



TI-S39-03-US
Issue 1

Pilot Operated Pressure Regulator with Electric Override ½" to 4" 25PE

Description

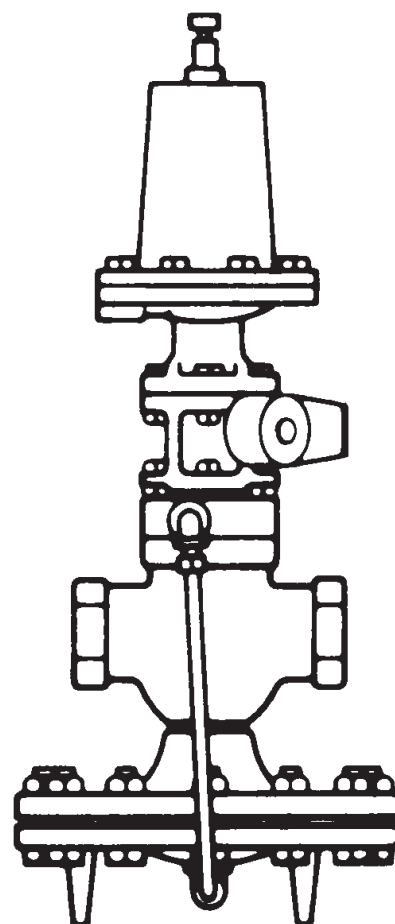
The 25PE has all of the features of the 25P, with the addition of an electric pilot. An electrical signal can override the pressure pilot to provide a remote shut-off capability.

*Note: For pressures below 15 psi g, the E pilot is not recommended for use with valves 2½" and larger.

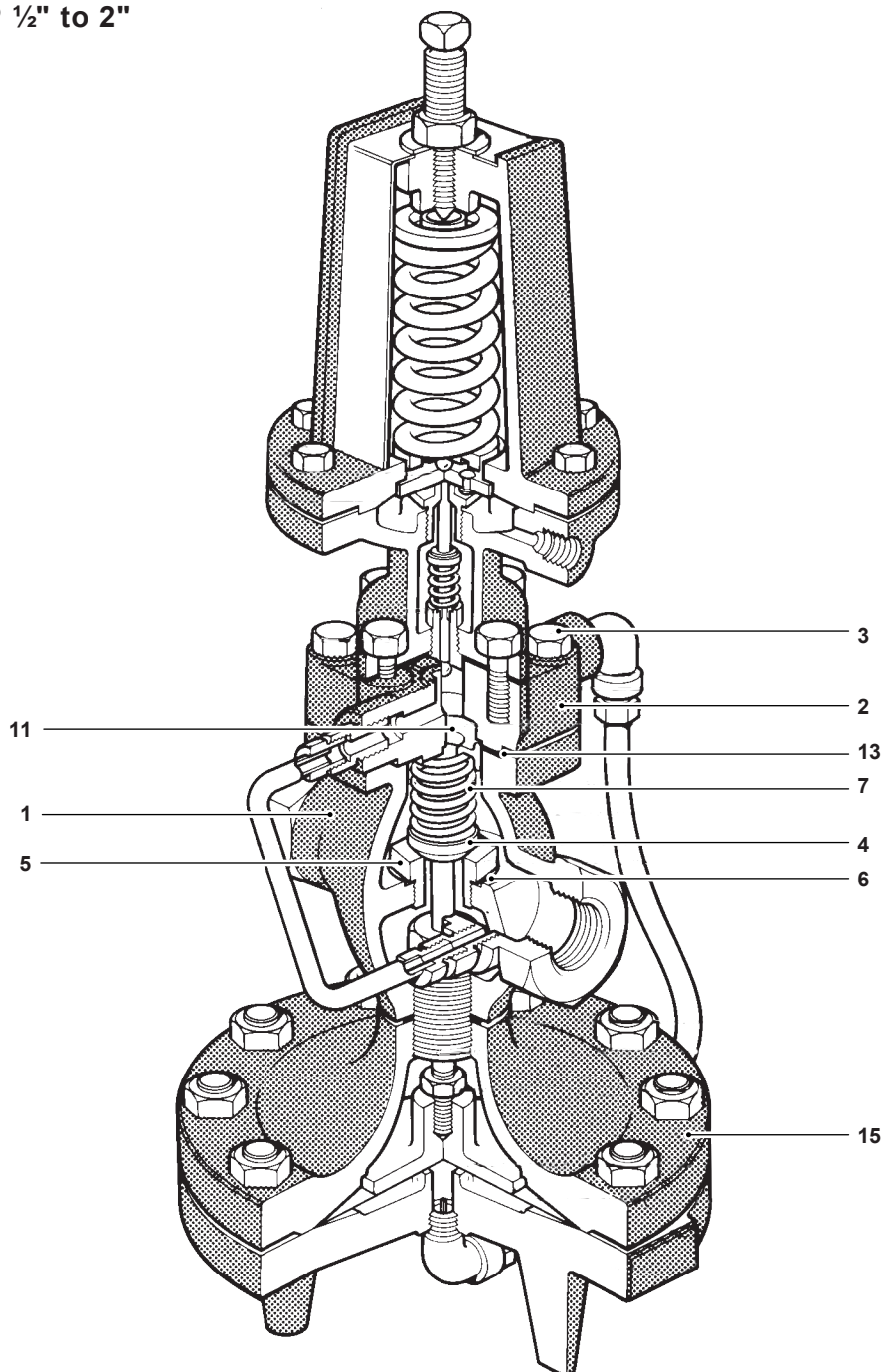
Sizes	½" to 2"	2½", 3", 4"	½" to 2"	2", 2½", 3", 4"
Connections	NPT	ANSI 125	NPT	ANSI 300
Construction	Cast iron		Cast steel	
Options		ANSI 250		ANSI 150 (excludes 2")
Electric pilot specifications	Enclosure: NEMA 4 and 7 (C and D) 115v (230v)/60Hz Inrush: 45 VA Normally closed 200 psi g Max. operating pressure			
Electric pilot options	For regulators 2½" and larger at pressures below 125 psi g, use the following electric pilot: Enclosure: NEMA 4 and 7 (C and D) 115v (230v)/60Hz Inrush: 45 VA Normally closed 140 psi g Max. operating pressure (for faster response time) 230 Volt Coil			

