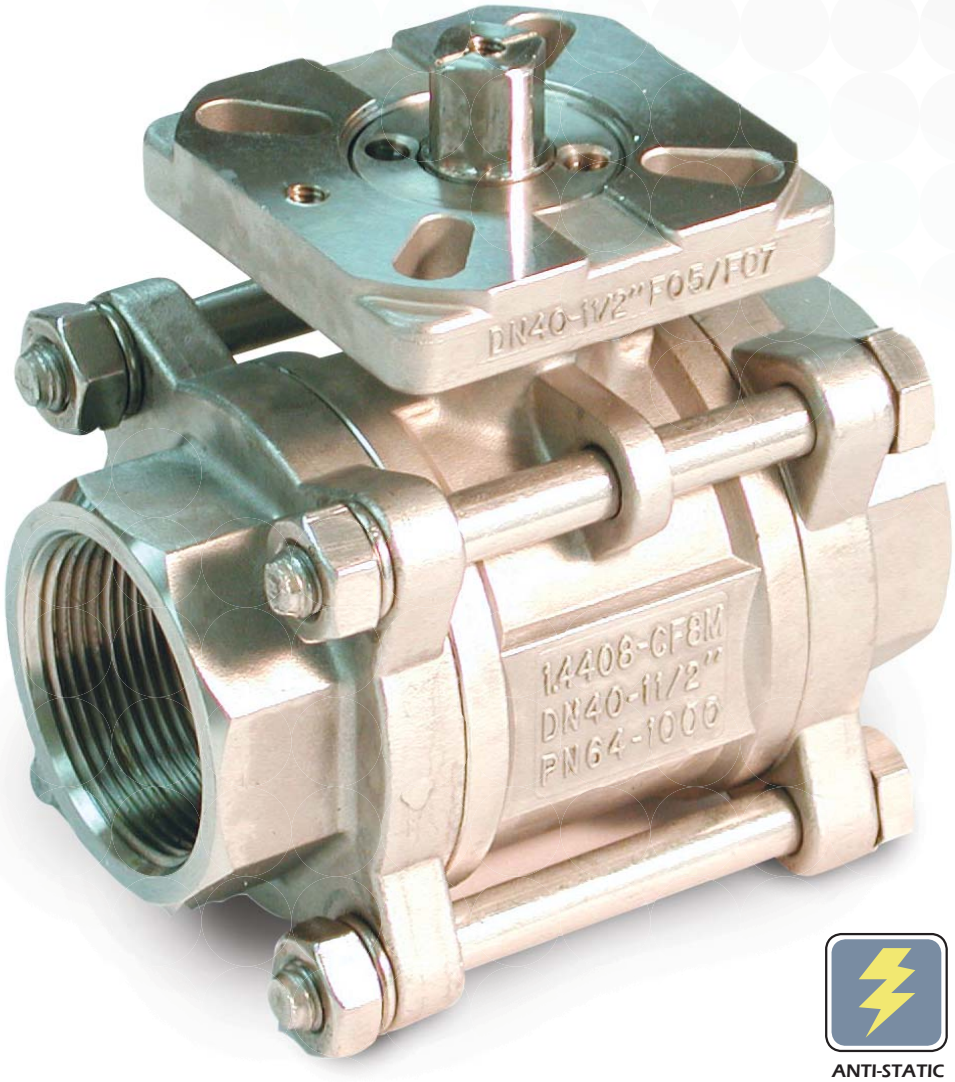
PVS FLOW CONTROL

Series 35
Direct Mount 3-Piece

Full Port Ball Valves

¼" – 4" (DN8 – DN100)
1000 psi (PN64)



ANTI-STATIC 2014/68/EU SAFETY

Ballvalves feature direct mount

PVS FLOW CONTROL's Series 35 ball valves feature direct mount for actuators with dual sets of ISO 5211 mounting patterns . In combination with high life-cycle, and live-loaded stem packing system, Series 35 ball valve provides an ideal choice for all your automation requirements. The 3-piece Swing-In-Place construction with a swing out center section allows for ease of in-line and out-of-line maintenance and installation. Various interchangeable end connections and a wide range of seat materials are available to meet most applications.

