cashco®
ISO Registered Company

MODEL B7

BACK PRESSURE RELIEF REGULATOR

Angle Design

Globe Design

OVERVIEW

The Model B7 is a self-contained, back pressure/ relief regulator designed to control inlet setpoint pressure levels between 10-1150 psig (.69-79.3 Barg). Pressure builds up to 30% above setpoint are possible.

FEATURES

- Large Piston Sensor Gives Excellent Sensitivity
- Low Operating Torque
- Material Traceability on Wetted Parts
- Anti-Resonance Design

TYPICAL APPLICATIONS

The B7 can be applied on hyperbaric chambers, air compressors, pressurized ballast tanks, high pressure testing equipment, life support applications, manifold systems, tube trailers, and gas transfer stations.

FUNCTIONAL PERFORMANCE

Design Proof Pressure: Pressure	150% Max Operating 2250 psig (155.1 Barg)
Internal Volume:	1.77 in^3 (29 cm^3)
Design Leakage:	Bubble Tight
Maximum Inlet* Pressure:	1500 psig (103.4 Barg)

INLET/OUTLET SIZES

1/2" (DN15), 3/4" (DN20)

END CONNECTIONS

NPT, FLANGED, TRI-CLAMP

COMMON APPLICATIONS

HYPERBARIC CHAMBERS, AIR COMPRESSORS, PRESSURIZED BALLAST TANKS, TUBE TRAILERS, GAS TRANSFER STATIONS

DESIGN PRESSURE

MAXIMUM INLET:
1500 psig (103.4 Barg)

GENERAL SPECIFICATIONS

Inlet & Outlet Port Size:	1/2” and 3/4” (DN15 and DN20)	Material:	Sanitary Construction: Interior of body surface Electro Polished to 16 micro-inch Ra finish with Electro Polished exterior.
Cv Capability:	2.5 Cv		
Inlet Pressure:	10-1150 psig (.69-79.3 Barg) See Position 11 - Spring Ranges.	Wetted Trim Material:	See Position 6.
Body End Connections:	FNPT in Brass or SST; 300#, 600#, 1500#RF Flanges & Tri-Clamp in SST.		
Body and Spring Chamber	316L SST/316L SST -ASTM A479 Brass/Brass - ASTM B16 Brass/316L SST	Operating Temp Range:	W/Plastic Knob-15° to 165°F (-25° to 75° C) W/High Temp Spring Chamber- -35° to 400°F (-37° to 205°C).

Trim	Temperature
Std Brass or SST	-20° to 400°F
NACE SST	-35° to 200°

OPTIONS

NACE Construction - (6 or 7) in Position 6. - Internal wetted portions meet NACE std MR0175, when exterior of regulator is not directly exposed to a sour gas environment, buried, insulated or otherwise denied direct atmospheric exposure. SST body/spring chamber materials only. Inconel w/TFE liner, Inconel X-750 spring, Neoprene O-rings.

Panel Mount - (C) in Position 14. - The panel mount feature requires a panel minimum of 11 gauge (.12) thick with a 1-3/8" hole cut out, complete with a threaded spring housing, and a panel mount ring to secure the regulator.

Tamper Proof - (1) in Position 15. - Control knob spins freely around adjusting screw. To change set point, remove knob cover, snap ring & knob. Rotate adjusting screw CW to increase set point or CCW to decrease set point.

High Temperature Spring Chamber- (U) in Position 15. - Uses a Metal adjusting screw for temperatures up to 400°F (205° C). (SST Spring Chamber Only.)

