

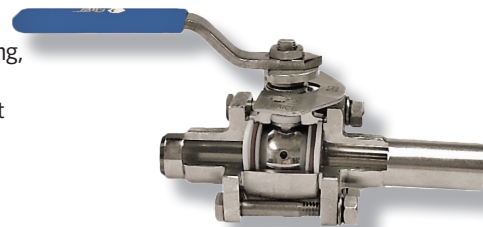
PBM IGENIX® CLEAN STEAM BALL VALVES

CS Cast Series 9/Forged Series 8, 1/2" - 6"



DESIGN FEATURES:

- Unique Adjust-O-Seal® feature allows in-line valve adjustment to compensate for normal wear on valve seats. Note: **CS Series Clean Steam valves have o-rings.**
- Upstream and downstream bubble-tight sealing capability allows valve body cleaning, purging, and draining.
- Stem assembly accommodates PBM Direct Mount Actuation for accurate alignment and increased cycling life.
- Forged and cast valves are low-controlled ferrite.
- True-Bore® (valve bore same as connecting tubing) – no puddling
- ASME BPE compliant
- USP Class VI elastomers and FDA compliant materials
- Valves are rated to full vacuum.
- Certified Material Test Report (CMTRS) provided for wetted components.
- Surface finishes are achieved without the use of ADIs (Animal Derived Ingredients).



SPECIFICATIONS	2-Way Valves
Sizes	1/2" - 6" Series 9, 1/2" - 4" Series 8
Material	Low ferrite cast and forged 316L material. Castings (Series 9) comply with A351, Alloy CF3M and/or A479, Alloy S31603. Forgings (Series 8) comply with A182, Alloy F316L/1.4404 and/or A479, Alloy S31603. Also available are Hastelloy™, AL6XN™, others
End Connections	Extended tube, hygienic clamp, compression ends (1/2" - 1")
Seats & Seals	White V-TEF™ standard, others available
O-rings	EPR O-ring energizer (FKM V1274-75/80, EPR E3608-70, others available)
Stem Packing Material	V-TEF™ and S-TEF®
Body Bolts & Nuts	18-8 Stainless Steel
Maximum Working Pressure	up to 900 psig CWP depending on valve series, size and temperature
Temperatures	up to 450°F depending on seat and seal material
Polish	Standard internal polish of 20 Ra ID Series 8, 30 Ra ID Series 9

CV Values (gpm), Series 8/Series 9		
Size	End Connections	
	F-	X-
1/2"	6.5	8
3/4"	23	28
1"	55	65
1-1/2"	160	193
2"	365	420
2-1/2"	700	800
3"	900	1,040
4"	1,800	2,080
6"	4,200	5,000

ID Surface Finish, Ra Readings for Valves per ASME BPE			
Surface Finish	PBM Polish Code	μ-in.	μ-m.
Mechanical Polish			
SF 1	A	20 Ra max	0.51
SF 2	A	25 Ra max	0.64
SF 3	-	30 Ra max	0.76
Mechanical Polish and Electropolish			
SF 4	G	15 Ra max	0.38
SF 5	F	20 Ra max	0.51
SF 6	F	25 Ra max	0.64

How To Order:

PRODUCT (1-2)		MATERIAL (3-4)		SIZE (5) SERIES (6)		END CONNECTIONS (7-8)		SEAT & SEAL (9)		PURGES (10-11)		BALL & STEM (12)		OPERATOR (13-14)		POLISH (15)	
CS	HF	F316L Forged Low Ferrite F316L / DIN 1.4404	C	1/2"	8	F-	Ext. Butt weld for Tube	G	V-TEF™ Seats / Seals FKM O-Rings	--	No Purge Port or Ball Option	-	Standard Ball and Stem	--	W/ Standard Lever Handle	-	0.75 μm ID (Std. Series 9)
			D	3/4"	9	FX	Ext. Butt weld for Tube by Hygienic Clamp	J	V-TEF™ Seats / Seals / VTFE Cav Fill / FKM O-Rings	- 8	Self Flushing Ball	F	Internal / External Grounding	02	W/O Handle W/ Stem Actuator Prep	A	0.50 μm ID (Std. Series 8)
	HL	316L Cast CF3M Low Ferrite	E	1"	X-	Hygienic Clamp	Z	V-TEF™ Seats / Seals EPR O-Rings	- V	Slotted V-Ball	G	17-4PH Stem	04	Locking Lever Handle	D	0.375 μm ID	
			G	1-1/2"			2	V-TEF™ Seats / Seals / VTFE Cav Fill / EPR O-Rings	- W	30° V-Ball	08	Gear Operator (Req'd for 6")	E	0.25 μm ID			
			H	2"			- X	45° V-Ball	18	Extended Handle (2-1/2" thru 4")	F	0.50 μm ID after Electro Polish					
			J	2-1/2"			- Y	60° V-Ball	71	Extended Handle (1/2" thru 2")	G	0.375 μm ID after Electro Polish					
			K	3"			H	S-TEF® Seats / Seals FKM O-Rings	Other Purge Port & Ball Options - Contact PBM.		20	DA 80psig actuator	G	0.375 μm ID after Electro Polish			
			L	4"			0	S-TEF® Seats / Seals EPR O-Rings	27	DA 60psig actuator	H	0.25 μm ID after Electro Polish					
	M	6"*	9	V-TEF™ Seats / Seals FEP Encaps. FKM O-Rings	34	SR 80psig actuator	H	0.25 μm ID after Electro Polish									
									41	SR 60psig actuator							

<http://pbmvalve.com/build-a-part-number>

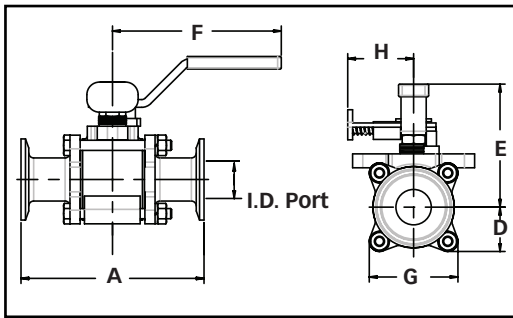
Other Seat/seal options available - contact PBM.

Other operator options available - Contact PBM.

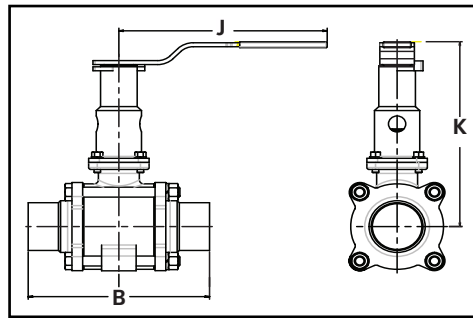
More polish available - Contact PBM.

PBM Igenix® Clean Steam Cast Series 9/Forged Series 8 Manual

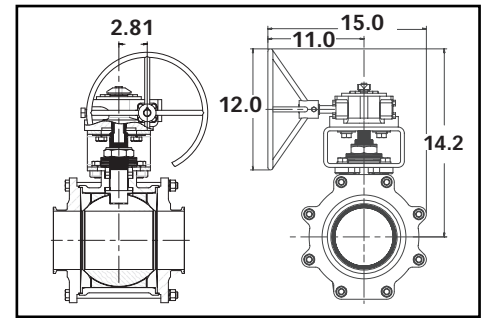
2-Way Valve with Locking Handle



2-Way Valve with Extended Lockable Handle



2-Way Valve with Gear Operator (6" only)

