

The BVMS Series Industrial Ball valves are flanged segmented valves designed for control and On/Off applications where high temperature and high pressure water or steam are used. The valves feature a characterized ball segment for high rangeability with a splined stem connection for precise control, as well as a low friction shaft and thrust bearings for longer life and smaller actuators.

These valves provide ample flow capacity, equal percentage flow characteristics and Class VI leakage. Valve bodies are one-piece carbon steel with cast Stainless Steel balls and ANSI 150 flanges.

Features and Benefits

- **Characterized Ball Segment**
High Rangeability in excess of 300:1
- **ANSI Class VI Leakage Rating**
Suitable for HVAC applications
- **One Piece Phosphate Coated Carbon Steel Bodies**
For cost effective applications up to 380°F at 200 PSI
- **Available NEMA 4 Actuators**
Reliable, cost effective control

BVMS Series

Flanged Industrial Control Segmented Ball Valves

2 Way • 2" - 12"

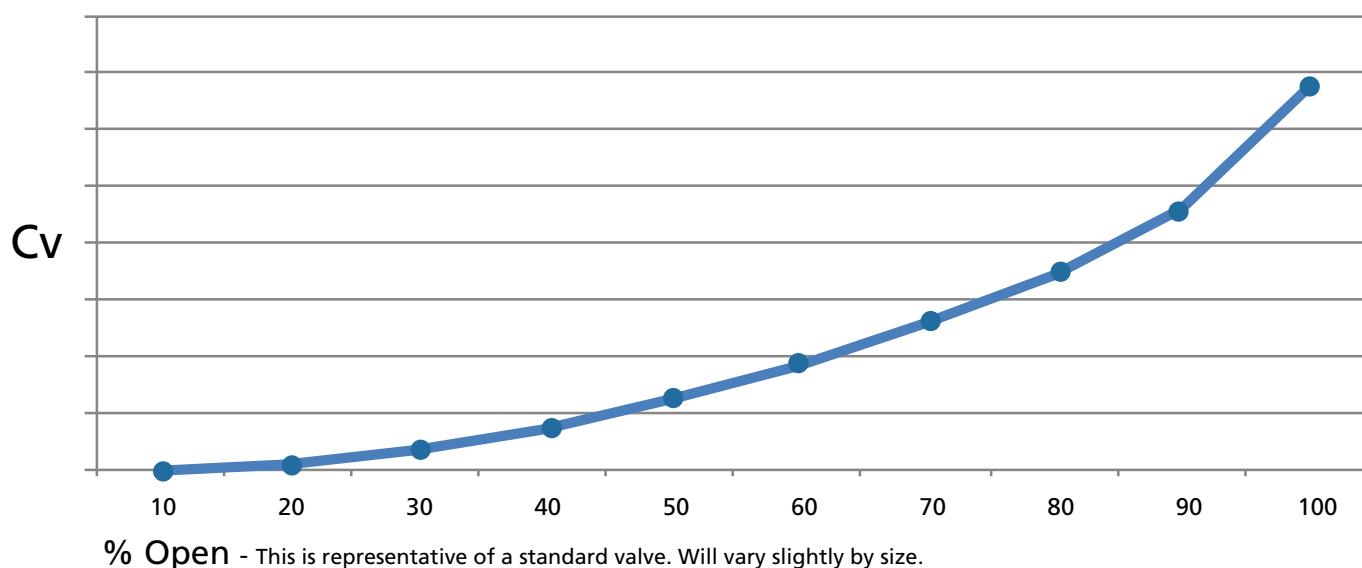
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Applications

Heat Exchangers, Standard and Computer Room
Air Conditioning Units.

