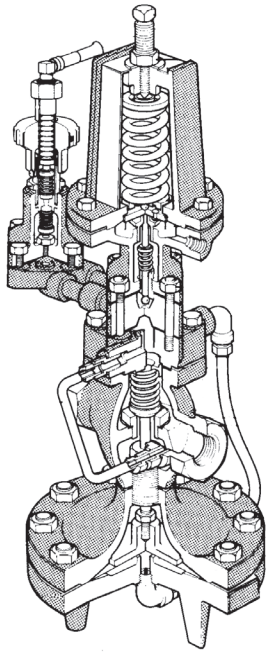
Combination Pressure/Temperature Regulator with Electric Override ½" to 4" 25PTE

Description

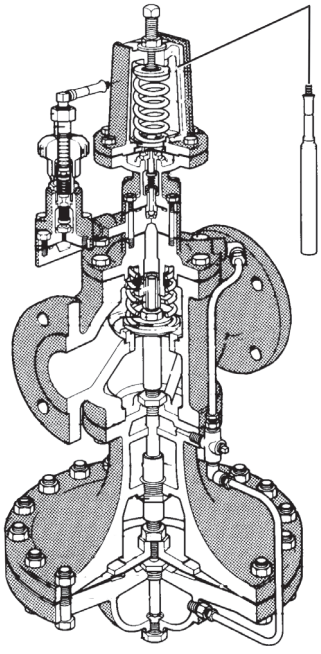
The 25PTE has all of the features of the 25PT pressure/temperature regulator, with the addition of an electric pilot which permits an electrical signal to override the temperature and pressure pilots to provide a remote shut-off capability.
*Note: For pressures below 15 psi g (1 bar g), the E pilot is not recommended for use with valves 2½" (DN65) and larger.

Model	25PTE			
Sizes	½" to 2" (DN15 to DN50)	2½", 3", 4" (DN65, DN80, DN100)	½" to 2" (DN15 to DN50)	2", 2½", 3", 4" (DN50, DN65, DN80, DN100)
Connections	NPT	ANSI 125	NPT	ANSI 300
Construction	Cast iron		Cast steel	
Options		ANSI 250		ANSI 150 (excludes 2")
	Standard capillary tubing available 8' and 15' lengths. Contact the factory for non-standard capillary tubing lengths available in 5' increments, up to 50' (15m). (see TI-P235-07-US)			
Electric pilot specifications	Enclosure: NEMA 2, 3, 3S, 4, & 4X 120 VAC / 60 Hz Holding: 23 VAC Inrush: 45 VAC Normally Closed PMO: 200 psi g (13.8 bar g) TMO: 388 °F (198 °C)			
Electric pilot options	Enclosure: NEMA 2, 3, 3S, 4, & 4X 120 VAC / 60 Hz Holding: 23 VAC Inrush: 45 VAC Normally Closed PMO: 140 psi g (9.7 bar g) TMO: 361 °F (183 °C)			

½" to 2"



2"* to 4"
*ANSI 300 only



Typical applications

Pressure/Temperature control applications where the regulator must also respond to an electrical program timer, safety or limit switch, or remote manual switch.

Limiting operating conditions

PMO	Maximum operating pressure	NPT:	200 psi g (14 bar g) @ 392 °F (200 °C)
		ANSI 125:	125 psi g (9 bar g) @ 392 °F (200 °C)
		ANSI 250:	200 psi g (17 bar g) @ 392 °F (200 °C)
		ANSI 150:	185 psi g (13 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)

*The temperature of the sensing bulb must not exceed 350 °F (177 °C)

Standard temperature ranges

30 °F to 90 °F	(0 °C to 32 °C)
60 °F to 120 °F	(16 °C to 49 °C)
100 °F to 160 °F	(38 °C to 71 °C)
120 °F to 180 °F	(49 °C to 82 °C)
160 °F to 220 °F	(71 °C to 104 °C)
200 °F to 260 °F	(93 °C to 127 °C)
260 °F to 320 °F	(127 °C to 160 °C)

Downstream pressure ranges

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

Yellow	**Blue**	**Red**
3 to 30 psi (0.21 to 2.1 bar)	20 to 100 psi (1.4 to 6.9 bar)	80 to 190 psi (5.5 to 13.1 bar)