Limiting operating conditions

PMO Maximum operating pressure	NPT:	200 psi g (14 bar g) @ 392 °F (200 °C)
	ANSI 125:	125 psi g (8 bar g) @ 392 °F (200 °C)
	ANSI 250:	200 psi g (14 bar g) @ 392 °F (200 °C)
	ANSI 150:	185 psi g (12 bar g) @ 392 °F (200 °C)
	ANSI 300:	200 psi g (14 bar g) @ 392 °F (200 °C)
Maximum operating temperature		392 °F (200 °C)



Materials - 25P ½" to 2"



25P ½" to 2"

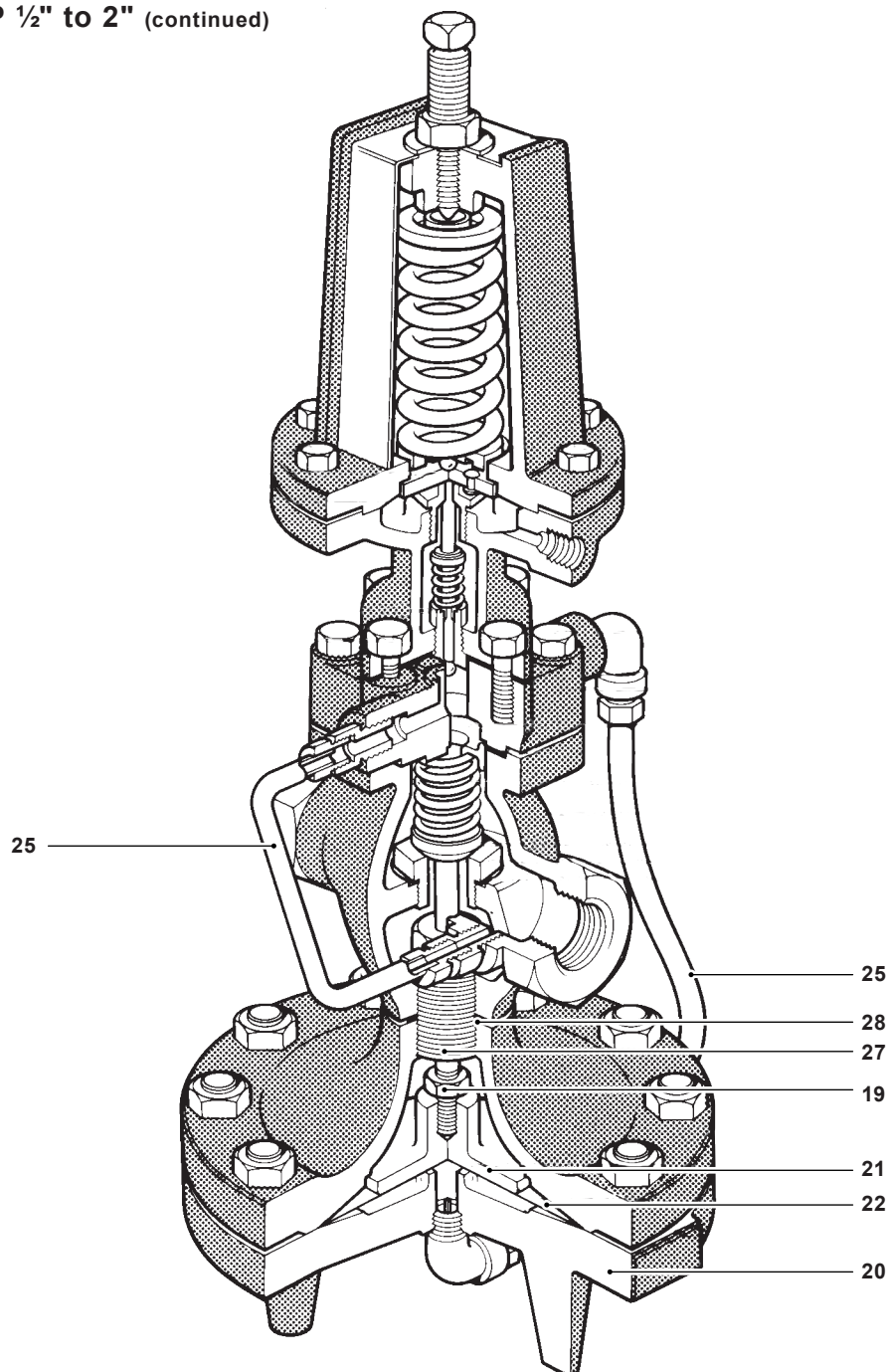
No.	Part	Material
1	Valve Body	Cast iron ASTM A 126 CL B
		Cast steel ASTM A216 Gr WCB
2	Cover	Cast iron ASTM A 126 CL B
		Cast steel ASTM A216 Gr WCB
3	Cover Bolts	Steel ASTM A449
4	Main Valve Head	Stainless steel
5	Main Valve Seat	Stainless steel
6	Main Valve Seat Gasket	Copper

No.	Part	Material
7	Valve Return Spring	Stainless steel
11	Spring Guide	Cast iron ½"-2" (DN15 - DN50)
		CRS 2*** - 4" (DN50 - DN100) *ANSI 300 only
13	Cover Gasket	Graphite
15	Upper Diaphragm Case	Cast iron ASTM A 126 CL B
		Cast steel ASTM A216 Gr WCB

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Materials - 25P ½" to 2" (continued)

25P ½" to 2"