BVMS - Flow Curve Chart



Technical Specifications - BVMS Segmented Industrial Ball Valve , 2" - 12"-2-Way

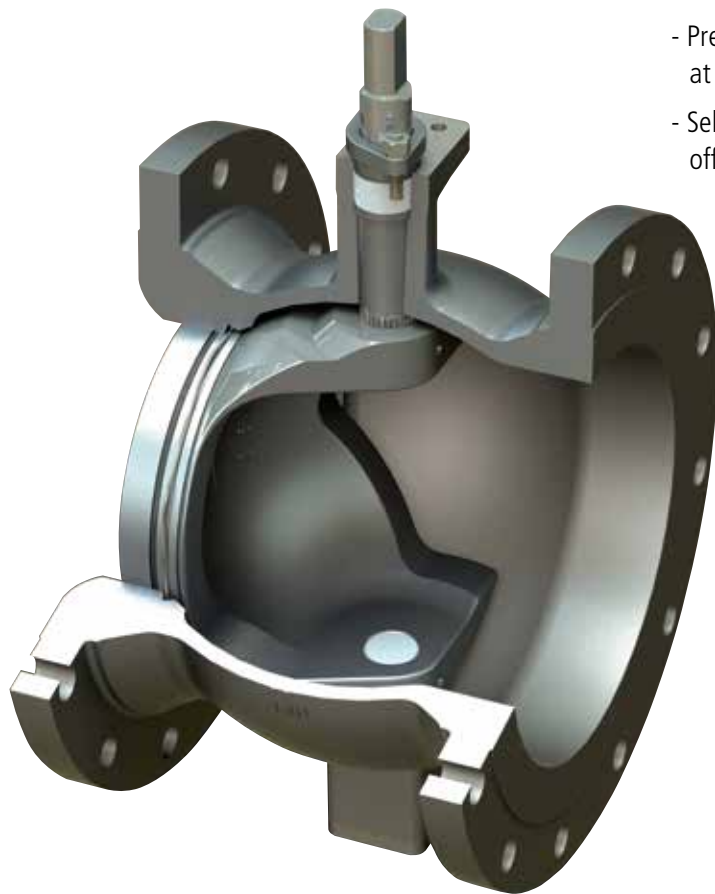
Service		Chilled/Hot Water, 50/50 Glycol Solutions and Saturated Steam
Size		2" to 12" Flanged Segmented Valves, 2-Way
Maximum Fluid Temperature	Water	-20° to 380°F at 200 PSI (-28° to 193°C at 1,378 kPa)
	Saturated Steam	100 psi (689 kPa) with upgraded AFLAS (FEPM) O-Ring
Valve Body Pressure Rating		ANSI Class 150
Maximum Close-Off Pressure	Water	285 PSI (1965 kPa)
	Saturated Steam	100 PSI (689 kPa)
Maximum Recommended Pressure Drop	Water	1/3 of Inlet Pressure
	Saturated Steam	1/3 of Inlet Pressure
Flow Characteristic		Equal Percentage
Rangeability		300:1
Leakage		ANSI Class VI
End Connections		ANSI Class 150
Ambient Operating Temperature Range		See Actuator Rating (Optional high temperature mounting kit may be required)
Materials	Body	ASTM A216 Gr WCB Carbon Steel
	Ball Segment	316 Stainless Steel
	Stem	ASTM A564 Type 630 Cond H1150D (17-4PH)
	Seat	Tek-Fil
	Stem Seal/Packing	PTFE + Graphite
	Gasket	PTFE
	O-Ring	Viton (FKM) or Optional AFLAS (FEPM) for steam

Disclaimer - The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Bray office. Bray, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

BVMS - Cut Away View

Ball - Stem Connection

- Close-fit splined connection between stem and the segment offers extra strength with no lost motion or dead band.
- Perfectly oriented, specially designed shaft pin facilitates self-alignment of the ball segment while simplifying the assembly and disassembly during routine maintenance.



Seat

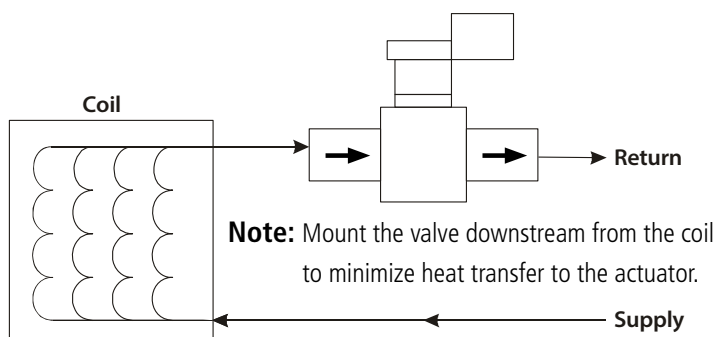
- Standard soft seat design uses Tek-Fil® to maintain exceptional chemical and heat resistance.
- Tek-Fil® provides higher compressive strength, lower co-efficient of friction, superior abrasion and wear resistance, lower permeability, lower porosity, and reduced cold flow.
- Directs the flow away from the sealing area.
- Pressure energized seat design offers excellent sealing even at very low differential pressures.
- Self-aligning seat is independent of external pipe loads and offers excellent sealing even in adverse conditions.

Bearings

- Stem and end post bearings are low friction and maintenance free.
- Made of wear resistant PTFE compound supported by metal fabric.
- Additional thrust bearing on stem collar for high pressure applications eliminates unbalanced axial load for consistent high performance and precision control.

