

# MODEL PBE-H

## PRESSURE BUILD & ECONOMIZER REGULATOR



MODEL PBE-H

### OVERVIEW

The Model PBE has a compact body and functions in a dual role as a pressure building regulator and as an economizer relief regulator in one model. The pressure build feature controls the outlet pressure while the economizer feature operates to relieve any excess pressure in the system above set point from atmospheric to 250 psig (17.2 Barg).

### FEATURES

- The Economizer feature begins to open when pressure approaches 10 psig (0.7 barg) above set point.

### APPLICATIONS

Widely used for pressure control of liquified gas in storage tanks.



**LINE SIZES AVAILABLE**  
1/2" (DN15)



**END CONNECTIONS**  
FNPT



**COMMON APPLICATIONS**  
LIQUIFIED GAS IN STORAGE TANKS



**DESIGN PRESSURE**  
MAXIMUM PRESSURE DROP:  
395 psig (27.2 Barg)

Алматы (7273)495-231  
Ангарск (3955)60-70-56  
Архангельск (8182)63-90-72  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Благовещенск (4162)22-76-07  
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Ставрополь (8652)20-65-13  
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## STANDARD/GENERAL SPECIFICATIONS

<b>Body Size:</b>	1/2" (DN15) with FNPT connections. Inlet connection size is equal to outlet connection size.	<b>Range Spring:</b>	SST. See Table 3.
<b>Body Orientation:</b>	<u>Globe:</u> Side inlet, side outlet.	<b>Cryogenic Construction:</b>	Cleaned for oxygen service per Cashco Spec. #S-1134. Mount in horizontal piping with adjusting screw oriented downwards.
<b>Body &amp; Spring Chamber Mat'l:</b>	ASTM B62 C83600.	<b>Flow Capacities:</b>	Max. Cv Comp. Diaph.: 3.0 Metal Diaph.: 2.3 For Capacities see Table 4.
<b>Body Cap:</b>	ASTM B16 C36000	<b>Option-21:</b>	<b>STRAINER:</b> Inlet filter to capture debris. When installed reduces capacity by approximately 40 %.
<b>Diaphragm:</b>	Metal – Phos. Bronze or 302 SST Composition – Gylon 3522. See Table 2.	<b>Option -31:</b>	<b>BSPT END CONNECTIONS.</b> British Standard Tapered Pipe threads per ISO 7/1; used as an alternate to NPT ends.
<b>Seat:</b>	PTFE	<b>Option-80:</b>	<b>HIGH OUTLET PRESSURE.</b> Taller spring chamber for use with range spring 100 - 250 psig. (see dimensions tables.)
<b>Gasket:</b>	PTFE - (used with metal diaphragm)		
<b>Temperature Range:</b>	-325 to +150°F (-198 to +66°C).		
<b>Maximum Design Pressure:</b>	See Table 1.		

## TECHNICAL SPECIFICATIONS

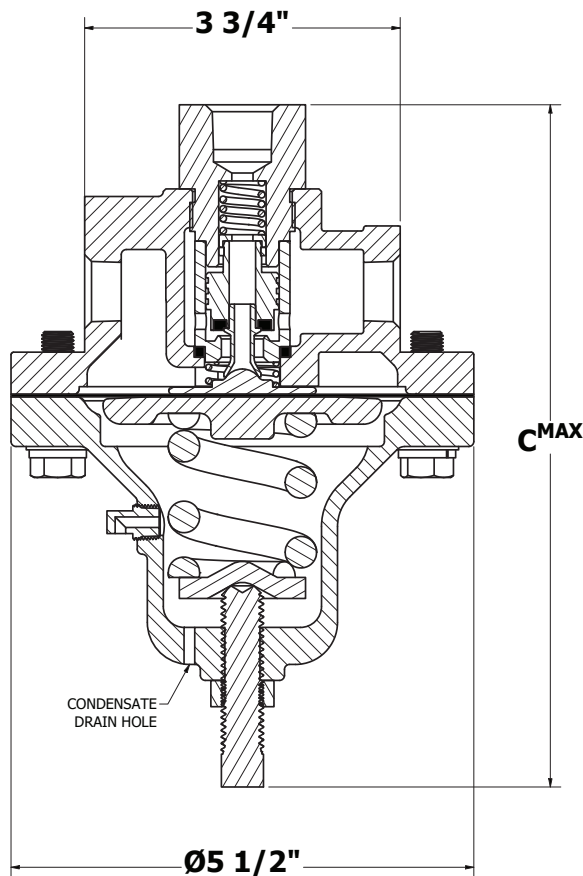
TABLE 1 CONTAINMENT PRESSURE VS. TEMPERATURE RATINGS PER ASME B31.3 See Table 2 for trim pressure/temperature limitations				
Materials Body/Spring Chamber	Inlet & Outlet Pressure		Temperature	
	psi	(BAR)	°F	°C
BRZ/BRZ	740	51.0	-325 to 150	-198 to 66
	730	50.3	200	93
	680	46.8	250	121
	640	44.1	300	149
	585	40.3	400	200

