ISO Registered Company

MODEL 1465

PRESSURE REDUCING REGULATOR

MODEL 1465

OVERVIEW

The Model 1465 is for small flows and is used primarily when sampling a fluid for analytical purposes. See Table 1 for more information. The 316 SST body can handle inlet pressures as high as 5000 psig (344 Barg).

FEATURES

High Pressure Drop Capabilities:	Pressure drops to 4700 psig (324 Barg).
Trim Material Combinations:	Five to choose from. See Table 3.
Two Trim Sizes:	0.05 and 0.19 C_V orifices used.
Gasket:	Utilizes diaphragm O-Ring of TFE.

MODEL 1465-80

MODEL 1465

LINE SIZES AVAILABLE
1/4" (DN8)

END CONNECTIONS
FNPT

COMMON APPLICATIONS
NATURAL GAS, INERT GASES, SOUR GAS, STEAM, CHEMICALS, WATER

DESIGN PRESSURE
INLET: UP TO 5000 psig (344 Barg)
OUTLET: UP TO 600 psig (41.4 Barg)

STANDARD / GENERAL SPECIFICATIONS

Body Size: 1/4" (DN8) with NPT female pipe connections. Bottom inlet and side outlet.

Body Material: ASTM A351, Gr. CF8M; Investment Cast 316 SST.

Spring Chamber: Standard: Cast bronze; ASTM B62, Alloy C83600.
Optional: SST; ASTM A351, Gr. CF3M.

Diaphragms: 302 SST, Neoprene, Elgiloy, Fluorocarbon Elast. See Table 3.

Trim: SST; metallic seated. See Table 3.

C_v's:

Orifice Size	Minimum Controllable Cv	Max. Cv
0.109	0.0005	0.05
0.156	0.002	0.19

Diaphragm O-ring: TFE.

Operating Temperature: -20 to +400°F (-29 to +205°C). See Tables 2 and 3.

Maximum Leakage Rate: Less than 50 standard cubic centimeters per minute. Air at 100 psig (6.9 Barg) in and Atmosphere out.

Inlet Pressure: Up to 5000 psig (344 Barg) maximum.

Range Spring and Maximum Pressure Drop: Plated Steel.

Spring Range		Max Pressure Drop	
psig	(Barg)	psig	(Barg)
5-30	(.34-2.1)	*1000	(68.9)
10-80	(.69-5.5)	2500	(172.4)
70-140	(4.8-9.6)	3000	(206.9)
125-200	(8.6-13.8)	3500	(241.3)
Option-80			
180-300	(12.4-20.7)	4000	(275.8)
270-400	(18.6-27.6)	4700	(324.1)
360-500	(24.8-34.5)	4600	(317.2)
* See Figure 2 and associated text.			

OPTION SPECIFICATIONS

Option-2: HANDWHEEL. Plastic handwheel on standard unit; aluminum handwheel for Option -2+80. Utilize for frequent setpoint changes.

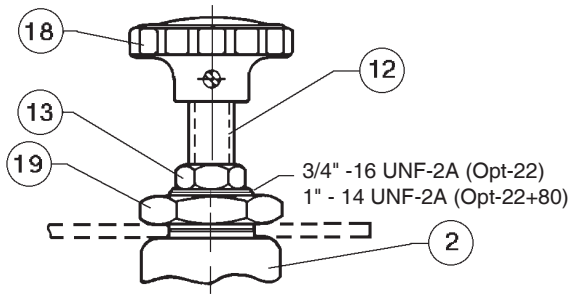


Figure 1: Option -22 Panel Mounting (handwheel portion is same for Option -2 Handwheel)

Option-22: PANEL MOUNTING. Includes a mounting nut and a handwheel.

Option-40 SST: SST NACE CONSTRUCTION. Internal wetted portions meet NACE standard MR0175 when the exterior of the regulator is not directly exposed to a sour gas environment, buried, insulated or otherwise denied direct atmospheric exposure. 316 SST body/spring chamber material only. S40 and S40M only trim selections available. Not available with Option -80.

Option-55: SPECIAL CLEANING. Cleaning per Cashco Spec. #S-1134 for Oxygen gas Service. **NOTE:** Design Pressure Rating shall not exceed 375 Psig (25.8 Barg) when body material is SST and process medium is oxygen.

Option-56: SPECIAL CLEANING. Cleaning per Cashco Spec. #S-1542. NOT suitable for Oxygen gas Service.