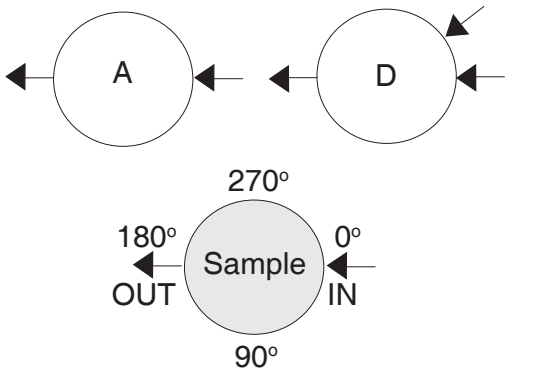
Cleaned for Oxygen Service #S-1134- (M) in Position 17. - This is a requirement for gaseous oxygen environments. All regulators requiring advanced cleaning shall be processed according to strict guidelines. **NOTE:** Design Pressure Rating shall not exceed 375 psig (25.8 Barg) when body material is SST and process medium is oxygen.

Cleaned per Spec. #S-1542 - (N) in Position 17. - Cleaning identical to that of #S-1134, but not labeled for application in oxygen service. NOT suitable for Oxygen Service.

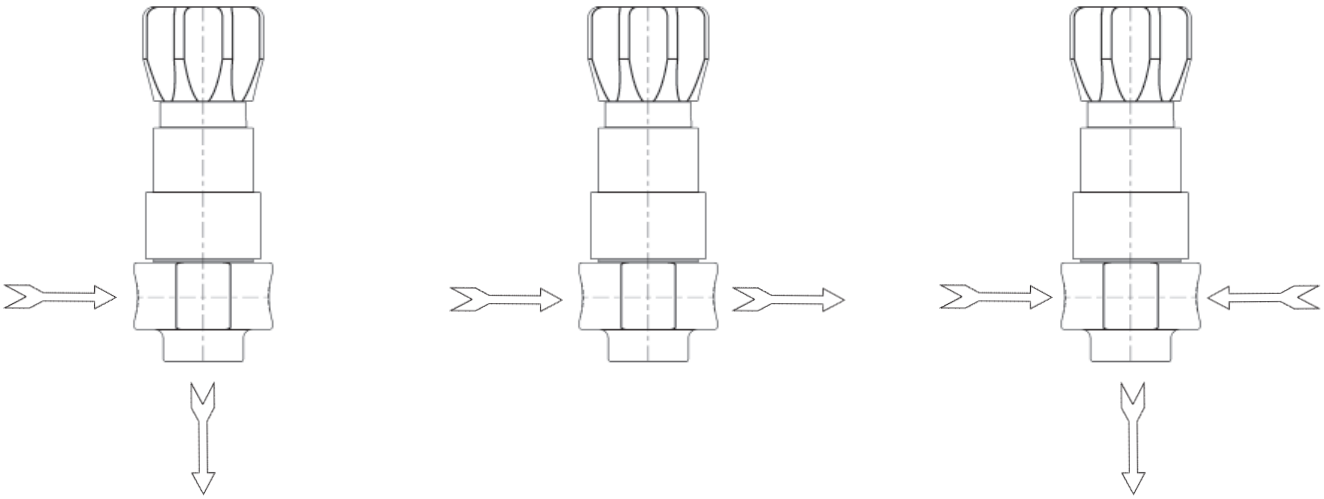
Sanitary Construction #S-1576- (P). in Position 17. - SST Construction - Interior of body surface Electro Polished to 16 micro-inch Ra finish with Electro Polished exterior. Tri-Clamp Ends 1/2" Size only. Unit is cleaned to Cashco Spec. #S-1576. Comply with FDA 21 CRF 177 2600 & USP Class VI material classification.

TABLE 1 Design Pressure -Temperature - End Conn Rating			
Temperature Range	**Flange End Connection PSIG (Barg)**		
Deg °F (° C)	300#	600#	1500#
-15 to +100 (-25 to +38)	720 (49.6)	1440 (99.2)	1500 (103.4)
+165 (+75)	655 (45.1)	1310 (90.3)	1500 (103.4)
+ 200 (94)	620 (42.7)	1240 (85.5)	1500 (103.4)
+ 300 (149)	560 (38.6)	1120 (77.2)	1500 (103.4)
+ 400 (205)	515 (35.5)	1025 (70.6)	1500 (103.4)
NOTE: Design Pressure Rating shall not exceed 375 psig (25.8 Barg) when body material is SST and process medium is oxygen.			

