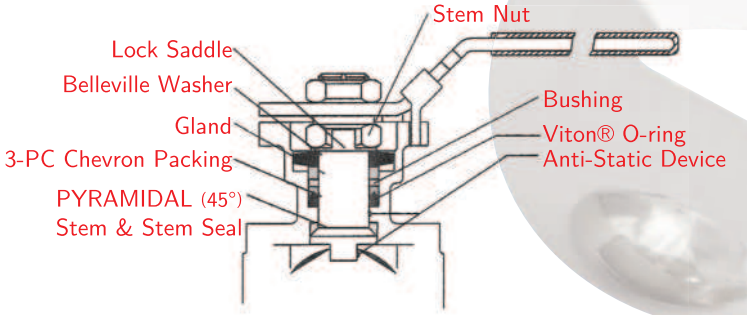
*Available in regular or cavity filled seats



30° V-Port
Fine Control



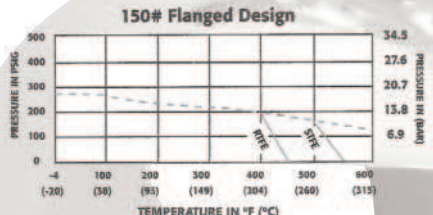
60° V-Port
Medium Control



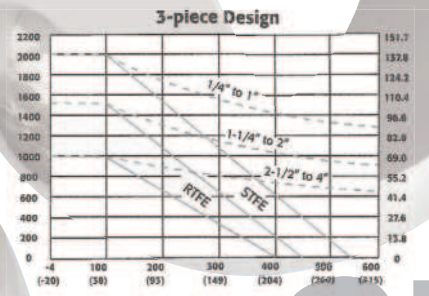
Valves 1¼" and above are provided with 2 Viton® o-rings in stem

Cv Values - Valve Sizing Coeffecients

Size	Ball Angle	0%	15%	20%	30%	40%	50%	60%	70%	80%	90%	100%
½"	30	0.0	0.1	0.1	0.2	0.3	0.5	0.8	1.1	1.6	2.2	2.6
	60	0.0	0.1	0.1	0.3	0.5	0.9	1.4	2.0	3.3	4.4	6.0
	90	0.0	0.1	0.2	0.4	0.6	0.9	1.5	2.2	3.8	5.4	6.9
¾"	30	0.0	0.1	0.2	0.5	0.7	1.2	1.8	2.4	3.3	4.5	5.4
	60	0.0	0.1	0.2	0.7	1.0	1.7	2.8	4.0	6.5	9.0	12.0
	90	0.0	0.2	0.4	0.8	1.2	2.0	3.1	4.6	8.0	11.3	14.0
1"	30	0.0	0.1	0.3	0.8	1.3	2.3	3.5	5.1	9.8	8.5	10.0
	60	0.0	0.2	0.4	1.1	1.8	3.4	5.3	7.9	12.3	15.3	21.0
	90	0.0	0.2	0.6	1.8	3.4	5.1	8.1	11.4	16.0	21.0	29.0
1¼"	30	0.0	0.2	0.4	1.1	2.0	3.7	5.5	8.0	10.0	13.0	15.0
	60	0.0	0.2	0.6	1.8	3.0	5.5	9.5	12.8	19.0	26.0	39.0
	90	0.0	0.3	0.8	2.0	5.0	8.0	14.0	19.0	28.0	39.0	55.0
1½"	30	0.0	0.3	0.6	1.6	3.0	5.0	7.5	11.0	14.0	17.0	20.0
	60	0.0	0.3	0.8	2.5	4.0	8.0	13.0	19.0	27.0	40.0	52.0
	90	0.0	0.4	0.9	3.5	7.0	13.0	20.0	31.0	42.0	63.0	78.0
2"	30	0.0	0.4	1.2	3.8	6.0	10.0	15.0	23.0	31.0	43.0	60.0
	60	0.0	0.4	1.5	4.6	9.0	16.5	27.0	29.0	55.0	83.0	110
	90	0.0	0.5	2.0	6.0	12.0	22.0	35.0	45.0	70.0	105	135
2½"	30	0.0	0.4	1.0	4.0	8.0	12.0	18.0	28.0	37.0	62.0	75.0
	60	0.0	0.4	1.5	5.0	10.0	21.0	34.0	53.0	75.0	103	150
	90	0.0	0.5	1.7	7.0	14.0	28.0	48.0	70.0	106	160	218
3"	30	0.0	0.5	1.2	4.0	8.0	14.0	23.0	33.0	46.0	65.0	82.0
	60	0.0	0.5	2.5	6.0	14.0	25.0	40.0	65.0	91.0	128	165
	90	0.0	0.7	3.5	8.0	18.0	35.0	60.0	90.0	135	205	310
4"	30	0.0	0.6	2.0	6.0	15.0	29.0	48.0	71.0	100	130	159
	60	0.0	0.7	3.0	11.0	25.0	40.0	59.0	90.0	141	212	356
	90	0.0	1.0	3.5	16.0	40.0	75.0	125	190	295	442	670
6"	30	0.0	0.9	3.2	14.0	33.0	60.0	103	155	220	280	350
	60	0.0	2	5.0	22.0	60.0	110	190	285	416	586	800
	90	0.0	3	8.0	35.0	90.0	160	280	425	650	970	1480



NOTE: Dotted line shows the rating for valve body. Solid line shows the rating for valve seat. Both ratings need to be consulted when determining the limitation of the valve for specific application.
Consult factory for other seat material.

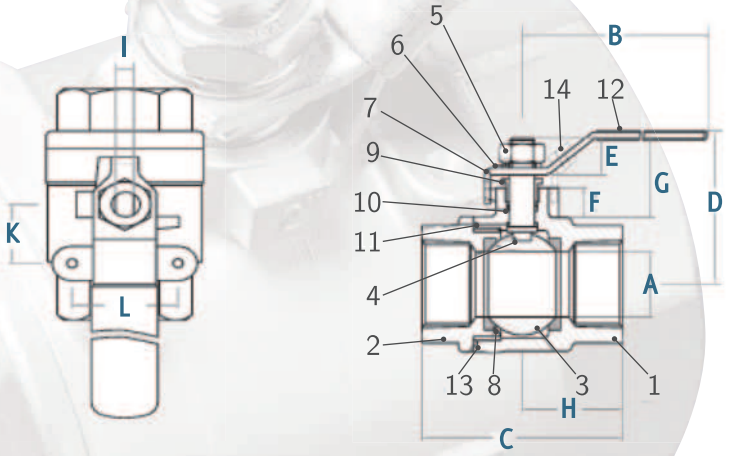


2-PC HIGH PRESSURE VALVE SERIES 20/40



Features & Specifications

- 2-piece 316 SS investment cast body
- Locking handle
- Sizes ¼"–1" have 2000 PSI WOG rating
- Sizes 1¼"–2" have 1500 PSI WOG rating
- Blowout proof stem design
- Full ported design, NPT
- Industrial/chemical applications
- ANSI B2.1, B16.34
- NOT suitable for automation



Pressure-Temperature Chart PT Page 22

Item	Part (Qty)	Material
1	Body	ASTM A351 GR CF8M
2	Cap	ASTM A351 GR CF8M
3	Ball	SUS 316
4	Stem	SUS 316
5	Stem Nut	SUS 304
6	Stem Washer	SUS 304
7	Handle	SUS 304
8	Seat (2)	PTFE
9	Gland	SUS 304
10	Stem Packing	PTFE
11	Thrust Washer	PTFE
12	Handle Sleeve	Vinyl
13	Joint Gasket	PTFE
14	Locking Device	SUS 304

Size	A	B	C	D	E	F	G	H	I	K	L
¼	0.46	3.94	2.17	1.97	0.39	0.31	0.91	1.08	0.20	0.50	1.12
⅜	0.50	3.94	2.17	1.97	0.39	0.31	0.91	1.08	0.20	0.50	1.12
½	0.59	5.12	2.56	2.56	0.47	0.39	1.02	1.28	0.26	0.50	1.12
¾	0.79	5.12	2.91	2.91	0.47	0.43	1.02	1.46	0.26	0.88	1.38
1	0.98	6.50	3.46	3.46	0.59	0.47	1.18	1.73	0.31	0.88	1.38
1¼	1.26	6.50	4.02	4.02	0.59	0.47	1.46	2.01	0.31	1.00	1.50
1½	1.50	7.48	4.33	4.33	0.63	0.47	1.38	2.17	0.38	1.00	1.50
2	1.97	7.48	4.92	4.92	0.63	0.39	1.22	2.46	0.38	1.00	1.50

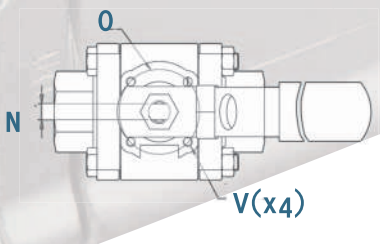
3-PC HIGH PRESSURE VALVE SERIES 83/309

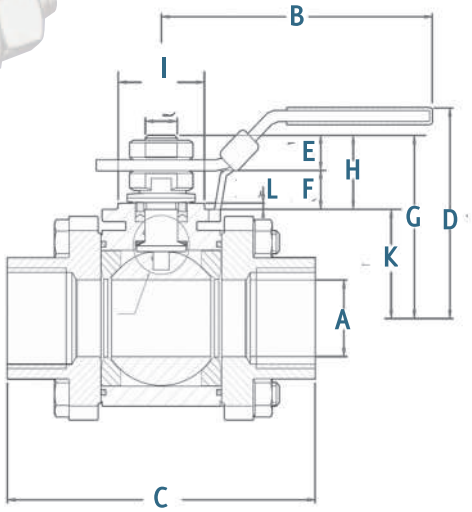


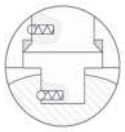
Features & Specifications

- ASTM 316 grade stainless steel
- Optimum sealing for high cycle applications with 3-piece chevron packing
- Live loaded, blowout proof stem design
- Full port, anti-static device
- Suitable for automation
- Standard locking handle
- Fire-safe tested per API 607 4th edition available
- ¼"–1" 2000 PSI WOG
- 1¼"–2" 1500 PSI WOG
- Suitable for automation with mounting bracket

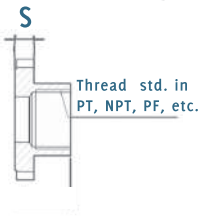
Pressure-Temperature Chart PT Page 22



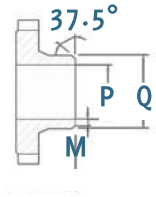




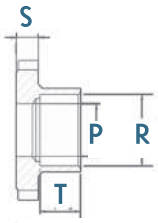
Pyramidal Stem & Anti-Static Device



83-10 Threaded End



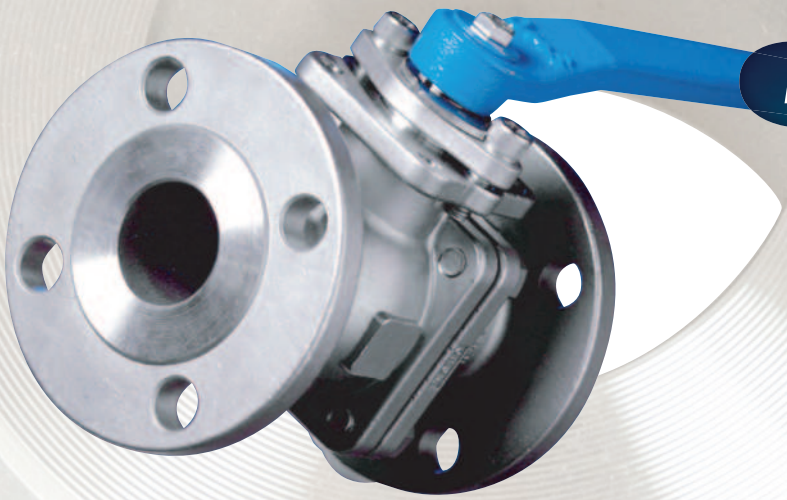
83-20 Socket Weld End



83-30 Butt Weld End Sch.40 available

Size	A	B	C	D	E	F	G	H	I	K	L	M	N	O	P	Q	R	S	T	V	ISO	Wt
¼	0.39	5.28	2.55	2.51	0.22	0.06	1.46	0.28	0.98	1.17	0.02	0.06	0.26	1.42	0.39	0.55	0.56	0.39	0.39	M5	F03	1.76
⅜	0.39	5.28	2.55	2.51	0.22	0.06	1.46	0.28	0.98	1.17	0.02	0.06	0.26	1.42	0.39	0.69	0.69	0.39	0.39	M5	F03	1.76
½	0.59	5.28	2.85	2.83	0.24	0.41	1.80	0.65	0.98	1.14	0.08	0.06	0.26	1.42	0.59	0.85	0.85	0.36	0.39	M5	F03	1.78
¾	0.79	5.28	3.36	3.01	0.30	0.43	2.02	0.72	0.98	1.30	0.08	0.06	0.26	1.42	0.79	1.08	1.07	0.45	0.51	M5	F03	2.79
1	0.98	6.69	4.15	3.27	0.40	0.59	2.41	0.99	1.18	1.42	0.08	0.06	0.31	1.65	0.98	1.34	1.34	0.45	0.51	M5	F04	4.27
1¼	1.26	6.69	4.37	3.46	0.32	0.63	2.53	0.95	1.18	1.57	0.08	0.06	0.31	1.65	1.26	1.68	1.69	0.48	0.51	M5	F04	5.83
1½	1.50	8.15	5.01	4.10	0.50	0.74	3.11	1.25	1.38	1.86	0.09	0.06	0.38	1.97	1.50	1.91	1.92	0.51	0.51	M6	F05	8.25
2	1.97	8.15	5.62	4.79	0.44	0.56	3.74	1.00	1.38	2.74	0.06	0.06	0.38	1.97	1.97	2.38	2.40	0.44	0.63	M6	F05	11.95

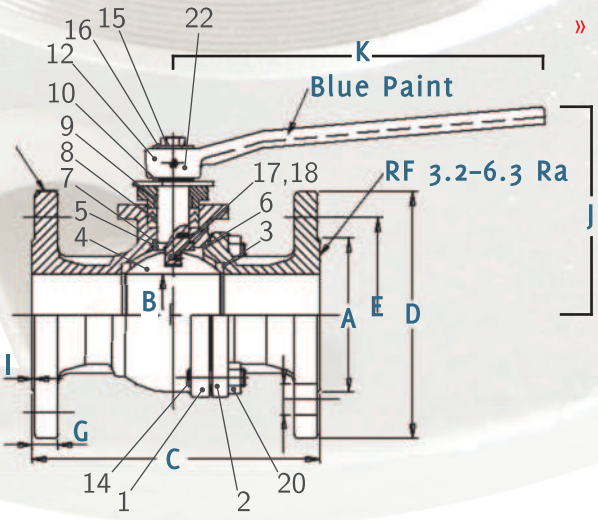
2-PC FLANGED END INDUSTRIAL BALL VALVES



EA-402-150#

Features & Specifications

- ASTM 316 grade stainless steel
- ANSI 150 lbs flanged ends
- Live loaded, blowout proof stem design
- 2-piece full port, anti-static device
- Suitable for automation
- Standard lockable handle
- Available gear operator
- ½"–8" size range
- Various sealing materials and carbon steel options
- SST x PTFE seating options for steam applications
- V-Port available

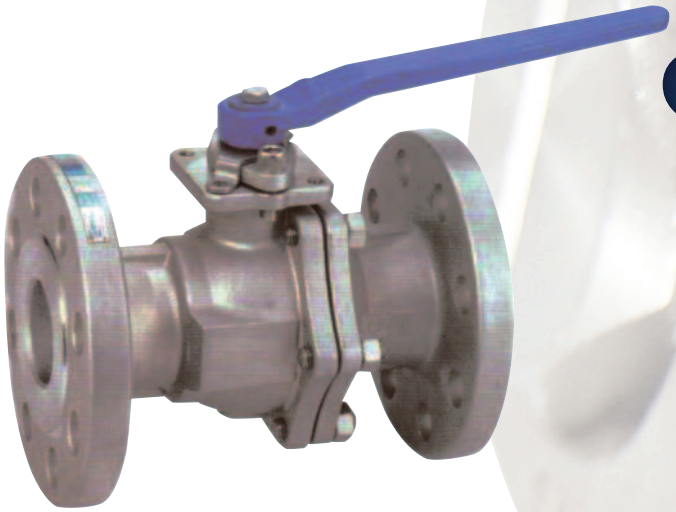


Item	Part (Qty)	Material		
1	Body	WCB		CF8M
2	Cap	WCB		CF8M
3	Seats (2)	PTFE+15% G.F.		
4	Ball	SUS 304	CF8	CF8M
5	Stem	SUS 304	SUS 304	SUS 316
6	Joint Gasket	PTFE		
7	Gasket	PTFE		
8	Seal	PTFE		
9	Gland Bushing	PTFE		
10	Gland Flange	CF8		
11	Stopper	SUS 304		
12	Handle	Ductile Iron		
13	Snap Ring	Steel		
14	Bolts (4,6,8)	SUS 304		
15	Gland Bolts	SUS 304		
16	Flat Washer	Steel		
17	Bolts	Steel		
	Static Device	SUS304		
18	Spring	SUS 304		

Size	A	B	C	D	E	F	G	H	I	J	K	ISO5211
½	1.38	0.63	4.25	3.50	2.38	0.63	0.44	0.16	0.06	3.30	5.31	F04
¾	1.69	0.79	4.61	3.87	2.75	0.63	0.44	0.16	0.06	3.30	5.31	F04
1	2.01	0.98	5.00	4.25	3.13	0.63	0.44	0.16	0.06	3.73	6.30	F05
1¼	2.52	1.26	5.51	4.62	3.50	0.63	0.50	0.16	0.06	3.89	6.30	F05
1½	2.87	1.50	6.50	5.00	3.88	0.63	0.56	0.16	0.06	4.78	9.06	F07
2	3.62	1.97	7.0	6.0	4.75	0.75	0.63	0.16	0.06	5.07	9.06	F07
2½	4.13	2.56	7.48	7.0	5.50	0.75	0.69	0.16	0.06	5.53	9.06	F07
3	5.00	3.15	7.99	7.50	6.00	0.75	0.75	0.16	0.06	6.06	13.78	F10
4	6.18	3.94	9.02	9.00	7.50	0.75	0.94	0.31	0.06	6.69	13.78	F10
5	7.32	4.92	14.02	10.00	8.50	0.87	0.94	0.31	0.06	8.15	15.75	F10
6	8.50	5.91	15.51	11.00	9.50	0.87	1.00	0.31	0.06	10.71	CF	F12
8	10.63	7.87	17.99	13.50	11.75	0.87	1.13	0.31	0.06	13.41	CF	F14

