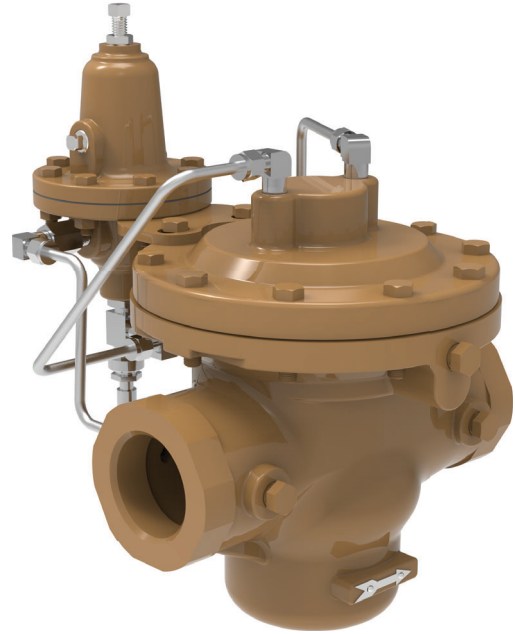


MODEL BGR-2

PILOT OPERATED BACK PRESSURE REGULATOR



MODEL BGR-2

OVERVIEW

The BGR-2 is high performance pilot operated back pressure regulator intended for applications where upstream pressure control is critical for a broad range of flow requirements. The BGR-2 was designed for use with back pressure from 15 to 300 psi (1 - 20.7 Bar). See BGR-1 for back pressures below 15 psi.

FEATURES

- Versatile:** Specially designed for use on most industrial gasses with a broad temperature range. Multiple trim options are available for a wide variety of applications.
- Tight Shutoff:** Meets ANSI/FCI 70-3 Class VI.
- Capacity:** See Table 1 for maximum capacities.
- Trim Design:** A flow-to-open trim design allows for superior control at minimal flow conditions. The pressure balanced design also eliminates deviation due to supply pressure effects.
- Heavy-Duty Guiding:** Two points of guiding allows for consistent sealing, reduced wear, and increased trim longevity.
- Failure Position:** Loss of loading pressure to the cover dome will cause the valve to close.

APPLICATIONS

The BGR-2 is intended for applications where upstream pressure control is critical for a broad range of gaseous flow requirements.



LINE SIZES AVAILABLE

1" (DN25), 1-1/2" (DN40), 2" (DN50),
3" (DN80), 4" (DN100)



END CONNECTIONS

NPT, FLANGED



COMMON APPLICATIONS

INDUSTRIAL GASSES



DESIGN PRESSURE

MAX. SETPOINT: 300 psi (20.7 Bar)

STANDARD / GENERAL SPECIFICATIONS

Line Sizes

1", 1-1/2", 2", 3", 4"
(DN25, 40, 50, 80, 100)

Body/Cover Dome Materials of Construction

DI - Ductile Iron - ASTM A395 60-40-18
CS - Carbon Steel - ASTM A352 LCC
SST - Stainless Steel - ASTM A351 CF3M

NOTE: Remaining materials are stainless steel unless noted otherwise in Table 4.

Maximum Capacities

Table 1 - Maximum Capacities			
Line Size		Max Capacity	
NPS	(DIN)	Cv	Kv
1"	(25)	15	13
1-1/2"	(40)	30	26
2"	(50)	60	52
3"	(80)	120	104
4"	(100)	220	190

Painting

Ductile iron and steel materials are epoxy coated per Cashco specification S-1606.

End Connections

Table 2 - End Connections

Line Size		Material	End Connection
NPS	(DIN)		
1" - 2"	(25 - 50)	All	NPT
3" - 4"	(80 - 100)	DI	ASME 125 FF
			ASME 250 RF
1" - 4"	(25 - 100)	LCC, SST	ASME 150 RF
			ASME 300 RF
			ASME 600 RF

Internal Sensing

The pilot senses pressure at the main main body inlet port.

