

MODEL MPRV-H

PRESSURE REDUCING REGULATOR

OVERVIEW

The Model MPRV-H is a compact brass or stainless steel pressure regulator used to control outlet pressure level between atmospheric and 600 psig (41.4 Barg).

APPLICATIONS

For General air, oil, water, and gas services. Not recommended for steam service. Use stainless steel for service that could cause stress corrosion cracking.



MODEL MPRV-H



LINE SIZES AVAILABLE

3/8" (DN10), 1/2" (DN15)



END CONNECTIONS

FNPT



COMMON APPLICATIONS

AIR, OIL, WATER, GAS SERVICES



DESIGN PRESSURE

MAX PRESSURE DROP:
600 psig (41.4 Barg)

STANDARD/GENERAL SPECIFICATIONS

Body Size:	3/8" and 1/2" (DN10 and DN15) with FNPT connections. Inlet connection size is equal to outlet connection size.	Range Springs:	Stainless Steel. See Table 3.
Body Orientation:	<u>Globe</u> : Side inlet, side outlet.	Flow Capacities:	Max. Cv Comp. Diaph.: 1.4 Metal Diaph.: 1.1 For Capacities see Table 4.
Body & Spring Chamber Mat'l:	ASTM B62 C83600 ASTM A479 S31600/S31603	Option -5:	<u>Brass Cryogenic Construction</u> : Use with Trim B9S, B9G or B9P. Cleaned for oxygen service per Cashco Spec. S-1134. Mount in horizontal piping with adjusting screw oriented downwards.
Body Cap:	ASTM B16 C36000 ASTM A479 S31600/S31603	Option -21:	<u>STRAINER</u> : Inlet filter to capture debris. When installed reduces capacity by approximately 40 %.
Diaphragm:	Metal – 302 SST. Composition – Gylon 3522 or Buna-N. See Table 2.	Option -31:	<u>BSPT END CONNECTIONS</u> . British Standard Tapered Pipe threads per ISO 7/1; used as an alternate to NPT ends.
Seat:	PTFE or Buna-N See Table 2.	Option -36:	<u>SST CRYOGENIC CONSTRUCTION</u> . Same specifications as Option -5, except with SST body/spring chamber material use Trim S9S or S9G. NOTE: Design Pressure Rating shall not exceed 375 psig (26 Barg) when process medium is oxygen.
Gasket:	PTFE used with Metal Diaphragm.		
Temperature Range:	See Table 2.		
Maximum Design Pressure:	See Table 1.		

OPTION SPECIFICATIONS

Option -55:	<u>SPECIAL CLEANING</u> . Cleaning per Cashco specification S-1134 for oxygen service. Includes sealed enclosure bag and notification tag. Stainless steel or bronze body/spring chamber materials only.	Option -56:	<u>SPECIAL CLEANING</u> : Cleaning per Cashco Spec. S-1542. Cleaning <u>identical</u> to that of S-1134, but <u>not</u> labeled for application in oxygen service. <u>Not</u> suitable for oxygen service.
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TECHNICAL SPECIFICATIONS

TABLE 1 CONTAINMENT PRESSURE VS. TEMPERATURE RATINGS PER ASME B31.3 See Table 2 for trim pressure/temperature limitations				
Materials Body/Spring Chamber	Inlet & Outlet Pressure		Temperature	
	psi	(BAR)	°F	°C
BRZ/BRZ	600	41.4	-325 to 200	-198 to 93
	560	38.6	250	121
	525	36.2	300	149
	480	33.1	400	204
SST/SST	600	41.4	-425 to 600	-254 to 315

TECHNICAL SPECIFICATIONS

TABLE 2 TRIM MATERIAL COMBINATIONS							
Part	Trim Designation Number						
	B9S	B9G	B9B	B9P	S9S	S9G	S9B
Diaphragm	302 SST	Gylon 3522	Buna-N	Phosphorous Bronze	302 SST	Gylon 3522	Buna-N
Diaphragm Gasket	PTFE	N/A	N/A	PTFE	PTFE	N/A	N/A
Diaphragm Stop	Brass						
Piston	Brass				316 SST		
Seat Disc	PTFE		Buna-N	PTFE	PTFE		Buna-N
Piston Spring	17-7PH SST						
Piston Post	316 SST						
Pusher Plate	303 SST						
Pusher Plate Gasket	PTFE	N/A	N/A	PTFE	PTFE	N/A	N/A
Pressure Plate	Brass						
Range Spring	SST						
Spring Button	SST						
Adjusting Screw & Lock Nut	SST						
Temperature Range	-325 to +180°F -198 to +83°C		-20 to +180°F -29 to +83°C		-325 to +180°F -198 to +83°C		-20 to +180°F -29 to +83°C
Maximum Working Pressure	600 psi 41.4 BAR						

TABLE 3 RANGE SPRINGS / MAX. PRESSURE DROP			
Range Spring		Max Pressure Drop	
psig	barg	psid	bard
3-30	(.21-2.07)	125	(8.6)
30-50	(2.07-3.45)	175	(12.1)
50-80	(3.45-5.52)	375	(25.9)
80-150	(5.52-10.3)	600	(41.4)
150-250	(10.3-17.2)	600	(41.4)
250-360	(17.2-24.8)	600	(41.4)
350-600	(24.1-41.4)	600	(41.4)