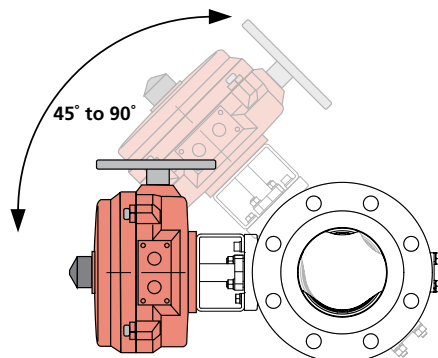
BVMS - Mode of Actuation

Typical Two-Way Ball Valve Application



BVMS - For Steam Applications

Install valve with stem at 45° to 90° from vertical.



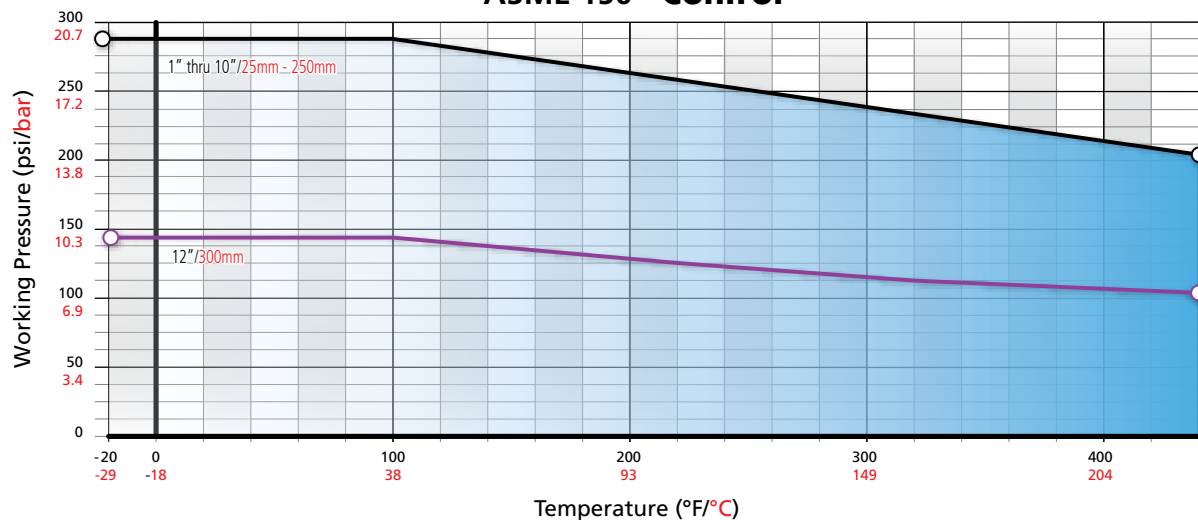
BVMS - Flow Coefficient Cv Chart

Ball Rotation		BVMS-Segmented Ball Valve - Tek Fil Seat - Class 150						
Deg	% of Open	2"	3"	4"	6"	8"	10"	12"
13.5°	15	0	0.17	1.8	2.7	8.2	17.2	17.7
18°	20	0	2.1	6	11.2	23	43	52
27°	30	1.21	10.4	20.6	38.5	73	121	157
36°	40	5.1	24	41	77.4	145	238	322
45°	50	11.2	41	68	126	247	385	532
54°	60	19.5	64	98	191.2	369	571	780
63°	70	29.5	93	136	274.6	517	790	1,094
72°	80	44	131	196	364.5	686	1,046	1,458
81°	90	70	181	283	584	922.5	1,372	1,954
90°	100	95	287	436	760	1,350	2,380	3,410