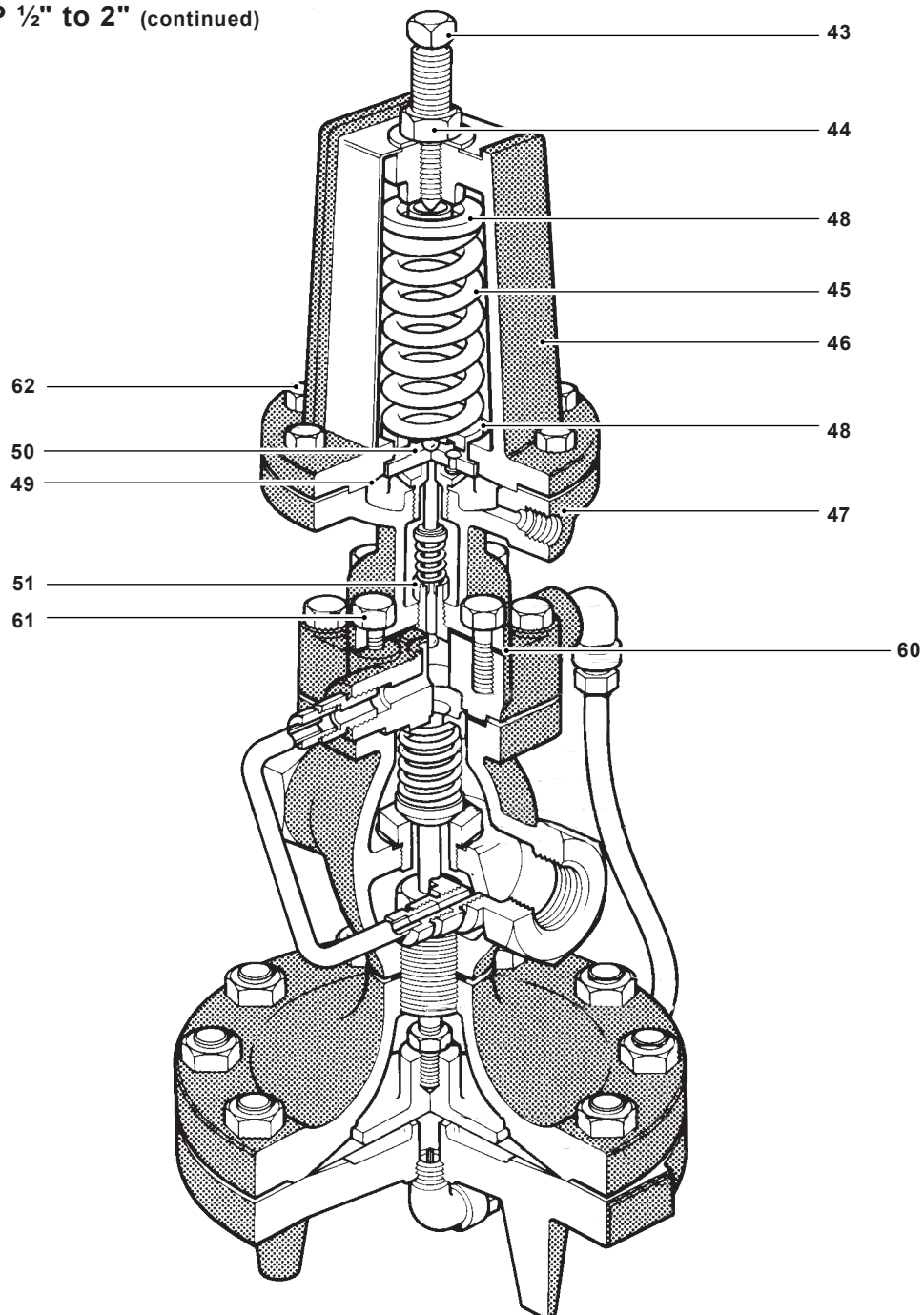


No.	Part	Material
19	Nut	Brass ½" - 2" (DN15 - DN50)
		Steel 2"* - 4" (DN50 - DN100) *ANSI 300 only
20	Lower Diaphragm Case	Cast iron ASTM A 126 CL B
		Cast steel ASTM A216 Gr WCB
21	Diaphragm Plate	Stainless steel ½" - 2" (DN15 - DN50)
		C.I. 2"* - 4" (DN50 - DN100) *ANSI 300 only

No.	Part	Material
22	Main Diaphragm (2 ply)	Stainless steel
25	Tubing Assembly	Copper
		Brass
27	Connector Stud	Stainless steel
28	Body Gasket	Copper Clad ½" - 2" (DN15 - DN50)
		Graphite 2"* - 4" (DN50 - DN100) *ANSI 300 only

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Materials - 25P ½" to 2" (continued)



25P ½" to 2"