PORTING CONFIGURATION GUIDE

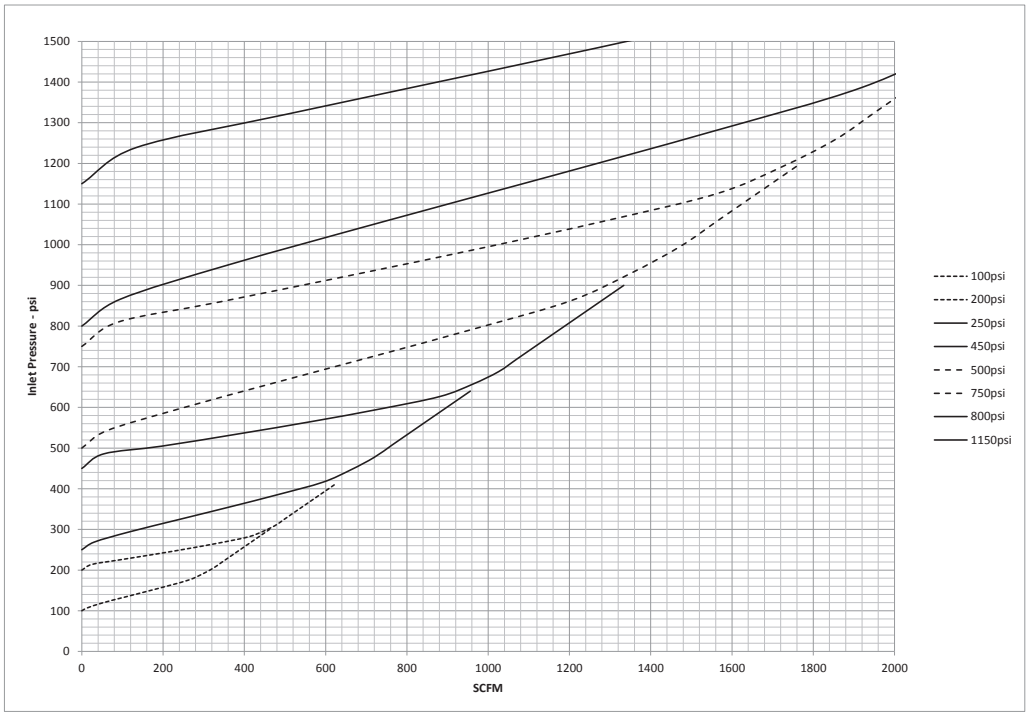


Angle **Globe** **Flow Through**



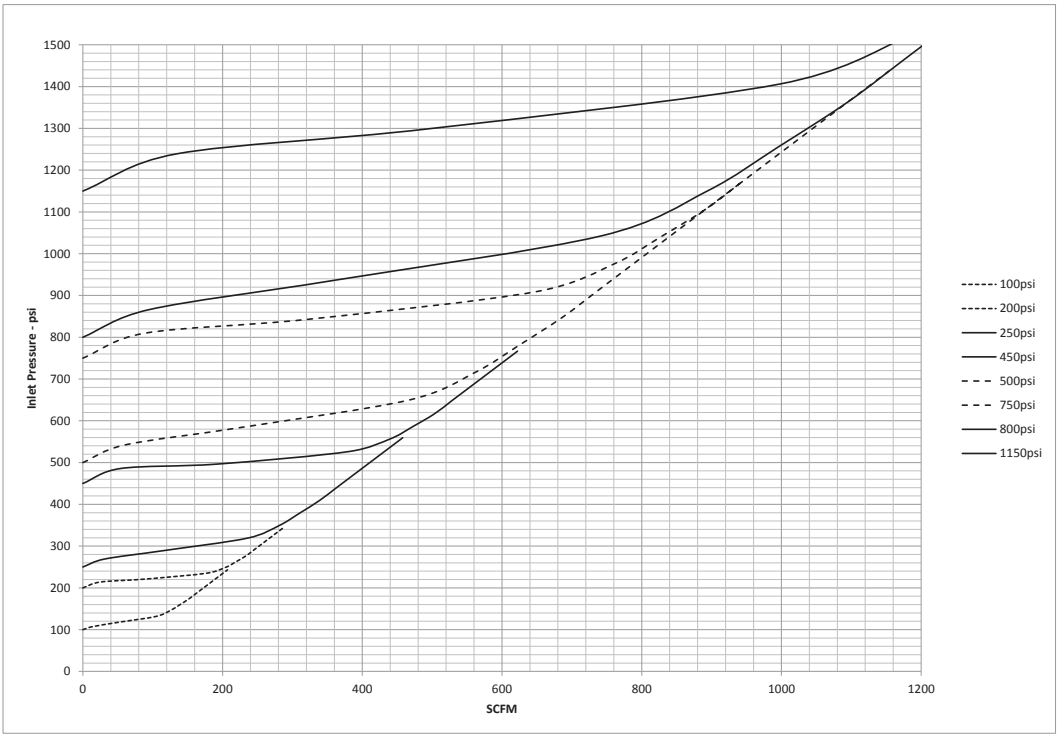
FLOW CHART for FULL PORT

Cv = 2.5