Option-80: HIGH OUTLET PRESSURE. For controlling outlet pressure above 200 psig (13.8 Barg) setpoint. Available in aluminum bronze and SST spring chamber, For spring ranges from 180 to 500 psig (12.4 to 34.5 Barg). S1 and S40M only trim selections available.

TECHNICAL SPECIFICATIONS

TABLE 1

APPLICATIONS

Fluid	Recommended Construction	Trim Designation Number
Air or Inert Gases	Metal Seat and Composition Diaphragm	S3, S7
Chemicals	Metal Seat and Diaphragm	S1 or S40M
	Metal Seat and Composition Diaphragm	S3 or S40
Sour Gas	Metal Seat and Diaphragm	S40M
	Metal Seat and Composition Diaphragm	S40
Hydrocarbon Gas or Liquids‡	Metal Seat and Diaphragm	S1
	Metal Seat and Composition Diaphragm	S3
Oxygen	Metal Seat and Diaphragm	S1, S40M
	Metal Seat and Composition Diaphragm	S7
Water and Condensate	Metal Seat and Diaphragm	S1
	Metal Seat and Composition Diaphragm	S3
Steam	Metal Seat and Diaphragm	S1

TABLE 2
BODY AND SPRING CHAMBER

MAXIMUM OUTLET PRESSURE AND TEMPERATURE RATINGS

SST Body Materials with:	Outlet Pressure		Temperature	
	psig	(Barg)	°F	(°C)
Standard BRZ Spring Chamber	400	(27.6)	-20 to +400	(-29 to +205)
SST Spring Chamber	600	(41.4)	-20 to +400	(-29 to +205)
OPT-80 (Both Spring Chambers)	600	(41.4)	-20 to +400	(-29 to +205)

TABLE 3

STAINLESS STEEL TRIM MATERIAL COMBINATIONS

Part	Stainless Steel Trim Designation Number				
	S1	S3	S40	S40M	S7
Diaphragm	302 SST	BC	BC	[1] Elgiloy	FKM
Plug	Chrome Plated 316 SST	Chrome Plated 316 SST	Chrome Plated 316 SST	Chrome Plated 316 SST	Chrome Plated 316 SST
Seat	Stellite #6B	Stellite #6B	Stellite #6B	Stellite #6B	Stellite #6B
Spring	302 SST	302 SST	Inconel X-750	Inconel X-750	302 SST
Spring Seat	316 SST	316 SST	316 SST	316 SST	316 SST
Pusher Plate	316 SST	316 SST	316 SST	316 SST	316 SST
Temperature Range	-20 to +400°F (-29 to +205°C)	-20 to +180°F (-29 to +83°C)	-20 to +180°F (-29 to +83°C)	-20 to +400°F (-29 to +205°C)	-20 to +400°F (-29 to +205°C)

[1] Elgiloy HRC 60 Max. — Elgiloy Company

NOTE: Cashco, Inc. does not recommend metal seated trim on any service where the flow will be dead ended down stream of the pressure reducing regulator.

BC = Neoprene, FKM = Fluorocarbon Elastomer

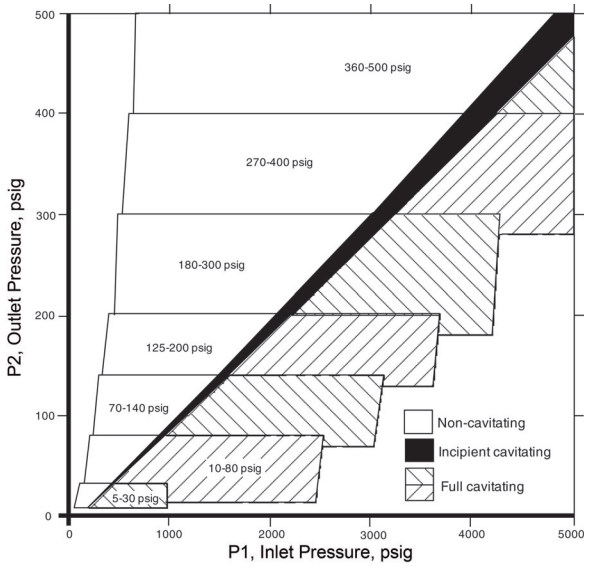
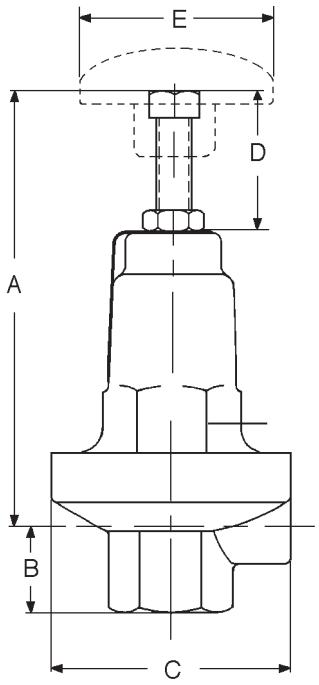


Figure 2: High Pressure Steam, Water or Condensate.