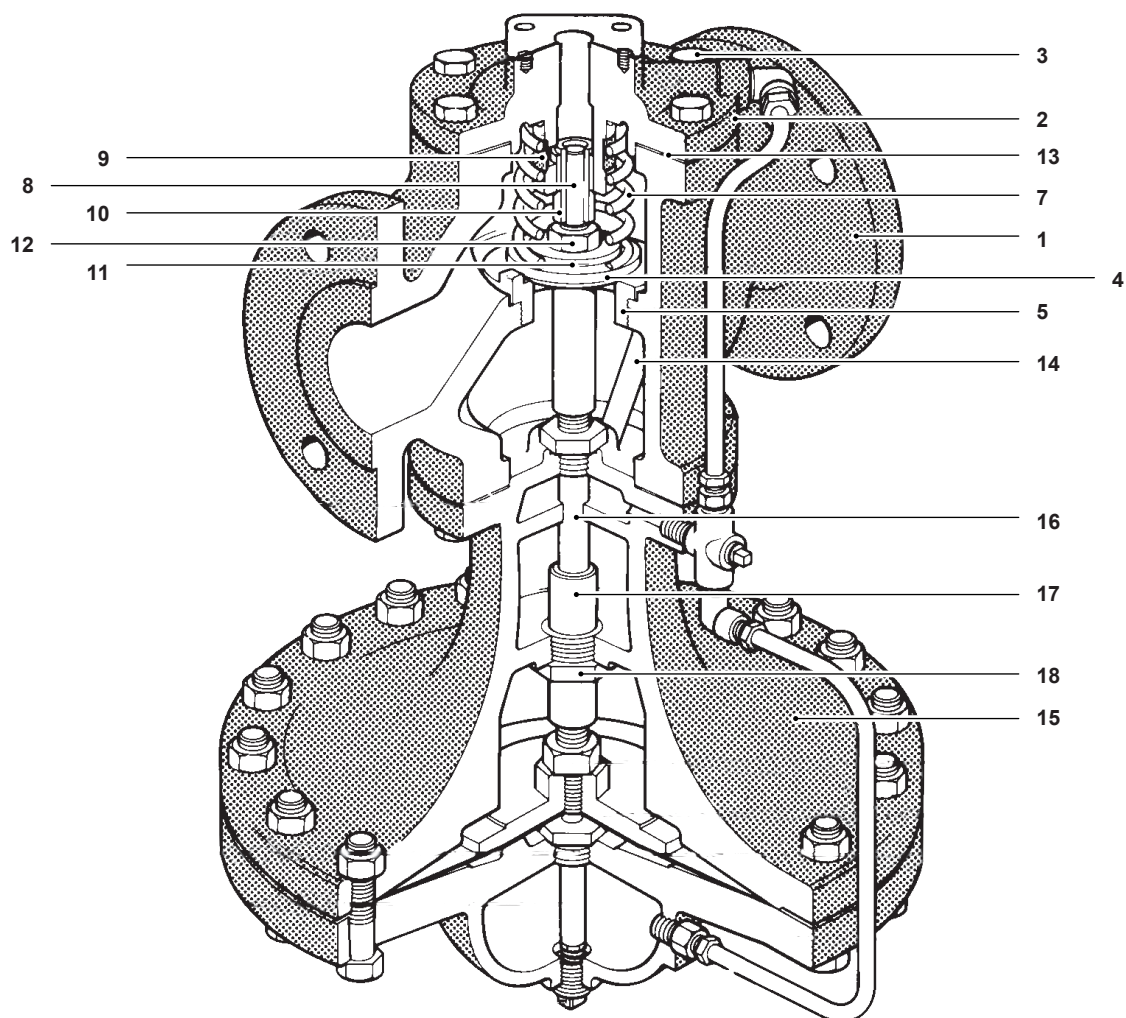
No.	Part	Material
43	Adjustment Screw	Stainless steel
44	Jam Nut	Brass
45	Pilot Valve Spring	Steel
46	Upper Diaphragm Case	Cast iron Cast steel
47	Lower Diaphragm Case	Cast iron Cast steel
48	Spring Plate	Steel

ASTM A569

No.	Part	Material
49	Diaphragm	Stainless steel
50	Diaphragm Plate	Stainless steel
51	Pilot Head Spring	Stainless steel
60	Pilot Gasket	Graphite
61	Pilot Mounting Screws	Steel
62	Diaphragm Case Screws	Steel