Pressure Shell Design Conditions

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

Capacities

The regulator is sized according to the temperature control requirements.
For selection and sizing, see TI-P235-18-US and TI-P717-08-US
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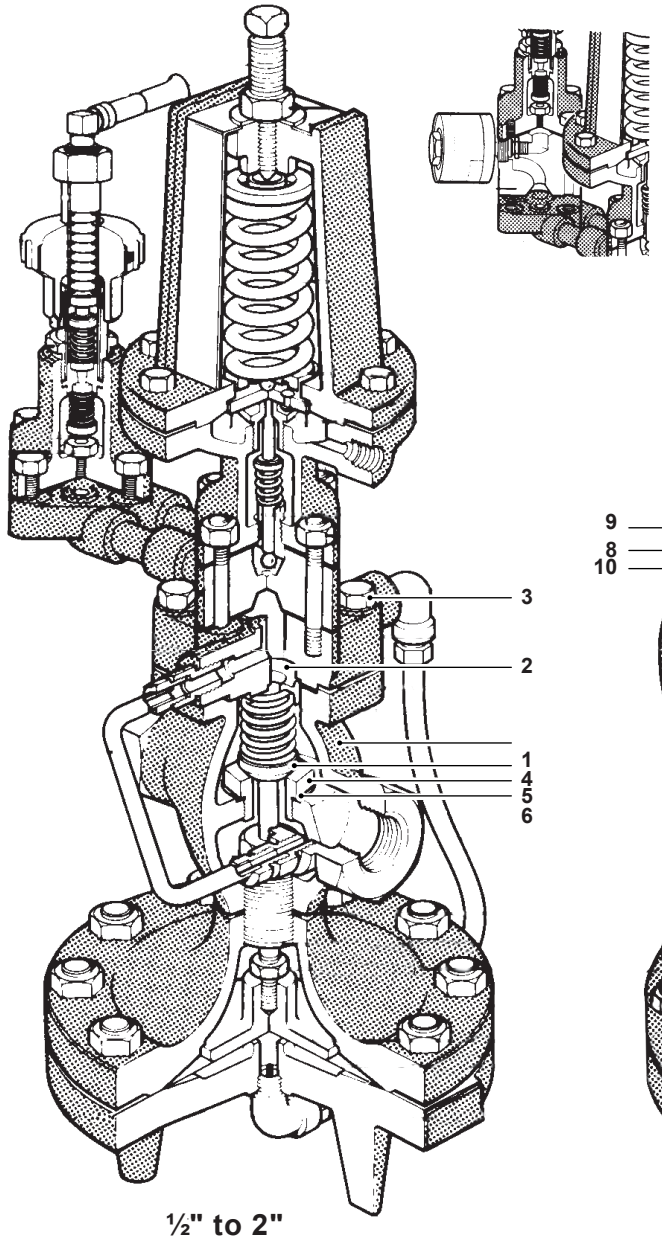
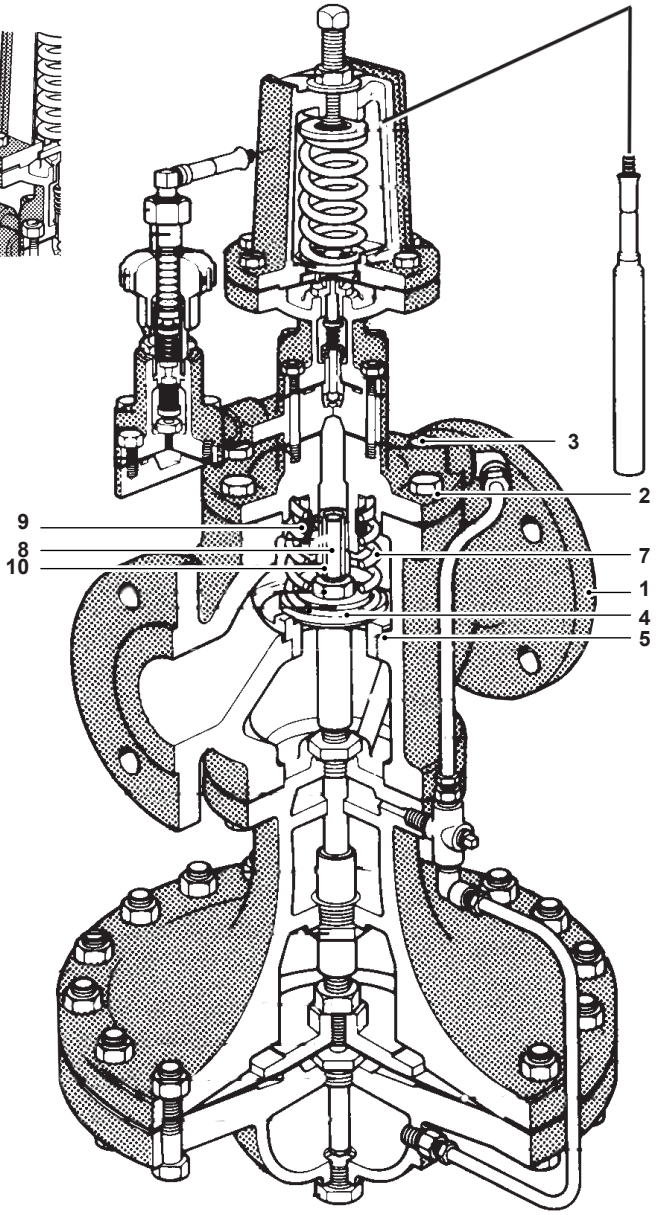
Materials



½" to 2"



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	
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	