Pressure-Temperature Chart PT Page 22

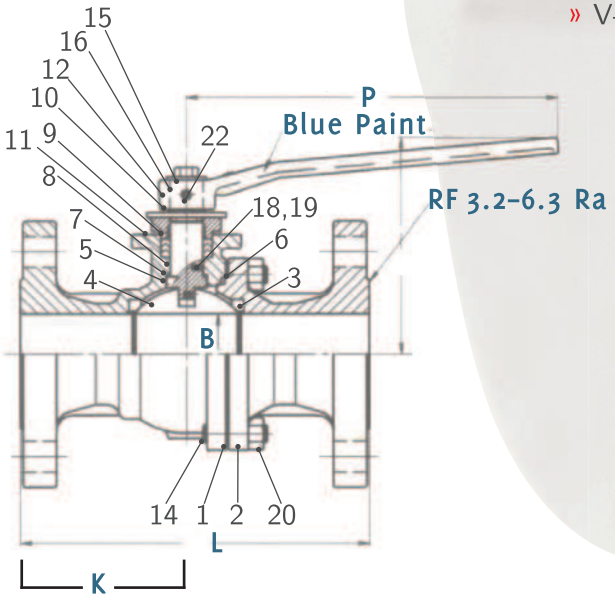
EA–402 & EA–25J–FS–300



EA–25J–FS–300#

Features & Specifications

- Investment cast stainless steel castings
- ANSI 300 rating
- ISO 5211 mounting pad
- Full bore, anti-static device
- Flange end
- Blowout proof stem design
- Suitable for automation
- Standard locking handle
- Fire-safe tested per API 607 4th edition
- Available in ½"–6" sizes
- 50/50 seats available for steam applications
- V-port not available



Size	NPS	B	K	L	P
½	DN15	0.63	3.28	5.51	5.32
¾	DN20	0.79	3.29	5.98	5.32
1	DN25	0.98	3.74	6.50	6.30
1½	DN40	1.50	4.79	7.48	9.06
2	DN50	1.97	5.31	8.50	9.06
3	DN80	3.15	6.13	11.14	13.78
4	DN100	3.94	7.19	12.01	15.75
5	DN125	4.92	8.08	15.00	15.75
6	DN150	5.91	10.49	15.87	31.50

Item	Part	Material	
1	Body	A351-CF8M	A216-WCB
2	Cap	A351-CF8M	A216-WCB
3	Seat	PTFE+15% G.F..	PTFE+15% G. F.
4	Ball	A351-CF8M/ SUS 316	A351-CF8/ SUS 304
5	Stem	SUS 316	SUS 304
6	Joint Gasket	PTFE/Graphite	PTFE/Graphite
7	Gasket	PTFE	PTFE
8	Seal	PTFE/Graphite	PTFE/Graphite
9	Gland Bushing	PTFE	PTFE
10	Gland Flange	A351-CF8	A351-CF8
11	Stopper	SUS 304	SUS 304
12	Handle	Ductile Iron/ Steel+Zinc plated	Ductile Iron/ Steel+Zinc plated
13	Snap Ring	Steel	Steel
14	Stud	A193-B8M	A193-B7
15	Gland Bolt	A193-B8	B193-B8
16	Flat Washer	Steel	Steel
17	Bolt	Steel	Steel
18	Static Device	SUS 304	SUS 304
19	Spring	SUS 304	SUS 304
20	Nut	A194-BM	A194-2H
21	Tag	SUS 304	SUS 304
22	Socket Screw	Steel	Steel

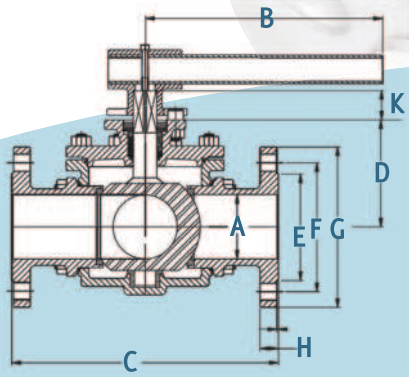
MULTIPORT SERIES INDUSTRIAL BALL VALVE

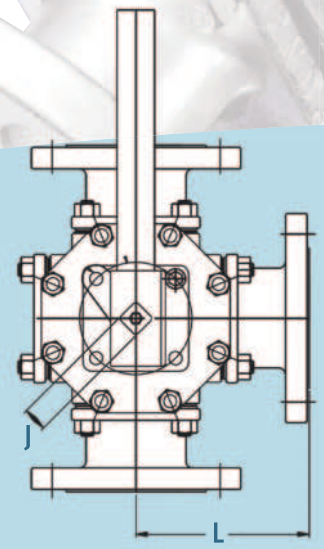
Features & Specifications

- » ASTM 316 grade stainless steel
- » 150# and 300# ANSI flanged ends available
- » Live loaded stem packing
- » Full port L or T port design, also available in 4-way option
- » Direct mounting ISO 5211 mounting pad
- » Investment cast and sand cast body construction
- » Meets international standards
- » Cost effective solution by reducing amount of valves needed in system
- » 1000 PSI WOG
- » ½"–8" size range



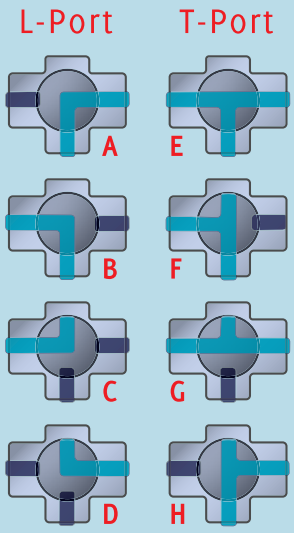
EA-36-150-FE





Pressure-Temperature Chart PT Page 22

Size	A	B	C	D	E	F	G	H	J (mm)	K (mm)	L	ISO5211
½	0.59	5.12	5.98	1.61	1.38	2.38	3.50	0.44	9	11	2.99	F03/F04
¾	0.79	6.50	6.57	1.93	1.69	2.76	3.86	0.44	11	14	3.29	F04/F05
1	0.98	6.50	7.48	2.17	2.01	3.13	4.25	0.44	11	14	3.74	F04/F05
1¼	1.26	8.07	8.19	2.48	2.52	3.50	4.61	0.50	14	18	4.10	F05/F07
1½	1.50	8.07	8.66	2.91	2.87	3.88	5.00	0.56	14	18	4.33	F05/F07
2	1.97	12.80	9.96	3.66	3.62	4.74	5.98	0.62	17	23	4.98	F07/F10
2½	2.44	15.75	11.81	4.67	4.13	5.49	7.01	0.70	22	25	5.91	F10
3	2.99	19.69	12.01	5.37	5.00	6.00	7.48	0.75	22	25	6.01	F10
4	3.78	25.59	14.51	6.16	6.18	7.50	9.02	0.94	22	25	7.26	F10
6	5.91	47.24	16.81	6.28	8.50	9.51	11.00	1.00	36	36	8.41	F12



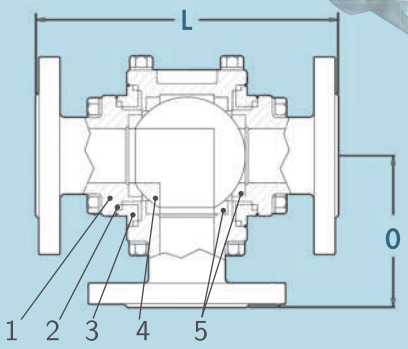
DIRECT MOUNT EA-36-150-FE & EA-36-10

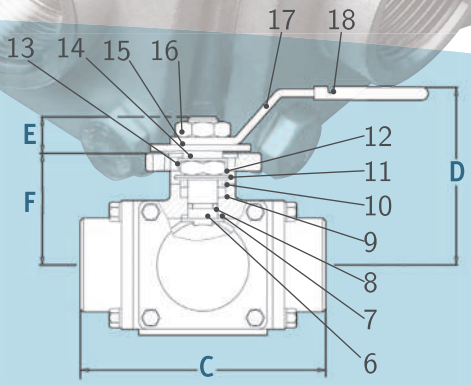


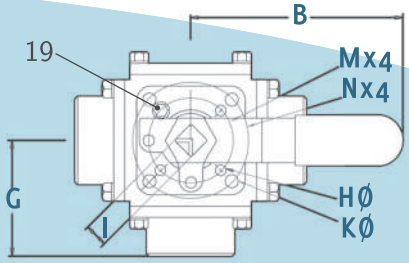
EA-36-10

Item	Part (Qty)	Material	
1	End Caps (3)	A351 Gr. CG8M	A216 Gr. WCB
2	Gasket (4)	PTFE	
3	Body	A351 Gr. CG8M	A216 Gr. WCB
4	Ball	SS 316	
5	Seat (4)	15% Carbon + PTFE	
6	Stem	SS 316	
7	Stem Seal	PTFE	
8	O-ring	VITON®	
9	Stem Packing	PTFE	
10	Gland	SS 304	
11	Belleville Washer (2)	SS 301	
12	Stem Nut	SS 304	
13	Nut Stop	SS 304	
14	Space Washer	SS 304	
15	Lock Saddle	SS 304	
16	Handle Nut	SS 304	
17	Handle	SS 304	
18	Handle Sleeve	Vinyl	
19	Stop Pin	SS 304	

*Available in NPT, socket-weld, and butt-weld ends







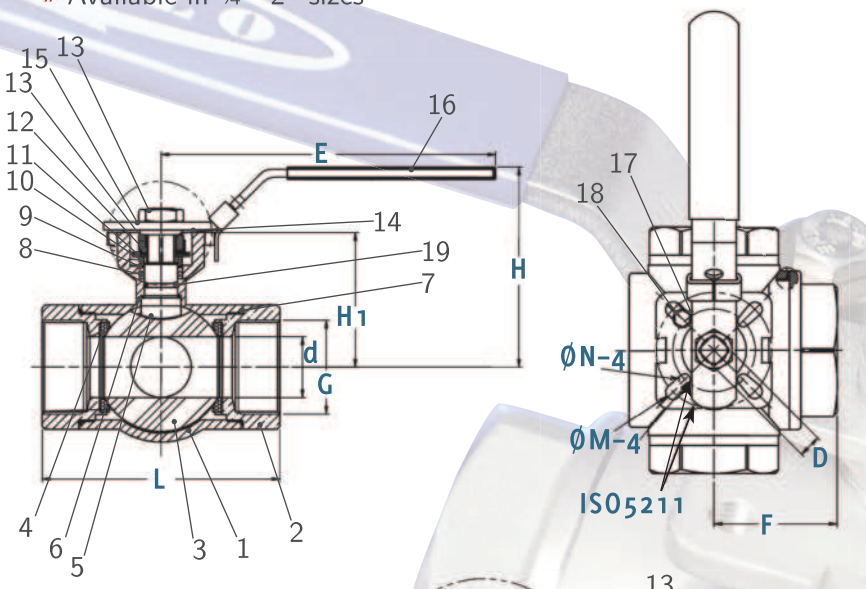
Size	B	C	D	E	F	G	H	I	K	L	M	N	O	ISO5211
¼	5.12	3.46	2.44	0.39	1.52	1.73	1.65	0.35	1.42	3.46	0.24	0.24	1.73	F03/F04
⅜	5.12	3.46	2.44	0.39	1.52	1.73	1.65	0.35	1.42	3.46	0.24	0.24	1.73	F03/F04
½	5.12	4.12	2.52	0.39	1.61	2.07	1.65	0.35	1.42	3.59	0.24	0.24	1.80	F03/F04
¾	6.50	4.41	3.23	0.51	1.93	2.07	1.97	0.43	1.65	4.41	0.28	0.24	2.21	F04/F05
1	6.50	5.04	3.50	0.51	2.17	2.76	1.97	0.43	1.65	5.04	0.28	0.24	2.52	F04/F05
1¼	8.07	5.51	3.86	0.67	2.48	2.52	2.76	0.55	1.97	5.51	0.36	0.28	2.76	F05/F07
1½	8.07	6.30	4.25	0.67	2.91	3.15	2.76	0.55	1.97	6.30	0.36	0.28	3.15	F05/F07
2	12.80	7.56	5.51	0.87	3.66	3.78	4.02	0.67	2.76	7.56	0.45	0.36	3.78	F07/F10
2½	15.75	11.57	5.67	0.98	4.66	5.78	–	0.87	4.00	11.57	0.67	0.45	5.79	F10
3	19.69	12.48	6.38	0.98	5.37	6.24	–	0.87	4.00	12.48	0.67	0.45	6.24	F10
4	25.59	14.53	7.17	0.98	6.16	7.27	–	0.87	4.00	14.53	0.67	0.45	7.27	F10

3-PC MULTIPORT VALVE EA–38–10

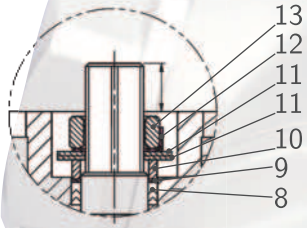
Features & Specifications

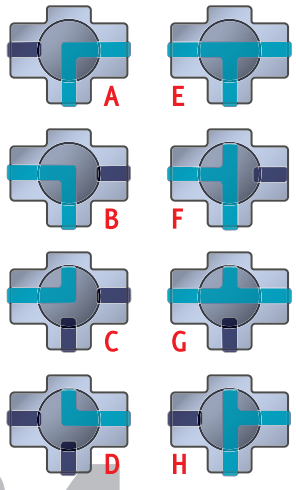
- » ASTM 316 stainless steel construction
- » Blowout proof stem design
- » Standard (reduced) port design
- » Available in L or T port
- » Standard locking handle
- » ISO 5211 mounting pad suitable for automation
- » Multiport design provides positive seating at all ports
- » Reduces quantity of valve needed in pipeline
- » 1000 WOG/NPT ends
- » Available in ¼"–2" sizes





Item	Part (Qty)	Material
1	Body	ASTM 351 Gr CF8M
2	Cap (3)	ASTM 351 Gr CF8M
3	Ball	ASTM 351 Gr CF8M
4	Ball Seats (4/set)	PTFE
5	Stem	SS 316
6	Thrust Washer	PTFE
7	End Seals (2/set)	PTFE
8	Stem Packing	PTFE
9	Thrust Washer	PTFE 25xG/F
10	Gland Bushing	SS 304
11	Belleville Washer (2)	SUS304–CSP
12	Stop	SS 304
13	Handle Nut	SS 304
14	Washer	SS 304
15	Handle	SS 304
16	Handle Sleeve	Vinyl Grip
17	Stopper	SS 304
18	Screw	SS304
19	O-ring	VITON®

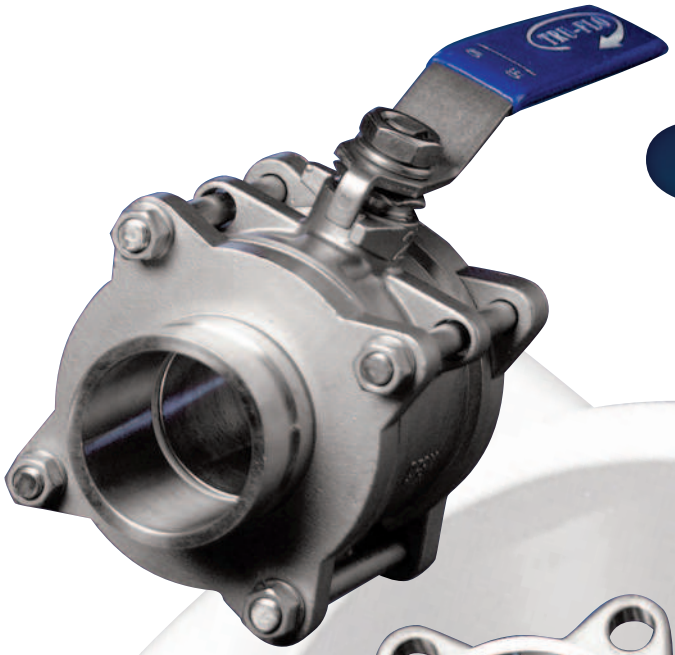




Pressure-Temperature Chart PT Page 22

Size	d	L	H	D	F	N	M	E	H1	ISO5211
¼	0.43	2.98	2.63	0.35	1.51	0.24	0.24	5.20	1.45	F04/F03
⅜	0.43	2.98	2.63	0.35	1.51	0.24	0.24	5.20	1.45	F04/F03
½	0.49	2.98	2.63	0.35	1.51	0.24	0.24	5.20	1.45	F04/F03
¾	0.63	3.41	2.94	0.35	1.76	0.24	0.24	6.97	1.74	F04/F03
1	0.79	4.07	3.71	0.43	2.00	0.24	0.28	6.97	2.17	F05/F04
1¼	0.98	4.65	3.94	0.43	2.27	0.24	0.28	8.07	2.39	F05/F04
1½	1.26	4.95	4.56	0.55	2.47	0.28	0.35	8.86	2.96	F07/F05
2	1.50	5.87	4.92	0.55	2.94	0.28	0.35	8.86	3.32	F07/F05