ASTM A449

Materials - 2" to 4" *ANSI 300 only

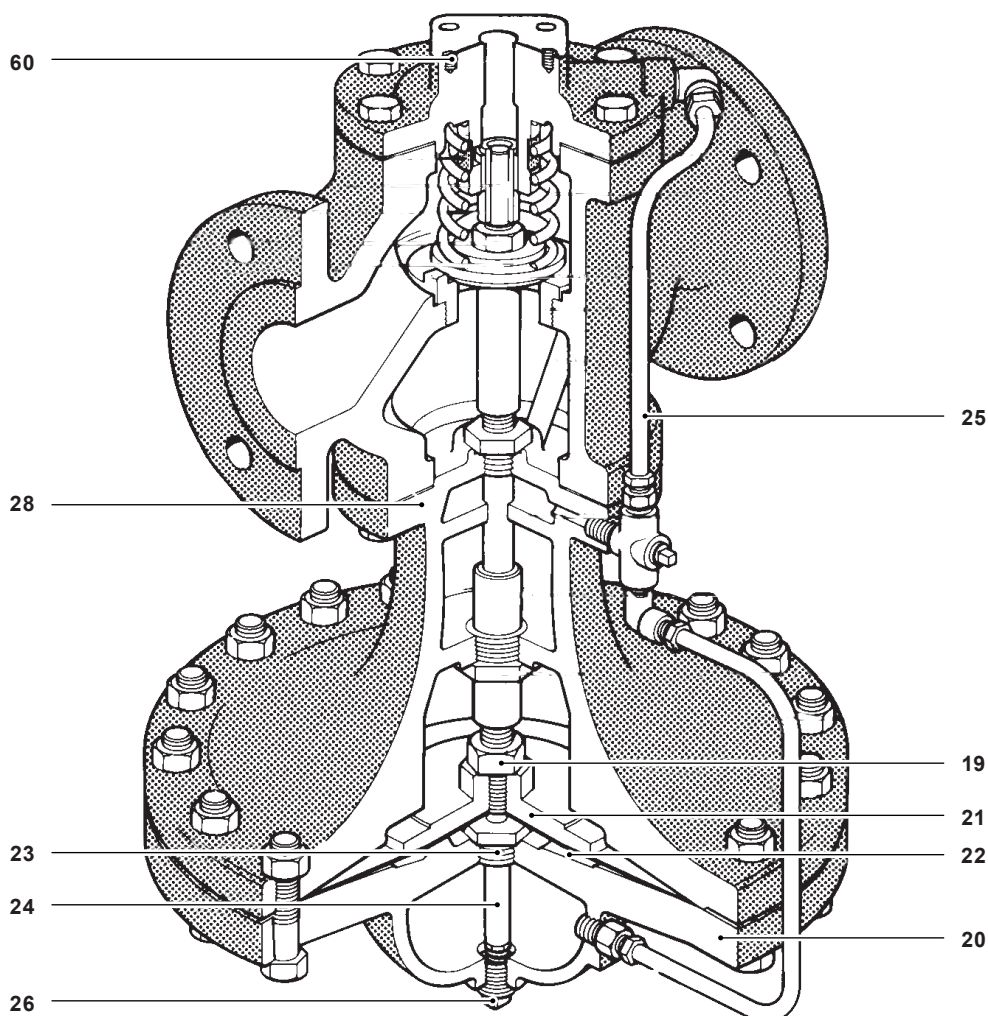


No.	Part	Material
1	Valve Body	Cast iron ASTM A 126 CL B
		Cast steel ASTM A216 Gr WCB
2	Cover	Cast iron ASTM A 126 CL B
		Cast steel ASTM A216 Gr WCB
3	Cover Bolts	Steel ASTM A449
4	Main Valve Head	Stainless steel
5	Main Valve Seat	Stainless steel
7	Valve Return Spring	Stainless steel
8	Valve Stem	Stainless steel
9	Strainer Screen	Stainless steel
10	Valve Stem Sleeve	Stainless steel

11	Spring Guide	Cast iron ½"-2" (DN15 - DN50)
		CRS 2"* - 4" *ANSI 300 only (DN50 - DN100)
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 AISI 304
18	Diaphragm Stem Guide	Stainless steel AISI 303

