Pilot Operated Back Pressure Regulator
1/2" to 4" 25BP

The 25BP Back Pressure Regulator maintains a constant upstream pressure in a piping system. The reverse-acting pressure pilot opens the main valve when the sensed upstream pressure increases. The 25BP is NOT a safety valve, and should NEVER be used as such.

Model	25BP			
Sizes	½" to 2"	2½", 3", 4"	½" to 2"	2", 2½", 3", 4"
Connections	NPT	ANSI 125 flgd.	NPT	ANSI 300 flgd.
Construction	Cast Iron		Cast Steel	
Options		ANSI 250 flgd.		ANSI 150 flgd. (excludes 2")

Typical Applications

The modulated release of surplus steam ensures that the set maximum presure in the steam space or upstream piping will not be exceeded. Flash steam recovery systems to release excess flash steam limits the flash tank pressure. For elimination of non-critical loads, see TI-3-031-US.

Limiting Operating Conditions

Max. Operating Pressure(PMO)
NPT: 250 psig (*17 barg*) @ 450˚F *(232˚C)*
ANSI 125: 125 psig (*8 barg*) @ 450˚F *(232˚C)*
ANSI 250: 250 psig (*17 barg*) @ 450˚F *(232˚C)*
ANSI 150: 185 psig (*12 barg*) @ 450˚F *(232˚C)*
ANSI 300: 300 psig (*20 barg*) @ 450˚F *(232˚C)*

Max. Operating Temperature 450˚F *(232˚C)*

Upstream Pressure Ranges

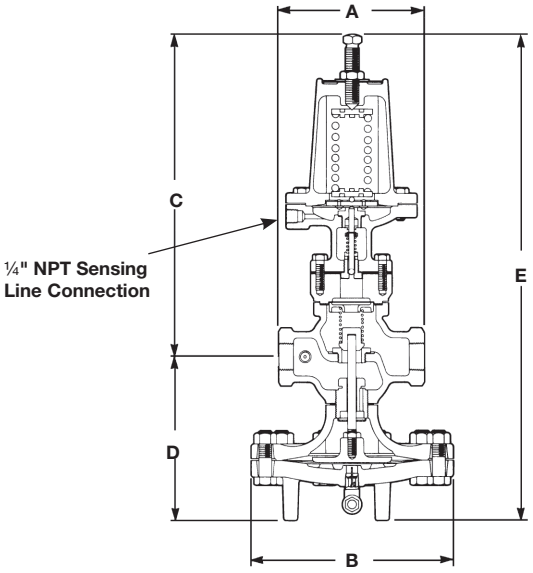
For the following upstream pressures, three color-coded pilot valve springs are available:

Yellow: 3 to 30 psi **Blue:** 20 to 100 psi **Red:** 80 to 250 psi

Pressure Shell Design Conditions

PMA Max. allowable pressure
Cast Iron: 250 psig/0-450˚F *17 barg/0-232˚C*
Cast Steel: 300 psig/0-600˚F *21 barg/0-316˚C*

TMA Max. allowable temperature
Cast Iron: 450˚F/0-250 psig *232˚C/0-17 barg*
Cast Steel: 600˚F/0-300 psig *316˚C/0-21 barg*



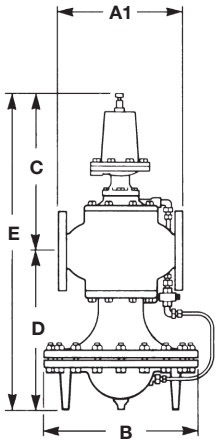
½" to 2"

Sample Specification

The back pressure regulator shall be of the pilot-actuated, diaphragm-operated type. The main valve shall be single seated with hardened stainless steel trim; the valve body shall be cast iron (cast steel). The pilot shall be bolted directly to the valve body.

Capacities:

For selection and sizing data, see TI-3-031-US.



2"* to 4"

Dimensions (nominal) in inches and millimeters

Size	A	A1 Ansi 125	A1 Ansi 250 Ansi 300	B	C	D	E	Weight Cast Iron	Weight Cast Steel
½", ¾"	5.5 *140*	– –	– –	7.6 *194*	12.2 *310*	6.2 *157*	18.4 *467*	32 lb *14.5 kg*	35 lb *15.9 kg*
1"	6.0 *152*	– –	– –	8.6 *219*	12.1 *308*	6.75 *171*	18.9 *479*	39 lb *17.7 kg*	43 lb *19.5 kg*
1¼", 1½"	7.25 *184*	– –	– –	8.6 *219*	12.7 *322*	7.1 *179*	19.75 *502*	44 lb *20 kg*	48 lb *21.8 kg*
2"	8.5 *216*	– –	9.0 *228*	10.6 *270*	13.3 *338*	8.2 *208*	21.5 *546*	69 lb *31.3 kg*	75 lb *34 kg*
2½"	– –	10.9 *276*	11.5 *292*	13.6 *346*	14.0 *356*	13.9 *354*	27.9 *710*	157 lb *71.2 kg*	171 lb *77.6 kg*
3"	– –	11.75 *298*	12.5 *318*	13.6 *346*	13.9 *354*	14.4 *367*	28.4 *721*	188 lb *85.3 kg*	205 lb *93 kg*
4"	– –	13.9 *352*	14.5 *368*	15.6 *397*	15.25 *387*	16.1 *410*	31.4 *797*	284 lb *129 kg*	309 lb *140 kg*

Local regulation may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only.
In the interests of development and improvement of the product, we reserve the right to change the specification.