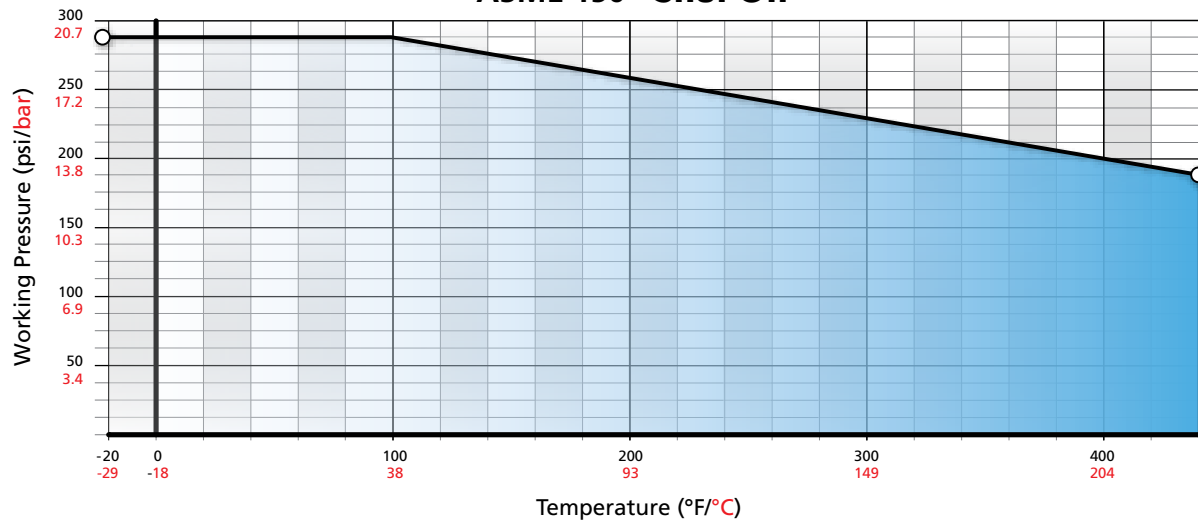
Piping and Installation Tips – For control applications select a valve which offers calculated Cv for the minimum and maximum flow between 15% and 80% of port opening.

