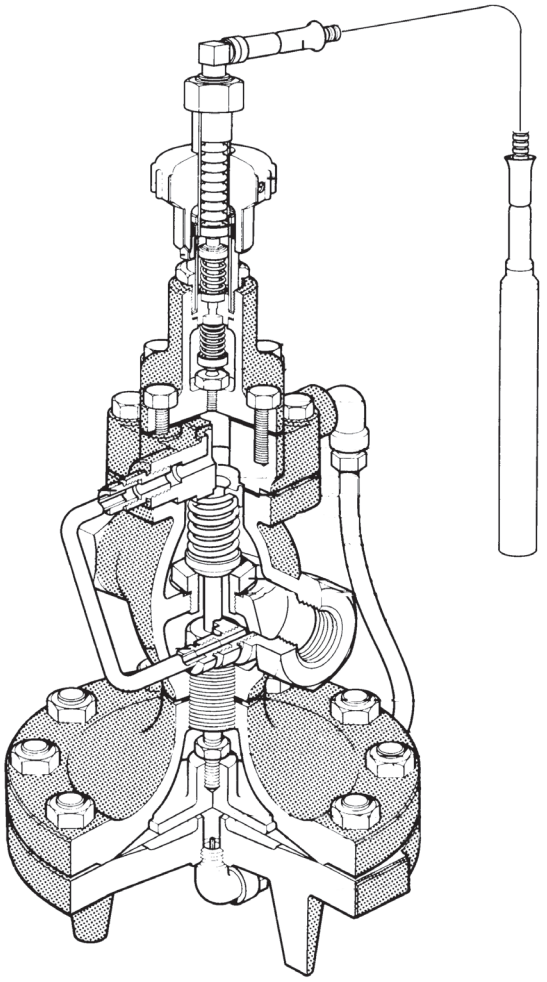
Pilot Operated Temperature Regulators ½" to 4" 25T

Description

The 25T is a self actuated pilot-operated temperature regulating valve. The temperature pilot has a calibrated dial for accurate temperature setting, and is available with a variety of solid-fill sensing bulbs (see TI-P235-07-US). The standard capillary tubing length is 8 feet, with an optional standard length of 15 feet.

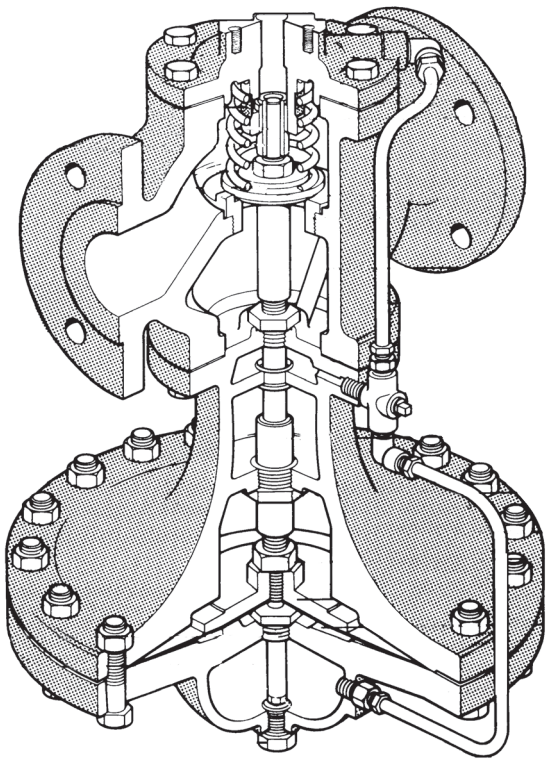
Model	25T			
Sizes	½" to 2"	2½", 3", 4"	½" to 2"	2", 2½", 3", 4"
Connections	NPT	ANSI 125	NPT	ANSI 300
Construction	Cast iron		Cast steel	
Options	ANSI 250		ANSI 150 (excludes 2")	
	Non-Standard capillary tubing length (see TI-P235-07-US) in 5 ft. intervals to a maximum of 50 ft.			



½" to 2"

Typical applications

Storage steam water heaters, instantaneous heat exchangers and converters, air handling coils, tank heating coils, steam jacketed vessels, steam chests, molds and platens.