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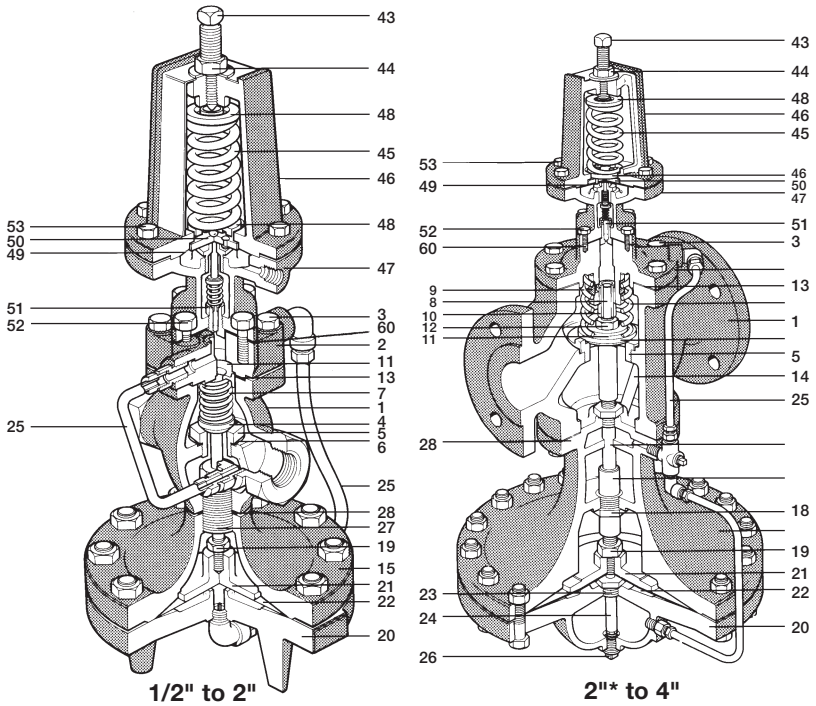

*ANSI 300 ONLY

Construction Materials

No.	Part	Material	
1	Valve Body	Cast Iron	ASTM A 126 CL B
		Cast Steel	ASTM A216 Gr WCB
2	Cover	Cast Iron	ASTM A 126 CL B
		Cast Steel	ASTM A216 Gr WCB
3	Cover Bolts	Steel	ASTM A449
4	Main Valve Head	Stainless Steel	400 Series Stn Stl
5	Main Valve Seat	Stainless Steel	
6	Main Valve Seat Gasket	Copper	
7	Valve Return Spring	Stainless Steel	
8	Valve Stem	Stainless Steel	
9	Strainer Screen	Stainless Steel	
10	Valve Stem Sleeve	Stainless Steel	
11	Spring Guide	Cast Iron ½"-2"	
		CRS 2"* - 4"	
12	Nut	Steel	
13	Cover Gasket	Graphite	
14	Pressure Equalizer Pipe	Stainless Steel	
15	Upper Diaphragm Case	Cast Iron	ASTM A 126 CL B
		Cast Steel	ASTM A216 Gr WCB
16	Stem Bushing (2½" - 4" Cast Steel only)	Stainless Steel	
17	Diaphragm Plate Stem	Stainless Steel	
18	Diaphragm Stem Guide	Stainless Steel	
19	Nut	Brass ½" - 2"	
		Steel 2"* - 4"	
20	Lower Diaphragm Case	Cast Iron	ASTM A 126 CL B
		Cast Steel	ASTM A216 Gr WCB
21	Diaphragm Plate	Brass ½" - 2"	
		C.I. 2"* - 4"	
22	Main Diaphragm (2 ply)	Stainless Steel	
23	Bushing	CRS	
24	Tube & Orifice	Brass	
25	Tubing Assembly	Copper	
26	Plug (Cast Iron)	Brass	
	(Cast Steel)	Steel	

No.	Part	Material	
27	Connector Stud	Stainless Steel	
28	Body Gasket	½" - 2" Copper Clad	
		2"* - 4" Graphite	
43	Adjustment Screw	Stainless Steel	
44	Jam Nut	Brass	
45	Pilot Valve Spring	Steel	
46	Upper Diaphragm Case	Cast Iron	
		Cast Steel	
47	Lower Diaphragm Case	Cast Iron	
		Cast Steel	
48	Spring Plate	Steel	ASTM A569
49	Diaphragm	Stainless Steel	
50	Diaphragm Plate	Brass	
51	Head & Seat Assy.	Stainless Steel	
		Stainless Steel	
52	Pilot Mounting Screws	Steel	ASTM A449
53	Diaphragm Case Screws	Steel	
60	Pilot Gasket	Graphite	

Installation

The regulator should be installed in a horizontal line with suitable bypass and isolating valves. A steam trap should be installed upstream to prevent condensate from reaching the regulator. The trap and regulator should both be protected with a strainer. The pressure sensing line should be located either in the upstream piping, or in the steam space. Complete installation instructions are given in IM-3-023-US.

Maintenance

Complete installation and maintenance instructions are given in IM-3-023-US, a copy of which is supplied with each regulator. Available spare parts are shown on TI-1-1120-US and TI-3-0271-US.

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