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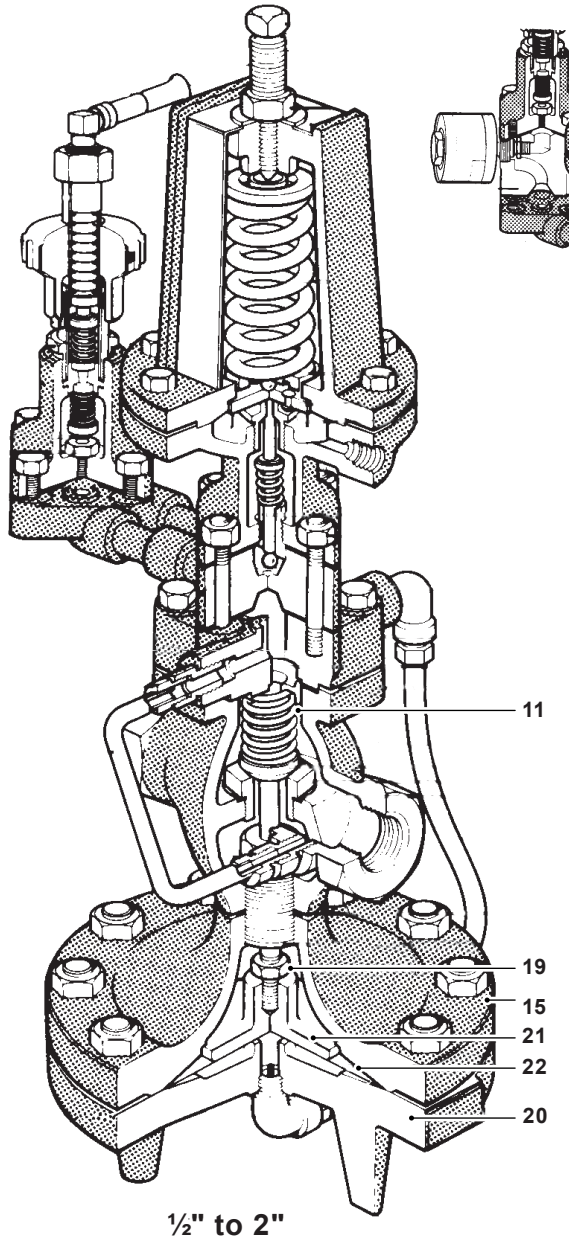
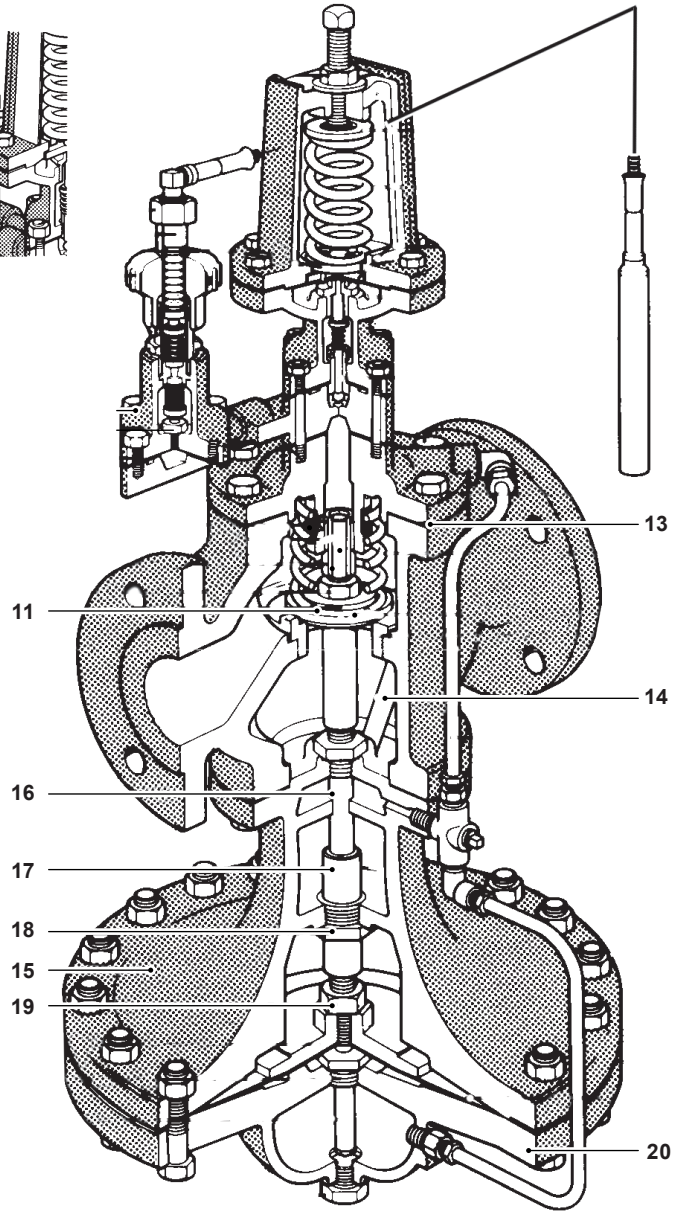
Materials (continued)



½" to 2"



2"* to 4"