2"* to 4" *ANSI 300 ONLY

Limiting operating conditions

PMO	Maximum operating pressure	NPT:	250 psi g (17 bar g) @ 450 °F (232 °C)
		ANSI 125:	125 psi g (8 bar g) @ 450 °F (232 °C)
		ANSI 250:	250 psi g (17 bar g) @ 450 °F (232 °C)
		ANSI 150:	185 psi g (12 bar g) @ 450 °F (232 °C)
		ANSI 300:	300 psi g (20 bar g) @ 450 °F (232 °C)
Maximum operating temperature (The temperature of the sensing bulb must not exceed 350 °F (177 °C))			450 °F (232 °C)

Standard temperature ranges

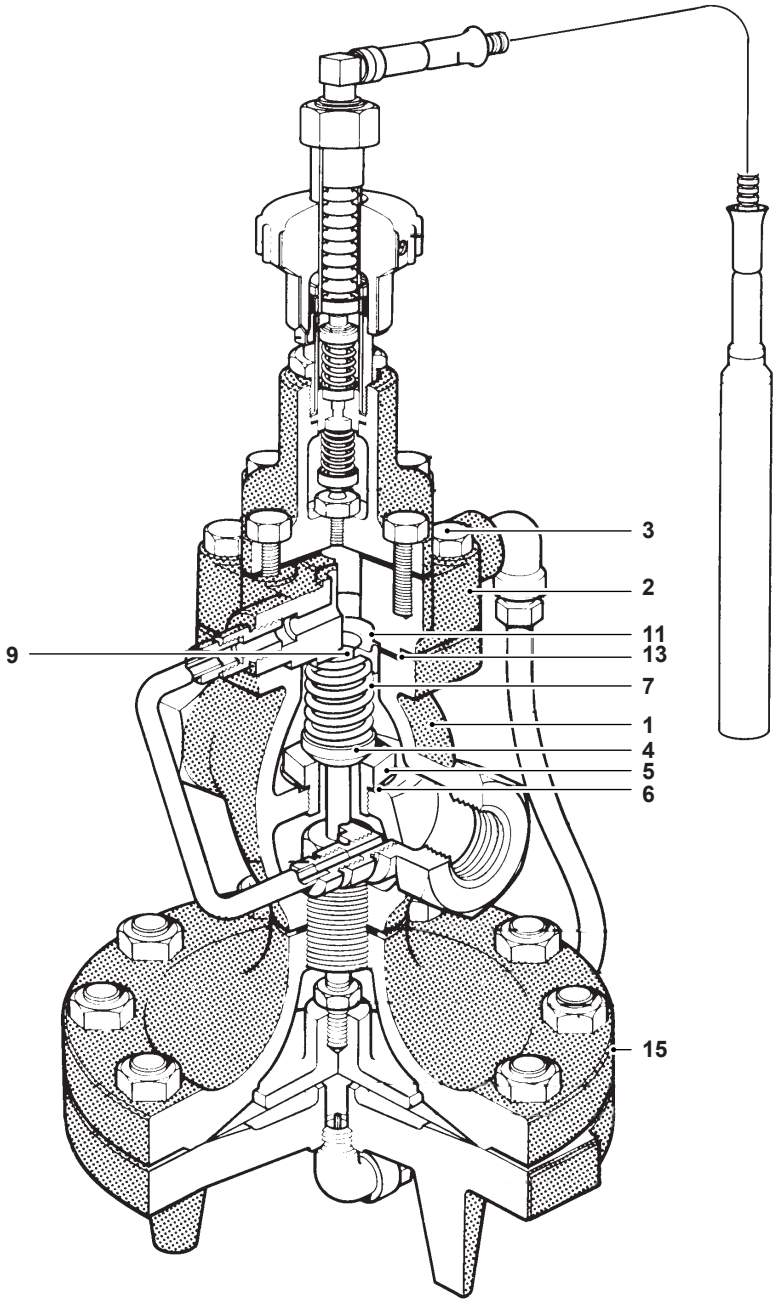
30 °F to 90 °F	(0 °C to 32 °C)
60 °F to 120 °F	(15 °C to 50 °C)
100 °F to 160 °F	(40 °C to 70 °C)
120 °F to 180 °F	(50 °C to 80 °C)
160 °F to 220 °F	(70 °C to 105 °C)
200 °F to 260 °F	(95 °C to 125 °C)
260 °F to 320 °F	(125 °C to 160 °C)

