

BVMS Series (ANSI 150) Flanged Industrial Control Segmented Ball Valves

2-Way • 2" - 12"

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Application

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

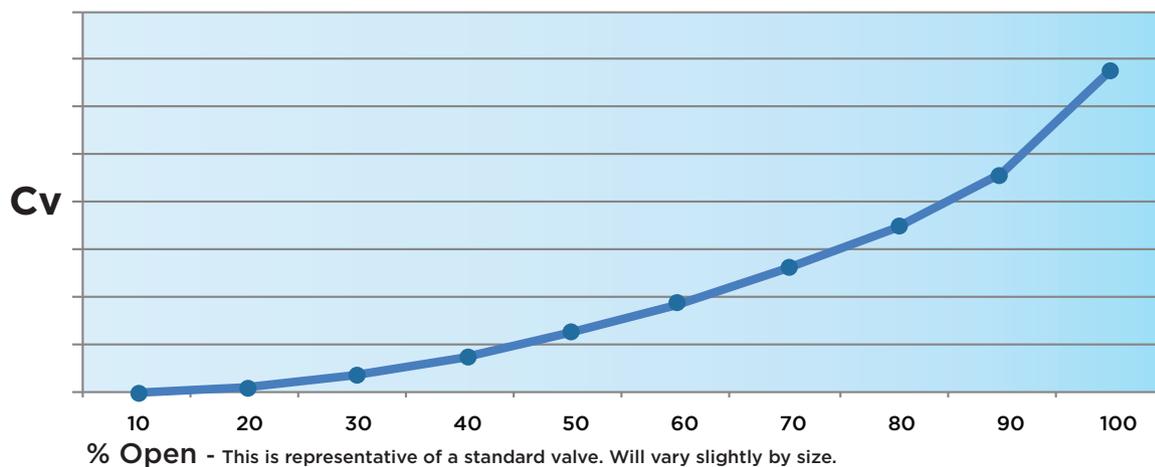
- Available NEMA 4 Actuators**

Reliable, cost effective control

Applications

Heat Exchangers, Standard and Computer Room Air Conditioning Units.

Flow Curve Chart



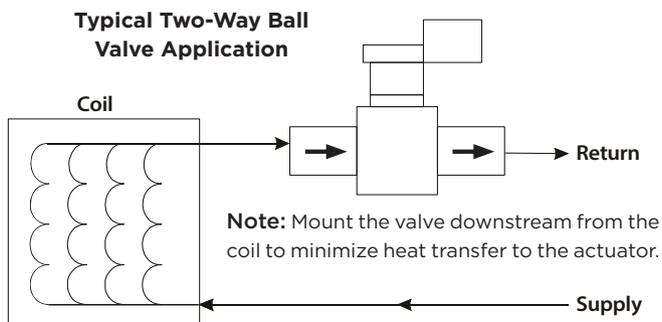
BVMS Series - Specifications

Technical Specifications - BVMS Segmented Industrial Ball Valve Body		
Service	Chilled/Hot Water, 50/50 Glycol Solutions and Saturated Steam	
Size Range	2-Way	2" to 12" Flanged Segmented Valves
Maximum Fluid Temperature	Water	-20° to 380°F @ 200 PSI (-28° to 193°C @ 1378 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 Operating Pressure Drop	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
Warranty	3 Years limited from time of shipment.	

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.