Captured Vent

The pilot exhaust is tubed into the main body outlet.

ATEX 2014/34/EU

For IIC gases. Standard for EU shipping destinations or must be declared at order.

PED 2014/68/EU

Standard for SEP, Category I, and Category 2 with EU shipping destinations or must be declared with order. Category 2 is not available for ductile iron materials.

TSG D7002

BGR-2 is approved for pressure piping components.

OPTION SPECIFICATIONS

OPT-40: NACE CONSTRUCTION:

Internal wetted portions meet NACE standard MR0175 for application in sour gas/crude service. Exterior of unit to not be directly buried, insulated, or otherwise denied direct atmospheric exposure. For use with carbon steel and stainless steel main body materials with 11 trim only.

OPT-55: GASEOUS OXYGEN CLEANING:

Cleaned per Cashco specification S-1134 for gaseous oxygen service. Includes sealed enclosure bag and notification tag. For use with stainless steel main body materials and 55 trim only. **NOTE:** Cleaning for oxygen service will decrease the pressure rating to 375 psi (22.8 Bar).

OPT-56: NON-OXYGEN CLEANING:

Cleaning per Cashco specification S-1542 for non-oxygen service. Includes sealed enclosure bag and notification tag. This cleaning is suitable for all main body and trim materials, but is not suitable for oxygen service.

REMOTE SENSE OPTION:

The remote sense option allows the pilot to sense pressure at a remote location rather than sensing at the main valve inlet. This option is recommended to prevent upstream piping factors from influencing critical pressure control locations. End users are required to supply 3/8" sense tubing connected to the pilot via 1/4" NPT. Both standard and remote sense options are field changeable.

TECHNICAL SPECIFICATIONS

Table 3 - Pressure Containment Ratings					
End Connection	Materials	Inlet & Outlet			
		psi ¹	(Bar) ¹	°F	(°C)
NPT	DI	400	(27.6)	-20 to +100	(-29 to +40)
		340	(23.4)	+200	(93)
		310	(21.4)	+300	(149)
		250	(17.2)	+400	(204)
	LCC	400	(27.6)	-50 to +400	(-45 to +204)
	SST	400	(27.6)	-425 to +400	(-254 to +204)
ASME 125 FF	DI	200	(13.8)	-20 to +100	(-29 to +40)
		190	(13.1)	+200	(93)
		165	(11.4)	+300	(149)
		140	(9.7)	+400	(204)
ASME 250 RF	DI	400	(27.6)	-20 to +100	(-29 to +40)
		400	(27.6)	+200	(93)
		375	(25.9)	+300	(149)
		290	(20.0)	+400	(204)
ASME 150 RF	LCC	285	(19.7)	-50 to +100	(-45 to +40)
		260	(17.9)	+200	(93)
		230	(15.9)	+300	(149)
		200	(13.8)	+400	(204)
	SST	275	(19.0)	-425 to +100	(-254 to +40)
		235	(16.2)	200	(93)
		215	(14.8)	300	(149)
		195	(13.4)	400	(204)
ASME 300 RF	LCC	400	(27.6)	-50 to +400	(-45 to +204)
	SST	400	(27.6)	-425 to +400	(-254 to +204)
ASME 600 RF	LCC	400	(27.6)	-50 to +400	(-45 to +204)
	SST	400	(27.6)	-425 to +400	(-254 to +204)

¹ Maximum allowable pressure rating is 375 psi (25.8 Bar) when oxygen cleaning (OPT-55) is specified.

Table 4 - Trim Materials ¹				
Component	Part Description	11 (NACE)	12	15 (Oxygen)
Pilot	Diaphragm	Neoprene	BUNA-N	FKM
	Seat	PTFE	BUNA-N	FKM
Main Valve	Body Bushing	Monel 400	Monel 400	Monel 400
	Diaphragm	Neoprene	BUNA-N	FKM
	Dynamic Seal	Neoprene	BUNA-N	FKM
	Stem Seals	PTFE	BUNA-N	FKM
	Cage Seal	PTFE	BUNA-N	FKM
	Seat	Neoprene	BUNA-N	FKM
	Return Spring	Inconel X-750	SST	SST
Working Temperature Range		-20 to +200°F	-30 to +212°F	-5 to +400°F
		-28 to +93°C	-34 to +100°C	-20 to +204°C
Maximum Working Pressure		400 psi		
		27 Bar		

¹ Remaining trim materials are stainless steel.