All of the Series 35 ball valves are equipped with standard blowout-proof design. This design is specified in which the stem is locked in the original position to prevent shoot out, even in the event of excess pressure in the pipeline system. In addition, all of the valve balls in the Series 35 are fixed at one side; the top face is interlocked with the stem, but the bottom face is free to move. This result produces a floating ball effect. With the downstream fluid flowing one direction, the ball forms an even tighter seal with the valve seat ring. This also provides a lower torque, and the ease of valve lever operation, as well as longer product life span.

(A) ISO5211 Actuator Direct Mount
Square stem and twin ISO 5211 pattern mounting pad allow for easy actuator installation without bracket and adaptor.

(B) Stem Packing
Self-adjusting stem packing assembly with Belleville washers prevents unwanted stem movements caused by temperature and vibration.

(C) Blowout-proof Stem
By inserting the stem from inside the body bore, the maximum safety is reached with no stem shooting out even with excess pressure.

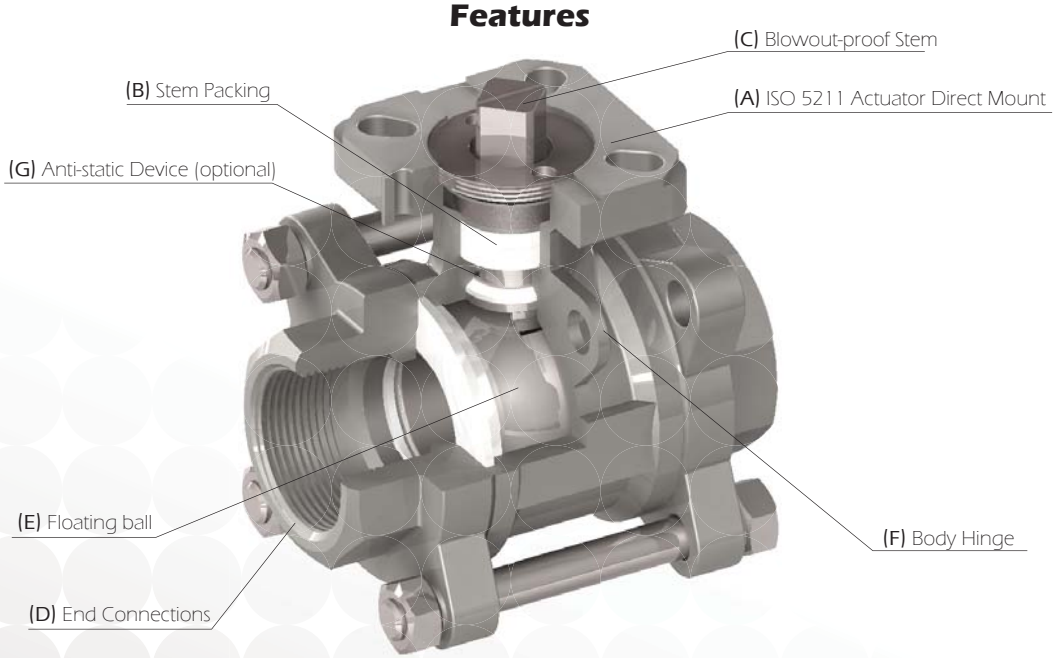
(D) End Connections
Series 35 features a full range of interchangeable connection ends. Thread end, butt-welding end, socket-welding end, Tri-clamp end.