3-PC GROOVED END VALVE EA–301–GE

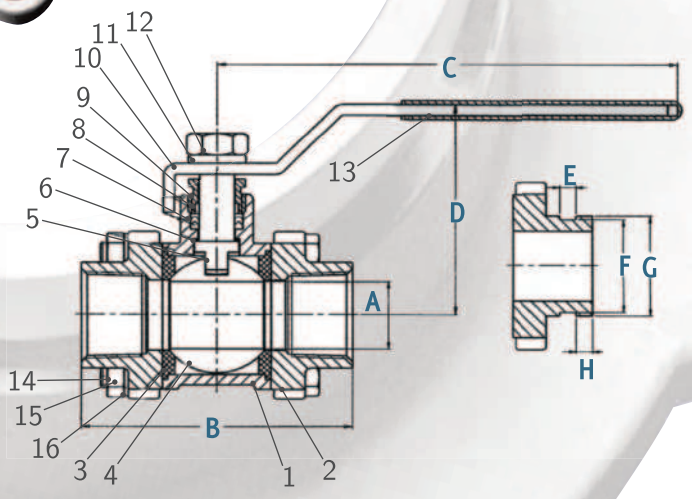




Features & Specifications

- ASTM 316 stainless steel investment cast construction
- Victaulic® style grooved connections
- Reinforced teflon with 3-piece chevron style packing that expands during compression for positive seal
- Designed for quick disconnect service
- 100% air tested underwater before leaving factory
- Blowout proof stem design
- Available in 2" & 3" sizes
- Not Suitable for actuation

Item	Part (Qty)	Material
1	Body	ASTM A351 CF8M/SS 316
2	End Caps (2)	ASTM A351 CF8M/SS 316
3	Seats (2)	PTFE + 15% G.F.
4	Ball	ASTM A351 CF8M/SS 316
5	Stem	SS 316
6	Gasket	PTFE
7	Seal	PTFE
8	Gland Brush	PTFE
9	Packing Gland	SS 304
10	Handle	SS 304
11	Lever Spring Washer	SS 304
12	Lever Nut	SS 304
13	Handle Cover	Vinyl
14	Bolts (4)	SS 304
15	Bolt Nuts (4/8)	SS 304
16	Spring Washers (4/8)	SS 304



Size	A	B	C	D	G	F	E	H
2	1.97	6.75	3.89	7.09	2.37	2.25	0.31	0.63
3	3.15	8.00	5.59	11.81	3.50	3.34	0.31	0.63

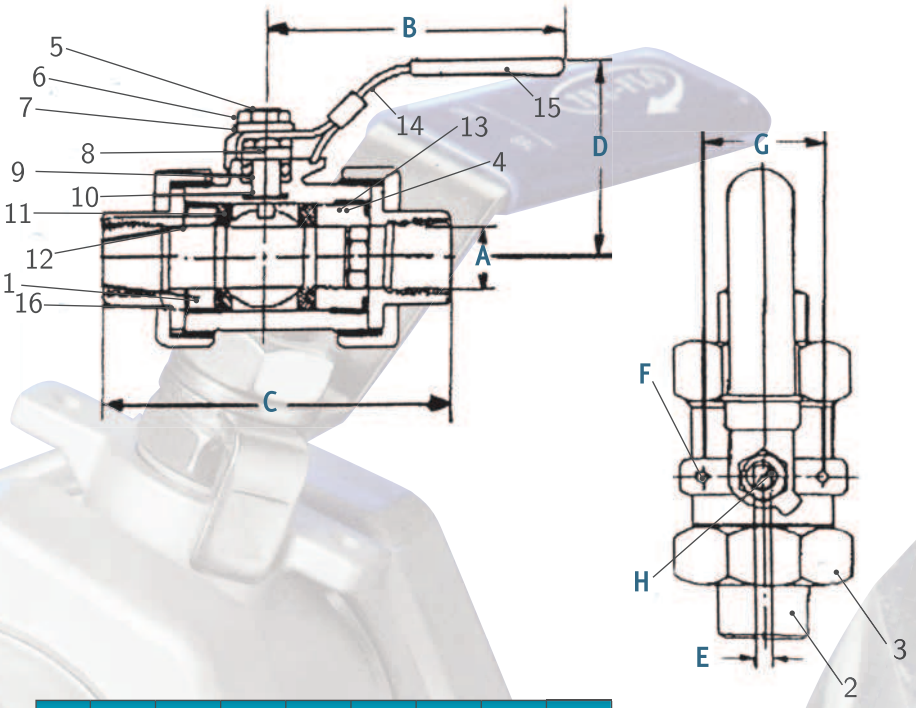
HIGH PRESSURE DOUBLE UNION HSBV–501



Features & Specifications

- Suitable for water borne paint applications
- Full port flow with self-contained center section
- 3-pc lug style body design for easy inline inspection and repair
- Mounting pad
- Investment cast 316 stainless steel construction
- Blowout proof, bottom entry stem design
- 2000 PSI WOG working pressure
- ½"–2" sizes available

Item	Part (Qty)	Material
1	Body	CF8M/316 ASTM A351
2	Union End	CF8M/316 ASTM A351
3	Union Nut	CF8M/316 ASTM A351
4	Threaded Spacer	CF8M/316 ASTM A351
5	Stem	SS 316
6	Handle Nut	SS 304
7	Washer	SS 304
8	Follower	SS 304
9	Stem Packing	Reinforced PTFE
10	Thrust Washer	Reinforced PTFE
11	Ball Seat	Reinforced PTFE
12	Solid Ball	CF8M/316 ASTM A351
13	Spacer Seal	Reinforced PTFE
14	Handle	SS 304
15	Cover	Plastic
16	End Seal	Reinforced PTFE



Size	A	B	C	D	E	F	G	H
¼	0.35	3.94	3.54	2.09	0.20	M4	1.13	0.31
⅜	0.49	3.94	3.54	2.09	0.20	M4	1.13	0.31
½	0.62	4.72	3.94	2.32	0.24	M5	1.42	0.37
¾	0.79	4.72	4.09	2.44	0.24	M5	1.42	0.37
1	1.00	5.71	4.80	2.87	0.31	M5	1.65	0.50
1¼	1.25	5.71	5.04	3.07	0.31	M5	1.65	0.50
1½	1.50	6.89	5.59	3.54	0.39	M6	1.97	0.63
2	2.00	6.89	6.50	3.86	0.39	M6	1.97	0.63

Pressure-Temperature Chart PT Page 22

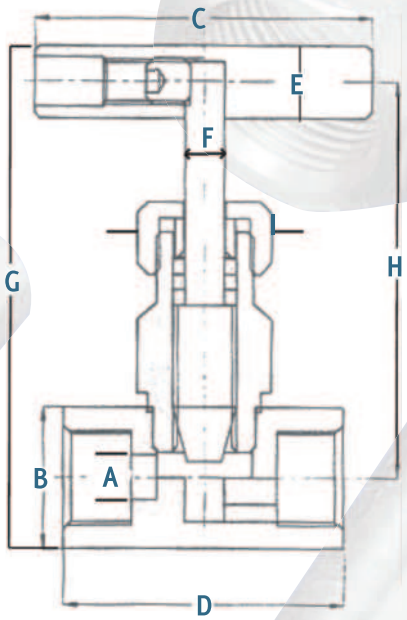
STAINLESS STEEL NEEDLE VALVES EN–501A



Features & Specifications

- Equipped with threaded NPT ends
- ISO 5211 direct mounting pad
- Manufactured dry and silicone free for instrumentation and water borne paint applications
- Investment cast 316 stainless steel construction
- High pressure 6000 PSI WOG working pressure
- ¼"–1" size range

Item	Part (Qty)	Material
1	Body	SS 316
2	Bonnet	SS 316
3	Packing Nut	SS 316
4	Packing	PTFE
5	Gland	SS 316
6	Stem	SS 316
7	Handle	SS 316
8	Set Screw	Alloy Steel



Size	A	B	C	D	E	F	G	H	I	Wt (lbs)
¼"	0.12	0.87	2.36	1.77	0.51	0.28	3.15	2.76	0.83	0.79
⅜"	0.12	0.98	2.36	1.97	0.51	0.28	3.35	2.87	0.83	0.95
½"	0.16	1.18	2.56	2.36	0.63	0.31	4.33	3.74	0.94	1.21
¾"	0.20	1.38	2.56	2.56	0.63	0.31	4.53	3.94	0.94	1.43
1"	0.28	1.81	3.15	3.27	0.75	0.39	5.08	4.13	1.18	2.97



DIAPHRAGM VALVE A155830



Features & Specifications

» **Material:**
Body:Forged/316L
Diaphragm:EPDM+PTFE/NC or NO
The seal of Diaphragm is exchangeable with GEMU

» **Connection:**
Clamp end/weld end

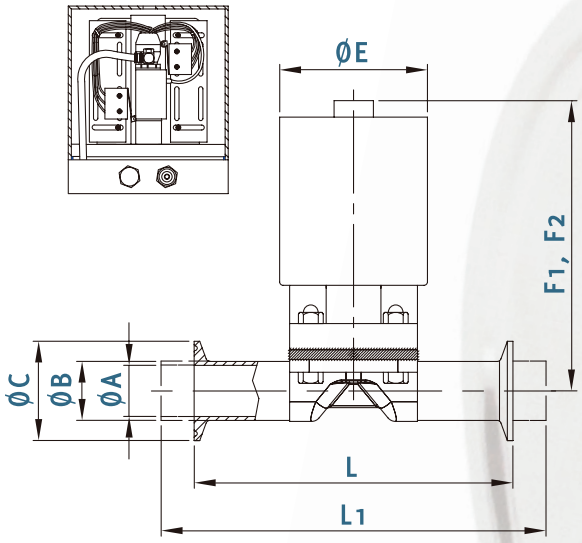
» **Body Type:**
Direct connection(two way)/equal T/ reducing T/U-point

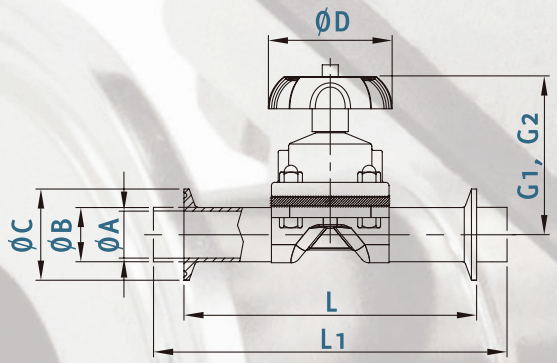
» **Operation:**
Normal open/normal close

» **Work Temp:**
Diaphragm:EPDM+PTFE(-10°C~150°C)

» **Work Pressure:**
Max:10 Bar

» **Surface:**
SF1:ID polished to Ra≦0.5μm/
SF4:EP finished to Ra≦0.38μm/
ID/OD mirror polished
ID Ra≦0.5μm/OD sand blasted





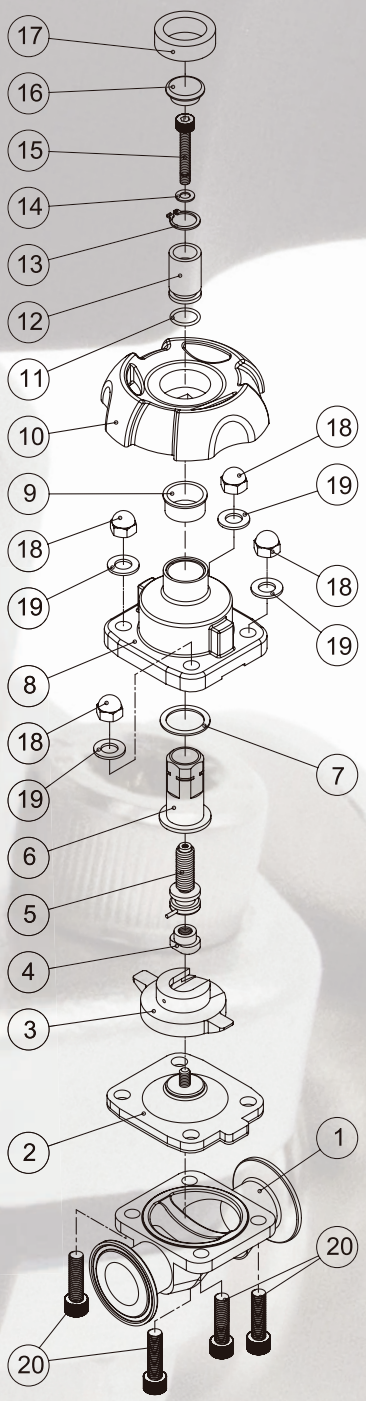
Size	A	B	C-3A	C-BPE	D	E	F1	F2	G1	G2	L	L1
½	0.37	0.5	0.98	0.98	2.37	2.37	4.80	5.16	2.91	3.27	3.5	4.88
¾	0.62	0.75	0.98	0.98	2.37	2.37	4.8	5.16	2.91	3.27	4.0	5.31
1	0.87	1	1.99	1.98	3.74	3.35	8.35	8.86	3.94	4.45	4.5	5.56
1½	1.37	1.5	1.99	1.99	3.75	3.35	8.54	9.13	4.69	5.28	5.50	6.63
2	1.87	2	2.52	2.52	4.65	5.24	12.4	13.11	5.31	6.02	6.25	7.50



Cast Diaphram Valve
A1558300



Forged Diaphram Valve
A1558300F

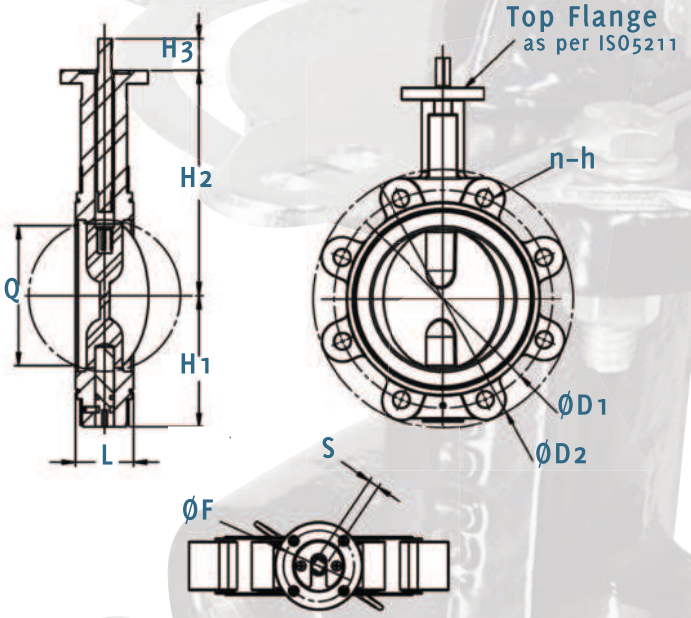


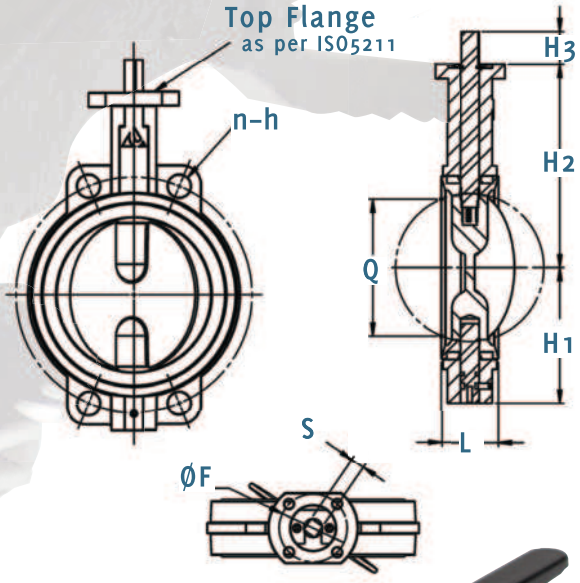
Item	Part (Qty)	Material
1	Body	SUS316L
2	Seal	EPDM & PTFE
3	Seat	SUS304
4	Screw	SUS304
5	Blot	SUS304
6	Blot Sleeve	SUS304
7	Seal	PTFE
8	Bonnet	SUS304
9	Sleeve	PEEK
10	Handwheel	EPDM & PFFE
11	O-Ring	NBR
12	Positioning Index	MC(BLUE)
13	Circlip	SUS304
14	Washer	SUS304
15	Screw	SUS304
16	Cover	MC(BLUE)
17	Cap	EPDM & PTFE
18	Nut	SUS304
19	Washer	SUS304
20	Screw	SUS304



CAST IRON BFY VALVES 050/051 SERIES

THE CAST IRON BUTTERFLY VALVE WITH EXTENDED NECK COMES STANDARD WITH ANSI CLASS 125/150 FLANGES. THE LUG STYLE IS CAPABLE OF WITHSTANDING 200 PSI WITH BI-DIRECTIONAL, DEAD END SERVICE. UNDERCUT IS AN AVAILABLE OPTION.