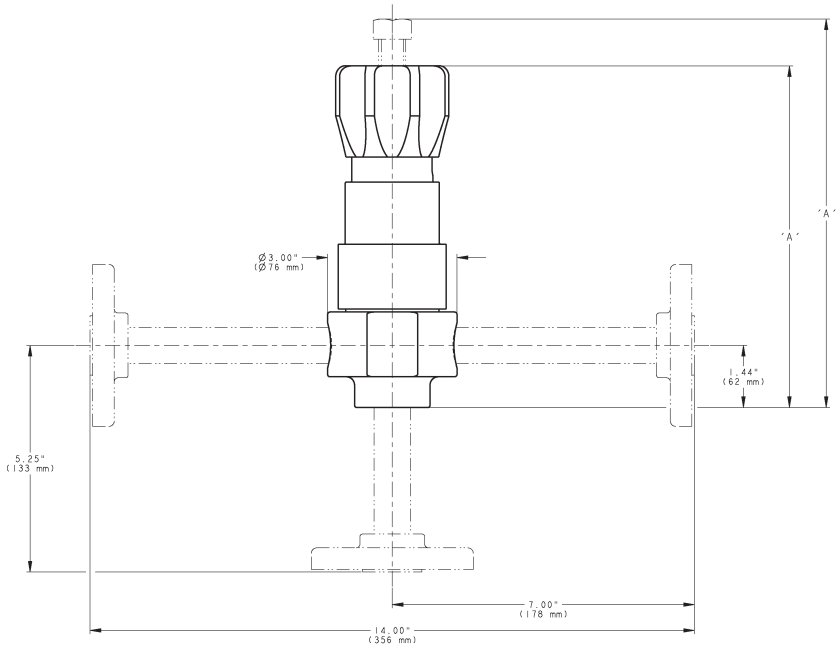


FLOW CHART for REDUCED PORT

Cv = 1.3

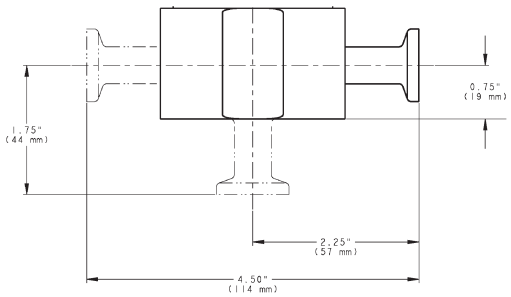


DIMENSIONS



Option	Dim "A"
Std Spring Chamber	8.0" (203 mm)
High Temp Spring Chamber	9.0" (229 mm)