*ANSI 300 ONLY

No.	Part	Material	
11	Spring Guide	Cast iron ½"-2" (DN15 to DN50)	
		CRS 2"* - 4" (DN50 to 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	Stainless steel	
		(2-½" - 4" (DN65 to DN100) Cast steel only)	
17	Diaphragm Plate Stem	Stainless steel	
18	Diaphragm Stem Guide	Stainless steel	
19	Nut	Brass ½" - 2" (DN15 to DN50)	
		Steel 2"* - 4" (DN50 to DN100)	
20	Lower Diaphragm Case	Cast iron	ASTM A 126 CL B
		Cast steel	ASTM A216 Gr WCB

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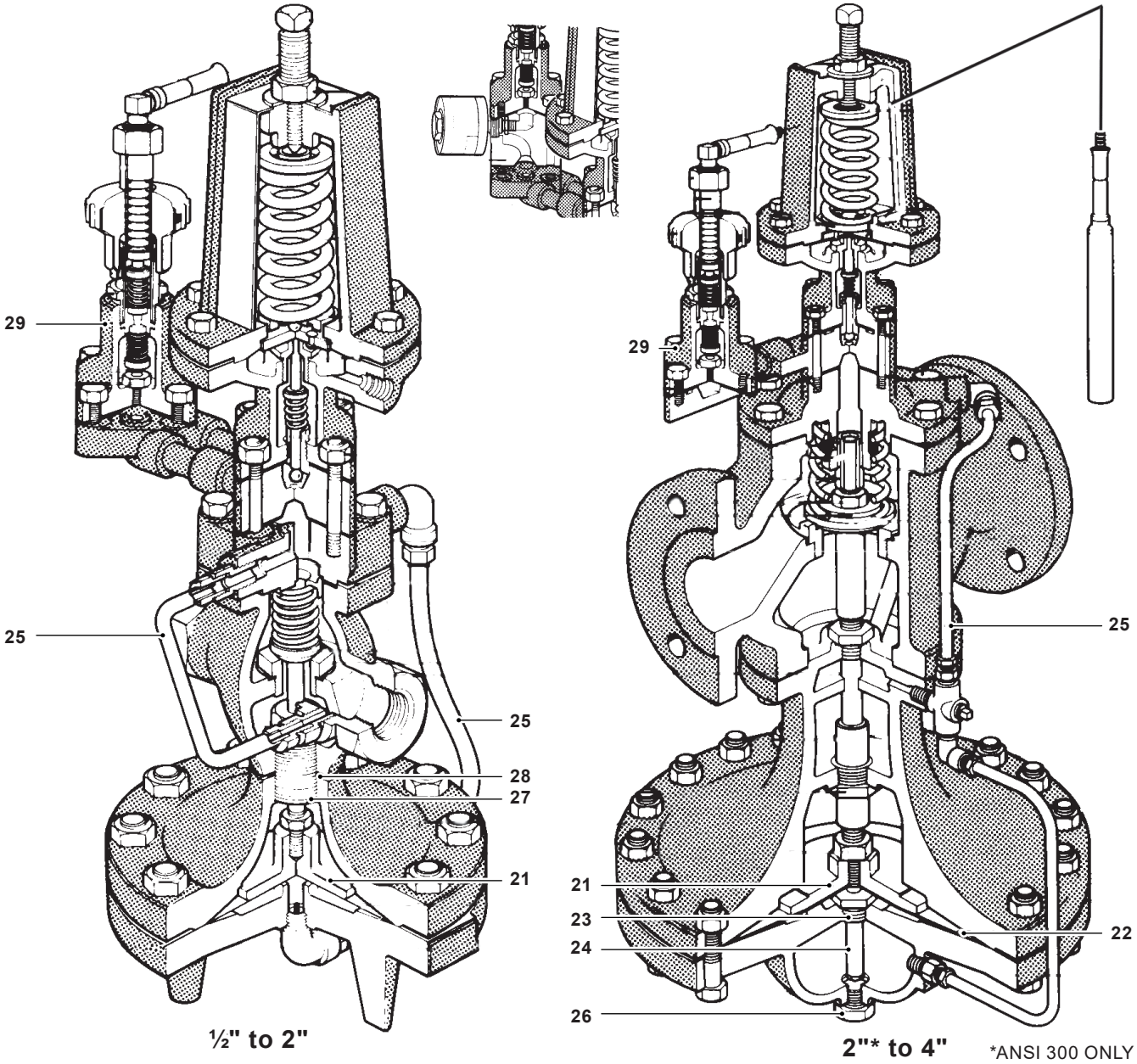

No.	Part		Material	
21	Diaphragm Plate		Brass ½" - 2" (DN15 to DN50)	
			C.I. 2"* - 4" (DN50 to DN100)	
22	Main Diaphragm (2 ply)		Stainless steel	
23	Bushing		CRS	
24	Tube & Orifice		Stainless steel	
25	Tubing Assembly		Copper	
			Brass	
26	Plug	(Cast iron)	Brass	
		(Cast steel)	Steel	
27	Connector Stud		Stainless steel	
28	Body Gasket		½" - 2" (DN15 to DN50) Copper Clad	
			2"* - 4" (DN50 to DN100) Graphite	
29	Pilot Valve Body		Cast iron	ASTM A 126 CL B
			Cast steel	

