ISO Registered Company

TECHNICAL BULLETIN **MPRV-H-TB**
03-16

MODEL MPRV-H

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PRESSURE REDUCING REGULATOR

The Model MPRV-H is a compact, Brass body or SST body 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.

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.

Body Orientation: Globe: Side inlet, side outlet.

Body & Spring Chamber Mat'l: Bronze - ASTM B283, C37700.
316/316L SST - ASTM A479

Body Cap: Brass - ASTM B16, Alloy 360
316/316L SST - ASTM A479

Diaphragm: Metal – 302 SST.
Composition – Gylon or Buna-N
See Table 2.

Seat: TFE or Buna-N See Table 2.

Gasket: TFE used with Metal Diaphragm

Temperature Range: -325 to +180°F (-198 to +83°C).

Maximum Design Pressure: 600 psig (41.4 Barg).

Range Springs: SST. See Table 3.

Flow Capacities: Max. Cv Comp. Diaph.: 1.4
Metal Diaph.: 1.1
For Capacities see Table 4.

Option -5: Brass Cryogenic Construction: Use with Trim B9S or B9G. Cleaned for oxygen service per Cashco Spec. #S-1134. Mount in horizontal piping with adjusting screw oriented downwards.

Option -21: STRAINER: Inlet filter to capture debris. When installed reduces capacity by approximately 40 %.

Option -31: BSPT END CONNECTIONS. British Standard Tapered Pipe threads per ISO 7/1; used as an alternate to NPT ends.

Option -36: SST CRYOGENIC CONSTRUCTION. 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 (25.8 Barg) when process medium is oxygen.

OPTION SPECIFICATIONS

Option -56: SPECIAL CLEANING: Cleaning per Cashco Spec. #S-1542. Cleaning identical to that of #S-1134, but not labeled for application in oxygen service. Not suitable for oxygen service.

TECHNICAL SPECIFICATIONS

TABLE 1
BODY/SPRING CHAMBER/BODY CAP
MAX. PRESSURE - TEMPERATURE

Pressure		Temperature	
psig	(barg)	°F	(°C)
600	(41.4)	-325 to +180	(-198 to +83)
Inlet & outlet have same Pressure vs. Temperature ratings.			

TABLE 2
TRIM MATERIAL COMBINATIONS

Part	Trim Designation Number					
	B9S	B9G	B9B	S9S	S9G	S9B
Diaphragm	302 SST	Gylon	Buna-N	302 SST	Gylon	Buna-N
Diaphragm Gasket	TFE	--	--	TFE	--	--
Piston	Brass			316 SST		
Seat Disc	TFE		Buna-N	TFE		Buna-N
Piston Spring	17-7PH SST					
Piston Post	316 SST					
Pusher Plate	303 SST					
Pusher Plate Gasket	TFE	--	--	TFE	--	--
Temperature °F (°C)	-325 to +180 (-198 to +83)		-20 to +180 (-29 to +83)	-325 to +180 (-198 to +83)		-20 to +180 (-29 to +83)

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 (P_1) Pressure		Metal Diaphragm % Droop			Composition Diaphragm % 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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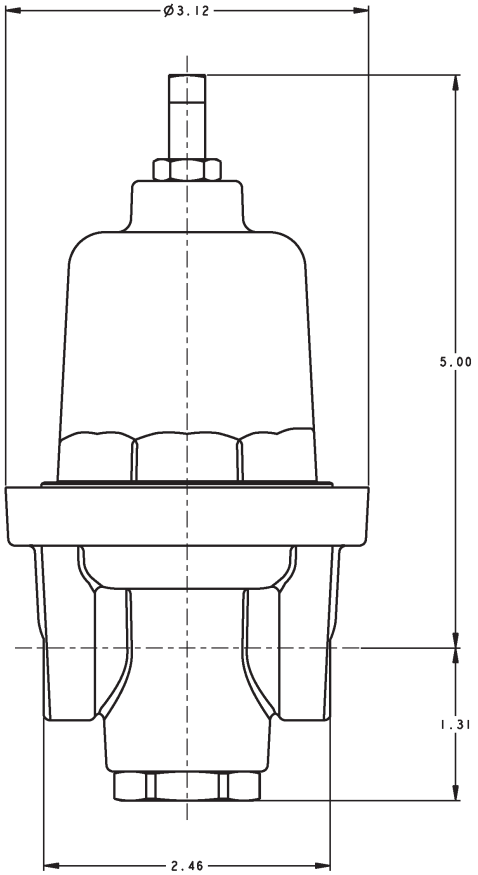
DIMENSIONS & WEIGHT



Weight - lbs.
3.5

MODEL MPRV-H PRODUCT CODER 03/11/16

An "X" in POS 12 followed by a 5-digit control number overrides remaining selections.

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
* 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
For Special Construction Contact Cashco for Special Product Code.	SPQ	X

POSITION 16 - CERTIFICATE OPTIONS		
Description	Option	CODE
No Option	-	0
Brass Cryogenic & Cleaned per Spec #S-1134 for Trim B9S or B9G.	-5	C
SST Cryogenic & Cleaned per Spec #S-1134 for Trim S9S or S9G.	-36	6
Special Cleaning: Per Cashco Spec #S-1542.	-56	N

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