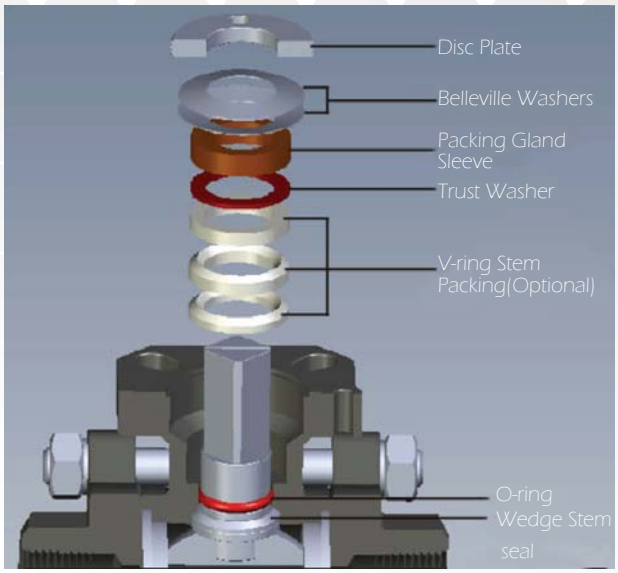
(E) Floating Ball
Floating ball design combined with soft ball seat offers the bubble-tight shutoff referring to ANSI CLASS VI.

(F) Body Hinge
The hinge on the central body provides the alignment of body to the end connection during swing-out operation.

(G) Anti-static Device (optional)
Anti-static device, conforming to BS 5351, discharges static electricity build-up from the friction among valve body, valve ball, and the stem ... stem of the valve.

Features





Live-loaded Stem

Belleville Washer

Belleville spring washer provides a constant loading of the stem seal system to compensate for pressure from upstream and the thermal expansion/contraction. These washers are precision engineered and manufactured for Series 35 ball valves to ensure the long-term consistent performance.

Wedge Stem Seal

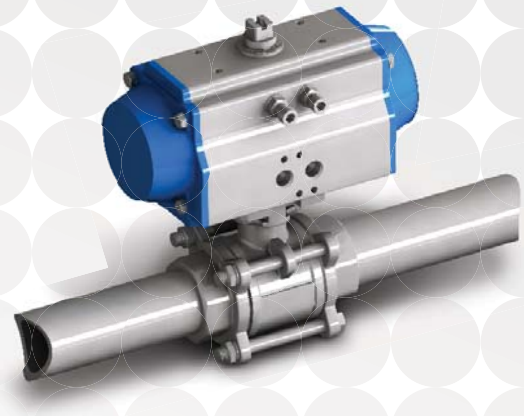
Utilizing a solid soft angled ring, this design seals perfectly against hard-faced surface on the body. The higher the internal pressure, the greater the sealing forces.

Independent Stem Rotation

The fixing design of the gland to the body neck ensures the With the absorption of radial loading and the reduced friction from axial stem loading, the requested torque is reduced correspondingly.

V-ring Design (optional)

An adjustable V-ring design creates a multiple seal between the stem and the body, and effectively seals internal media within as well as keeping out external media from entering the system.



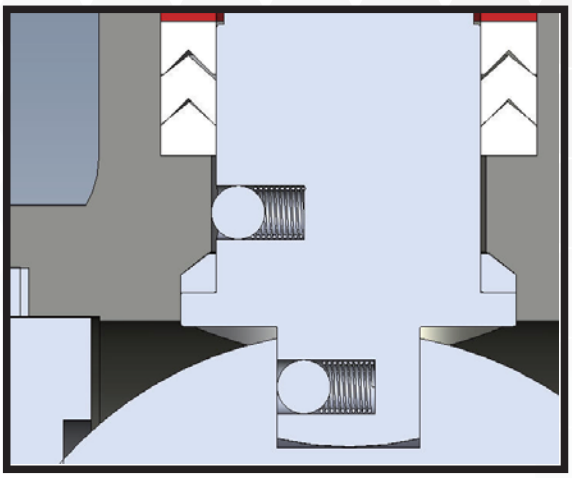
Direct mounting Pad

The dual ISO direct mounting pad allows precise mounting of actuator flexibly. With the integrally cast top flange, machined flat surface and square stem, the design ensures correct alignment of the actuator to minimize the side-loading effect during high cycle or continuous duty applications. The well-supplied (air or electric power) actuation equipments can be removed safely and easily while the valve in under the line pressure.

In-Line Service

The Series 35 ball valve is especially well suited for use in piping systems where line breaks are required and total entry into the line is necessary. These time saving features are a big plus for process industries, automated valve and welded piping system by reducing costly downtime. No adjustment or reattachment is necessary.