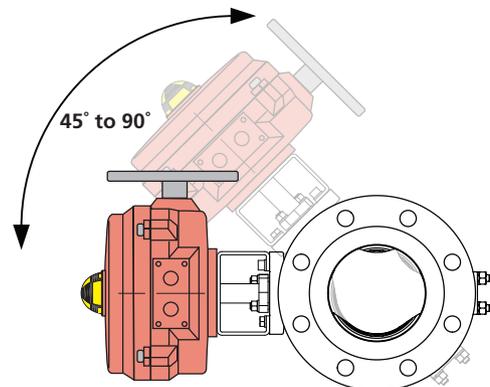
BVMS - Mode of Actuation

Typical Two-Way Ball Valve Application



BVMS - For Steam Applications

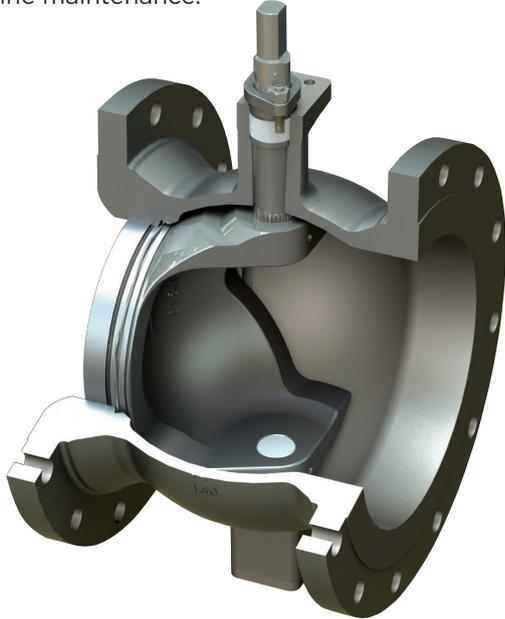
Install valve with stem at 45° to 90° from vertical.



BVMS Series - 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 - 2-Way-On/Off & Modulating Series 70 Industrial Electric Actuators Close-Off Charts

2-Way, 24 VAC & 120 VAC, On/Off Actuators - (285 PSI WATER/100 PSI STEAM Close-Off)

Model Number	Valve Size		Flow Coefficient		Series 70 120 VAC On/Off	Series 70 24 VAC On/Off
	In.	mm	Cv	Kv	Model	Model
BVMS2-C150-0095	2	50	95	82	70-0081H	70-24-0081H
BVMS3-C150-0287	3	80	287	247	70-0081H	70-24-0081H
BVMS4-C150-0436	4	100	436	375	70-0121H	70-24-0201H
BVMS6-C150-0760	6	150	760	654	70-0201H	70-24-0201H
BVMS8-C150-1350	8	200	1350	1161	70-E301H	70-24-0501H
BVMS10-C150-2380	10	250	2380	2047	70-0501H	70-24-0501H
BVMS12-C150-3410	12	300	3410	2933	70-1300H	-

2-Way, 24 VAC & 120 VAC, Modulating Actuators - (285 PSI WATER/100 PSI STEAM Close-Off)

Model Number	Valve Size		Flow Coefficient		Series 70 120 VAC Modulating	Series 70 24 VAC Modulating
	In.	mm	Cv	Kv	Model	Model
BVMS2-C150-0095	2	50	95	82	70-0081SVH	70-24-0081SVH
BVMS3-C150-0287	3	80	287	247	70-0081SVH	70-24-0081SVH
BVMS4-C150-0436	4	100	436	375	70-0121SVH	70-24-0201SVH
BVMS6-C150-0760	6	150	760	654	70-0201SVH	70-24-0201SVH
BVMS8-C150-1350	8	200	1350	1161	70-E301SVH	70-24-0501SVH
BVMS10-C150-2380	10	250	2380	2047	70-0501SVH	70-24-0501SVH
BVMS12-C150-3410	12	300	3410	2933	70-1300SVH	-

Options/Adders

1. For Battery Back-Up Failsafe Unit (BBU) option on 24 VAC actuators add "-BBU".
2. For normally Closed, add a "C" to the end of the valve part number, i.e. BVMS2-C150-0095C, otherwise normally open. BBU models only. Add "S150" in place of C150 for Stainless Steel body option.