PTFE COATED DISCS ALSO AVAILABLE FOR INDUSTRIAL BUTTERFLY VALVES



#051-LUG

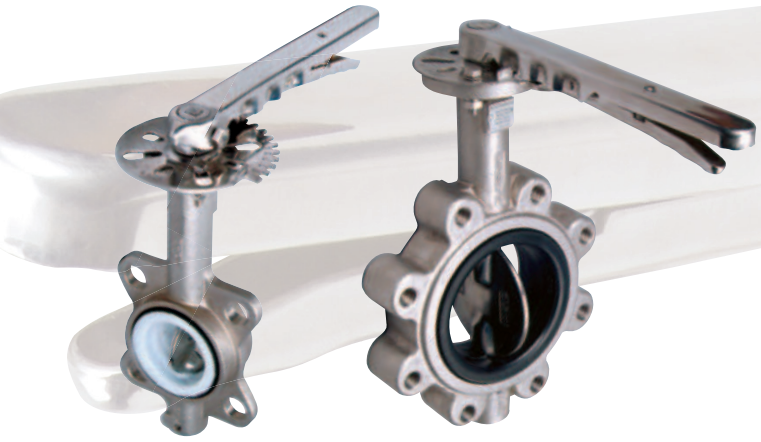


#050-WAFER

Ductile Iron Butterfly Valves

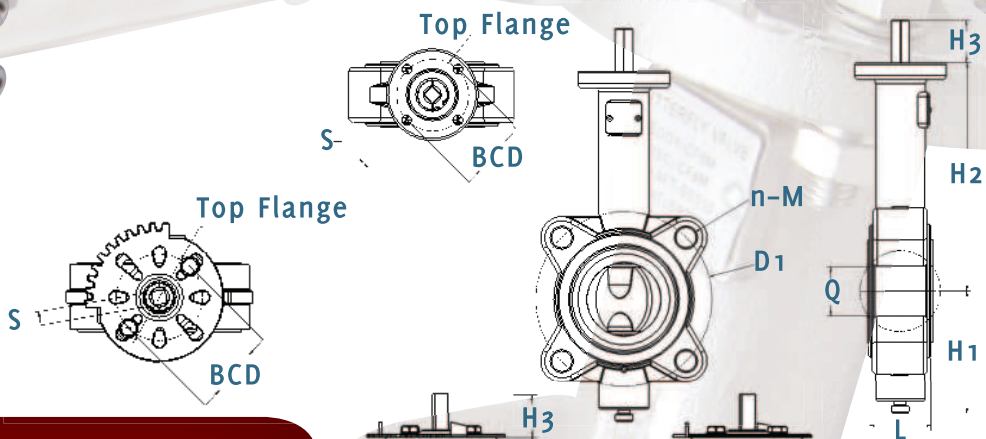
Size		L		Q		ØD		Lug Taps	Wafer Holes		H1		H2		H3		□ S		ØF		ISO
in	*mm*	*in*	*mm*	*in*	*mm*	*in*	*mm*	*SAE Thread*	*in*	*mm*	*in*	*mm*	*in*	*mm*	*in*	*mm*	*in*	*mm*	*in*	*mm*	
1½	DN40	1.3	33	0.8	21	3.88	98.5	1/2"- 13 UNC	4 x 0.7	4 x 18	2.5	64	4.9	124	1.18	30	0.354	9	1.969	50	F05
2	DN50	1.7	43	1.1	29	4.75	120.7	4 x 5/8 -11 UNC	4 x 0.9	4 x 22	2.6	66	5.1	130	1.18	30	0.354	9	1.969	50	F05
2½	DN65	1.8	46	1.8	45	5.50	139.7	4 x 5/8 -11 UNC	4 x 0.7	4 x 18	3.2	81	5.6	142	1.18	30	0.354	9	1.969	50	F05
3	DN75	1.8	46	2.5	62	6.00	152.4	4 x 5/8 -11 UNC	4 x 0.7	4 x 18	3.5	89	5.8	147	1.18	30	0.354	9	1.969	50	F05
4	DN100	2.0	52	3.5	89	7.50	190.5	8 x 5/8 -11 UNC	4 x 0.7	4 x 18	4.3	109	6.7	170	1.18	30	0.433	11	2.756	70	F07
5	DN125	2.2	56	4.6	116	8.50	215.9	8 x 3/4 -10 UNC	4 x 0.9	4 x 22	4.8	122	7.4	188	1.18	30	0.551	14	2.756	70	F07
6	DN150	2.2	56	5.7	145	9.50	241.3	8 x 3/4 -10 UNC	4 x 0.9	4 x 22	5.4	137	8.0	203	1.18	30	0.551	14	2.756	70	F07
8	DN200	2.4	60	7.8	197	11.75	298.5	8 x 3/4 -10 UNC	4 x 1.0	4 x 26	6.7	170	9.4	239	1.57	40	0.669	17	4.016	102	F10
10	DN250	2.7	68	9.8	248	14.25	362.0	12 x 7/8 -9 UNC	4 x 1.0	4 x 26	7.9	201	10.7	272	1.57	40	0.866	22	4.016	102	F10
12	DN300	3.1	78	11.7	298	17.00	431.8	12 x 7/8 -9 UNC	4 x 1.0	4 x 26	9.3	236	12.0	305	1.57	40	0.866	22	4.016	102	F10
14	DN350	3.1	78	—	—	18.75	476.3	12 x 1 -8 UNC	—	—	10.3	262	13.0	330	1.57	40	0.866	22	4.016	102	F10
16	DN400	4.0	102	—	—	21.25	539.8	16 x 1 -8 UNC	—	—	11.8	300	14.2	361	2.00	51	1.063	27	5.512	140	F14
18	DN450	4.5	114	—	—	22.75	577.9	16 x 1 1/8 -7 UNC	—	—	12.8	325	15.6	396	2.00	51	1.063	27	5.512	140	F14
20	DN500	5.0	127	—	—	25.00	635.0	20 x 1 1/8 -7 UNC	—	—	14.2	361	17.3	439	2.52	64	1.063	27	6.496	165	F16
24	DN600	6.1	154	—	—	29.50	749.3	20 x 1 1/4 -7 UNC	—	—	16.5	419	19.7	500	2.76	70	1.417	36	6.496	165	F16

STAINLESS STEEL BFY VALVES 650/651 SERIES



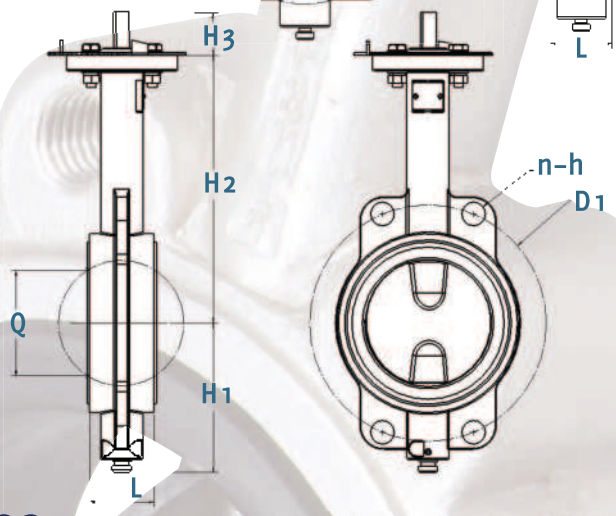
#650-WAFER #651-LUG

All exposed components are stainless steel with an ISO 5211 top mounting flange and 150 PSI bi-directional rating. Connection flanges conform to ANSI Class 150 standards and has no tapered pins for maximum durability.



Features & Specifications

- Sizes 2" through 12" available, wafer or lug
- 316 stainless disc has mirror polish
- Variety of disc and seal materials available
- Conforms to MSS–SP–67, MSS–SP–25, API–609
- Designed for blowout proof service
- High Cv slim disc design
- Easily field repairable
- 10-position handle

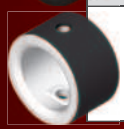


Stainless Steel Butterfly Valves

Size		L		Q		ØD		Lug Taps	Wafer Holes		H1		H2 □		H3		S		ØF		ISO
in	mm	in	mm	in	mm	in	mm	SAE Thread	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	
2	DN50	1.7	43	1.1	29	4.75	120.7	4 x 5/8 -11 UNC	4 x 0.9	4 x 22	2.6	66	5.1	130	1.18	30	0.354	9	1.969	50	F05
2½	DN65	1.8	46	1.8	45	5.50	139.7	4 x 5/8 -11 UNC	4 x 0.7	4 x 18	3.2	81	5.6	142	1.18	30	0.354	9	1.969	50	F05
3	DN75	1.8	46	2.5	62	6.00	152.4	4 x 5/8 -11 UNC	4 x 0.7	4 x 18	3.5	89	5.8	147	1.18	30	0.433	11	1.969	50	F05
4	DN100	2.0	52	3.5	89	7.50	190.5	8 x 5/8 -11 UNC	4 x 0.7	4 x 18	4.3	109	6.7	170	1.18	30	0.433	11	2.756	70	F07
5	DN125	2.2	56	4.6	116	8.50	215.9	8 x 3/4 -10 UNC	4 x 0.9	4 x 22	4.8	122	7.4	188	1.18	30	0.551	14	2.756	70	F07
6	DN150	2.2	56	5.7	145	9.50	241.3	8 x 3/4 -10 UNC	4 x 0.9	4 x 22	5.4	137	8.0	203	1.18	30	0.551	14	2.756	70	F07
8	DN200	2.4	60	7.8	197	11.75	298.5	8 x 3/4 -10 UNC	4 x 1.0	4 x 26	6.7	170	9.4	239	1.57	40	0.669	17	4.016	102	F10
10	DN250	2.7	68	9.8	248	14.25	362.0	12 x 7/8 -9 UNC	4 x 1.0	4 x 26	7.9	201	10.7	272	1.57	40	0.866	22	4.016	102	F10
12	DN300	3.1	78	11.7	298	17.00	431.8	12 x 7/8 -9 UNC	4 x 1.0	4 x 26	9.3	236	12.0	305	1.57	40	0.866	22	4.016	102	F10
14	DN350	3.1	78	—	—	18.75	476.3	12 x 1 -8 UNC	—	—	10.3	262	13.0	330	1.57	40	0.866	22	4.016	102	F10
16	DN400	4.0	102	—	—	21.25	539.8	16 x 1 -8 UNC	—	—	11.8	300	14.2	361	2.00	51	1.063	27	5.512	140	F14
18	DN450	4.5	114	—	—	22.75	577.9	16 x 1 1/8 -7 UNC	—	—	12.8	325	15.6	396	2.00	51	1.063	27	5.512	140	F14
20	DN500	5.0	127	—	—	25.00	635.0	20 x 1 1/8 -7 UNC	—	—	14.2	361	17.3	439	2.52	64	1.063	27	6.496	165	F16
24	DN600	6.1	154	—	—	29.50	749.3	20 x 1 1/4 -7 UNC	—	—	16.5	419	19.7	500	2.76	70	1.417	36	6.496	165	F16

Butterfly Valve Seat Material Properties

Property		EPDM	NEOPRENE	VITON	SILICONE
Temperature		-55°–275°F	-40°–225°F	-20°–400°F	-80°–450°F
Resistance to	Acid	Good–Excellent	Good	Good	Good
	Alkali	Good–Excellent	Fair–Good	Poor–Good	Poor–Good
	Petroleum Oil	Poor	Excellent	Excellent	Good
	Vegetable Oil	Good	Good	Excellent	Good
	Abrasion	Good–Excellent	Good	Good	Good–Excellent
Compression Set		Fair	Good	Good–Excellent	Good–Excellent

Seat Material	General Application	Temperature Range	Environments Not Recommended
 NITRILE BUNA-N (NBR)	Hydrocarbons with less than 40% of aromatics, natural gas, air, H_2O, sea water, brine, alcohols, glycols (food grade available)	14°F to 176°F -10°C to 80°C	solvents, benzene, xylene
 EPDM	H_2O, steam, air, brine, abrasives, phosphates, esters, ketones, alkali, food compounds, liquids and solids, diluted inorganic acids, caustic soda (food grade available)	-4°F to 250°F -20°C to 120°C	hydrocarbons, oils, fats, dry air
 HIGH TEMP EPDM		-4°F to 300°F -20°C to 148°C	
 Hypalon (CSM)	Oxidizing acids, chromic acid, hydrofluoric acid, sulphur based acids, sodium hypoclonte, ozone	0°F to 212°F -18°C to 100°C	steam, ketones, hot air, nitric acid
 Silicone	Beverages, food	-22°F to 300°F -30°C to 150°C	hydrocarbons, solvents, steam
 Fluoroelastomer (FKM) (VITON® or Fluorel®)	Hydrocarbons with high concentration of aromatics, mineral and halogenated acids, phosphoric acid, aliphatic and aromatic ethers	0°F to 400°F -18°C to 205°C	steam, ketones, amines, esters, alkali
 Neoprene (CR)	Oils, diluted mineral acids, alkali, fats	-4°F to 212°F -20°C to 100°C	ketones, concentrated acids, solvents for paint
 Natural Rubber	Abrasive products	-40°F to 176°F -40°C to 80°C	steam, hydrocarbons, oils
 PTFE/EPDM	Corrosive products, solvents	-4°F to 250°F -20°C to 120°C	abrasive products, fluorine gases, alkaline metals

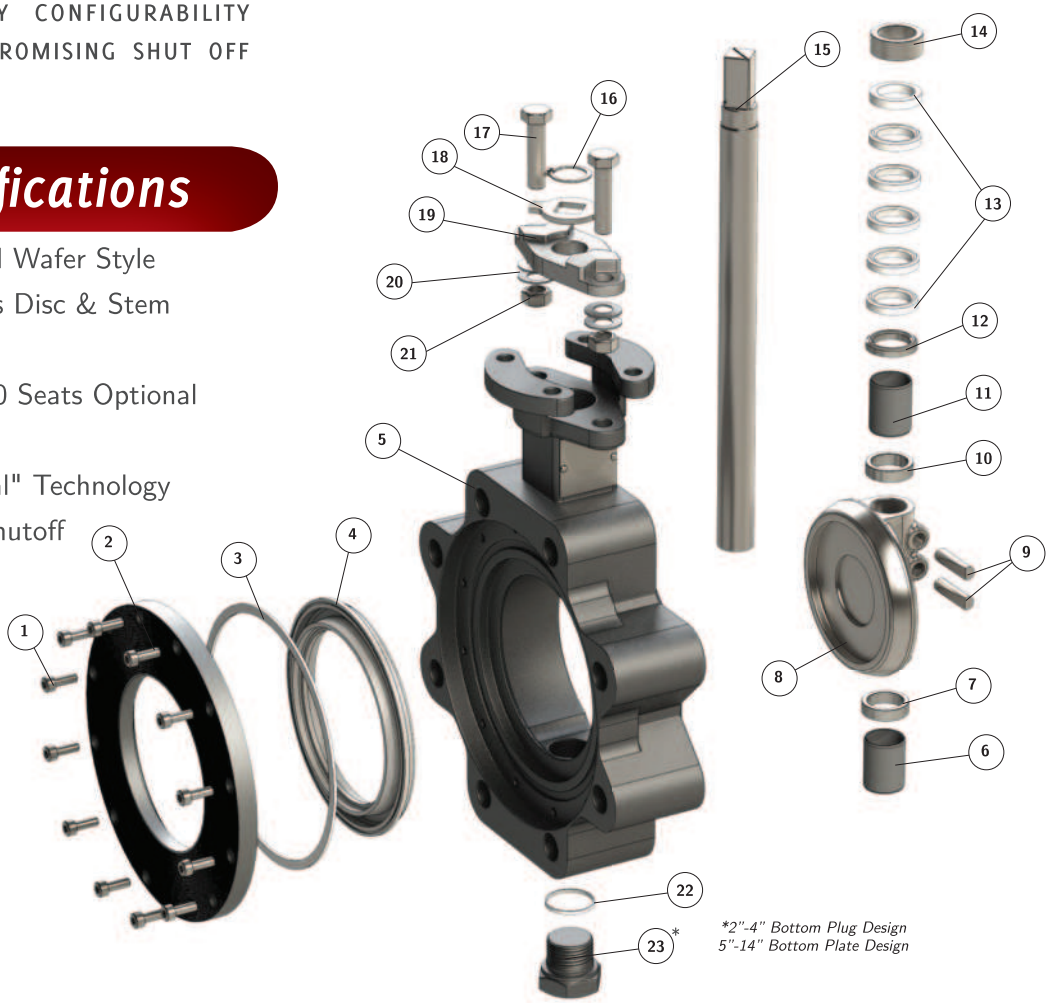
CARBON STEEL HP BFY 750/751 SERIES

Our High Performance Butterfly Valves are designed for demanding applications. Unique seat and body construction allows for easy configurability and maintenance, without compromising shut off capability or service life.

Features & Specifications

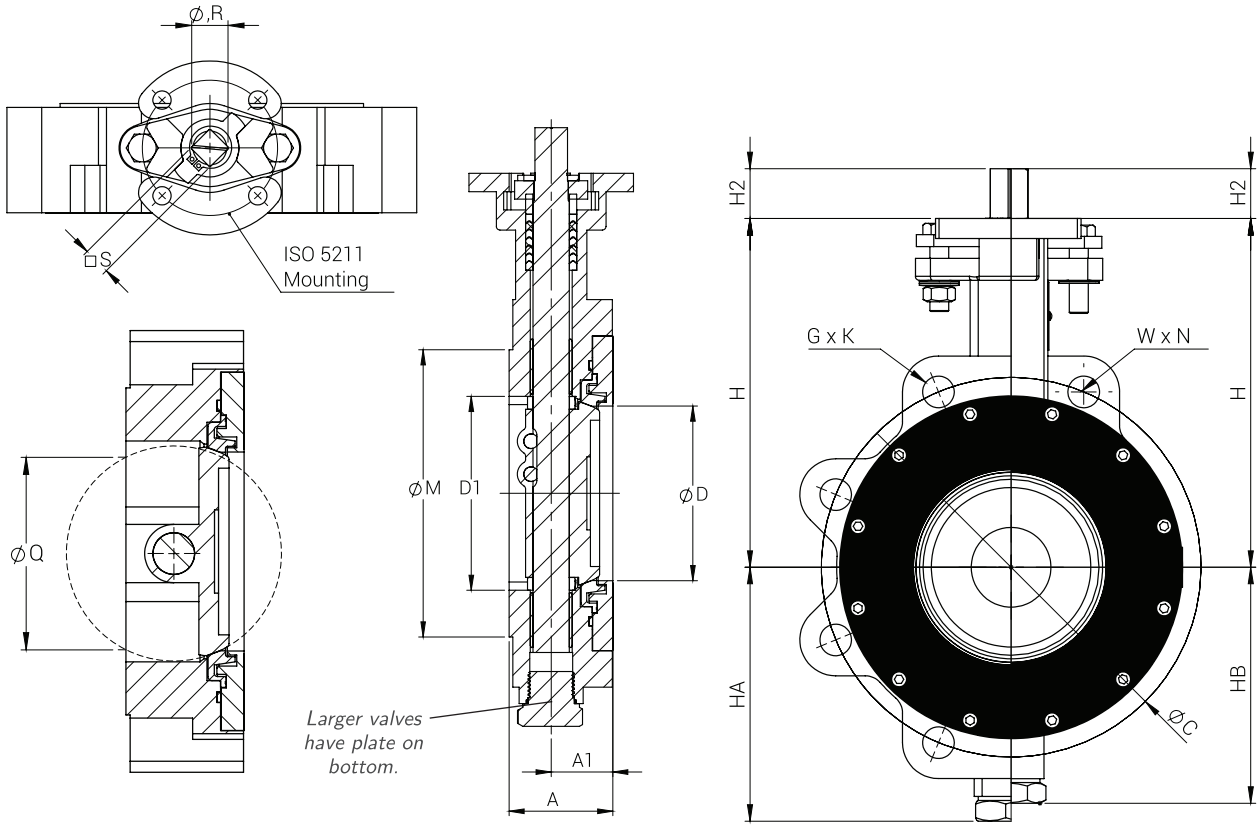
- » ANSI 316 CLASS 150 Lug and Wafer Style
- » WCB or CF*M Body, Stainless Disc & Stem
- » 15% Glass RTFE Standard
- » 100% Virgin PTFE, TFM 1600 Seats Optional
- » ISO 5211 Direct Mount
- » Double Offset "Secure Arc Seal" Technology
- » Bubble Tight Bi-Directional Shutoff
- » Suitable for Dead-End Service
- » Blow-out Proof Stem