The center section can swing out after removing the body bolt which goes through the body hinge, loosen the remaining bolts, eliminating the need to cut a valve out of line and having to replace both the valve and the pipe. With this design, the seats, seals and ball can be serviced in this position without disturbing the pipe alignment.



Locking Device (optional)

The locking device is ideal for applications where it is critical to keep the valve positions without the risk of accidental operation.

Vacuum Service

Standard Series 35 ball valves, without special preparation, are rated to hold in part of the "Medium Vacuum" range to 52 TORR (mm of Hg) or 52000 microns in temperature ratings from -4°F to 350°F (-20°C to 180°C). Here only PTFE seats and seals are highly recommended for this vacuum service.

Size range

1/4"~4" (DN8~DN100)

Standards and Specifications

Threaded/Socket-welding end-to-end length meets
3202 M3 (except 1/4" and 3/8")
Butt-welding end-to-end length meets
3202 S13

Sanitary Clamp End Dimension is according to BS 4825-3
Valve body and end cap connections are high quality investment cast. Both stainless steel material and carbon steel can be solution annealed and normalized upon requests.
Body and end cap is based designed by ASME B16.34.
Valve stems are blow-out proof for maximum safety and meet ASME/ANSI B16.34 specifications.

All valves are factory tested to API 598 and MSS SP-72.

Steam

A specialized version is available for steam application, please consult with us separately.

Pressure rating:

1000 psi WOG (PN64)
150 psi (10 bar) with saturation steam

Temperature range:

-4°F to 350°F (-20°C to 180°C) with PTFE/RPTFE

End connection:

Threaded
Butt-welding
Socket-welding
Tri-Clamp end
Sanitary Welding

Body material:

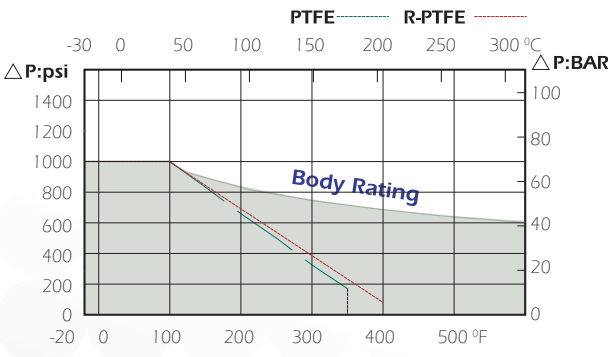
ASTM CF8M, CF8, WCB
(DIN 1.4408. 1.4308, 1.0619)

CE marking CE

The whole series of ball valves are approved according to European Directive 2014/68/EU.

