



Breakthrough  
engineering for  
a better world

Process  
Automation

IMI PBM



# CP Series 6 Size 1/2" to 4"

## Cryogenic Ball Valves #300

### Design Features

- Valve has been shown to exceed leakage performance per BS6364 and MSS SP-134
- CP Series Cryogenic Valves do not have O-Rings
- Live-loaded stem packings
- Fire Tested to API 607
- Extended Socket Weld & Buttweld ends require no disassembly to weld
- Designed and tested in accordance with ASME B31.1 and B16.34
- Cleaned for oxygen service
- Optional API-622 Low-e Packing (cannot be cleaned for oxygen service)
- Quarter turn operation
- Locking lever handle or optional oval locking handwheel with special request
- Automation available
- Internal and external grounding
- Uni-directional flow and vented ball, marked HP (high pressure) and LP (low pressure) on valve body
- Available with or without extended stem

CV & Weights		
Size	CV (gpm)	Weight (lbs)
1/2"	12	5
3/4"	42	5
1"	73	9
1 1/2"	170	22
2"	360	28
3"	935	770
4"	1,900	164*

\*Stem prep for automation

Cryogenic Allowable Leakage Rate Comparison		
NPS	MSS-SP-134-2010	BS 6364-1984
1/2"	37.50	90
3/4"	56.25	120
1"	75	150
1 1/2"	112.50	240
2"	150	300
3"	225	480
4"	300	600

### SPECIFICATIONS

Sizes  
Stem Material  
Temperatures  
Body, Ball End Fitting Material  
Seats and Lower Stem Packing Material  
Body Gaskets and Upper Stem Packing  
Handle  
Maximum Working Pressure

### FULL PORT, WELDED OR THREADED ENDS

1/2" to 4"  
17-4 PH Stainless Steel  
400°F (250°C) to -320°F (-200°C)  
316L Stainless Steel  
V-TEF™  
Graphite  
300 Stainless Steel  
72 psig CWP (ANSI CL300)



How To Order:  
pbmvalve.com/build-a-part-number

PRODUCT (1-2) MATERIAL (3-4)			SIZE (5) SERIES (6)			END CONNECTION (7-8)			SEAT / SEAL (9)		PURGE PORTS (10-11)		BONNET (12)		OPERATOR (13- 14)			OXYGEN CLEAN (15 - 16)	
CP	HL	316L S/S	C	1/2"	6	B	Sch. 40 Ext. Butt weld	G	V-TEF™/Graphite Seals Spiral wound graphite stem packing	--	No Purge Ports	-	Standard Bonnet	04	Locking Lever Handle - Std. 1/2" thru 2" Only	-L	Oxygen Clean Per PBM Procedure "G" seat / seal code only		
			D	3/4"		D	Sch. 10 Ext. Butt weld	Z	V-TEF™/Graphite Seals Low Emission graphite stem packing			V	12" Tall Bonnet	09	Locking "T" Handle - Std. 3" Only	--	NO Oxygen Clean "Z" seat / seal code only		
			E	1"		J	Extended Socket Weld							08	Gear Operator Std. - 4" Only				
			G	1-1/2"		Q	Female NPT							02	No Handle, Stem Actuator Prep				
			H	2"		Q1	Female BSPT							20	DA 80psig actuator				
			K	3"										27	DA 60psig actuator				
			L	4"										34	SR 80psig actuator				
														41	SR 60psig actuator				

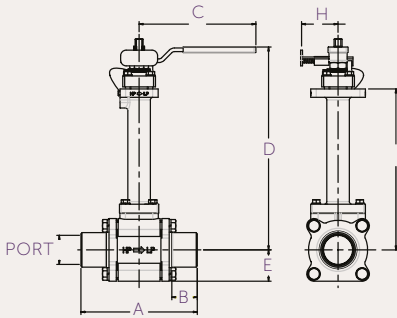
Other material options available - Contact IMI PBM

Note: Valves with "Z" code will not be oxygen cleaned.