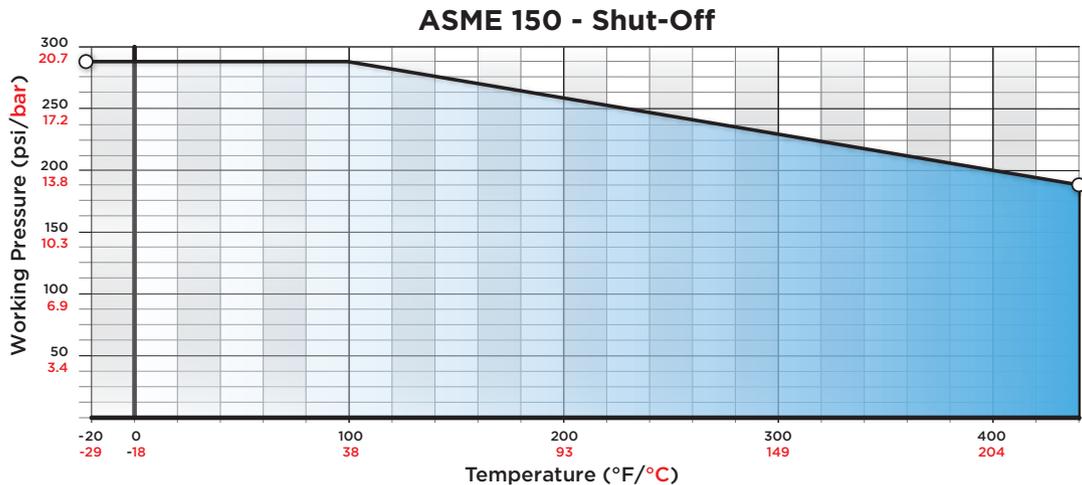
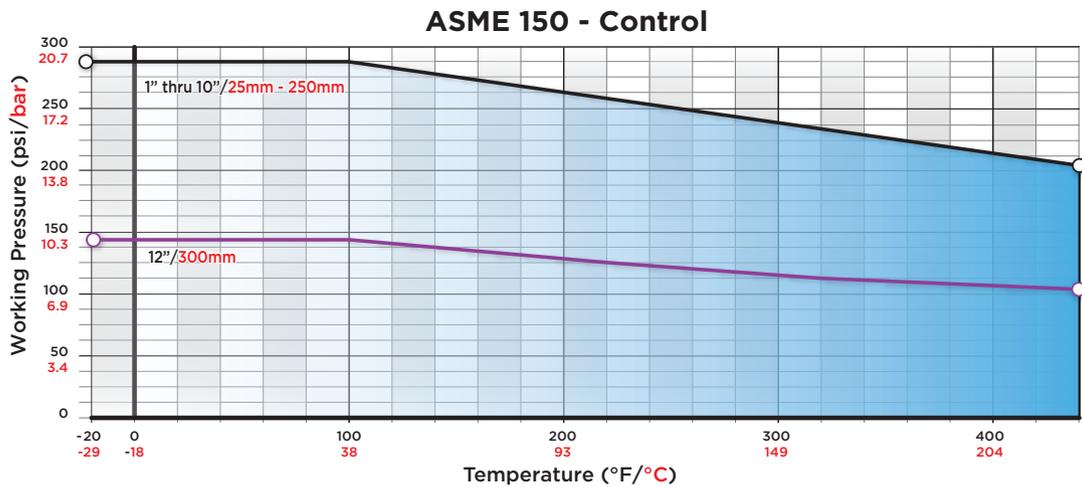
BVMS Series - Flow Coefficient Cv Chart