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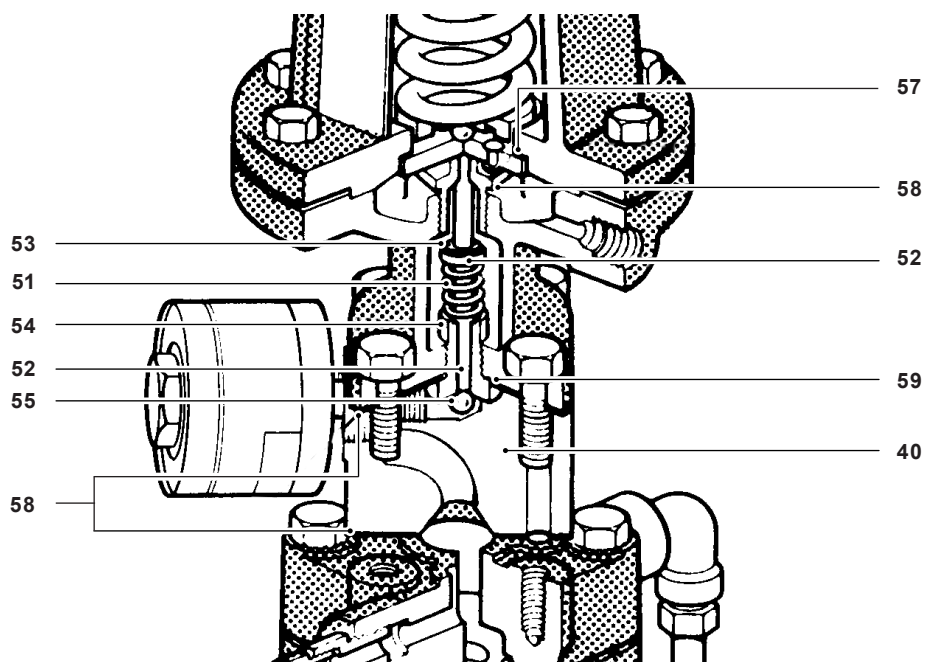
Materials - 2" to 4" *ANSI 300 only (continued)



No.	Part	Material
19	Nut	Brass ½" - 2" (DN15 - DN50) Steel 2" - 4" (DN50 - DN100)
20	Lower Diaphragm Case	Cast iron ASTM A 126 CL B Cast steel ASTM A216 Gr WCB
21	Diaphragm Plate	Stainless steel ½" - 2" (DN15 - DN50) C.I. 2" - 4" (DN50 - DN100) *ANSI 300 only
22	Main Diaphragm (2 ply)	Stainless steel
23	Bushing	CRS

No.	Part	Material
24	Tube and Orifice	Stainless steel
25	Tubing Assembly	Copper Brass
26	Plug (Cast iron)	Brass
26	Plug (Cast steel)	Steel
28	Body Gasket	Copper Clad ½" - 2" (DN15 - DN50) Graphite 2" - 4" (DN50 - DN100) *ANSI 300 only
60	Pilot Gasket	Graphite

Materials - PE Pilot ½" to 4"



No.	Part	Material
40	Electric Pilot Adapter	Cast iron ASTM A 126 CL B
		Bronze ASTM B62
51	Pilot Head Spring	Stainless steel
52	Spring Retainer Cup	Stainless steel
53	Retaining Ring	Brass
54	Pilot Seat	Stainless steel
55	Pilot Head	Stainless steel
57	Stem Guide	Stainless steel
58	Stem Guide Gasket	Stainless steel
59	Seat Gasket	Stainless steel

Downstream pressure ranges

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

Yellow 3 to 30 psi (0.21 to 2.1 bar)	Blue 20 to 100 psi (1.4 to 6.9 bar)	Red 80 to 250 psi (5.5 to 17.2 bar)
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Typical applications

Steam pressure reducing applications where the PRV must also respond to an electrical program timer, safety or limit switch, or remote manual switch.

Pressure shell design conditions

PMA Maximum allowable pressure	Cast iron:	250 psi g/0-450 °F	17 bar g/0-232 °C
	Cast steel:	300 psi g/0-600 °F	21 bar g/0-316 °C
TMA Maximum allowable temperature	Cast iron:	450 °F/0-250 psi g	232 °C/0-17 bar g
	Cast steel:	600 °F/0-300 psi g	316 °C/0-21 bar g

Capacities

For selection and sizing data, see TI-P717-08-US.

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 in a straight section of the downstream piping at least 10 pipe diameters from the nearest fitting. Complete installation instructions are given in IM-3-000-US.