Item	Description	Materials
1	Insert Bolts	A193 GR.8
2	Seat Insert	ASTM A29 GR1045 (WCB) ASTM A240 GR316 (CF8M)
3	Insert Ring	PTFE
4	Seat	See Page 7
5	Body	A216 WCB or A351 CF8M
6	Lower Stem Bearing	SS/PTFE Lined
7	Lower Retaining Ring	304 SS
8	Disc	A351 CF8M
9	Disc Taper Pins	17-4 PH
10	Lower Retaining Ring	304SS

Item	Description	Materials
11	Upper Stem Bearing	SS/PTFE Lined
12	Packing Ring	304 SS
13	Packing	PTFE
14	Upper Retaining Ring	304 SS
15	Stem	17-4 PH
16	Snap Ring	W1-8
17	Gland Bolts	A193 GR.8
18	Stopper Plate	304 SS
19	Packing Gland	A351 CF8M
20	Spring Washers	301 SS
21	Gland Nuts	A194 GR.8
22	Plug Seal	PTFE
23	Body Plug	A216 WCB or A351 CF8M



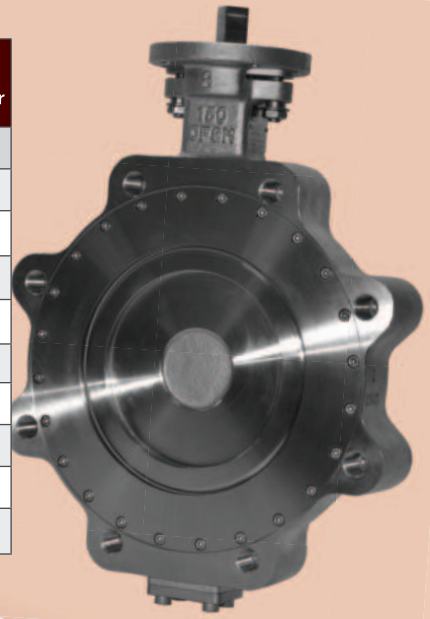
High Performance Butterfly Valves

Size ANSI DN	ISO 5211	A	A1	C	ØD	ØD1	G	K	W	N	H	HA Lug	HB Wafer	H2	M	Q	ØR	S	Handle Size	Notch Plate
2"	F07	1.81	1.14	4.75	1.81	2.28	5/8"-11 UNC	4	0.67	2	5.00	3	3	0.71	3.62	1.80	0.55	0.43	01	F07 HP Notch Plate
50		*46*	*29*	*120.7*	*46*	*58*			17		*127*	*76.2*	*76.2*	*18*	*92*	*45.75*	*14*	*11*		
2.5"	F07	1.93	1.06	5.50	2.32	2.72	5/8"-11 UNC	4	0.67	2	5.51	3.79	3.79	0.83	4.13	1.97	0.56	0.43		
65		*49*	*27*	*139.5*	*59*	*69*			17		*140*	*96.2*	*96.2*	*21*	*105*	*50.13*	*14*	*11*		
3"	F07	2.01	1.18	6.00	2.87	3.31	5/8"-11 UNC	4	0.67	2	5.91	4.21	4.21	0.83	5.00	2.80	0.71	0.55	02	
80		*51*	*30*	*152.4*	*73*	*84*			17		*150*	*106.9*	*106.9*	*21*	*127*	*71*	*18*	*14*		
4"	F07	2.22	1.32	8.50	3.76	4.17	5/8"-11 UNC	8	0.71	2	6.89	5.02	4.68	0.83	6.18	3.71	0.74	0.55		
100		*56.5*	*33.5*	*190.5*	*95.5*	*106*			18		*175*	*127.4*	*118.9*	*21*	*157*	*94.19*	*19*	*14*		
5"	F10	2.32	1.34	8.50	4.37	4.72	3/4"-10 UNC	8	0.81	2	7.87	5.44	5.12	1.10	7.32	4.21	0.74	0.55	03	F10 HP Notch Plate
125		*59*	*34*	*215.9*	*111*	*120*			20.5		*200*	*138.2*	*130*	*28*	*186*	*106.88*	*19*	*14*		
6"	F10	2.36	1.38	9.50	5.59	6.06	3/4"-10 UNC	8	0.79	2	8.46	6.10	5.71	1.10	8.50	5.53	0.74	0.55		
150		*60*	*35*	*241.5*	*142*	*154*			20		*215*	*155*	*145*	*28*	*216*	*140.36*	*19*	*14*		
8"	F10	2.56	1.50	11.75	7.48	7.95	3/4"-10 UNC	8	0.81	2	9.65	7.06	7.06	1.46	10.67	7.48	1.02	0.75	04	
200		*65*	*38*	*298.5*	*190*	*202*			20.5		*245*	*179.4*	*179.4*	*37*	*271*	*189.97*	*26*	*19*		
10"	F10 & F12	2.83	1.655	14.25	9.29	9.76	7/8"-9 UNC	12	0.93	2	11.34	8.23	8.23	1.46	12.76	9.29	1.18	0.87	05	F12 HP Notch Plate
250		*72*	*42*	*362*	*236*	*248*			23.5		*288*	*209*	*209*	*37*	*324*	*236*	*30*	*22*		
12"	F12	3.27	1.85	17.00	11.11	11.65	7/8"-9 UNC	12	1.00	2	12.99	9.84	9.84	1.89	15.00	11.08	1.42	1.06	06	
300		*83*	*47*	*431.8*	*282.2*	*296*			25.4		*330*	*250*	*250*	*48*	*381*	*281.33*	*36*	*27*		

HIGH PERFORMANCE BUTTERFLY VALVES

Weights

Size		750 WCB Wafer		751 WCB Lug		850 CF8M Wafer		851 CF8M Lug		Individual Handle		Individual Gear Operator	
ANSI	*DN*	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg
2"	50	6.83	3.10	8.88	4.03	6.83	3.10	8.88	4.03	1.35	0.613	2.8	1.3
2.5"	65	9.46	4.29	11.64	5.28	9.46	4.29	11.64	5.28	1.35	0.613	2.8	1.3
3"	80	11.79	5.35	13.76	6.24	11.79	5.35	13.76	6.24	1.31	0.595	2.8	1.3
4"	100	19.51	8.85	26.39	11.97	19.51	8.85	26.39	11.97	1.31	0.595	2.8	1.3
5"	125	27.76	12.59	36.57	16.59	27.76	12.59	36.57	16.59	3.70	1.678	5.6	2.5
6"	150	32.17	14.59	42.61	19.33	32.17	14.59	42.61	19.33	3.70	1.678	5.6	2.5
8"	200	50.07	22.71	65.61	29.76	50.07	22.71	65.61	29.76	3.25	1.476	11.5	5.2
10"	250	80.00	36.29	102.21	46.36	80.00	36.29	102.21	46.36	7.57	3.432	11.5	5.2
12"	300	129.21	58.61	162.92	73.90	129.21	58.61	162.92	73.90	7.53	3.414	22.2	10.1



Seating Torque (in-lbs)

Size (in)	SHAFT DOWNSTREAM				SHAFT UPSTREAM			
	Pressure Differential (ΔP in PSI)				Pressure Differential (ΔP in PSI)			
	75 ΔP	150 ΔP	225 ΔP	285 ΔP	75 ΔP	150 ΔP	225 ΔP	285 ΔP
2	286	295	304	311	290	302	315	325
2-1/2	329	342	355	365	332	347	363	375
3	397	416	435	450	397	416	435	450
4	559	600	642	675	559	600	642	675
5	589	662	735	793	610	705	799	875
6	1021	1125	1230	1313	1057	1197	1338	1450
8	1360	1550	1740	1892	1441	1712	1983	2200
10	3598	3944	4290	4566	3778	4304	4830	5250
12	3767	4430	5093	5624	3866	4628	5390	6000

The torque values listed above do not include a safety factor. It is recommended that a safety factor of 20% be added to these numbers for standard self-lubricating service. For water, dry air, solvents, abrasives, powder, and dust service, see service factor guide chart below.

Service Factor Rating

Service Condition	Service Type	Media Type	Safety Factor	Multiplier
1	Ideal	Lubricating Oil	20%	1.20
2	Normal	Water	30%	1.30
3	Severe	Dry Air, Solvents	50%	1.50
4	Extreme	Abrasives	100%	2.00

This service factor chart is a suggested guide only. Actual service conditions will vary due to dynamic flow conditions and may require adjustments to the applied safety factor.

Ordering Guideline

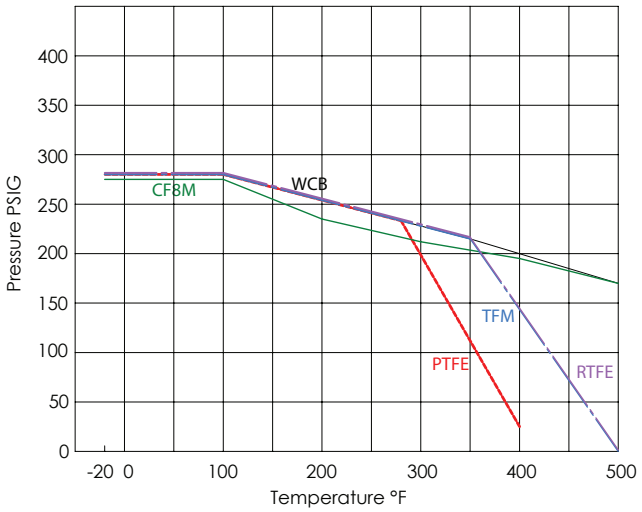
Size	Series	Trim	Operator
020 = 2" **025** = 2.5" **030** = 3" **040** = 4" **050** = 5" **060** = 6" **080** = 8" **100** = 10" **120** = 12"	**750** = CL150 WCB Wafer **751** = CL150 WCB Lug **850** = CL150 CF8M Wafer **851** = CL150 CF8M Lug	See Chart Below	**BST** = Bare Stem **HND** = Lever Handle **GOP** = Manual Gear Operator **HNS** = 304SS Lever Handle **GOS** = 316SS Gear Operator **ILP** = Lever Handle W/ ILP

Trim Codes	Disc	Stem	Seat	Temperature Range	
821	CF8M	17-4	15% Glass RTFE	-20°F to 425°F	-29°C to 218°C
822	CF8M	316 SS	15% Glass RTFE	-20°F to 425°F	-29°C to 218°C
823	CF8M	17-4	100% Virgin PTFE	-20°F to 400°F	-29°C to 204°C
824	CF8M	316 SS	100% Virgin PTFE	-20°F to 400°F	-29°C to 204°C
825	CF8M	17-4	TFM 1600	-20°F to 500°F	-29°C to 260°C
826	CF8M	316 SS	TFM 1600	-20°F to 500°F	-29°C to 260°C
827	CF8M	17-4	Fire-Safe	-20°F to 500°F	-29°C to 260°C
828	CF8M	316 SS	Fire-Safe	-20°F to 500°F	-29°C to 260°C

Cv Values

Size (in)		Disc Position							
ANSI	DN	20°	30°	40°	50°	60°	70°	80°	90°
2"	50	5	8	12	18	29	43	60	62
2.5"	65	7	12	18	28	44	67	92	96
3"	80	12	21	31	48	75	113	157	163
4"	100	29	50	74	115	180	270	374	388
5"	125	49	84	124	192	300	450	623	647
6"	150	81	141	207	321	502	755	1045	1085
8"	200	164	283	416	645	1009	1517	2099	2180
10"	250	235	407	598	926	1449	2178	3014	3130
12"	300	370	641	942	1459	2283	3431	4748	4930

Pressure Rating



Standards and Compliance

ISO 5211
Industrial Valves
Part-Turn Actuator
Attachments

ASME B16.5
Steel Pipe Flanges
and Flange Fittings

ASME B16.34
Steel Valves

MSS-SP-6
Finishes For
Pipe Flanges

MSS-SP-25
Standard Markings
For Valves

MSS-SP-68
High Pressure
Butterfly Valves
with Offset Design

GEAR OPERATORS GO–**–ISO SERIES

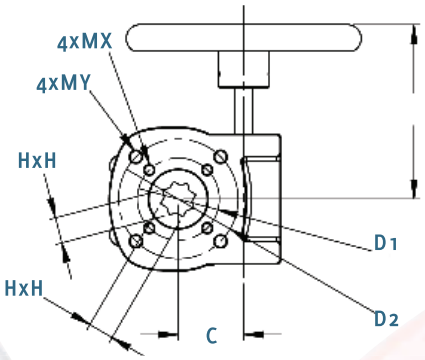


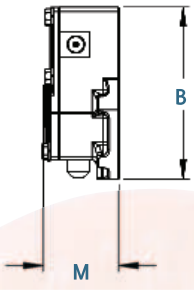
Other custom accessories available; call for details.

Features & Specifications

- Compact design for a versatile and economic solution
- Cast iron body with extended neck
- Install between standard ANSI class 125/150 flanges
- ISO 5211 square drive shaft for easy automation
- Lug style 150 PSI bi-directional dead-end service
- Conforms to MSS–SP–67, MSS–SP–25, API–609
- Seat backing ring ensures blowout proof service
- High Cv slim disc design
- Easily field repairable
- Undercut available

Model	Gear Ratio	Input Torque (in-lbs)	Output Torque (in-lbs)*	Hand Wheel Diameter (in)	Weight (lbs)	Rim Pull (lbs)*
GO–01–ISO	40:1	160	1330	4	2.8	40
GO–02–ISO	37:1	195	2200	5	5.6	39
GO–03–ISO	42:1	400	4425	8	11.5	50
GO–04–ISO	42:1	800	8850	12	22.2	67
GO–05–ISO	60:1	975	15900	12	40.8	81
GO–06	68:1	1460	30090	16	78.1	91
GO–07	88:1	1460	39825	16	101.0	91
GO–08	184:1	1330	69900	16	171.0	83
GO–09	250:1	1330	89395	16	238.0	83
GO–10	720:1	1330	146030	20	408.0	67



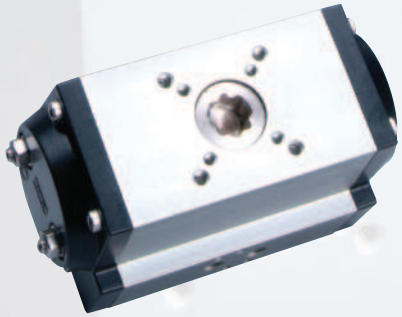




				Output Shaft (mm)	Valve Mounting					
Model	L (in)	M (in)	C (in)	HxH	D1 (in)	4xMX	ISO	D2 (in)	4xMY	ISO
GO–01–ISO	4.0	1.89	1.67	11	1.97	M5	F05	2.76	M8	F07
GO–02–ISO	5.8	2.17	1.97	17	2.76	M8	F07	–	–	–
GO–03–ISO	5.8	2.72	2.09	22	2.76	M8	F07	4.02	M10	F10
GO–04A–ISO	8.4	3.07	2.60	27	4.02	M10	F10	5.51	M16	F14
GO–04B–ISO	8.4	3.07	2.60	27	4.92	M12	F12	–	–	–
GO–05A–ISO	8.1	3.43	3.50	46	4.92	M12	F12	6.50	M20	F16
GO–05B–ISO	8.1	3.43	3.50	46	5.51	M16	F14	–	–	–
GO–06A–ISO	10.9	3.58	4.84	46	6.50	M20	F16	–	–	–
GO–06B–ISO	10.9	3.58	4.84	46	5.51	M16	F14	–	–	–
GO–07–ISO	13.6	3.94	6.02	46	6.50	M20	F16	10.00	M16	F25
GO–08–ISO	18.7	5.16	1.97	CALL	6.50	M20	F16	10.00	M16	F25
GO–09–ISO	19.9	6.54	3.74	CALL	10.00	M16	F25	11.73	M20	F30
GO–10	26.6	6.22	9.45	CALL	10.00	M16	F25	11.73	M20	F30

ALUMINUM PNEUMATIC ACTUATORS



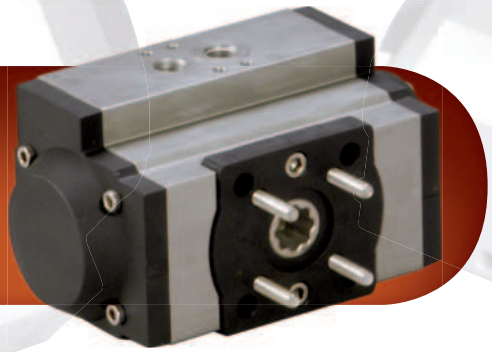


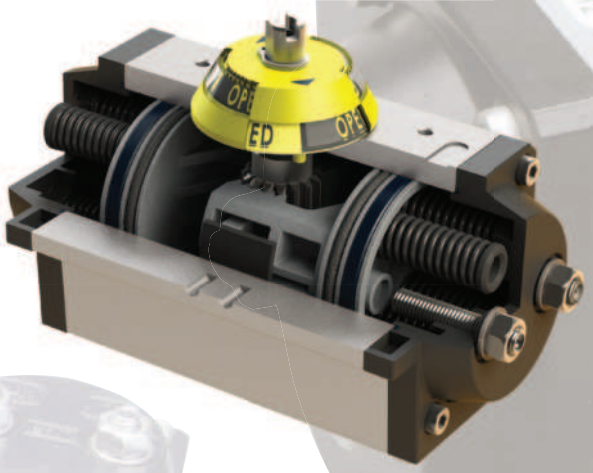
Features & Specifications

- Compact design utilizes the same body for double acting and spring return units.
- Utilizing NAMUR VDI/VDE 3845 and ISO 5211 dimensions
- Standard 90° rotation, with optional 120°, 135°, 150°, and 180°
- Female pinion drive standard, with optional drives to meet specific application requirements
- Ideal for high cycle applications
- Rugged tooth design allowing for manual override
- High visibility position indication
- High cycle life wear pads serves as both guide and wear bearings
- Epoxy coated spring cartridges are pre-loaded for safety
- Alternative operating media includes air, water, nitrogen and compatible hydraulic fluids
- Stainless steel fasteners
- Honed bore for high cycle life
- Full traceability of all component parts
- Factory pressure and leak tested and boxed individually
- Wide range of adapters and accessories available
- Hard anodized body standard

THE NEW MT SERIES OFFERS A FLANGELESS DESIGN WHICH MAKES AUTOMATION EASY. THE MT SERIES ALSO OFFERS TWO ISO BOLT CIRCLES AS A STANDARD WHICH ELIMINATES THE NEED FOR THE FLANGE THUS PREVENTING CORROSION.