Weight
NPT: 7.50 lbs (3.4 kgs)
-W / Flanges: upwards
to 22 lbs. (10.0 kgs)



Tri-Clamp Ends

B	7	POS 3	—	POS 5	POS 6	POS 7	7	—	POS 10	POS 11	POS 12	POS 13	POS 14	POS 15	0	POS 17	A

POSITION 3 - BODY SIZE/ CONN./Cv			
Size	**Conn. Orientation**	**Cv**	**CODE**
1/2" (DN15)	Angle	1.3	1
		2.5	2
	Globe	1.3	3
		2.5	4
	Flow Thru	1.3	5
		2.5	6
3/4" (DN20)	Angle	1.3	7
		2.5	8
	Globe	1.3	9
		2.5	A
	Flow Thru	1.3	B
		2.5	C

POSITION 5 - BODY/SPRING CHAMBER	
Body/Spring Chamber Mat'l.	**CODE**
Brass/Brass	B
316L SST/316L SST *	S
Brass/316L SST	T
* Select for NACE or Sanitary Construction	

POSITION 6 - TRIM & SEAT MATERIALS			NACE
Trim	**Seat**	**CODE**	
Brass	Brass	1	
	PTFE	2	
SST	SST *	3	6
	PTFE *	4	7
SST w/Stellite Orifice	Stellite	5	
* Select for Sanitary Construction - Only available for Port "A". Comply with FDA 21 CRF 177.2600 & USP Class VI material classification. Sanitary Construction not available with NACE.			

POSITION 7 - PORTING CONFIGURATION	
Description	**CODE**
See Porting Guide	**** A
	** D

NOTE: If specifying gauges in Position 13 review asterisks as follows:

** Inlet gauge port only

**** No gauge ports available

POSITION 10 - END CONNECTIONS	
End Connection(s)	**CODE**
FNPT ***	1
300 # RF Flange *	7
600 # RF Flange *	8
1500 # RF Flange *	A
Tri-Clamp End * **	S
* Not available for Brass body material. ** (Tri-Clamp Available in 1/2" Size Only) *** Not available for Sanitary Construction - Clean per #S-1576	

POSITION 11 - RANGE SPRING INLET PRESSURE	
Psig (Barg)	**CODE**
10 - 225 (.69 - 15.5)	2
15 - 450 (1.0 - 31.0)	3
20 - 750 (1.4 - 51.7)	5
50 - 1150 (3.4 - 79.3)	6

POSITION 12 - STD OR SPECIAL DRAWING	CODE
Standard Construction	0
For Special Construction Contact Cashco for Special Product Code	X

*** For information on ATEX see pages 7 & 8 on the IOM.**

POSITION 13 - INLET GAUGE (See "NOTE" - Position 7)	
Psig (Barg)	**CODE**
0 - 300 (0 - 20.7)	F
0 - 600 (0 - 41.3)	G
0 - 1000 (0 - 69.0)	H
0 - 2000 (0 - 138.0)	J
No Inlet Gauge	0

POSITION 14 - OPTIONS			
OPTIONS	**CODE**	**OPTIONS**	**CODE**
No Option	0	Panel Mount	C

POSITION 15 - OPTIONS			
OPTIONS	**CODE**	**OPTIONS**	**CODE**
No Option	0	Tamper Proof	1
		High Temperature Spr Chmbr Constr. *	U
* Available with SST Spring Chamber Only			

POSITION 17 - CLEANING SERVICE			
OPTIONS	**CODE**	**OPTIONS**	**CODE**
No Option	0	Oxygen Cleaned Per Spec #S-1134	M
		* Special Cleaning: Per Spec #S-1542.	N
		Sanitary Construction - Clean per #S-1576	P
* NOT suitable for Oxygen Service.			

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