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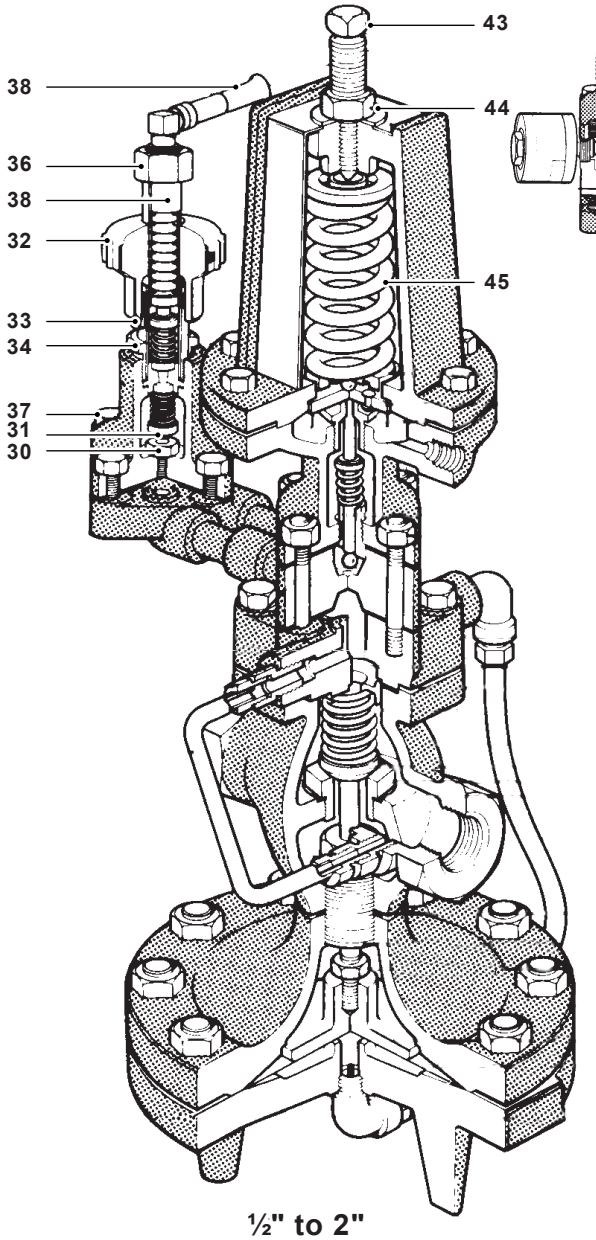
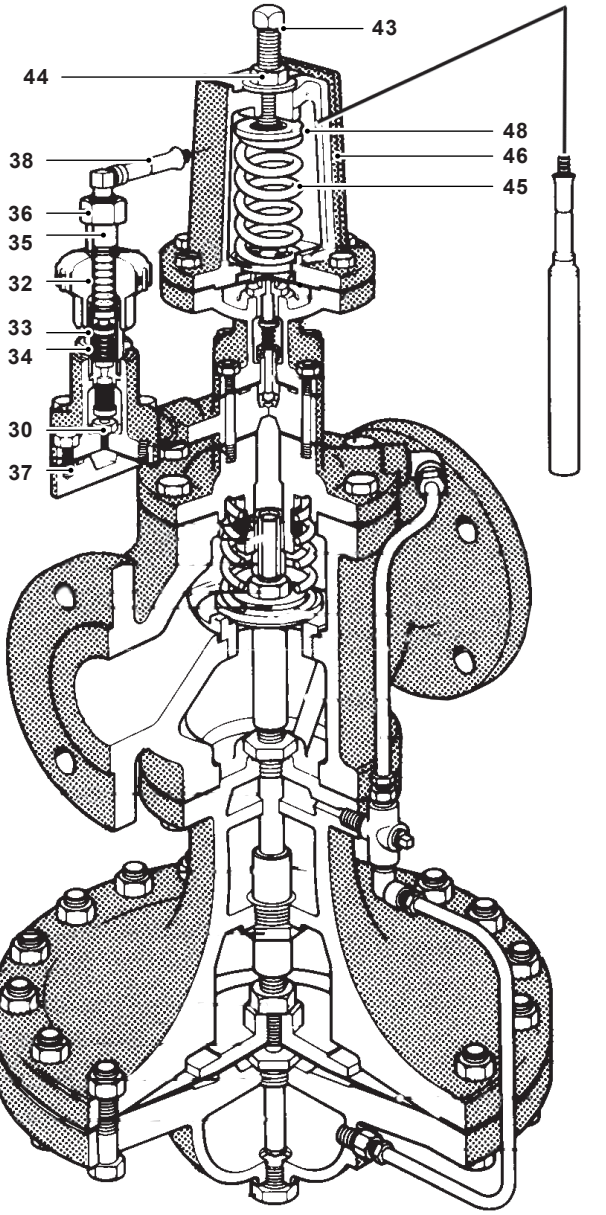