MT Series actuators have replaced the older UT series with mounting plate, however, sizes 51 and larger are still available with changeable mounting plate.





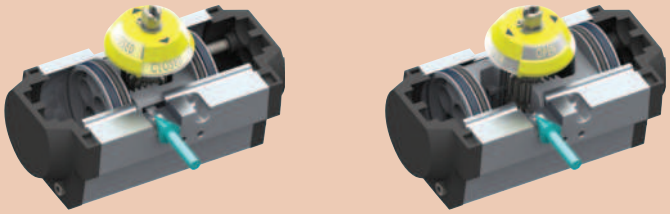
Double Acting

SIZE	40 PSIG	60 PSIG	80 PSIG	100 PSIG	120 PSIG
MT04	38	56	75	94	113
MT12	62	94	125	156	187
MT16	137	206	275	344	412
MT17	180	270	360	450	540
MT21	250	375	500	625	750
MT26	375	562	750	937	1125
MT31	500	750	1000	1250	1500
MT36	800	1200	1600	2000	2400
MT41	1000	1500	2000	2500	3000
MT46	1562	2344	3125	3906	4687
MT/UT51	2250	3375	4500	5625	6750
MT/UT56	3000	4500	6000	7500	9000
MT/UT61	4550	6825	9100	11375	13650
MT/UT66	6000	9000	12000	15000	18000
MT/UT71	11750	17625	23500	29375	35250
MT/UT76	15750	23625	31500	39375	47250

Large sized actuators are still supplied with interchangeable mounting flange.

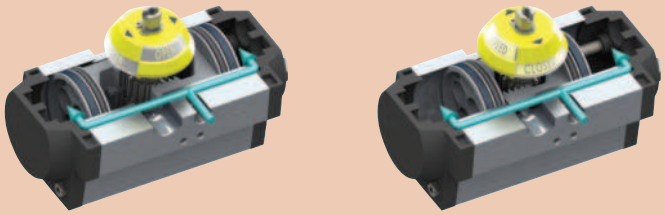
DOUBLE ACTING

CLOSED — OPENING PHASE — OPEN



AIR IN #4 = PISTONS CLOSED

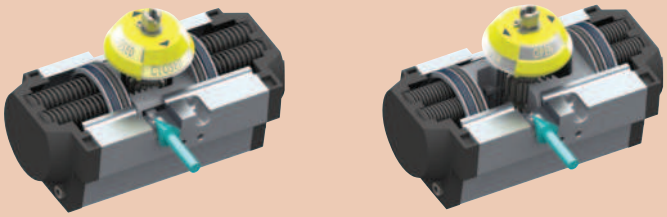
OPEN — CLOSING PHASE — CLOSED



AIR IN #2 = PISTONS OPEN

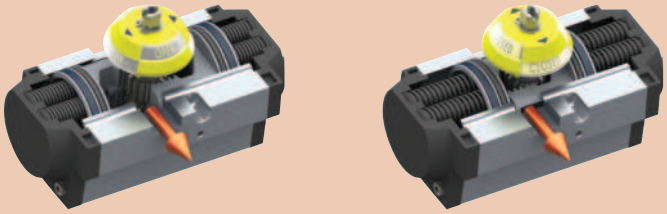
SPRING RETURN

CLOSED — OPENING PHASE — OPEN



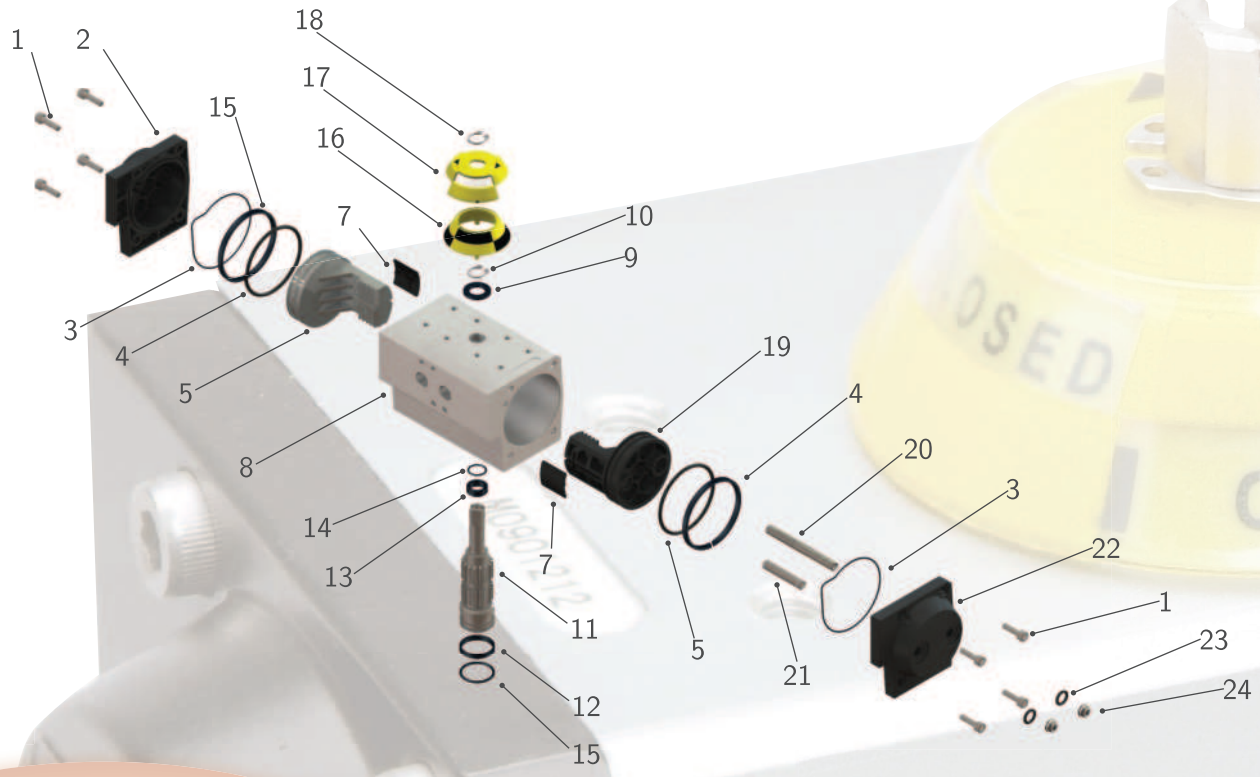
AIR IN #4 = PISTONS OPEN

OPEN — CLOSING PHASE — CLOSED



AIR FAILURE = PISTONS CLOSE (SPRING RELEASE)

ALUMINUM PNEUMATIC ACTUATORS



Item	Description	Materials	Item	Description	Materials
1	End Cap Bolts	AISI 304 Stainless Steel	13	Upper Pinion Bearing	Technopolymer
2	Left End Cap	Die Cast Aluminum Epoxy Coated	14	Upper Pinion O-ring	BUNA-N
3	End Cap O-ring	BUNA-N	15	Lower Pinion O-ring	BUNA-N
4	Piston Wear Bearing	Technopolymer	16	Open/Closed Indicator	Technopolymer
5	Piston O-ring	BUNA-N	17	Indicator Window	Technopolymer
6	Left Piston	Die Cast Aluminum Epoxy Coated	18	Indicator Snap Ring	AISI 304 Stainless Steel
7	Piston Skate	Technopolymer	19	Travel Stop Piston	Die Cast Aluminum Epoxy Coated
8	Actuator Body	Extruded Aluminum (6063 or 6005)	20	Closed Travel Stop	AISI 304 Stainless Steel
9	Upper Pinion Washer	Technopolymer	21	Open Travel Stop	AISI 304 Stainless Steel
10	Pinion Snap Ring	AISI 304 Stainless Steel	22	Travel Stop End Cap	Die Cast Aluminum Epoxy Coated
11	Pinion	Nickel Plated Carbon Steel	23	Travel Stop O-rings	BUNA-N
12	Lower Pinion Bearing	Technopolymer	24	Travel Stop Nuts	AISI 304 Stainless Steel

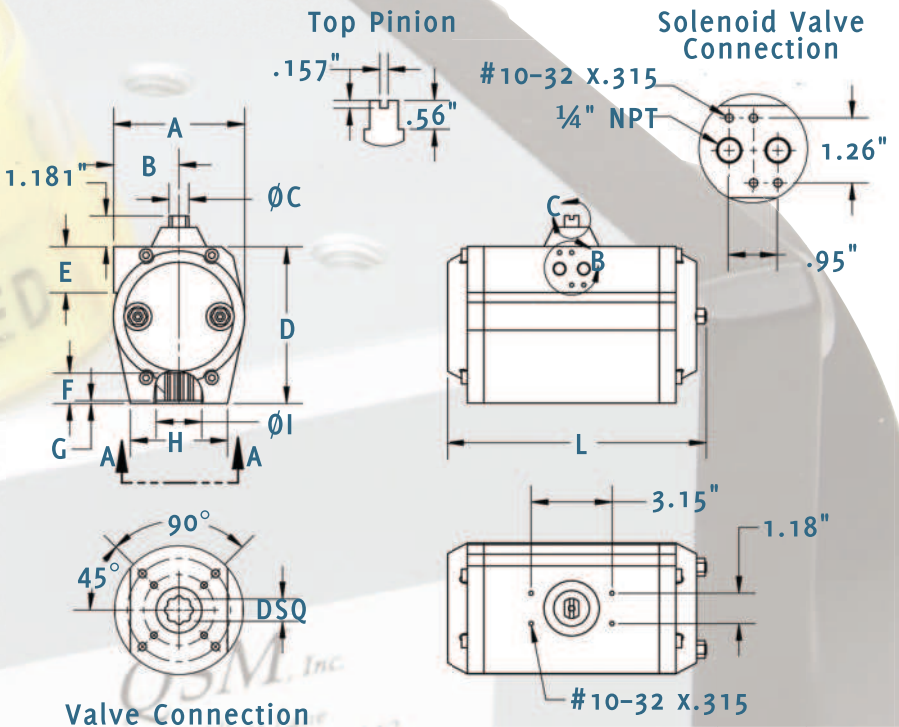
SEVERE COLD SERVICE
For temperatures below -4°F down to -40°F, special low temperature seals and lubricant must be used.

STANDARD SERVICE
Actuators come standard with BUNA-N seals, which are good for normal temperature ranges of -4°F to 176°F.

ELEVATED TEMP SERVICE
For elevated temperatures up to 300°F, VITON® seals are available. Typical VITON® installations are good for 250°F continuous and 300°F cyclic

HIGH TEMP SERVICE
For extremely hot environments, special high temperature seals and lubricant must be used. Temperature ranges up to 500°F can be accomodated with our specially manufactured actuator units.

MT/UT Series





Technopolymer actuators are available for extra corrosion resistance to general environmental conditions. A matching limit switch box is available to accompany our technopolymer line of actuators. Please call or visit online at www.tru-flo.com to view the technical data and for more information regarding our various automation options for corrosive environments.

Type	A	B	C	D	E	F	G	H	I	L	M	J	K	W	X	DSQ	ISO 5211
MT12	2.64	1.57	0.47	2.80	1.77	0.49	0.06	1.85	0.87	4.69	0.39	1.42	#10-32x.394	1.969	¼"-20x.394	0.4331	F03/F05
												1.65	#10-32x.394				F04
MT16	3.19	1.85	0.47	3.19	1.75	0.75	0.08	2.44	1.30	6.89	0.39	1.97	¼"-20x.394	2.756	5/16"-18x.512	0.5512	F05/F07
												1.65	#10-32x.394				F04/F07
MT17	3.19	1.85	0.47	3.19	1.75	0.75	0.08	2.44	1.30	8.15	0.39	1.97	¼"-20x.394	2.756	5/16"-18x.512	0.5512	F05/F07
												1.65	#10-32x.394				
MT21	3.78	2.13	0.55	3.86	1.77	0.75	0.08	3.01	1.38	7.32	0.39	1.97	¼"-20x.512	2.756	5/16"-18x.512	0.6693	F05/F07
MT26	3.78	2.13	0.55	3.86	1.77	0.75	0.08	3.01	1.38	9.76	0.39	1.97	¼"-20x.512	2.756	5/16"-18x.512	0.6693	F05/F07
MT31	4.49	2.44	0.77	4.61	1.73	0.91	0.08	3.56	1.59	9.49	0.55	1.97	¼"-20x.512	2.756	5/16"-18x.512	0.6693	F05/F07
MT36	5.16	2.60	0.77	6.06	1.77	1.18	0.12	3.76	1.59	10.28	0.55	2.76	5/16"-18x.512	4.016	3/8"-16x.709	0.8661	F10/F07
MT41	5.16	2.60	0.77	6.06	1.77	1.18	0.12	3.76	1.77	12.01	0.55	2.76	5/16"-18x.512	4.016	3/8"-16x.709	0.8661	F10/F07
MT46	5.71	2.87	1.10	6.63	1.77	1.18	0.12	3.88	2.22	14.45	0.79	2.76	5/16"-18x.512	4.016	3/8"-16x.709	0.8661	F10/F07
MT51	7.13	3.58	1.10	7.95	1.73	1.57	0.12	4.33	2.13	14.98	0.79	4.02	3/8"-16x.709	4.921	½"-13x.787	1.063	F12
MT56	7.13	3.58	1.10	7.95	1.73	1.57	0.12	4.90	2.62	17.22	0.79	4.02	3/8"-16x.709	4.921	½"-13x.787	1.063	F10/F12
MT61	9.13	4.49	1.10	10.12	1.77	1.97	0.16	6.32	3.15	17.48	0.79	5.51	3/8"-16x.709	5.512	5/8"-11x.984	1.4173	F14
MT66	9.13	4.49	1.10	10.12	1.77	1.97	0.16	6.32	3.15	19.76	0.79	5.51	3/8"-16x.709	5.512	5/8"-11x.984	1.4173	F14/F10

ACTUATOR CORROSION RESISTANCE OPTIONS

TRU-FLO OFFERS A WIDE VARIETY OF ACTUATOR COATINGS WHICH EXTEND THE LIMITS OF SERVICE FOR ALUMINUM ACTUATORS.

Material/Finish	Aluminum: Hard Anodized	Aluminum: Anodized w/ Polyamide Epoxy coating	Aluminum: Electroless Nickel Infused	Aluminum: PTFE/PFA Coating	Stainless Steel: 300 series
Appearance	Silver-gray with a low gloss appearance	Black with a medium gloss finish	Medium gloss silver finish	Glossy black/ optional white finish	Silver; low to medium gloss unless polished
General Properties	Good general corrosion properties in most "natural" environments with pH from 4.5 to 8.5. Good resistance to salt air environments. The coating is extremely hard and resistant to abrasion.	This epoxy coating is a relatively thick coating which creates a barrier against many of the chemicals which anodizing alone cannot adequately resist. It will resist more acidic or basic environments than anodizing alone.	Uniformly thick coating with essentially no porosity and a reasonably high hardness. The coating is pure, tough, hard, and resistant to many types of corrosion media.	This coating provides complete surface coverage and exhibits excellent corrosion resistance properties in a wide variety of applications. In addition, it is FDA approved for food contact.	304 and 316 Stainless steel are the most commonly used alloys. Both have good corrosion resistance but 316 is generally considered superior, however more expensive.
Relative Cost to Purchase	Lowest cost option	Moderate	Moderately high	Moderately high	Highest cost option by a significant margin
Performance Limitations	Highly acidic or basic environments will break down the coating.	Good general corrosion resistance, particularly in salt or alkaline environments. Limited resistance to acids. Surface chalking will occur when exposed to UV radiation. Also suitable for low concentrations of caustic washdown solutions.	The coating will provide enhanced corrosion protection in very acidic environments but will not withstand attack from strong alkaline media. Also suitable for low to medium concentrations of caustic washdown solutions.	These coatings are resistant to any environment into which an actuator would be installed. Provided the integrity of the surface is intact, the coating can resist a broad array of chemical environments at temperatures ranging from sub-zero to over 300°F.	Although Stainless Steel does offer enhanced corrosion resistance, it also is dramatically higher in both cost and weight. The weight differential will often necessitate the use of special support bracketry.



Increased Corrosion Resistance

Material/Finish	Aluminum: Hard Anodized	Aluminum: Anodized w/ Polyamide Epoxy coating	Aluminum: Electroless Nickel Infused	Aluminum: PTFE/PFA Coating	Stainless Steel: 300 series
General Indoor Atmosphere	AR	BR	BR	BR	BR
Outdoor Atmosphere, Non-Exposed	AR	BR	BR	BR	BR
Outdoor Atmosphere, Non-Exposed	AR	BR	BR	BR	BR
Outdoor Atmosphere, Exposed with Salt Spray	AR	AR	BR	AR	BR
Caustic Washdown: Low Concentration	NR	LL	AR	AR	BR
Caustic Washdown: High Concentration	NR	LL	LL	AR	AR

Legend

BR	Better than Recommended; may cost significantly more than necessary for reliable long-term service
AR	Acceptable and Recommended
LL	Limited Life; actuator will function for a period of time with a shortened life due to external corrosive attack
NR	Not Recommended

The service guidelines presented here are intended to provide general information about the service limitations and performance of coated actuators. Tru-Flo should be contacted to verify the suitability of the coating in a specific environment.