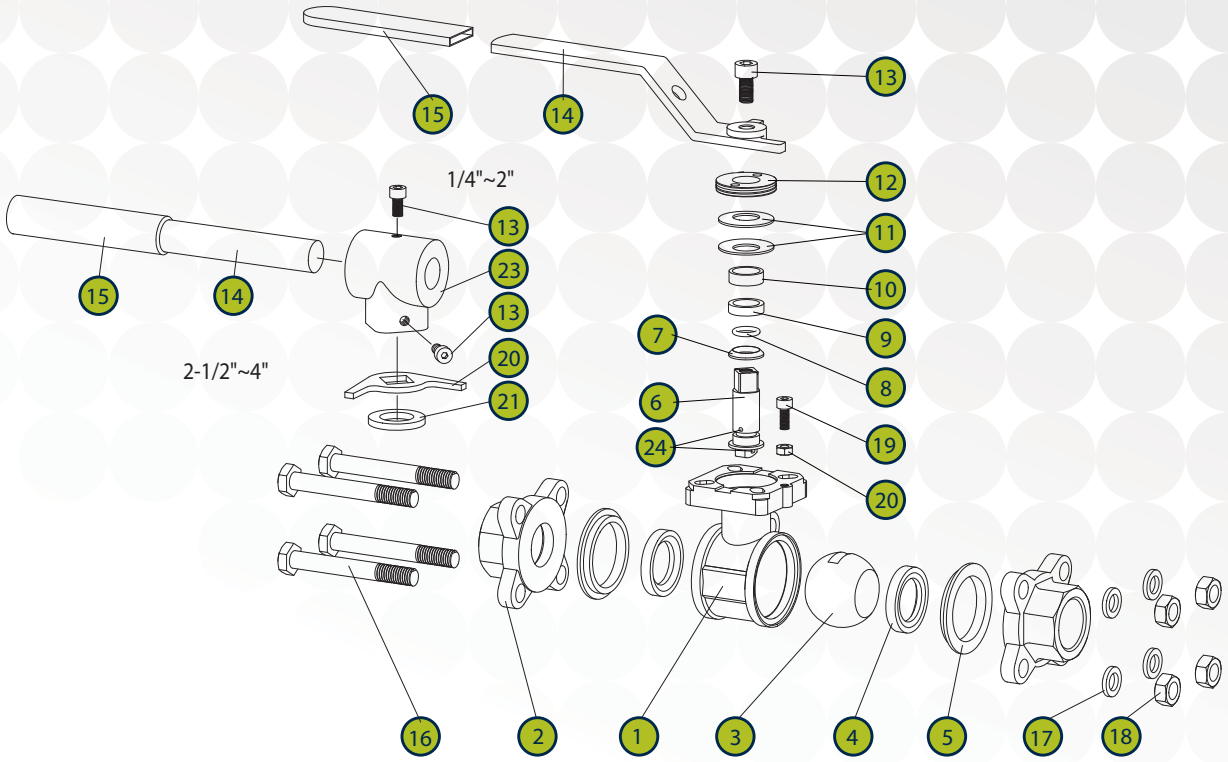
SIL3 Capable Please inquire

Valve Body Rating with Seat Material Plot



PTFE/ R.PTFE Ball Seat Pressure-Temperature Rating

This table express Seat material resistance as declared by the original manufacturers. The values are to be considered with other parameters such as size, seat design and temperature limitations as governed by relevant standards such as ASME B16.34 or EN-12516.

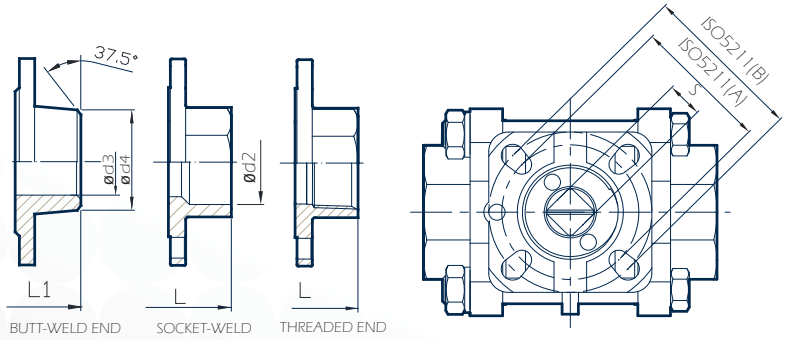


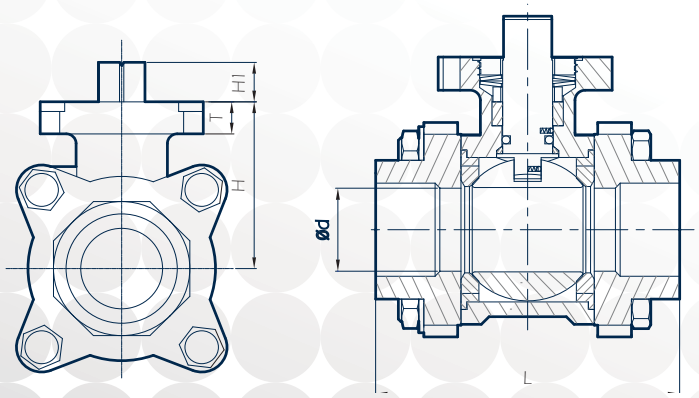
NO	PART NAME	MATERIAL
1	BODY	CF8M / CF8 / WCB
2	END CAP	CF8M / CF8 / WCB
3	SOLID BALL	ASTM A351 CF8M
4	BALL SEAT	PTFE
5	BODY SEAL	PTFE
6	STEM	SS 316
7	STEM SEAL	PTFE
8	O-RING	VITON
9	STEM PACKING	PTFE
10	FOLLOWER	SS 304
11	BELLEVILLE SPRING	SUS301
12	STEM NUT	SS 304