Pressure shell design conditions

PMA	Max. allowable pressure	Cast iron	250 psi g @ 450 °F	(17 bar g @ 232 °C)
		Cast steel	300 psi g @ 450 °F	(20 bar g @ 232 °C)
TMA	Maximum allowable temperature	Cast iron	450 °F @ 250 psi g	(232 °C @ 17 bar g)
		Cast steel	450 °F @ 300 psi g	(232 °C @ 20 bar g)

Materials

½" to 2"

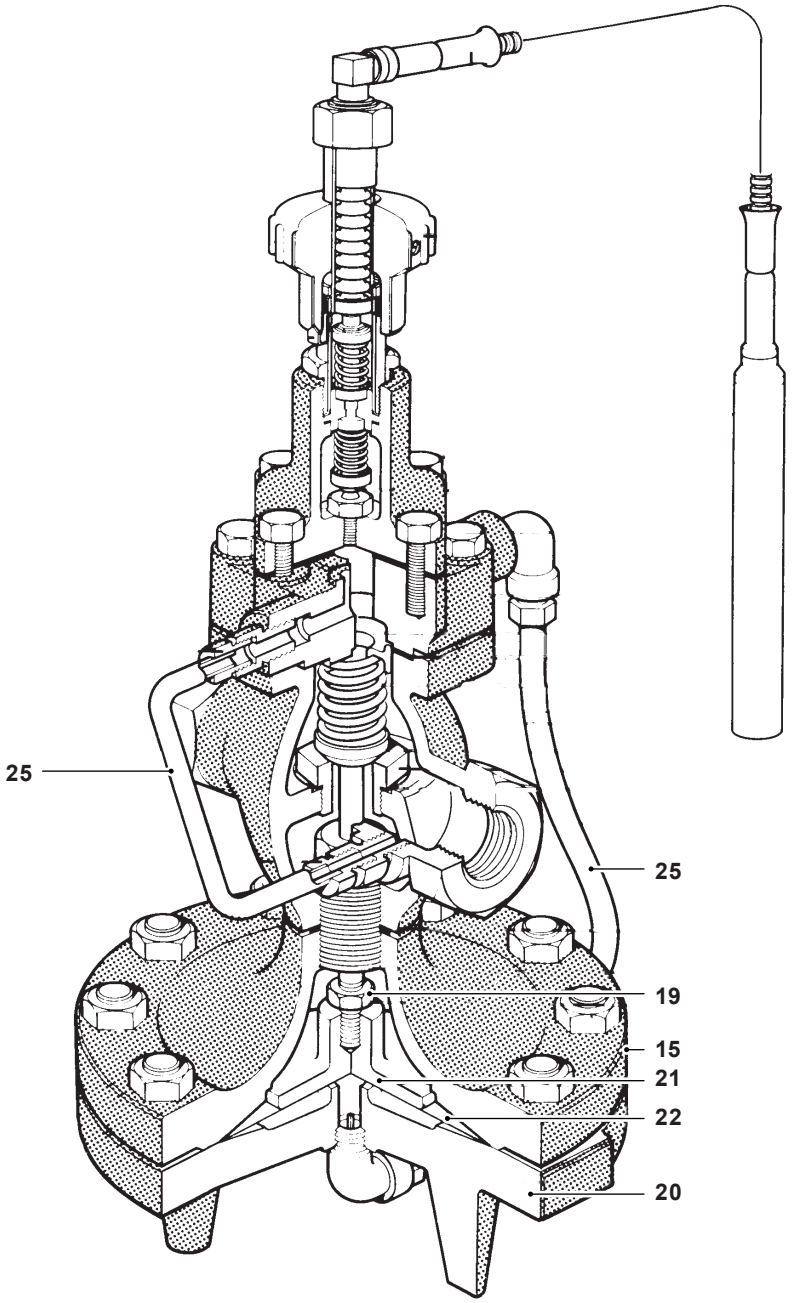


No.	Part	Material	
1	Valve Body	Cast iron	ASTM A 126 CL B
		Cast steel	ASTM A216 Gr WCB
2	Cover	Cast iron	ASTM A 126 CL B
		Cast steel	ASTM A216 Gr WCB
3	Cover Bolts	Steel	ASTM A449
4	Main Valve Head	Stainless steel	
5	Main Valve Seat	Stainless steel	
6	Main Valve Seat Gasket	Copper	
7	Valve Return Spring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

No.	Part	Material	
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

Materials

½" to 2"

