

# PBM 300# CRYOGENIC BALL VALVES

## Full Port, Sizes 1/2" - 4"

### DESIGN FEATURES:

- Valve meets or exceeds leakage performance per MSS SP-134
- **CP Series Cryogenic valves DO NOT have o-rings.**
- Live-loaded stem packings
- Fire Tested to API 607
- Extended Socket Weld & Butt weld 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 LOX cleaned)
- Quarter turn operation
- Locking lever handle or optional oval locking handwheel
- Automation available
- Internal and external grounding
- Uni-directional flow and vented ball
- Available with or without extended stem



SPECIFICATIONS	CP - FULL PORT
Sizes	1/2" - 4"
Body, Ball, End Fitting Material	316L Stainless Steel
Stem Material	17-4 PH Stainless Steel
Seats and Lower Stem Packing Material	V-TEF™
Body Gaskets and Upper Stem Packing	Graphite
Handle	300 Stainless Steel
Maximum Working Pressure	720 psig CWP (ANSI 300# Class)
Temperatures	400°F (205°C) to -320°F (-200°C)

CV and 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	70
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

### HOW TO ORDER:

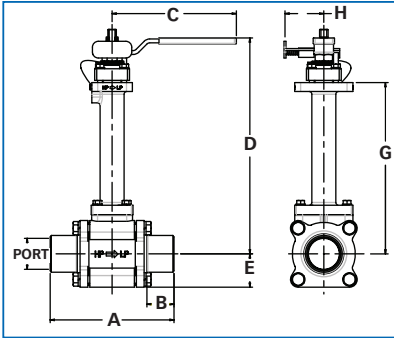
PRODUCT (1-2) MATERIAL (3-4)			SIZE (5) SERIES (6)			END CONNECTIONS (7-8)		SEAT & SEAL (9)		PURGES (10-11)		BONNET (12)		OPERATOR (13-14)		OXYGEN CLEAN (15-16)	
CP	HL	316L S / S	C	1/2"	6	B	Sch. 40 Ext. Butt weld	G	V-TEF™/Graphite Seals Spiral wound graphite stem packing	--	No Purge Ports	-	Standard Bonnet	04	Locking Lever Handle - Std. 1/2" thru 2" Only	- L	Oxygen Clean Per PBM Procedure "G" seat / seal code only
Other material options available - Contact PBM.			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	Note: Valves with "Z" code will not be oxygen cleaned.					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"		When end conn. are mixed. 1st position is upstream conn. & 2nd position is for downstream conn.								27	DA 60psig actuator		
			L	4"										34	SR 80psig actuator		
														41	SR 60psig actuator		

Other operator options available - Contact PBM.

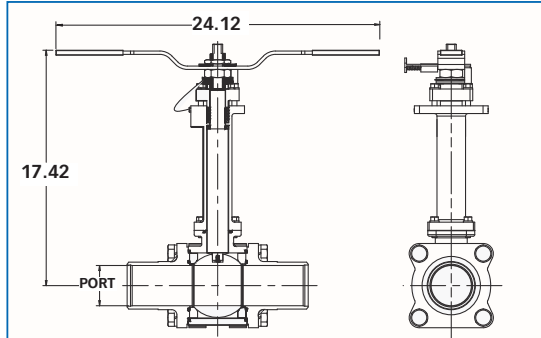
<http://pbmvalve.com/build-a-part-number>

# PBM Cryogenic (CP) Series 6 Ball Valve Dimensions

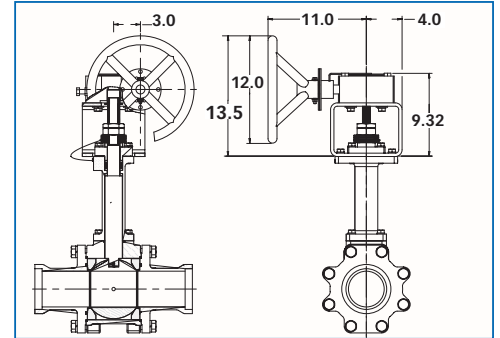
CP with lever handle



3" CP with T-Handle



4" CP with Gear Operator

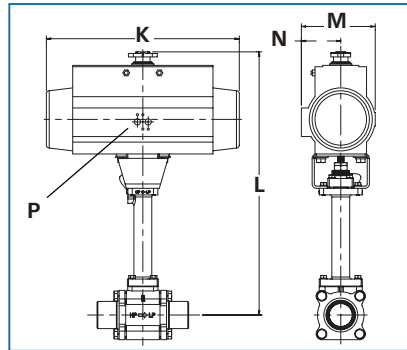


## CP CRYOGENIC VALVES

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	n/a	n/a

## ACTUATED DIMENSIONS

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



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



<http://pbmvalve.com/valves/cryogenic-valves>

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



[www.PBMValve.com](http://www.PBMValve.com)

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