½" to 2"



2"* to 4"

*ANSI 300 ONLY

No.	Part	Material
30	Pilot Valve Seat	Stainless steel
31	Pilot Valve Head	Stainless steel
32	Adjustment Knob	Phenolic
33	Pointer	Stainless steel
34	Extension Nut	Brass
35	Case Tube	Brass
36	Retaining Nut	Brass
37	Pilot Mounting Screws	Steel
38	Capillary Tube	Varies with style selected
39	Bulb	Varies with style selected
43	Adjustment Screw	Stainless steel
44	Jam Nut	Brass
45	Pilot Valve Spring	Steel

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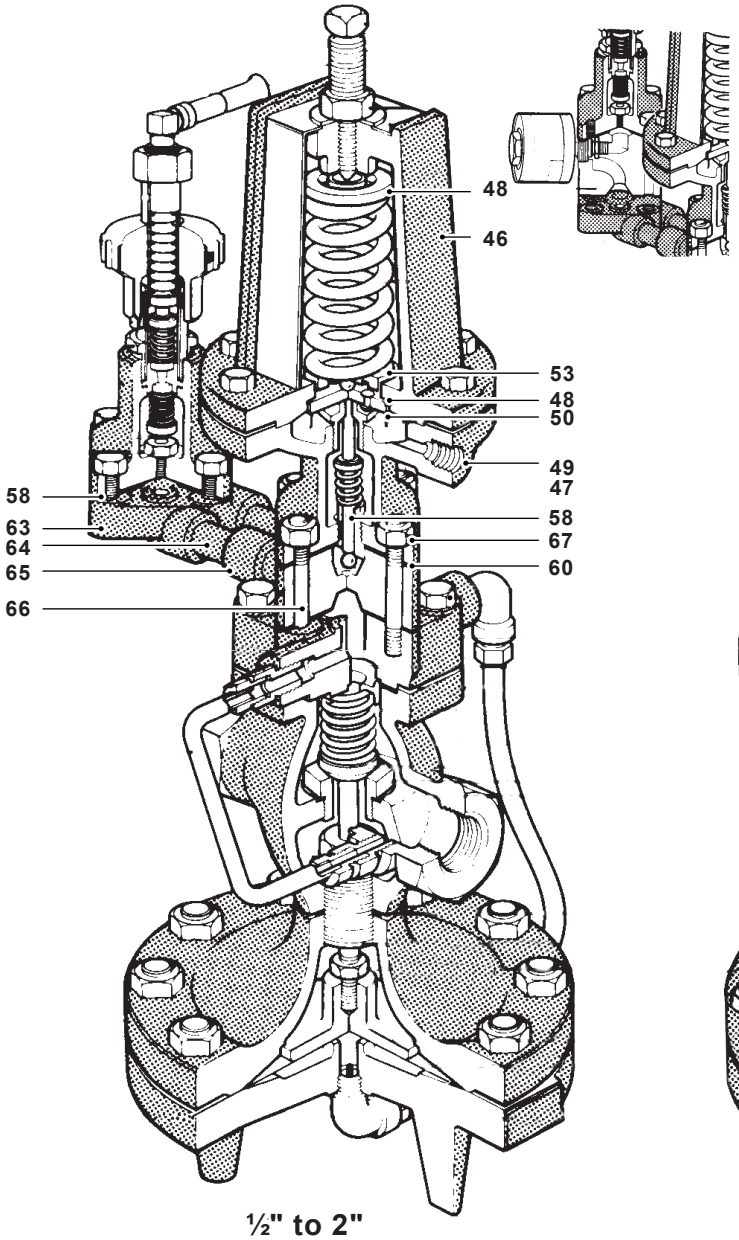