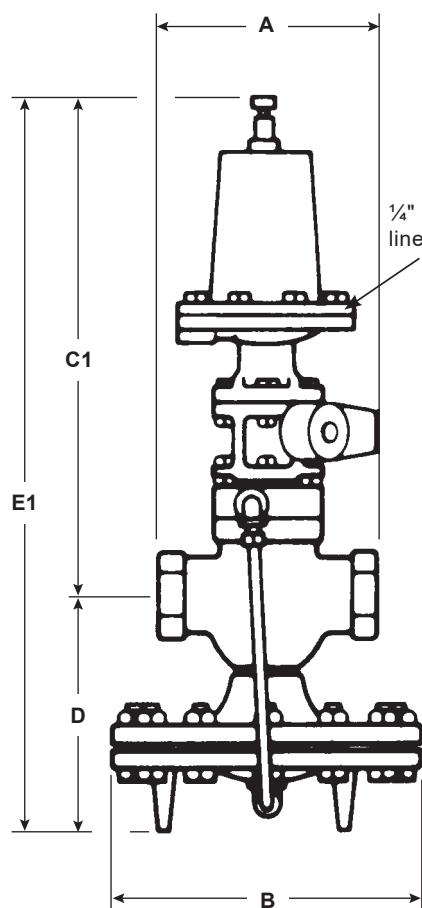
Maintenance

Complete installation and maintenance instructions are given in IM-3-000-US, a copy of which is supplied with each regulator. Available spare parts are shown on TI-P717-09-US.

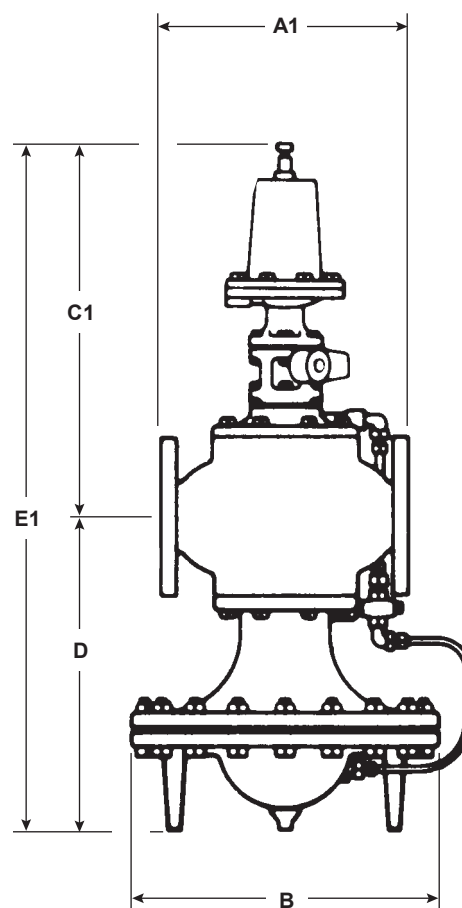
Sample specification

The pressure regulator shall be of the pilot-actuated diaphragm operated type. The main valve shall be single-seated with hardened stainless steel trim; the regulator body shall be cast iron (cast steel). The pilot shall be bolted directly to the regulator body. The main valve shall be capable of dead-end shut-off. The electric pilot shall have a NEMA 4 and 7 (C and D) enclosure with 115v (230v) 60 Hz coil.

Dimensions/weights (nominal) in inches (mm) and lbs (kg)



1/2" to 2"



2" to 4"

Size	A	ANSI 125 ANSI 250	ANSI 300	B	C1	D	E1	Weight	
		A1	A1					Cast iron	Cast steel
1/2", 3/4"	5.5 (140)			7.6 (193)	14.1 (358)	6.2 (157)	20.6 (524)	36 lb (16.3 kg)	39 lb (17.7 kg)
1"	6.0 (152)			8.6 (219)	14.4 (365)	6.75 (171)	21.1 (536)	43 lb (19.5 kg)	47 lb (21.3 kg)
1 1/4", 1 1/2"	7.25 (184)			8.6 (219)	14.9 (379)	7.1 (180)	22.0 (559)	48 lb (21.8 kg)	52 lb (23.6 kg)
2"	8.5 (216)		9.0 (229)	10.6 (270)	15.6 (396)	8.2 (208)	23.75 (603)	73 lb (33.1 kg)	80 lb (36.3 kg)
2 1/2"		10.9 (276)	11.5 (292)	13.6 (346)	16.25 (413)	13.9 (353)	30.2 (767)	160 lb (72.6 kg)	175 lb (79.4 kg)
3"		11.75 (298)	12.5 (318)	13.6 (346)	16.2 (411)	14.4 (365)	30.6 (778)	191 lb (86.6 kg)	208 lb (94.3 kg)
4"		13.9 (353)	14.5 (368)	15.6 (397)	17.5 (445)	16.1 (409)	33.6 (854)	287 lb (130 kg)	313 lb (142 kg)