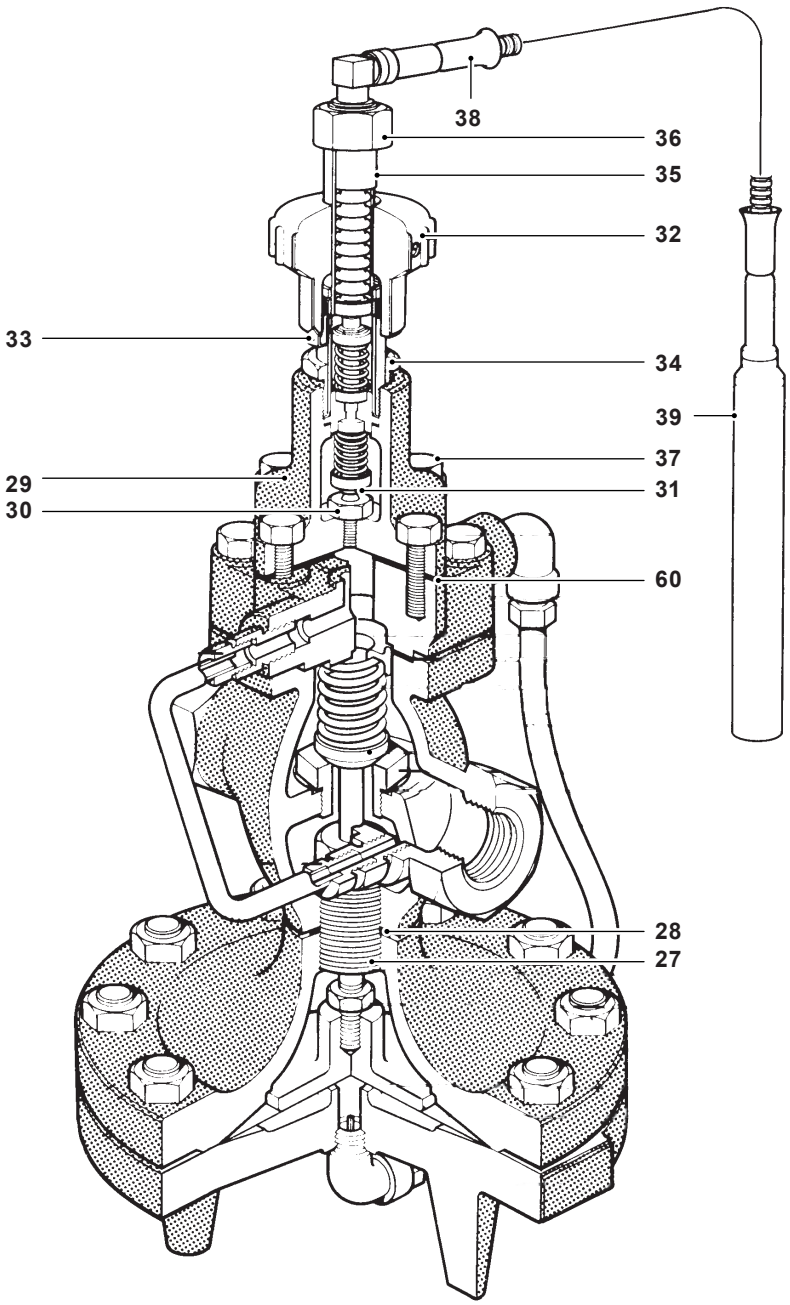


No.	Part	Material
16	Stem Bushing	Stainless steel (2½" - 4" Cast steel only)
17	Diaphragm Plate Stem	Stainless steel
18	Diaphragm Stem Guide	Stainless steel
19	Nut	Brass ½" - 2"
		Steel 2"* - 4"
20	Lower Diaphragm Case	Cast iron
		Cast steel

No.	Part	Material
21	Diaphragm Plate	Brass ½" - 2"
		C.I. 2"* - 4"
22	Main Diaphragm (2 ply)	Stainless steel
23	Bushing	CRS
24	Tube & Orifice	Stainless steel
25	Tubing Assembly	Copper
		Brass