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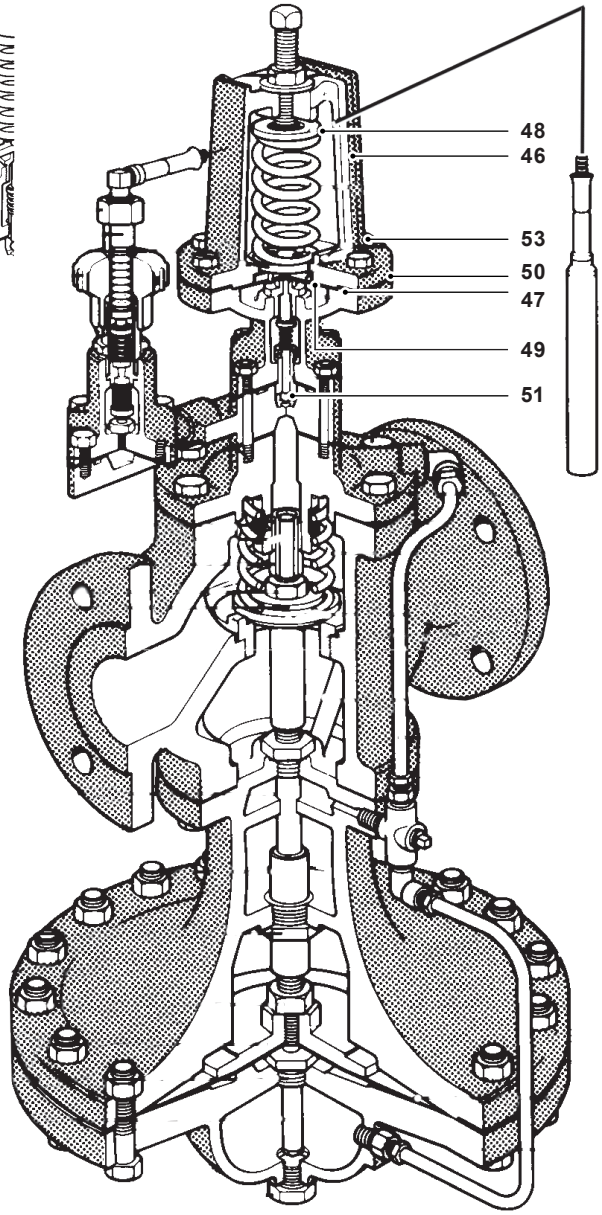

2"* to 4"

*ANSI 300 ONLY

No.	Part	Material	
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	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	
56	Head Stem	Stainless steel	

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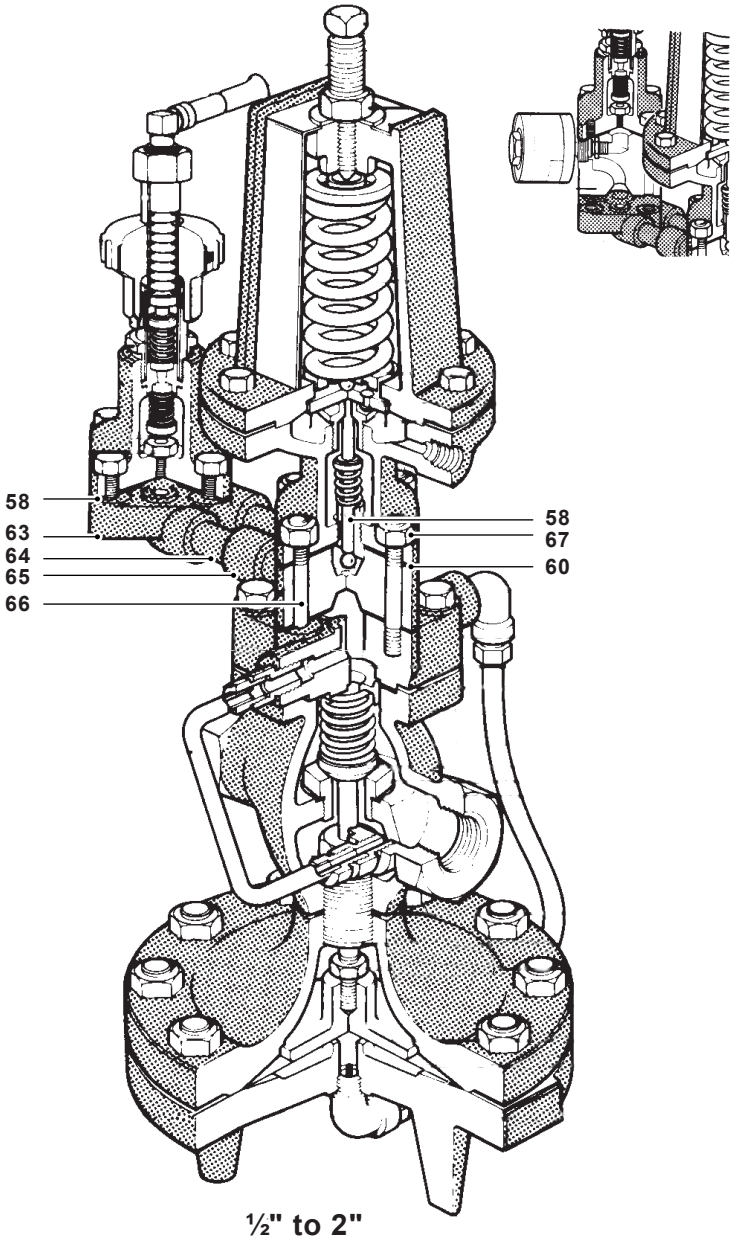
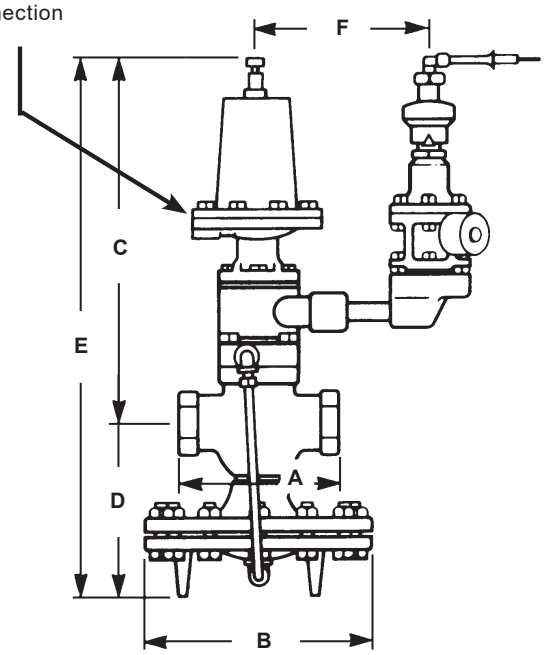