TABLE 2 TRIM MATERIAL COMBINATIONS			
Part	Trim Designation Number		
	B9B	B9S	B9G
Diaphragm	Phos. Bronze	302 SST	Gylon 3522
Diaphragm Gasket	PTFE	PTFE	N/A
Diaphragm Stop	Brass		
Piston	Brass		
Seat Disc	PTFE		
Piston Spring	17-7PH SST		
Piston Post	316 SST		
Pusher Plate	303 SST		
Pusher Plate Gasket	PTFE	PTFE	N/A
Pressure Plate	Brass		
Range Spring	SST		
Spring Button	SST		
Adjusting Screw & Lock Nut	SST		
Temperature Range	-325 to 150°F -198 to 66°C		
Maximum Working Pressure	250 psi 17.2 BAR		

TABLE 3 RANGE SPRINGS / MAX. PRESSURE DROP			
Range Spring		Max Pressure Drop	
psig	barg	psid	bard
2-15	(.14-1.0)	200	(13.8)
10-40	(.69-2.8)	395	(27.2)
30-80	(2.1-5.5)	395	(27.2)
70-150	(4.8-10.3)	395	(27.2)
100-250	(6.9-17.2)	395	(27.2)

TABLE 4 CAPACITY - Cv (F <sub>L</sub> = 0.95)								
Flowing Pressure		Metal Diaphragm			Composition Diaphragm			
		% Droop			% Droop			
psig	(Barg)	10%	20%	30%	10%	20%	30%	
5	(0.3)	0.17	0.23	0.28	0.06	0.07	0.20	
10	(0.7)	0.16	0.19	0.20	0.24	0.50	0.71	
15	(1.0)	0.33	0.38	0.44	0.37	0.67	1.00	
25	(1.7)	0.27	0.37	0.50	0.29	0.62	0.94	
35	(2.4)	0.22	0.40	0.64	0.30	0.60	1.00	
50	(3.4)	0.22	0.37	0.54	0.20	0.43	0.66	
75	(5.2)	0.26	0.53	0.74	0.28	0.56	0.88	
100	(6.9)	0.50	0.84	1.13	0.37	0.78	1.16	
125	(8.6)	0.45	0.84	1.21	0.46	0.90	1.36	
150	(10.3)	0.45	0.81	1.17	0.57	1.24	1.76	
175	(12.1)	0.42	0.82	1.20	0.83	1.39	1.79	
200	(13.8)	0.48	0.91	1.28	0.69	1.40	1.80	
225	(15.5)	0.53	0.92	1.22	0.82	1.46	1.73	
250	(17.2)	0.48	0.88	1.26	0.75	1.45	1.80	

# DIMENSIONS & WEIGHT



SIZE INCH	INCHES		ASSEMBLED WEIGHT (lbs)
	C <sup>MAX</sup>	C <sup>MAX</sup> +OPTION-80	NON-FLANGED
1/2"	8 1/8	9 11/16	14
SIZE DN	MILLIMETERS		ASSEMBLED WEIGHT (kgs)
	C <sup>MAX</sup>	C <sup>MAX</sup> +OPTION-80	NON-FLANGED
15	226	246	6

## MODEL PBE-H PRODUCT CODER 04/20/22

A6
4 - 3
POS  
6 & 7
7 - POS  
10
POS  
11
POS  
12
0
0
0
0
0
0
B

POSITION 6 & 7 - TRIM DESIGNATION NO.	
Desig.	CODE
B9B	BB
B9G	BG
B9S	BS

POSITION 10 - END CONNECTION	
Description	CODE
FNPT	1
-31 Opt. BSPT	B
BSPT - Screwed Tapered Pipe Thread	

POSITION 11 - RANGE SPRING		
psig	(Barg)	CODE
2 - 15	(.14 - 1.0)	A
10 - 40	(.69 - 2.8)	C
30 - 80	(2.1 - 5.5)	D
70 - 150	(4.8 - 10.3)	E
100 - 250 * Opt.-80 only	(6.9 - 17.2)	F

\* Includes Opt-80 for High Outlet Pressure construction.

**\* For information on ATEX see pages 8 & 9 on the IOM.**

POSITION 12 - OPTION		
Description	Option	CODE
None	---	0
Strainer	-21	F

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