BVMS-Segmented Ball Valve - Tek Fil Seat - Class 150

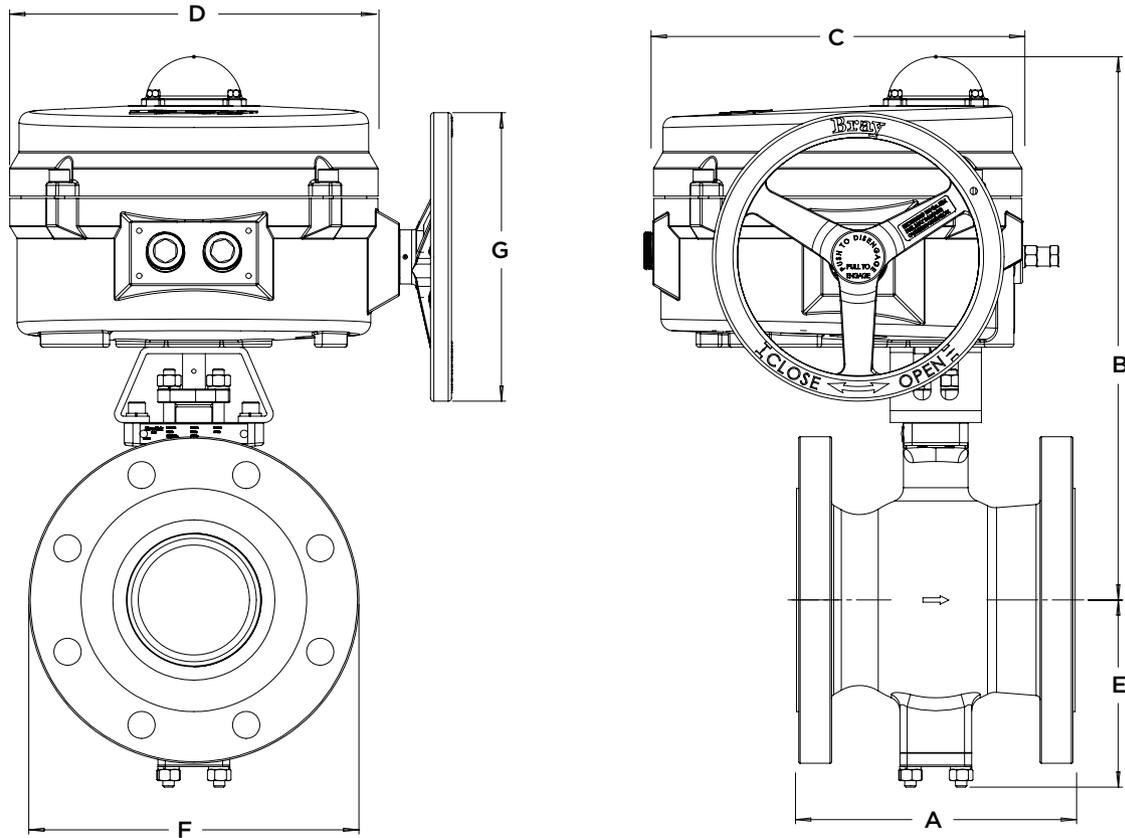
Model Number	Valve Size		Flow Coefficient		Percent of Ball Rotation									
	In.	mm	Cv	Kv	15%	20%	30%	40%	50%	60%	70%	80%	90%	100%
BVMS2-C150-0095	2	50	95	82	0.00	0.00	1.21	5.1	11.2	19.5	29.5	44.0	70.0	95.0
BVMS3-C150-0287	3	80	287	247	0.17	2.1	10.4	24.0	41.0	64.0	93.0	131.0	181.0	287.0
BVMS4-C150-0436	4	100	436	375	1.8	6.0	20.6	41.0	68.0	98.0	136.0	196.0	283.0	436.0
BVMS6-C150-0760	6	150	760	654	2.7	11.2	38.5	77.4	126.0	191.2	274.6	364.5	584.0	760.0
BVMS8-C150-1350	8	200	1350	1161	8.2	23.0	73.0	145.0	247.0	369.0	517.0	686.0	922.5	1350.0
BVMS10-C150-2380	10	250	2380	2047	17.2	43.0	121.0	238.0	385.0	571.0	790.0	1046.0	1372.0	2380.0
BVMS12-C150-3410	12	300	3410	2933	17.7	52.0	157.0	322.0	532.0	780.0	1094.0	1458.0	1954.0	3410.0

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



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



BVMS Dimensions - ANSI 150 - 2" - 12" - 2-Way, Segmented with Industrial Actuators - in. (mm)

Model Number	Valve 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)	12.9 (327)	9.3 (236)	7.5 (191)	3.9 (99)	6.0 (152)	3.5 (89)	17.9 [8.1]
BVMS3-C150-0287	3	80	287	247	6.5 (165)	12.9 (327)	9.3 (236)	7.5 (191)	4.8 (121)	7.5 (190)	3.5 (89)	32.0 [14.4]
BVMS4-C150-0436	4	100	436	375	7.6 (194)	15.0 (380)	12.1 (308)	10.1 (256)	5.2 (133)	9.1 (230)	8.0 (203)	45.2 [20.5]
BVMS6-C150-0760	6	150	760	654	9.0 (229)	19.0 (481)	12.1 (308)	10.1 (256)	7.6 (193)	11.0 (280)	8.0 (203)	86.0 [39.0]
BVMS8-C150-1350	8	200	1350	1161	9.6 (243)	20.1 (522)	13.1 (333)	12.1 (308)	8.4 (213)	13.6 (345)	12.0 (305)	131.0 [59.4]
BVMS10-C150-2380	10	250	2380	2047	11.7 (297)	20.1 (522)	13.1 (333)	12.1 (308)	10.1 (256)	16.0 (406)	12.0 (305)	191.0 [86.7]
BVMS12-C150-3410	12	300	3410	2933	13.3 (338)	25.8 (656)	14.8 (375)	12.1 (308)	11.5 (292)	19.0 (483)	12.0 (305)	302.0 [137.0]

Dimensions for largest Actuator shown
Weights (valve only) are in lbs. [kg in brackets]

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Bray Commercial provides automated Butterfly, Ball, Globe and Pressure Independent Control Valves to the commercial building HVAC market throughout the world. Wherever valve performance is required to maintain climate controlled environments, Bray can provide the required automated valves to meet the demanding flow applications of chiller/boiler isolation, air handlers and terminal units for new construction, retrofit and/or LEED certification applications in buildings.

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