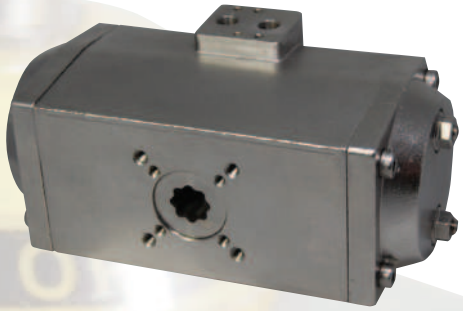
STAINLESS STEEL ACTUATORS SS SERIES

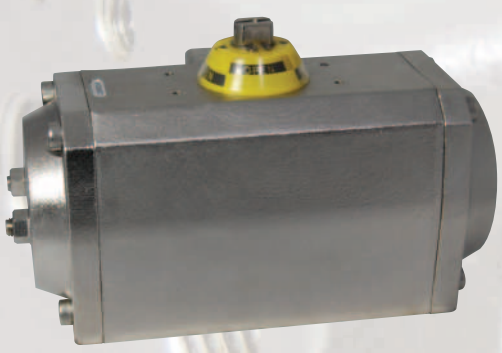


Features & Specifications

- Compact design utilizes the same body for double acting and spring return units.
- NAMUR VDI/VDE 3845 and ISO 5211 mounting dimensions
- Female pinion drive standard, with optional drives to meet specific application requirements
- Ideal for high cycle applications with honed bore
- Rugged tooth design allowing for manual override
- High visibility position indication
- High cycle life wear pads serves as both guide and wear bearings
- Epoxy coated spring cartridges are pre-loaded for safety
- Alternative operating media includes air, water, nitrogen and compatible hydraulic fluids
- Stainless steel fasteners
- Full traceability of all component parts
- Factory pressure and leak tested and boxed individually
- Wide range of adapters and accessories available

TRU-FLO'S NEW STAINLESS STEEL ACTUATORS ARE BY DESIGN, BEST IN CLASS. THE SS SERIES ACTUATORS TAKE CORROSION RESISTANCE TO THE EXTREME WITH ALL OF THE GREAT ENGINEERING FEATURES THAT SEPARATE **TRU-FLO** FROM THE COMPETITION. OUR STAINLESS STEEL ACTUATORS CONFORM TO THE ISO STANDARD WHICH MAKES VALVE AUTOMATION EASY AND COST EFFECTIVE. **TRU-FLO'S** DUAL PATENTED TRAVEL STOPS ALLOW UP TO 110° OF STROKE IN A 90° ACTUATOR, FAR SUPERIOR IN POSITIONING ADJUSTMENT.





Model	40 PSIG	60 PSIG	80 PSIG	100 PSIG	120 PSIG
SS12*	62	94	125	156	187
SS16	137	206	275	344	412
SS21	250	375	500	625	750
SS26	375	562	750	937	1125
SS31	500	750	1000	1250	1500
SS36	800	1200	1600	2000	2400
SS46	1562	2344	3125	3906	4687
SS56	3000	4500	6000	7500	9000
SS66	6000	9000	12000	15000	18000

*SS12 comes standard without dual travel stops

Torque values (in–lbs)

ELECTRIC ACTUATORS

A MANUAL OVERRIDE ALLOWS THE VALVE TO BE ROTATED WITHOUT POWER. TWO TRAVEL LIMIT SWITCHES AND TWO AUXILIARY SWITCHES ARE STANDARD AND CAMS FOR EACH ARE ADJUSTABLE WITH AN ALLEN WRENCH. A PRE-WIRED SPACE HEATER IS INSTALLED TO PREVENT DAMAGE FROM CONDENSATION. MODULATING CONTROLS WITH WEATHERPROOF HOUSING ARE STANDARD WITH A LOCAL CONTROL STATION AS AN AVAILABLE OPTION.



Heater & Thermostat



Travel Limit Switch



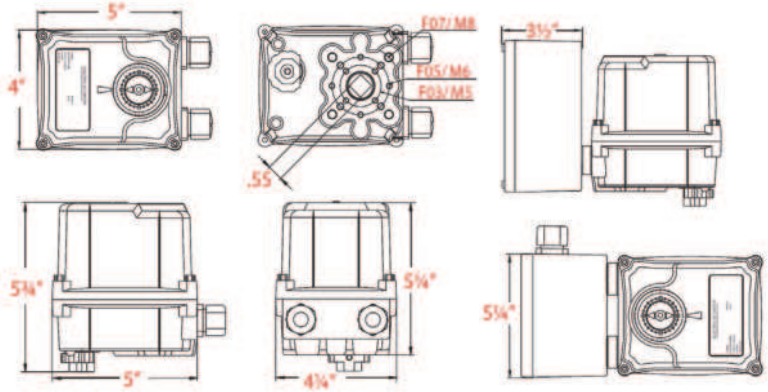
Manual Operation

Features & Specifications

- Compact, durable, die cast aluminum alloy enclosure
- Utilizing ISO 5211 dimensions for mounting
- Motors are engineered for high torque, low current draw, and high cycle ratings
- Custom engineered capacitor for each single phase motor
- Self-locking gearing
- Mechanically driven position indication
- Heater guards against condensation
- Female output drive allows for direct mounting in conformance to DIN 3337 standard
- Spring loaded terminal strip for reliable tight wiring connections
- Dual conduit entrance allowing full electrical code access
- Stainless external captive cover bolts
- Weather seal against water and debris
- Manual override
- Travel limit switch



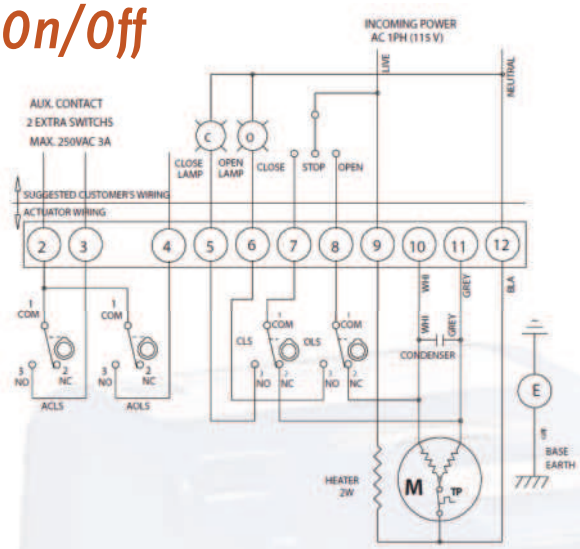
EL-600

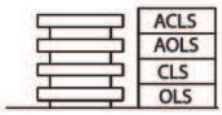


Note: Allow 3½" for cover removal

EL–600 & EL–700 Series

On/Off

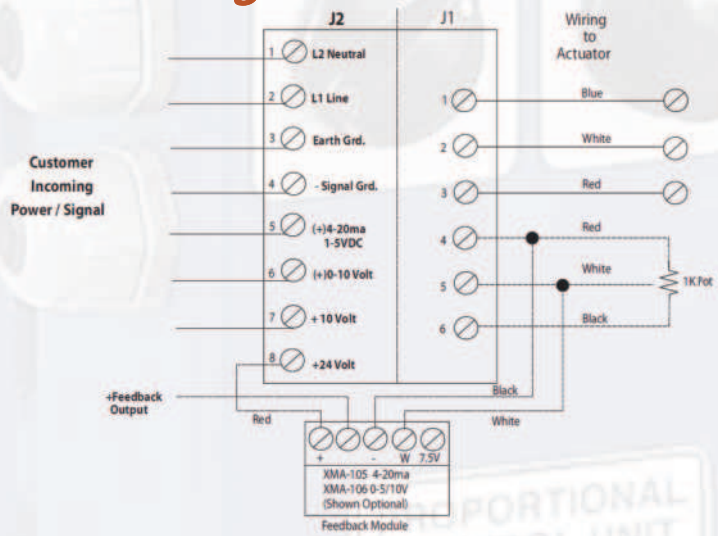


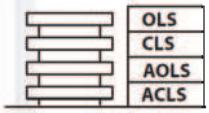


Switch Locations

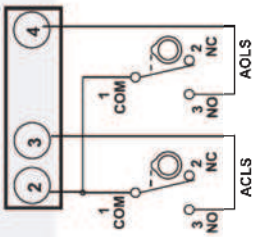
Torque		
	in–lbs	600
	NM	68
Model/Amp Draw		0.4
Number of Actuators		2
Speed of Actuator 60Hz		12
Number of Handwheel turns 90°		8
Duty Cycle 30 min T.P.		70%
Weight (lbs)		8

Modulating





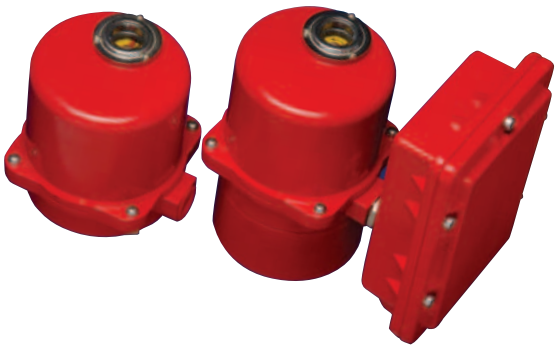
Switch Locations



Specifications			
Enclosure	Weatherproof enclosure rated NEMA4, 4X, IP67	Rotation	320° ±10° (0°–330°)
Power Supply	115 VAC, single phase 50/60 Hertz, ±10%	Operating Temperature	-40°F to 158° (on/off) -40°F to 140° (modulating actuators)
Duty Cycle	70%	External Coating	Polyester powder coating
Motor	Reversible Motor	Mounting Orientation	Can be mounted in any orientation
Limit Switches	2 SPDT open and closed, 250 VAC 3 Amp rating	Modulating Control*	Propotional control board 0–10VDC or 4-20 MA input
Auxiliary Switches	2 SPDT open and closed, 250 VAC 3 Amp rating	Feedback 1K Pot*	Potentiometer unit 1K–10K feedback
Space Heater	2 Watt (115/220 VAC) anti-condenstation	Feedback Current*	Current position transmitter 0–10 VDC or 4-20MA out
Manual Override	Handwheel hexagon design	Local Control Station*	Remote or local controls, open/stop/close controls
Conduit Entries	Two hubble type seal tight fittings	* = Indicates Available Option	

ELECTRIC ACTUATORS ETI 300–1950 SERIES

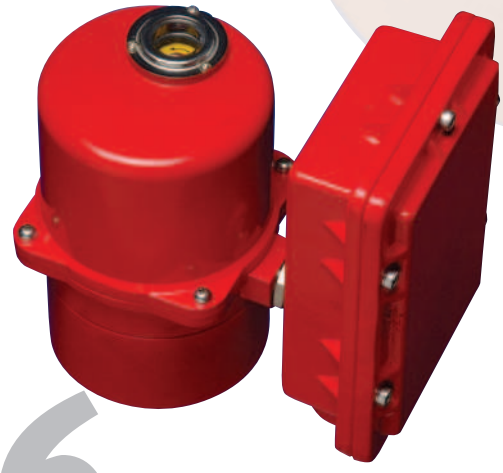
TRU-FLO'S LINE OF ELECTRIC ACTUATORS OFFERS A BROAD RANGE OF TORQUES FROM 300 TO 30,000 IN-LBS AND NUMEROUS FEATURES INCLUDING MANUAL OVERRIDES, AUXILIARY SWITCHES, 4-20MA MODULATING CONTROL, SEVERAL VOLTAGE OPTIONS; 1-PHASE 24/120V/220V AND 12 OR 24VDC, 3-PHASE 220V, 380V, AND 400V. THE UNITS FEATURE EPI-CYCLICAL GEAR TRAINS AND A UNIQUE MANUAL OVERRIDE WITH HAND WHEEL.



Features & Specifications

- Die cast aluminum enclosure
- Corrosion resistant NEMA 4/4x construction
- Utilizing ISO 5211 mounting patterns
- Optional servo card for modulating service; 4–20mA, 1–5mA, 1–5VDC, 0–10VDC, command signal potentiometer inputs with optional 4–20mA transmitter
- CSA and CE approved
- Self-locking gear train–no brake required
- Visual position indication
- Working temperature of -14°F–160°F
- Stainless steel fasteners
- Manual override with hand wheel standard on most models
- Standard two auxiliary limit switch



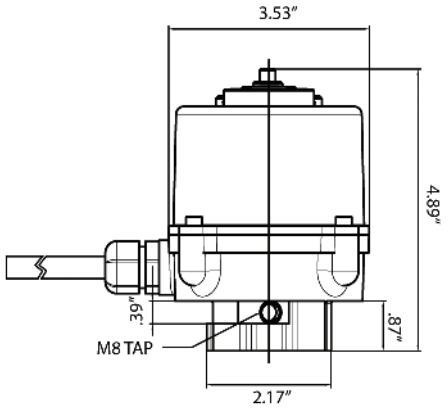


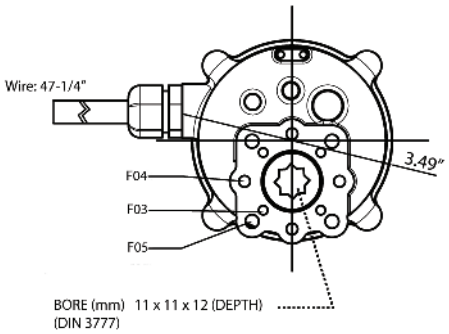
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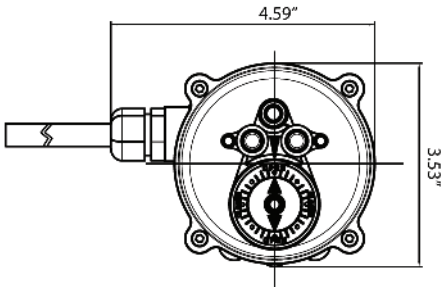
№ 211860

WE–350 & WE–500 Series

The WE–350 series electric actuator is specifically designed to operate small size ball valves (1" and less), dampers, and other quarter-turn devices.

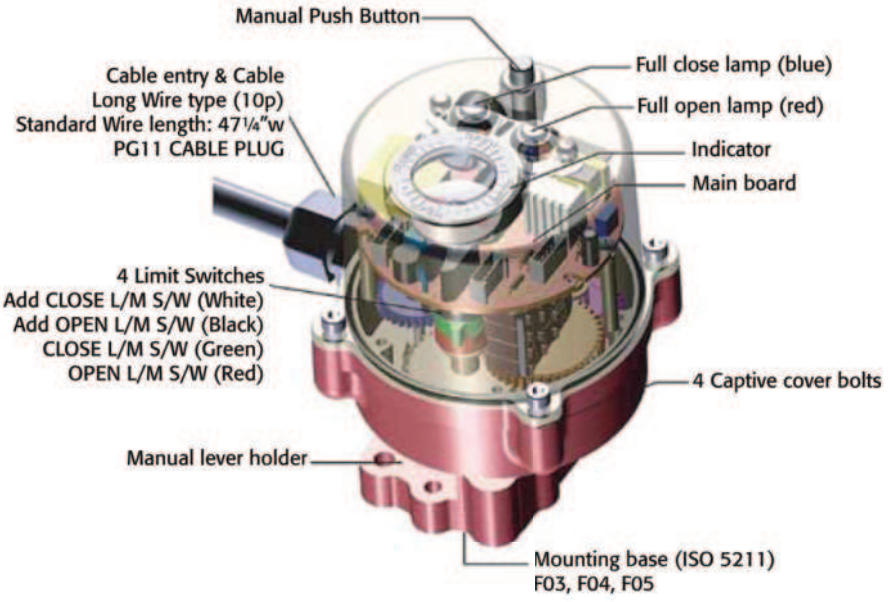






Features & Specifications

- Compact and lightweight
- High resistance to corrosion due to hard anodizing on inside and outside with polyester powder coating on external surface
- Multi-voltage (AC85-265V/1PH, 24VDC)
- Standard space heater
- Weather proof (IP67) NEMA 4 & 6
- Push button and manual lever
- Wide, easy mounting base standard to ISO5211 (F03/F04/F05)
- Standard four limit switches
- Captive cover bolts
- Mechanical position indicator & LED lamp indicators (Open/Close)



Type (Model)	Maximum Output Torque	Operating Time 60/50Hz	Mounting Size	Electric Motor Stop	Supplying Power & Rating Current (A) 60/50Hz, 1 Phase			Duty Cycle IEC34–1	Manual Level Angle	Weight
	in–lbs	90°	ISO5211	A	110VAC	220VAC	24VDC	S4		Lbs
WE–350	354	12 sec	F03, F04, F05	2A	0.120	0.060	0.460	50%	90°	2.65
WE–350HS	270	6.5 sec			0.065	0.033	0.250			

LIMIT SWITCH BOXES QMS/QPS41-2SS

The **TRU-FLO** aluminum and stainless steel limit switch box is setting a new standard for cost effective compact limit switches. Both switches are available with mechanical, proximity, and inductive switches. These options allow for a low cost switch based on the needs and wants of the particular application.







Inductive Proximity

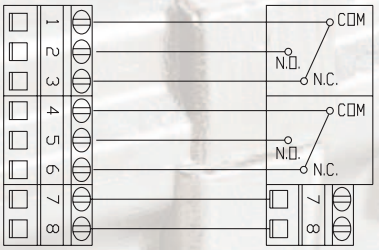
QPS41-2SS-IND

Also available in configurations shown on page 53

Features & Specifications

- Simple operating position changes with quick set cams
- Compact design for small valve envelope size
- Easy wiring with two conduit entries M20x1.5 (½"NPT available) and one terminal strip with 8-point angled
- High visibility indicator comes standard
- Stainless steel captive cover bolts
- NAMUR 80x30 H30 stainless steel mounted bracket included
- Available in stainless steel and technopolymer

MECHANICAL WIRING

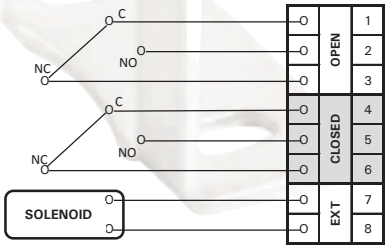


Switch #1
Up-Open

Switch #2
Under-Closed

Solenoid Valve
Pass Thru

MAGNETIC WIRING



Wire Colors			
Cam Switch Position		Part No. QMS41-2AL MS41-2AL	Part No. QPS41-2AL PS41-2AL
UPPER		Black	White
		Blue	Black
		Red	Blue
LOWER		White	White
		Green	Black
		Yellow	Blue
PASS THRU WIRING			

Please Note: Cam colors do not correspond to beacon colors or open closed designation.