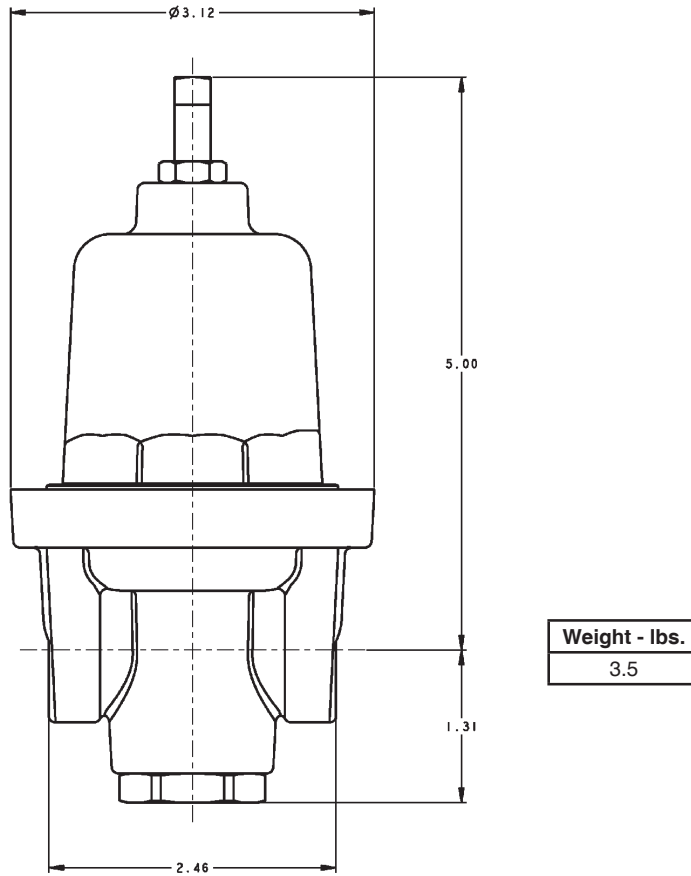
TABLE 4 CAPACITY - Cv (F_L = 0.95)							
Setpoint (P₁) Pressure		Metal Diaphragm			Composition Diaphragm		
		% Droop			% Droop		
psig	(Barg)	10%	20%	30%	10%	20%	30%
5	(0.3)	0.03	0.04	0.04	0.03	0.03	0.03
10	(0.7)	0.04	0.13	0.21	0.10	0.20	0.27
15	(1.0)	0.05	0.06	0.20	0.13	0.27	0.36
25	(1.7)	0.05	0.24	0.36	0.04	0.16	0.34
35	(2.4)	0.03	0.08	0.28	0.08	0.29	0.44
50	(3.4)	0.18	0.40	0.59	0.25	0.47	0.64
75	(5.2)	0.05	0.30	0.47	0.33	0.57	0.75
100	(6.9)	0.19	0.40	0.58	0.31	0.55	0.72
125	(8.6)	0.15	0.39	0.59	0.31	0.55	0.75
150	(10.3)	0.18	0.46	0.68	0.34	0.64	0.83
175	(12.1)	0.23	0.51	0.73	0.37	0.68	0.89
200	(13.8)	0.26	0.53	0.75	0.37	0.71	0.94
225	(15.5)	0.29	0.57	0.78	0.46	0.79	1.00
250	(17.2)	0.29	0.58	0.80	0.52	0.83	1.01
275	(19.0)	0.36	0.60	0.77	0.53	0.78	0.89
300	(20.7)	0.40	0.67	0.94	0.47	0.80	0.93
350	(24.1)	0.30	0.52	0.82	0.31	0.56	0.71
400	(27.6)	0.30	0.54	0.71	0.56	0.76	0.88
450	(31.0)	0.38	0.62	0.72	0.78	0.90	1.03
500	(34.5)	0.37	0.63	0.81	0.43	0.71	0.91
550	(37.9)	0.28	0.65	0.86	0.58	0.79	1.02

NOTES

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DIMENSIONS & WEIGHT



MODEL MPRV-H PRODUCT CODER 04/20/22

MH
POS 3
—
POS 5
POS 6 & 7
7
—
POS 10
POS 11
POS 12
0
0
0
POS 16
0
A

POSITION 3 - SIZE			
Size		Connection Orientation	CODE
in	(DN)		
3/8"	(10)	Globe — side inlet side outlet	3
1/2"	(15)		4

POSITION 5 - BODY / SPRING CHAMBER MATERIAL	
Material	CODE
Brass	3
SST	A

POSITION 6 & 7 - TRIM DESIGNATION NO.			
Brass Trim		SST Trim	
Desig.	CODE	Desig.	CODE
B9S *	BS	S9S *	SS
B9G *	BG	S9G *	SG
B9B	BB	S9B	SB
B9P *	BP	-	-

* Select For Cryogenic Service

POSITION 10 - END CONNECTION	
Description	CODE
FNPT	1
-31 Opt. BSPT	B

BSPT - Screwed Tapered Pipe Thread

POSITION 11 - RANGE SPRING		
psig	(Barg)	CODE
3 - 30	(.21 - 2.07)	K
30 - 50	(2.07 - 3.45)	L
50 - 80	(3.45 - 5.52)	M
80 - 150	(5.5-10.3)	N
150 - 250	(10.3-17.2)	P
250 - 360	(17.2-24.8)	S
350 - 600	(24.1-41.4)	T

POSITION 12 - OPTIONS		
Description	Option	CODE
No Option	-	0
Strainer	-21	F

POSITION 16 - CERTIFICATE OPTIONS		
Description	Option	CODE
Brass Cryogenic & Cleaned per Spec S-1134 for Trim B9S, B9G or B9P.	-5	C
SST Cryogenic & Cleaned per Spec S-1134 for Trim S9S or S9G.	-36	6
Oxygen Cleaning: Per Cashco Spec S-1134	-55	M
Non-Oxygen Cleaning: Per Cashco Spec S-1542.	-56	N

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