NO	PART NAME	MATERIAL
13	HANDLE BOLT	SS 304
14	HANDLE	SS 304
15	HANDLE SLEEVE	VINYL
16	BODY BLOT	SS 304
17	WASHER	SS 304
18	NUT	SS 304
19	STOP BOLT	SS 304
20	NUT	SS 304
21	HANDLE SPACER	PTFE
22	TRIANGLE STOPPER	SS 304
23	HANDLE ADAPTER	SS 304
24	ANTI-STATIC DEVICE	SS 316

Dimensions inch/mm

SIZE inch DN	d	L	L_1	S	H_1	T	H	d2	d3	d4	Torque in.lbs N.m	ISO 5211	Weight lbs Kg
1/4 " 6	0.45 11.5	2.56 65	2.76 70	0.35 9	0.27 7	0.35 9	1.69 43	0.56 14.3	0.41 10.4	0.58 14.8	45 5	F03 F04	1.26 0.57
3/8 " 10	0.50 12.7	2.56 65	2.76 70	0.35 9	0.27 7	0.35 9	1.69 43	0.70 17.7	0.70 13.7	0.72 18.3	45 5	F03 F04	1.21 0.55
1/2 " 15	0.59 15	2.95 75	2.95 75	0.35 9	0.27 7	0.35 9	1.69 43	0.87 22	0.87 15	0.83 21	60 7	F03 F04	1.23 0.56
3/4 " 20	0.79 20	3.15 80	3.54 90	0.35 9	0.31 8	0.35 9	1.77 45	1.08 27.5	1.08 21.4	1.11 28.3	80 9	F03 F04	1.7 0.77
1 " 25	0.98 25	3.54 90	3.94 100	0.43 11	0.43 11	0.39 10	2.09 53	1.35 34.3	1.35 27.2	1.39 35.2	130 15	F04 F05	2.82 1.28
1¼ " 32	1.26 32	4.33 110	4.33 110	0.43 11	0.43 11	0.39 10	2.24 57	1.69 43	1.69 35.5	1.72 43.7	160 18	F04 F05	4.19 1.90
1½ " 40	1.50 40	4.72 120	4.92 125	0.55 14	0.55 14	0.51 13	2.68 68	1.93 49	1.93 41.2	1.95 49.6	200 23	F05 F07	6.02 2.73
2 " 50	1.97 50	5.51 140	5.91 150	0.55 14	0.55 14	0.51 13	3.03 77	2.42 61.4	2.42 52.7	2.48 63	280 32	F05 F07	9.52 4.32
2½ " 65	2.48 63	7.28 185	7.48 190	0.67 17	0.67 17	0.51 13	3.90 99	3.04 77.2	3.04 65.3	3.05 77.5	500 57	F07 F10	20.06 9.10
3 " 80	3.15 80	8.07 205	8.66 220	0.67 17	0.67 17	0.51 13	4.37 111	3.54 90	3.54 78.1	3.57 90.7	650 73	F07 F10	29.5 13.38
4 " 100	3.82 100	9.45 240	10.63 270	0.87 22	0.87 22	0.63 16	5.43 138	4.54 115.4	4.54 102.3	4.54 115.4	1100 124	F10 F12	48.72 22.10