QMS/QPS41-2AL



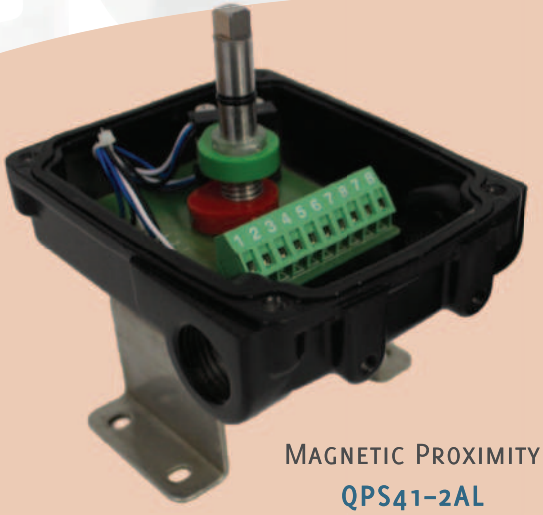
Mechanical Switches	3A @ 250 VAC
Proximity Sensors	See ordering information
Magnetic Switches	See ordering information

Specification	Standard	Option
Enclosure Protection	IP67/NEMA 4/4x	Intrinsically Safe EEx ia iIC T6
Temperature Range	-20°C~+80°C (-4°F+176°F)	-40°C +85°C (-40°F+185°F)
Conduit Entries	2x ½" NPT	2x M20x1,5
Switches	2x mechanical switches SPDT 2x Proximity Sensors 2x Magnetic Switches	Gold plated contacts
Terminal	8-Points	–
External Coating	Black Epoxy Coating ElectroPolished Stainless Steel	–
Weight	1.76 lbs	–

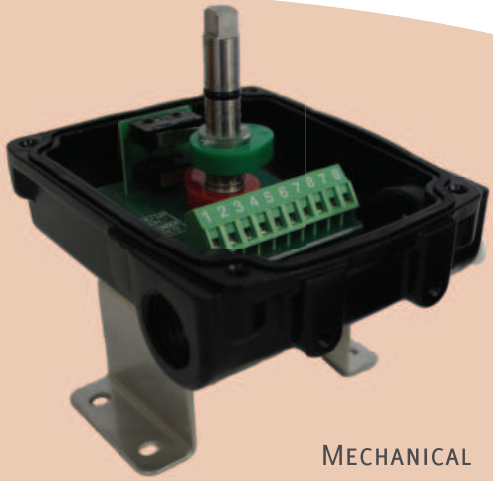
Item	Material
Housing	Die Cast Aluminium AISI 316L Stainless Steel
Shaft	AISI 304 Stainless Steel (For All LSB) AISI 316 Stainless Steel (for SS LSB)
External Indicator	Polycarbonate
Indicator OPEN/CLOSED	ABS
Cams	ABS
Spring	Stainless Steel
O-ring	NBR
Bracket	AISI 304 Stainless Steel (For All LSB) AISI 316 Stainless Steel (for SS LSB)



Universal 303SS
Mounting Bracket



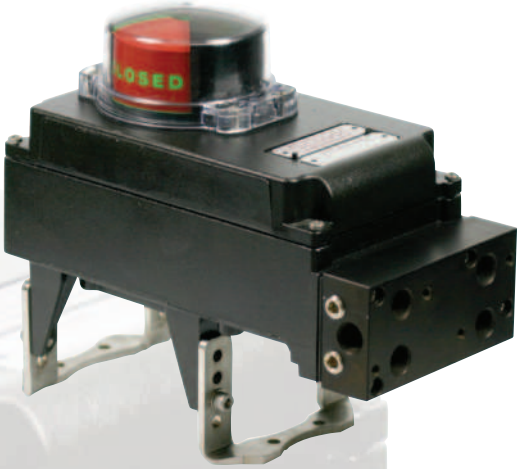
Magnetic Proximity
QPS41-2AL

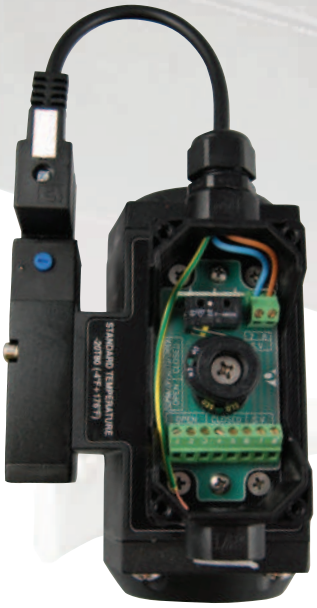


Mechanical
QPS41-2AL

LIMIT SWITCH BOXES OMEGA

The HUB1200EA13A/HUB1400E13A control unit is now available with 3-position control options with configurations for double-acting and spring-return actuators (for both 90°, 180°, and other rotational requirements). It features an integral 3-position, dual-coil solenoid valve for actuator control combined with feedback sensors for CW, mid-point or dribble-position, and CCW position indication in a single compact enclosure.





Solenoid Valve
Pass-Through Option

Features & Specifications

- Multiple capabilities suitable for both double-acting and spring-return applications
- Mid-point stop ability ideal for all 180° spring-return 3-postion control applications including a critical fail application
- Compact design reducing installation, calibration, and testing time
- Dribble position can be reached from either direction
- Prewired solenoid and feedback sensors for simplified control
- No bracket is necessary for actuators conforming to the ISO NAMUR standard



Body & Cover	Epoxy Coated Aluminum
Indicator Dome	UV Resistant and VO Polycarbonate
Pneumatic Connection Plate	Anodized Aluminum
Seals	ABS
Shaft	Stainless Steel
Fastners	Stainless Steel

Ambient Temperature Range	General Purpose: 23°F to 122°F Intrinsically Safe -4°F to 140°F
Fluid	Filtered, lubricated, or non-lubricated compressed air (dried DP -4°F)
Operating Pressure	Min. 37 PSI, Max. 116 PSI
Electrical	according to switch option

SPECIALTY SWITCHES IFM/TÜRCK/SMART

The concept of the Smart Beacon is simple, powerfully effective, and designed to work with any manufacturer of inductive type sensors, such as IFM, Türk, and Pepperl + Fuchs. The Smart Beacon is designed for clear visual indication and providing flexibility to configure its sensing heads for all types of rotary valve applications including 2-way and 3-way multiport valves.





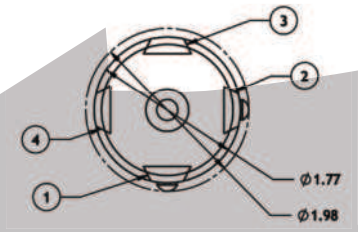
180° *2–Way* *L–Port*

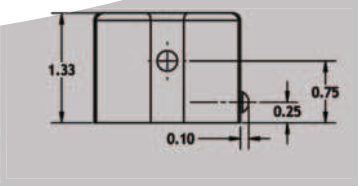
TRU-FLO Valves & Automation

180° 3-Position Sensing Beacon
Other options available, call for details.



Insert Color				
Configuration	1	2	3	4
2-Way	●			
L-Port	●	●		
T-Port	● ●	●		●
180°	●		●	



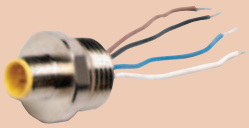


Sensing heads for proximity sensors are configurable for a variety of applications. Call for details.

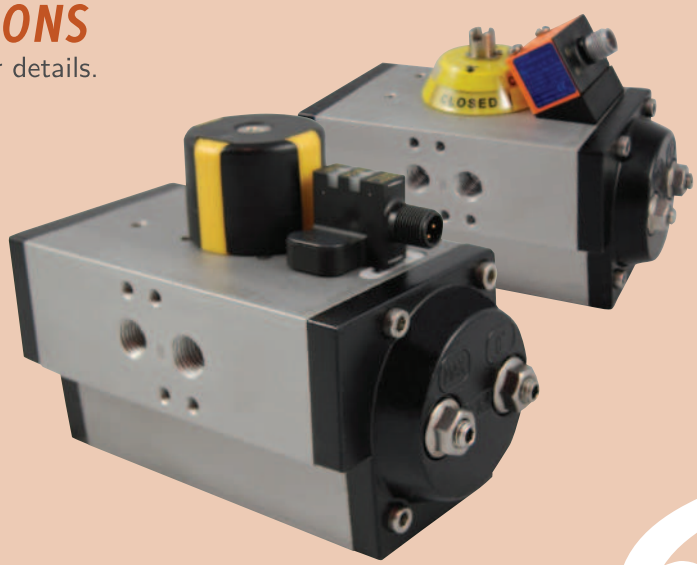
IFM & TÜRCK SWITCH OPTIONS

Other plug and play options are available, call for details.









PNEUMATIC POSITIONERS YT Series

Standard

3–15 PSI

YT 1200 Series	
Input Signal	3–15 PSI
Supply Pressure	20–100 PSI
Stroke	0~90°
Air Connection	PT (NPT) ¼"
Gage Connection	PT (NPT) ⅛"
Protection	IP66
Ambient Temp	-20~70°... (-4~158°F)
Linearity	±2% F.S.
Hysteresis	±1% F.S.
Sensitivity	±0.5% F.S.
Repeatability	±0.5% F.S.
Air Consumption	0.11 CFM (Sup.=20 PSI)
Flow Capacity	2.8 CFM (Sup.=20 PSI)
Material	Aluminum Diecasting
Weight	1.7kg (3.1 lb)

YT 1200-02/04 with Limit Switches	
Input Type	2 Wire
Input Signal	90°
Output Signal	4–20mA
Load Resistance	Max.880Ω/30VDC
Noise Range	50mVp.p
Adjustable Range	Zero : ±10% Span : ±60~110%
Protection	IP66
Linearity	±1%
Sensitivity	±0.2%
Hysteresis	±0.2%
Supply Voltage	9~30VDC

YT-02 & YT-04 Limit Switches
Rating AC 0.6A 125V~16A
Switch Type 2 x SPDT

*Special Order

YT 1200–03 Internal w/Position Transmitter	
Input Type	2 Wire
Input Signal	90°
Output Signal	4–20mA
Load Resistance	Max.880Ω/30VDC
Noise Range	50mVp.p
Adjustable Range	Zero : ±10% Span : ±60~110%
Protection	IP66
Linearity	±1%
Sensitivity	±0.2%
Hysteresis	±0.2%
Supply Voltage	9~30VDC

*Special Order

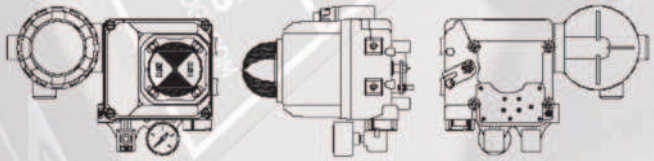


YT-03 Series

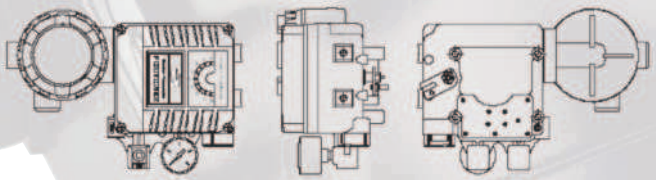


YT-Series Pneumatic Positioners

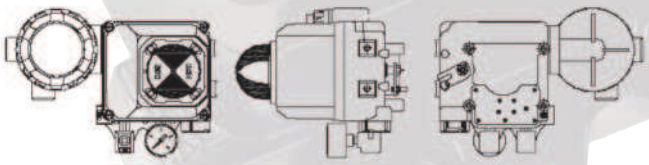
YT-02



YT-03



YT-04



*Available with beacon indicator

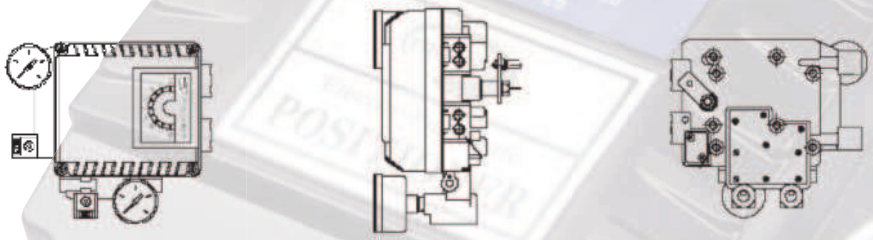
YT-1200	Pneumatic Positioner, 3–15 PSI w/Universal Mounting, Gages
YT-1202	Pneumatic Positioner, 3–15 PSI, w/External Limit Switch, Universal Mounting, Gages
YT-1203	Pneumatic Positioner, 3-15 PSI, w/External Position Transmitter, w/Universal Mounting, Gages
YT-1204	Pneumatic Positioner, 3-15 PSI, w/External Limit Switch & Position Transmitter, w/Universal Mounting, Gages
TEM	Hi & Low Temp Adder

ELECTRO PNEUMATIC POSITIONERS

YT-1000/1050	
Input Signal	4–20mA DC
Impedance	250±15Ω
Supply Pressure	20–100 PSI
Stroke	0~90°
Air Connection	¼" NPT
Gage Connection	⅛" NPT
Conduit	½" NPT
Protection	IP66
Ambient Operating Temp.	-4°F~158°F (-20°C~70°C)
Ambient Explosion Temp.	-4°F~140°F (-20°C~60°C)
Linearity	±1% F.S. ±2% F.S.
Hysteresis	±1% F.S.
Sensitivity	±0.2% F.S. ±0.5 F.S.
Repeatability	±0.5% F.S.
Air Consumption	0.11 CFM (Sup=20 PSI)
Flow Capacity	2.8 CFM (Sup=20 PSI)
Material	Aluminum Diecasting
Weight	2.8kg (6.2 lbs)



YT-1000L/1050L

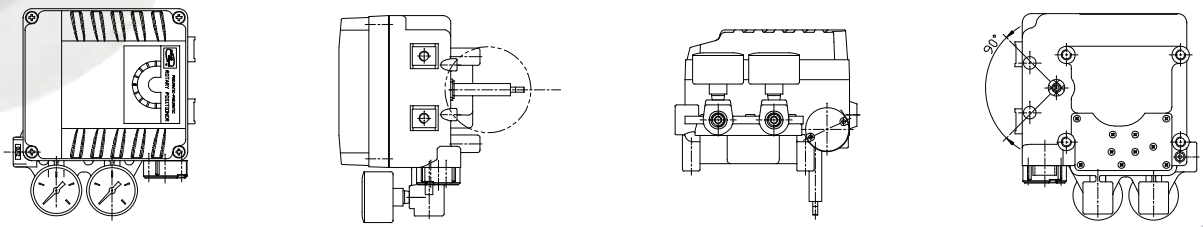




YT-1050	Stainless Steel
YT-01	Electro-Pneumatic Positioner, 4–20mA, w/universal mounting, gages Available with dome
YT-03	Electro-Pneumatic Positioner w/internal position transmitter, w/universal mounting, gages

YT-Series
Electro-Pneumatic
Dome View Positioners

YT-1000R/1050R



SOLENOID VALVES SV SERIES

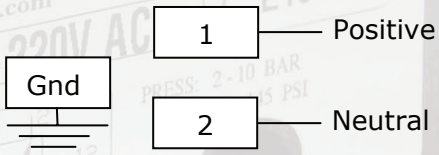


SV SERIES SOLENOID VALVE IS A COMPLETE RANGE OF VALVES DESIGNED ACCORDING TO NAMUR VDI/VDE 3845 AND MADE OF EPOXY COATED ANODIZED ALUMINUM. EACH SOLENOID VALVE IS FIELD INTERCHANGEABLE FOR USE ON EITHER DOUBLE ACTING 4-WAY OR SPRING RETURN 3-WAY ACTUATORS AND IS AVAILABLE IN SINGLE COIL, DUAL COIL, OR 3-POSITION CONFIGURATION (OPEN CENTERS, CLOSED CENTERS, OR CENTER IN PRESSURE).

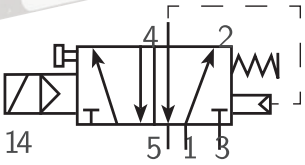
Features & Specifications

- Standard with a lockable manual override
- 4-way standard configuration with optional adapter for 3-way field conversion
- NAMUR mounting available in single or dual coils and open or closed centers
- Available in explosion proof configurations for hazardous locations and intrinsically safe
- ¼" NPT air inlet and exhaust connections
- Various voltages available
- IP67 available for washdown situations

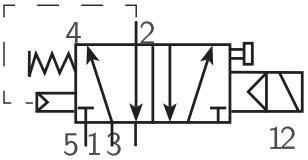
WIRING DIAGRAM



LEFT PILOT



RIGHT PILOT



Stainless steel solenoid valves are available to enhance our extensive line of corrosion resistant products.





SV61



SV71



SV91



SV3P

TUBING

A270 Sanitary Stainless Steel Tube

RathGibson's sanitary tubing exceeds ASTM A270 S2 and 3A specifications.
1/2" to 8"

A270-BPE High Purity Stainless Steel Tubing

Manufactured to ASME BPE and ASTM A270 S2 specifications, this high quality tubing is 100% bore-scoped and mechanically polished on both ID and OD.
1/2" to 6"

True15 Electropolished Stainless Steel Tubing

Manufactured to ASME BPE and ASTM A270 S2 standards, making it ideal for ultra high purity applications.
1/2" to 6"







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PART NUMBER REFERENCE GUIDE


EA-33NF-SE/SW/BW


EA-207A-SE


EA-3308-SN


36-10


EA-501A-SE


EA-407-SN


83/309-10


EA-33NF-SN


BFY-316L


HSBV-501


38-10


EA-33NF-SN-EXT


Heat Transfer Box


3A-CV-CC


EA-301-GE


20-40


36-150-FE


EA-33NF-SN-TK


EA-102A-SE


EA-402A-FE

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