WEIGHTS and DIMENSIONS
Shown with standard internal sensing and NPT end connections.

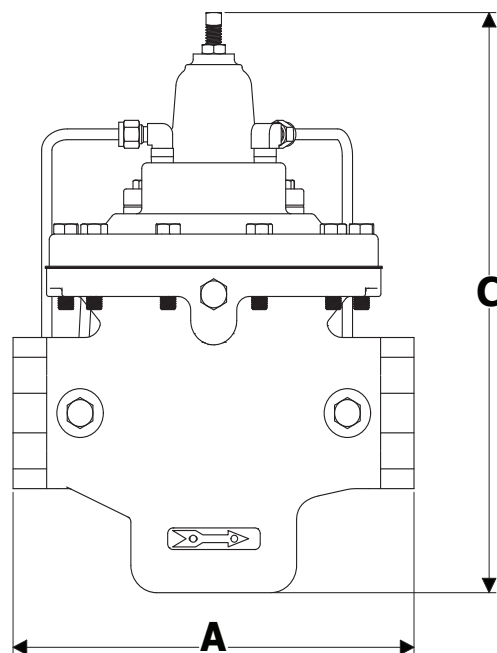
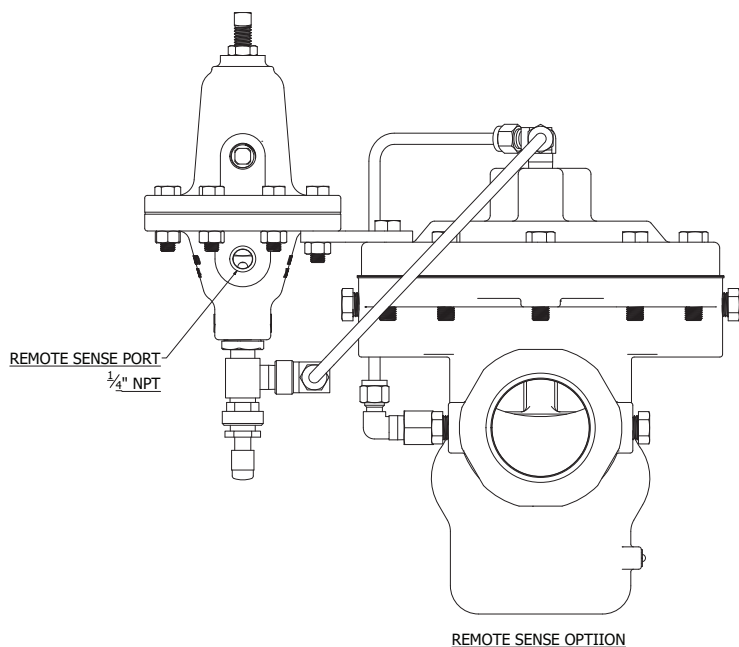
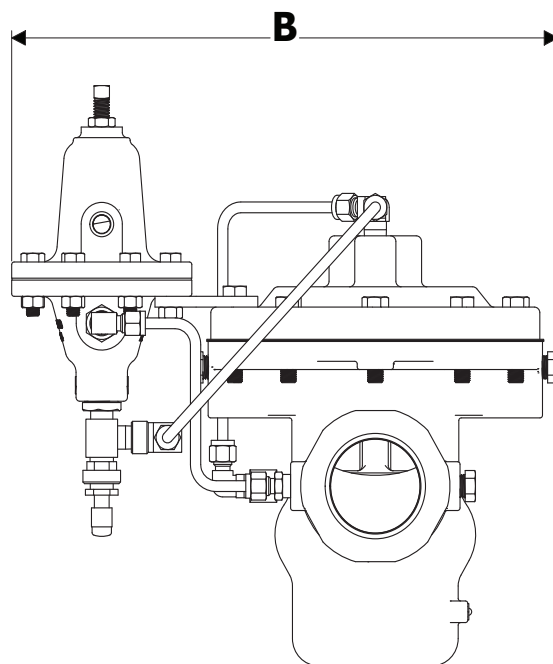