Materials

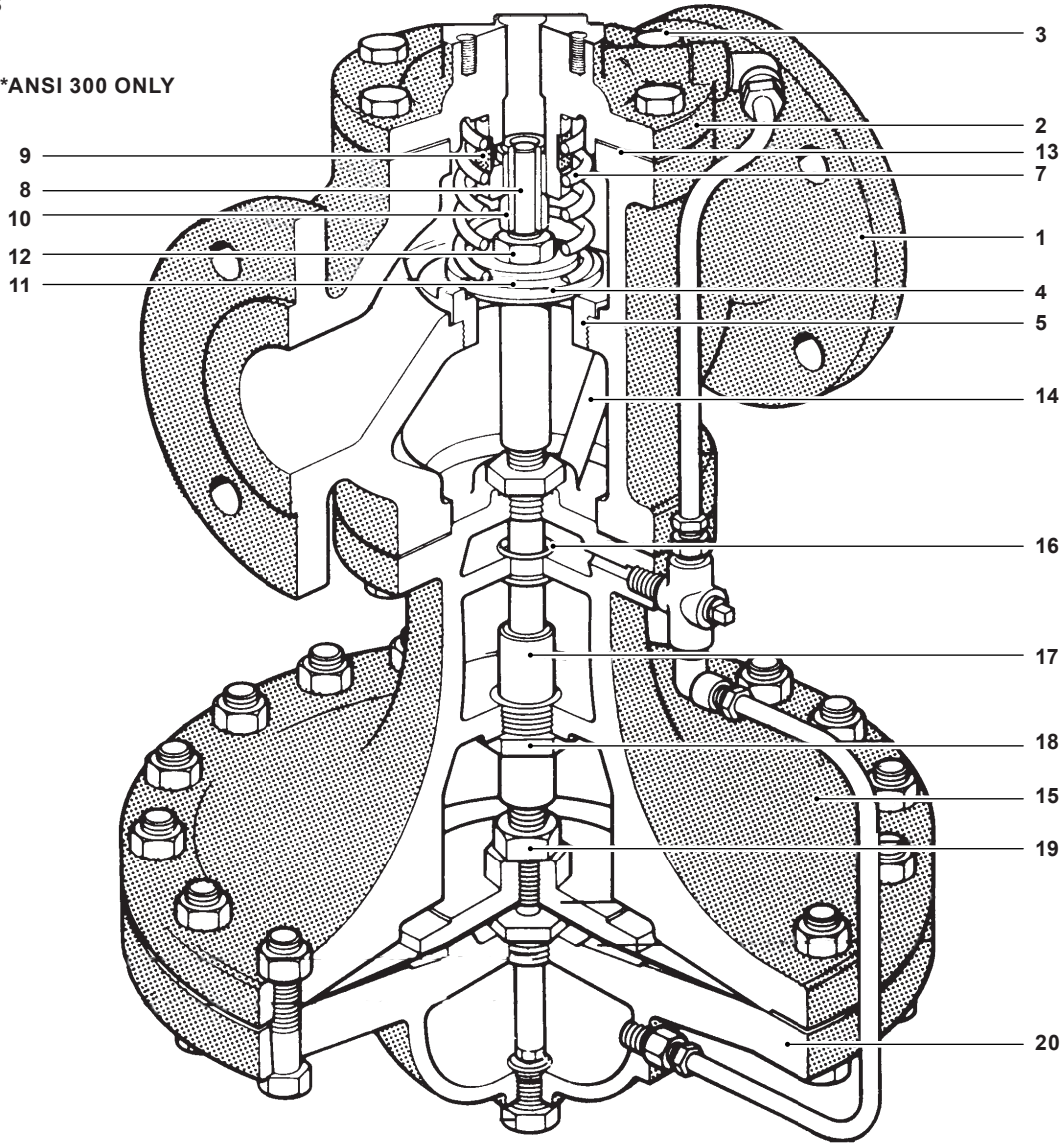
½" to 2"



No.	Part	Material	
26	Plug (Used on flanged valves 2" to 4")	Brass	
		Steel	
27	Connector Stud	Stainless steel	
28	Body Gasket	½" - 2" Copper Clad	
		2"* - 4" Graphite	
29	Pilot Valve Body	Cast iron	ASTM A 126 CL B
		Cast steel	ASTM A216 Gr WCB
30	Pilot Valve Seat	Stainless steel	
31	Pilot Valve Head	Stainless steel	