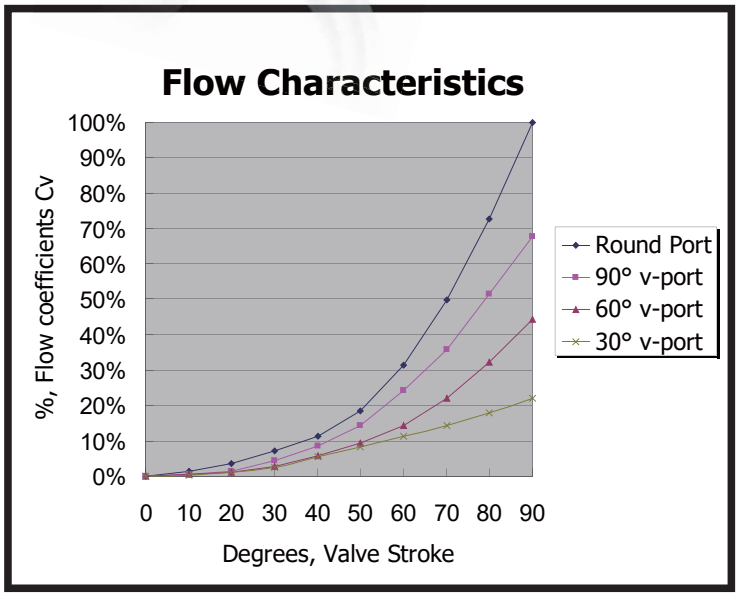


Valve Size		Rated Cv	Rated Kv
inch	DN		
1/4	6	4	3.4
3/8	10	10	8.6
1/2	15	24	20.8
3/4	20	47	40.6
1	25	81	70
1¼	32	132	114
1½	40	202	174.7
2	50	376	325.2
2½	65	642	555.3
3	80	901	779.2
4	100	1,588	1,373.4

For Tri-clamp and Sanitary Welding Connections, please contact your PVS FLOW CONTROL representative.

Valve seat selection

Please contact your sales for more properties of materials



Cavity Filler

PVS FLOW CONTROL offers the quality solution to fluid contamination problems, the ball valves with cavity-filled seats as an option to the standard valve seats. Cavity Fillers are particularly designed for multiple industries and applications including pharmaceutical and sanitary use.

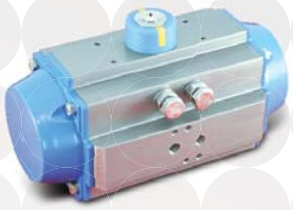
A v-port ball valve has a "v" shaped ball instead of a round-bore ball. This allows the orifice to be opened and closed in a more controlled manner with a closer to linear flow characteristic PVS FLOW CONTROL provides several v-port balls in Series 35 with different angles of "v". Note that the long-term throttling operation in a certain percent open is no recommended.
For Cv, please see Flow Coefficients (Cv) of V-port Ball Valve.