Applications involving these fluids should be considered for cavitation. The above fluids are typically cooled to 80° to 120°F (27° to 49°C) before pressure is reduced. Figure 2 graphically indicates where cavitation can be expected. If a selection ends in the "cavitating zone", then multiple Model 1465's should be used in series to stage the pressure drops to eliminate cavitational damage.

DIMENSIONS AND WEIGHTS



ENGLISH UNITS (inches)						
Body Size 1/4"	**A**	**B**	**C**	**D**	**E**	**Shipping Weight**
Standard	4.50	.91	2.50	—	—	3 lbs.
-2 (Handwheel)	4.88	.91	2.50	—	1.50	
-22 (Panel Mount)	4.88	.91	2.50	2.06	1.50	
-2+80 (Handwheel + High Outlet Pressure)	7.62	.91	2.50	—	4.0	5 lbs.
-22-80 (Panel Mt. + High Outlet Pressure)	7.62	.91	2.50	2.75	4.0	
-80 (High Outlet Pressure)	6.88	.91	2.50	—	—	
METRIC UNITS (mm)						
Body Size DN8	**A**	**B**	**C**	**D**	**E**	**Shipping Weight**
Standard	114	23	64	—	–	1.36 kgs.
-2 (Handwheel)	124	23	64	—	38	
-22 (Panel Mount)	124	23	64	52	38	
-2+80 (Handwheel + High Outlet Pressure)	194	23	64	—	102	2.27 kgs.
-22 + 80 (Panel Mt. + High Outlet Pressure)	194	23	64	70	102	
-80 (High Outlet Pressure)	175	23	64	—	—	

MODEL 1465 PRODUCT CODER 02/07/20

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

4	B	POS 3	—	POS 5	POS 6 & 7	7	—	1	POS 11	POS 12	POS 13	POS 14	0	POS 16	0	A

POSITION 3 - SIZE & ORIFICE			
Size		Orifice	CODE
in	(DN)		
1/4"	(8)	0.109"	2
		0.156"	J

POSITION 5 - BODY & SPRING CHAMBER MATERIALS	
Body / Sp. Ch.	CODE
SST/SST	A
SST/BRZ	8

POSITION 6 & 7 - TRIM DESIGNATION NUMBERS	
Desig.	CODE
S1	S1
S3*	S3
S7*	S7
S40*	40
S40M	4M
* Not Available for range springs above 180-300 psig.	

POSITION 11 - RANGE SPRINGS			
Spg. Chamber Option	Steel Range Spring		CODE
	psig	(Barg)	
Std.	5 - 30	(.34-2.1)	A
	10 - 80	(.69-5.5)	1
	70-140	(4.8-9.7)	2
	125-200	(8.6-13.8)	3
Opt-80 *	180-300	(12.4-20.7)	4
	270-400	(18.6-14.5)	5
	360-500	(24.8-34.5)	6
* Opt-80 High Outlet Pressure construction.			

POSITION 12 - TRIM VARIATIONS		
Description	Option	CODE
No Option	--	0
For Special Construction Contact Cashco for Special Product Code.	SPQ	X

POSITION 13 - FEATURE OPTIONS		
Description	Option	CODE
No Option	-	0
Handwheel	-2	2
Panel Mounting - (Opt-2 included).	-22	C

POSITION 14 - SPRING CHAMBER OPTIONS		
Description	Option	CODE
No Option	-	0
Vent Tap	-25	D

POSITION 16 - CERTIFICATE OPTIONS		
Description	Option	CODE
No Option	-	0
NACE Const.:SST/SST/XX Per MR0175, S40, S40M Trims.	-40SST	K
Special Cleaning: Per Cashco Spec #S-1134. W/ properly selected mat'ls. Suitable for Oxygen Service.	-55	M
Special Cleaning: Per Cashco Spec #S-1542.	-56	N

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

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