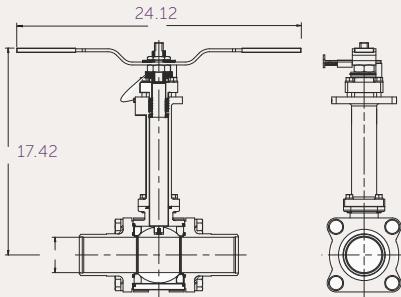
When end connections are mixed. First position is for upstream connection and second position is for downstream connection.

Other operator options available - Contact IMI PBM

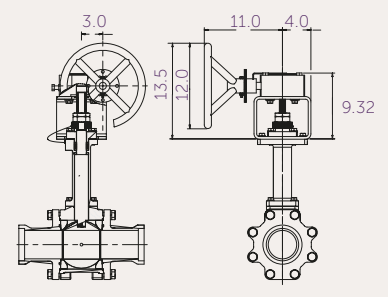
CP WITH LEVER HANDLE



3" CP WITH T-HANDLE



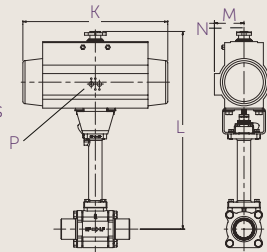
4" CP WITH GEAR OPERATOR



Size	Ball Port	A	B	Extended Socket Weld		A	C	D	E	G	H	Hole Dia. for Lock
		Butt Weld		A	Socket Depth	FNPT	Handle Length from CL	Handle Height Std. Ext.		CL to Top of Bonnet		
1/2"	0.50	5.50	1.50	6.32	0.41	3.12	6.15	9.92	1.00	7.78	1.55	.28
3/4"	0.75	5.50	1.50	6.56	0.53	3.44	6.15	9.92	1.00	7.78	1.55	.28
1"	1.00	6.00	1.50	7.06	0.53	4.25	8.09	9.92	1.33	7.64	1.64	.25
1-1/2"	1.50	7.50	1.50	8.56	0.53	5.50	18.03	13.60	1.78	10.76	2.57	.38
2"	2.00	8.00	1.75	9.32	0.66	6.00	18.03	13.95	2.15	11.07	2.57	.38
3"	3.00	13.50	2.31	14.88	0.69	9.00	NA	NA	3.14	13.41	3.84	.38
4"	4.00	16.00	2.31	17.62	0.81	12.00	NA	NA	4.91	14.83	NA	NA

ACTUATED DIMENSIONS  
Unit of measure = inches

Dimensions based on actuators used with V-TEF® seats



Find out more  
pbmvalve.com

Size	60 psi Double Acting					80 psi Double Acting					60 psi Spring Return					80 psi Spring Return				
	K	L	M	N	P	K	L	M	N	P	K	L	M	N	P	K	L	M	N	P
1/2"	6.46	13.73	3.17	1.77	1/8	5.55	13.28	2.79	1.61	1/8	9.48	14.99	4.17	2.30	1/8	8.27	14.44	3.72	2.07	1/8
3/4"	6.46	13.73	3.17	1.77	1/8	5.55	13.28	2.79	1.61	1/8	9.48	14.99	4.17	2.30	1/8	8.27	14.44	3.72	2.07	1/8
1"	6.46	14.08	3.17	1.77	1/8	6.46	14.08	3.17	1.77	1/8	10.83	15.86	4.85	2.68	1/4	9.48	15.35	4.17	2.30	1/8
1-1/2"	10.83	19.98	4.85	2.68	1/4	9.48	19.47	4.17	2.30	1/8	14.65	21.81	5.83	3.15	1/4	13.12	21.33	5.39	2.87	1/4
2"	13.12	21.46	5.39	2.87	1/4	10.83	20.29	4.85	2.68	1/4	19.68	23.95	7.36	3.90	1/4	17.13	22.98	6.45	3.44	1/4
3"	14.65	25.46	5.83	3.15	1/4	13.12	24.98	5.39	2.87	1/4	22.78	29.53	8.54	4.29	1/4	19.68	27.29	7.36	3.90	1/4
4"	22.78	32.96	8.54	4.29	1/4	22.78	32.96	8.54	4.29	1/4	26.46	35.04	11.42	5.71	1/4	26.46	35.04	11.42	5.71	1/4



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