Flow Coefficients (Cv) of V-port Ball Valve

Valve Size	V Type	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%
1/2"	10°	2.95	2.36	1.94	1.53	1.19	0.84	0.51	0.36	0.00	0.00
	30°	5.76	3.99	3.15	2.22	1.46	0.89	0.51	0.32	0.02	0.00
	60°	10.13	6.93	4.56	3.18	2.02	1.32	0.73	0.33	0.03	0.00
	90°	15.28	9.83	6.29	4.10	2.57	1.58	0.84	0.34	0.03	0.00
3/4"	10°	4.27	3.55	2.70	2.13	1.55	1.19	0.66	0.37	0.03	0.00
	30°	8.43	6.45	4.88	3.51	2.18	1.49	0.79	0.38	0.03	0.00
	60°	16.84	11.09	7.59	5.12	3.17	2.09	0.95	0.41	0.03	0.00
	90°	27.63	17.52	11.28	6.70	4.14	2.47	1.29	0.46	0.03	0.00
1"	10°	5.88	4.97	4.25	3.28	2.14	1.74	1.06	0.84	0.22	0.00
	30°	12.34	9.86	7.50	5.36	3.89	2.41	1.63	0.95	0.24	0.00
	60°	26.91	17.37	12.47	8.19	5.45	3.45	2.16	0.97	0.26	0.00
	90°	40.62	26.78	17.96	11.74	7.48	4.49	2.55	1.09	0.28	0.00
1-1/4"	10°	10.24	6.87	6.86	5.22	3.73	2.86	2.23	1.19	0.52	0.00
	30°	20.10	16.09	12.17	8.66	6.09	4.22	2.55	1.67	0.56	0.00
	60°	39.26	27.25	19.36	13.11	8.82	5.60	3.25	1.75	0.56	0.00
	90°	70.96	44.32	29.44	18.79	11.83	7.44	4.51	2.32	0.75	0.00
1-1/2"	10°	12.76	11.06	7.65	5.94	5.21	3.50	2.41	0.89	0.00	0.00
	30°	28.60	22.35	15.23	11.38	8.30	5.48	2.46	1.37	0.46	0.00
	60°	55.73	40.16	26.54	17.53	11.87	7.31	3.07	1.59	0.34	0.00
	90°	96.99	62.87	38.90	24.95	15.69	9.73	5.46	2.37	0.62	0.00
2"	10°	21.53	16.98	16.01	12.47	10.07	5.26	4.43	2.37	0.79	0.00
	30°	47.47	37.46	27.32	20.75	14.12	9.65	6.53	3.05	1.15	0.00
	60°	92.06	69.69	49.08	31.92	21.36	13.98	8.52	4.21	1.31	0.00
	90°	173.40	110.49	73.44	48.50	29.56	18.56	11.54	5.13	1.44	0.00
2-1/2"	10°	35.16	29.35	24.60	19.68	14.70	10.63	7.63	3.85	1.32	0.00
	30°	79.21	63.94	49.22	34.32	25.24	15.90	9.98	4.98	2.16	0.00
	60°	150.59	107.54	80.65	52.93	34.89	22.72	14.87	6.44	2.02	0.00
	90°	253.06	180.69	119.78	84.32	50.76	32.69	21.11	11.67	1.79	0.00
3"	10°	47.02	32.65	26.34	19.84	15.89	12.27	7.97	3.98	1.81	0.00
	30°	105.15	80.57	58.10	42.90	29.96	19.58	12.14	5.04	1.96	0.00
	60°	190.26	136.08	112.14	82.22	54.10	27.60	15.80	13.54	1.43	0.00
	90°	388.90	235.03	157.48	99.49	64.78	38.40	22.20	11.64	2.10	0.00
4"	10°	58.97	52.74	43.58	33.52	25.93	18.16	11.12	7.42	3.66	0.00
	30°	160.29	131.67	100.78	72.91	53.71	35.10	19.49	10.73	3.90	0.00
	60°	332.17	243.98	174.60	118.86	81.15	51.80	24.79	15.34	6.48	0.00
	90°	652.17	401.89	262.88	170.63	111.42	73.39	43.49	24.32	7.20	0.00

Automation Accessories

Pneumatic Actuators
VT Series – Rack & Pinion Type



The VT Series rack & pinion actuators are reliable quality products, which can be relied on to perform faultlessly under any difficult circumstances.. For double-acting mode , the actuator is available in 11 sizes. Under the provision of common power supply (80 psi), the output torque ranges from 8.02 to 2877 Nm (71 to 25469 in-lbs). For single-active, also known as spring return type, 10 sizes are available.

Electric Actuators
Js Series

The Js Series electric actuators are made in new sizes from 34.3 to 597.8 Nm (303.6 to 5290.8 in-lbs), which are generally applied for ball valves with maximum size 6", and butterfly valves with maximum size 12", and are available in on-off or modulating versions, with a choice of duty cycles. All models include standard manual override, visual position indicator, torque limiter and adjustable-position switches.

VSII™ Namur Type Solenoid Valves
for Valve Actuator

VSII™ namur type solenoid valve is specifically engineered to pilot pneumatic process valve actuators. Using enhanced materials, VSII™ has an operating temperature range from -20°C up to 50°C (-4°F up to 140°F). The most notable improvement is the patened rotary sealing plate. It features in the field conversion form 3/2 to 5/2 action without the need for tools or additional parts, and incorporates exhaust feedback to increase actuator spring life span.

For other automation options, please consult with your PVS FLOW CONTROL representative.

How to order

VALVE TYPE	PORT	BODY MATERIAL	SEAT	TRIM	TYPE OF CONNECTION	PRESSURE RATING	SPECIAL REQUEST	SIZE OF CONNECTION	OTHER
A	B	C	D	E	F	G	H	I	J

PVS FLOW CONTROL

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