½" to 2"

No.	Part	Material	
57	Stem Guide	Stainless steel	
58	Stem Guide Gasket	Stainless steel	
59	Seat Gasket	Stainless steel	
60	Pilot Gasket	Graphite	
61	Pilot Mounting Screws	Steel	ASTM A449
62	Diaphragm Case Screws	Steel	
63	"T" Pilot Adapter	Brass	
64	Adapter Pipe	Steel	
65	"P" Pilot Adapter	Ductile Iron	
		Cast steel	
66	Adapter Stud	Steel	
67	Adapter Nut	Steel	

Dimensions/weights (approximate) in inches (*mm*) and lbs (*kg*)

¼" NPT Sensing Line Connection



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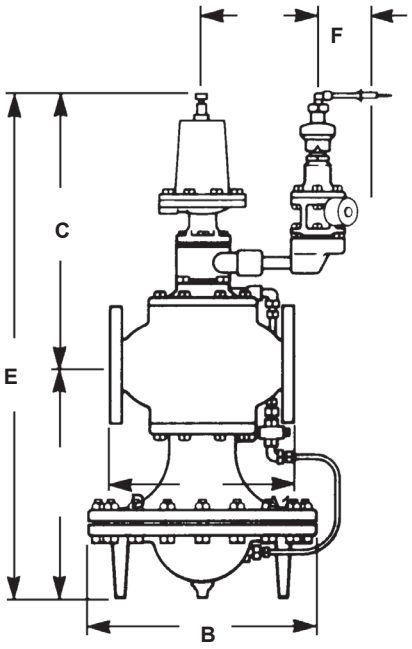

2"* to 4"

Size	A	ANSI 125 ANSI 150 A1	ANSI 250 ANSI 300 A1	B	C	D	E	F	Weight	
									Cast iron	Cast Steel
½", ¾"	5.5 (140)			7.6 (193)	13.25 (337)	6.2 (157)	19.4 (493)	5.0 (127)	41 lb (18.6 kg)	45 lb (20.4 kg)
1"	6.0 (152)			8.6 (218)	13.2 (335)	6.75 (171)	19.9 (505)	5.0 (127)	48 lb (21.8 kg)	52 lb (23.6kg)
1¼", 1½"	7.25 (184)			8.6 (218)	13.75 (349)	7.1 (180)	20.8 (528)	5.0 (127)	53.5 lb (24.3 kg)	60 lb (27.2kg)
2"	8.5 (216)		9.0 (229)	10.6 (269)	14.4 (366)	8.2 (208)	22.6 (574)	5.0 (127)	78 lb (35.4 kg)	85 lb (38.6 kg)
2½"		10.9 (277)	11.5 (292)	13.6 (346)	15.1 (384)	13.9 (353)	29.0 (737)	5.0 (127)	166 lb (75.3 kg)	181 lb (82.1 kg)
3"		11.75 (298)	12.5 (318)	13.6 (345)	15.0 (381)	14.4 (366)	29.4 (747)	5.0 (127)	197.5 lb (89.6 kg)	215 lb (97.5 kg)
4"		13.9 (353)	14.5 (368)	15.6 (396)	16.3 (414)	16.1 (409)	32.4 (823)	5.0 (127)	293.5 lb (133 kg)	320 lb (145 kg)

Sample specification

Pressure/Temperature Regulators shall be of the pilot-actuated, diaphragm-operated type with separate pressure and temperature pilots and electrical override. The main valve shall be single-seated, with hardened Stainless steel trim; the regulator body shall be Cast iron (Cast steel). The pilots shall be removable without disturbing the control connections. The temperature setting shall be adjustable without the use of tools, and the set point shall be indicated on a calibrated dial. The thermostatic system shall be solid fill, and shall incorporate overheat protection. The regulator shall be capable of dead-end shut-off. The electric pilot shall have a Enclosure: NEMA 2, 3, 3S, 4, & 4X enclosure with 120 VAC / 60 Hz coil.

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 thermostatic bulb must be carefully located in the medium being heated. The pressure sensing line may be located either in the downstream piping or in the steam space. Complete installation instructions are given in IM-3-017-US.

Maintenance

Complete installation and maintenance instructions are given in IM-3-017-US, a copy of which is supplied with each regulator. Available spare parts are shown on TI-P717-09-US and TI-P235-02-US.