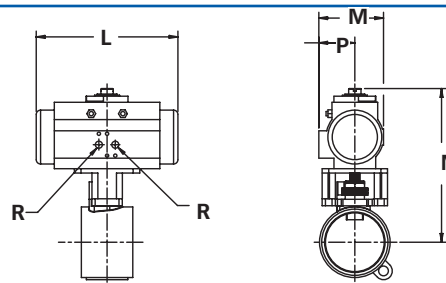


2-Way Sanitary Dimensioned valves in inches										Locking Handle		Ext. Lockable Handle		
Valve Size	Size Code	I.D. Port	A	B	D	E	F	G	Approx. Wgt (lbs)	H	Hole Dia. for Lock	J	K	Hole Dia. for Lock
1/2"	C	0.37	3.50	5.50	0.75	2.05	4.00	1.50	1.1	1.55	.28	5.09	4.00	0.31
3/4"	D	0.62	4.00	6.00	0.85	2.23	4.00	1.68	1.4	1.55	.28	5.09	4.14	0.31
1"	E	0.87	4.50	6.50	1.09	3.01	4.15	2.18	2.7	1.62	.25	5.09	5.44	0.31
1-1/2"	G	1.37	5.50	7.50	1.68	4.91	8.81	3.31	8.9	2.57	.38	8.00	7.46	0.38
2"	H	1.87	6.25	8.00	2.15	4.47	8.03	4.30	15.0	2.57	.38	8.00	7.74	0.38
2-1/2"*	J	2.37	8.00	11.50	2.79	6.51	12.06	5.58	36.0	3.47	.38	12.06	11.36	0.38
3"	K	2.87	8.00	10.50	2.78	6.77	12.06	5.58	33.0	3.47	.38	12.06	11.61	0.38
4"	L	3.83	10.00	13.00	3.66	7.53	12.06	7.33	67.0	3.47	.38	12.06	12.38	0.38
6"*	M	5.78	13.00	17.00	6.18	NA	NA	12.37	164.0	NA	NA	NA	NA	NA

*Cast Series 9 Only

ACTUATED DIMENSIONS

Unit of Measure = inches
Dimensions based on actuators used with V-TEF™ seats.



Size	80 PSI Spring Return					60 PSI Spring Return					60, 80 PSI Double Acting				
	L	M	N	P	R	L	M	N	P	R	L	M	N	P	R
1/2"	5.55	2.80	5.45	1.61	1/8 NPT	6.46	3.17	5.90	1.77	1/8 NPT	5.55	2.80	5.45	1.61	1/8 NPT
3/4"	5.55	2.80	5.59	1.61	1/8 NPT	6.46	3.17	6.04	1.77	1/8 NPT	5.55	2.80	5.59	1.61	1/8 NPT
1"	6.46	3.17	6.51	1.77	1/8 NPT	8.27	3.72	7.22	2.07	1/8 NPT	5.55	2.80	6.06	1.61	1/8 NPT
1-1/2"	9.47	4.17	9.65	2.30	1/8 NPT	10.83	4.85	10.16	2.68	1/4 NPT	8.27	3.72	9.10	2.07	1/8 NPT
2"	10.83	4.84	10.45	2.68	1/4 NPT	13.11	5.39	11.80	2.87	1/4 NPT	8.27	3.72	9.39	2.07	1/8 NPT
2-1/2"	13.11	5.39	13.48	2.87	1/4 NPT	14.65	5.83	13.96	3.15	1/4 NPT	13.11	5.39	13.48	2.87	1/4 NPT
3"	14.65	5.83	14.21	3.15	1/4 NPT	17.13	6.46	15.10	3.44	1/4 NPT	13.11	5.39	13.73	2.87	1/4 NPT
4"	17.13	6.46	15.86	3.44	1/4 NPT	19.69	7.36	16.80	3.94	1/4 NPT	13.11	5.39	14.51	2.87	1/4 NPT
6"	22.78	8.54	23.02	4.29	1/4 NPT	22.78	8.54	23.02	4.29	1/4 NPT	22.78	8.54	23.02	4.29	1/4 NPT

Manual Valves with Tube Ends when used with insulation		
Tube OD	Insulation max with no extension	Insulation max with extension
0.50	0.76	2.68
0.75	0.79	2.72
1.00	1.45	3.88
1.50	3.10	5.57
2.00	2.31	5.60
2.50	4.00	8.88
3.00	4.08	8.88
4.00	4.35	9.12



<http://www.pbmvalve.com/valves/clean-steam-valves>

<http://www.pbmvalve.com/maintenance-instructions>

www.PBMValve.com

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