BVMS - Pressure/Temperature Chart

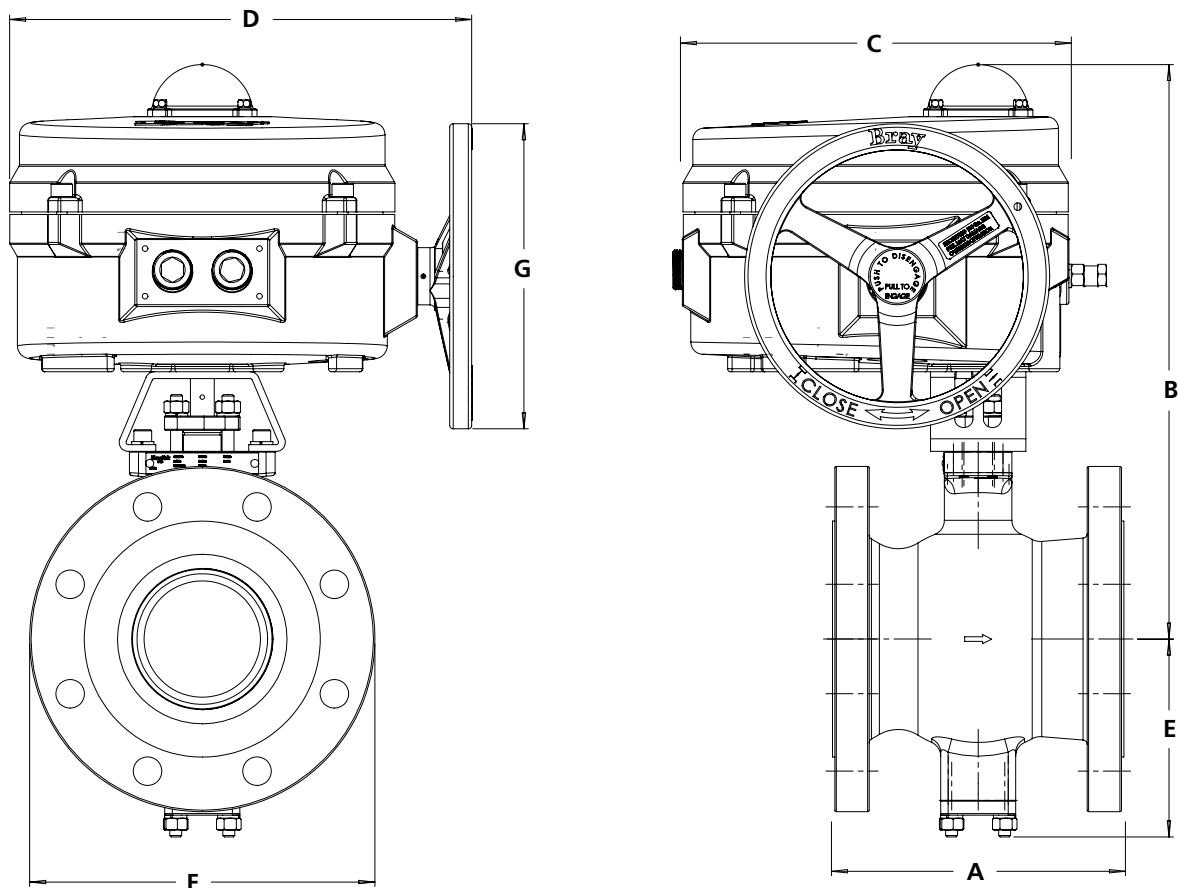
ASME 150 - Control



ASME 150 - Shut-Off



BVMS - 2-Way - Segmented Ball Valve/Actuator Dimensions



2-Way BVMS Dimensions, 2" - 12" - Segmented BVMS Series - w/ Industrial Actuators												
Valve Models	Size		Flow Coefficient		A	B	C	D	E	F	G	Weight
	in.	mm	Cv	Kv								
BVMS2-C150-0095	2	50	95	82	4.9 (124)	12.88 (327)	7.5 (191)	9.29 (236)	3.90 (99)	6.00 (152)	3.50 (89)	17.9 [8.1]
BVMS3-C150-0287	3	80	287	247	6.5 (165)	14.69 (373)	10.1 (256)	12.12 (308)	4.80 (121)	7.48 (190)	8.00 (203)	32.0 [14.4]
BVMS4-C150-0436	4	100	436	375	7.6 (194)	14.98 (380)	10.1 (256)	12.12 (308)	5.20 (133)	9.06 (230)	8.00 (203)	45.2 [20.5]
BVMS6-C150-0760	6	150	760	654	9 (229)	18.24 (463)	12.1 (308)	14.29 (363)	7.60 (193)	11.02 (280)	12.00 (305)	86.0 [39.0]
BVMS8-C150-1350	8	200	1350	1161	9.6 (243)	18.95 (481)	12.1 (308)	14.29 (363)	8.40 (213)	13.58 (345)	12.00 (305)	131.0 [59.4]
BVMS10-C150-2380	10	250	2380	2047	11.7 (297)	20.56 (522)	12.1 (308)	14.29 (363)	10.10 (256)	16.0 (406)	12.00 (305)	191.0 [86.7]
BVMS12-C150-3410	12	300	3410	2933	13.3 (338)	25.84 (656)	12.1 (308)	14.78 (375)	11.50 (292)	19.0 (483)	12.00 (305)	302.0 [137.0]

Dimensions are in Inches (Millimeters in parenthesis)

Weights (valve only) are in lbs. [kg in brackets]

BVMS - 2-Way Commercial Actuator Selection & Close-Off Chart

2-Way BVMS Actuator Selection/Close-Off - 285 PSI Water & 100 PSI Steam																				
On/Off & Floating					70-24-0061H		70-24-0201H		70-24-0501H		70-0061H		70-0121H		70-0501H		70-0651H		70-1300H	
					On-Off Tri-State 24VAC		On-Off Tri-State 24VAC		On-Off Tri-State 24VAC		On-Off Tri-State 120VAC		On-Off Tri-State 120VAC		On-Off Tri-State 120VAC		On-Off Tri-State 120VAC		On-Off Tri-State 120VAC	
Modulating					70-24-0061SVH		70-24-0201SVH		70-24-0501SVH		70-0061SVH		70-0121SVH		70-0501SVH		70-0651SVH		70-1300SVH	
					0-10VDC 4-20mA 24VAC		0-10VDC 4-20mA 24VAC		0-10VDC 4-20mA 24VAC		0-10VDC 4-20mA 120VAC		0-10VDC 4-20mA 120VAC		0-10VDC 4-20mA 120VAC		0-10VDC 4-20mA 120VAC		0-10VDC 4-20mA 120VAC	
Valve Models		Size in. mm		Flow Coefficient Cv Kv		Series 70 - 24VAC					Series 70 - 120VAC									
BVMS2-C150-0095		2	50	95	82	285/100 PSI						285/100 PSI								
BVMS3-C150-0287		3	80	287	247			285/100 PSI						285/100 PSI						
BVMS4-C150-0436		4	100	436	375			285/100 PSI						285/100 PSI						
BVMS6-C150-0760		6	150	760	654					285/100 PSI						285/100 PSI				
BVMS8-C150-1350		8	200	1350	1161					285/100 PSI						285/100 PSI				
BVMS10-C150-2380		10	250	2380	2047											285/100 PSI				
BVMS12-C150-3410		12	300	3410	2933													285/100 PSI		
For steam applications, install valve with stem at 45° to 90° from vertical. V-port ball valves are controllable between 15% and 80% of full open.										<div><div>Key</div><div>BVMS2-C150-0095</div><div><div>=</div><div>Industrial Ball Valve Series</div><div>BVMS</div><div>2</div><div>Size (in.)</div><div>C</div><div>Material C = Carbon Steel</div><div>150</div><div>ANSI Class</div><div>95</div><div>Cv</div></div></div>										



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