Table 5a - Weights and Dimensions (USC)						
Dimension	End Connection	Line Size (in.)				
		1"	1-1/2"	2"	3"	4"
A	NPT - DI	6	9-7/8	9-7/8	N/A	N/A
	NPT - CS/SST	8-1/4	9-7/8	9-3/4	N/A	N/A
	ASME 125 FF	N/A	N/A	N/A	11-3/4	13-7/8
	ASME 250 RF	N/A	N/A	N/A	12-1/2	14-1/2
	ASME 150 RF	10-3/4	12-3/8	10	11-3/4	13-7/8
	ASME 300 RF	10-3/4	12-3/8	10-1/2	12-1/2	14-1/2
B	ALL	10-13/16	11-13/16	13	16	16
C	ALL	11	12-5/8	12-3/8	17-1/2	18-3/4
Weight (lb)	NPT	31	38	56	N/A	N/A
	FLANGED	36	50	69	163	172

Table 5b - Weights and Dimensions (Metric)						
Dimension	End Connection	Line Size (mm)				
		DN25	DN40	DN50	DN80	DN100
A	NPT - DI	153	251	251	N/A	N/A
	NPT - CS/SST	210	251	248	N/A	N/A
	ASME 125 FF	N/A	N/A	N/A	298	352
	ASME 250 RF	N/A	N/A	N/A	318	368
	ASME 150 RF	273	314	254	298	352
	ASME 300 RF	273	314	267	318	368
B	ALL	275	300	330	406	406
C	ALL	279	321	314	445	476
Weight (kg)	NPT	14	17	25	N/A	N/A
	FLANGED	16	23	31	74	78



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MODEL BGR-2 PRODUCT CODER 03/07/24

B **L** POS 3 — POS 5 POS 6 & 7 **7** — POS 10 POS 11 POS 12 **0** **0** **0** POS 16 **0** **A**

POSITION 3 - LINE SIZE		
NPS	(DIN)	CODE
1"	(25)	6
1-1/2"	(40)	8
2"	(50)	9
3"	(80)	B
4"	(100)	C

POSITION 5 - BODY MATERIALS	
Material	CODE
Ductile Iron	1
LCC Carbon Steel	6
Stainless Steel	A

POSITION 6 & 7 - TRIM	
Trim	CODE
11	11
12	12
15	15

POSITION 10 - END CONNECTIONS				
Line Size		Material	End Connection	CODE
NPS	(DIN)			
1" - 2"	(25 - 50)	All	NPT	1
3" - 4"	(80 - 100)	DI	ASME 125 FF	2
		DI	ASME 250 RF	3
1" - 4"	(25 - 100)	LCC, SST	ASME 150 RF	4
			ASME 300 RF	5
			ASME 600 RF	6

POSITION 11 - SPRING RANGE		
USC	(Metric)	CODE
15 - 25 psi	(1 - 1.7 Bar)	2
25.1 - 75 psi	(1.8 - 5.2 Bar)	3
75.1 - 150 psi	(5.3 - 10.3 Bar)	4
150.1 - 300 psi	(10.4 - 20.7 Bar)	5

POSITION 12 - SENSE MODE	
Mode	CODE
Remote Sense	B
Internal Sense	C

POSITION 16 - OPTIONS		
Description	Option	CODE
No Option	—	0
NACE Construction Per MR0175	OPT-40	J
Cleaned For Oxygen Service	OPT-55	M
Cleaned For Non-Oxygen Service	OPT-56	N

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