Materials

2"* to 4" *ANSI 300 ONLY

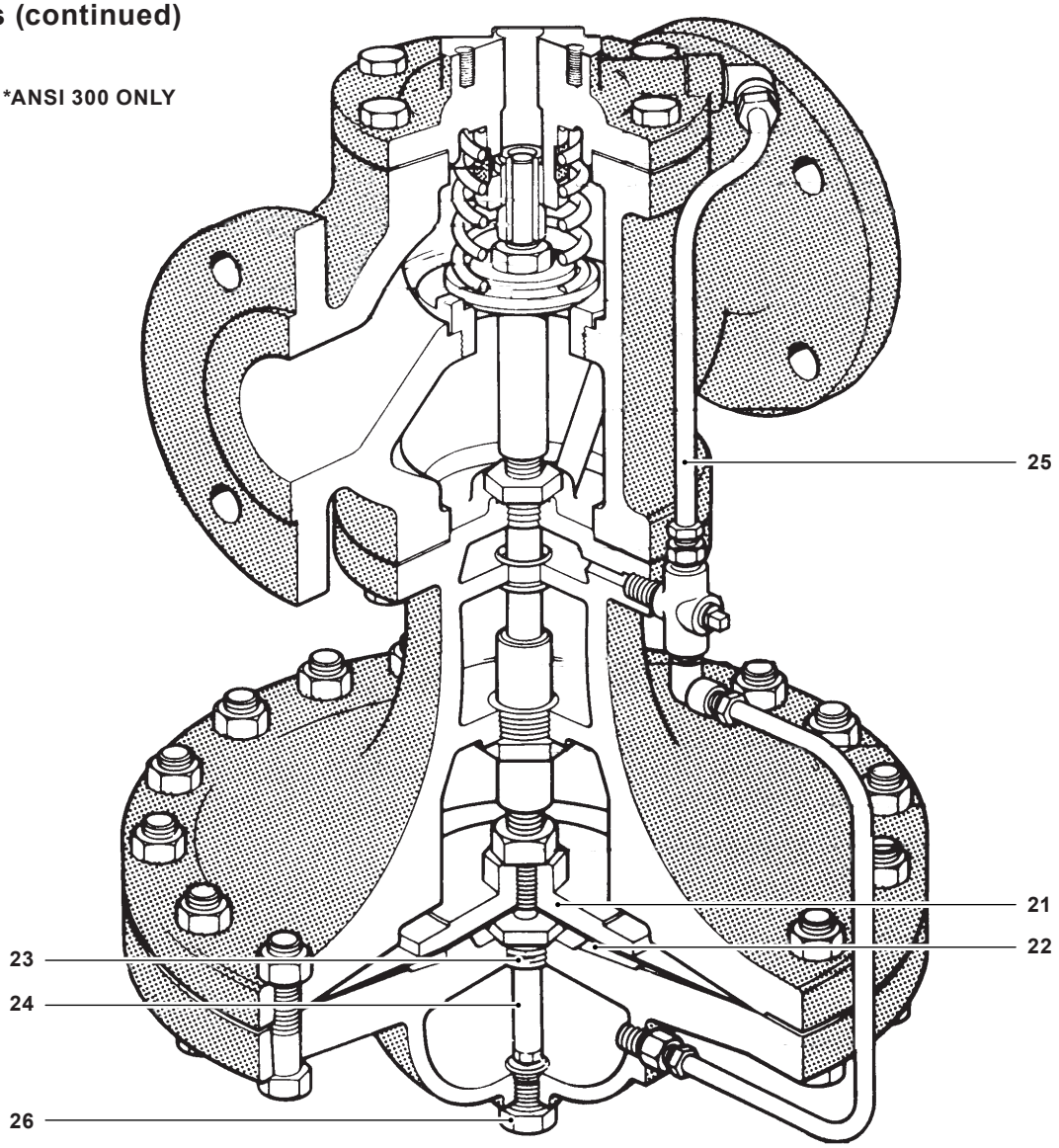


No.	Part	Material	
1	Valve Body	Cast iron	ASTM A 126 CL B
		Cast steel	ASTM A216 Gr WCB
2	Cover	Cast iron	ASTM A 126 CL B
		Cast steel	ASTM A216 Gr WCB
3	Cover Bolts	Steel	ASTM A449
4	Main Valve Head	Stainless steel	
5	Main Valve Seat	Stainless steel	
6	Main Valve Seat Gasket	Copper	
7	Valve Return Spring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

No.	Part	Material	
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 (2½" - 4" Cast steel only)	
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	
		Cast steel	

Materials (continued)

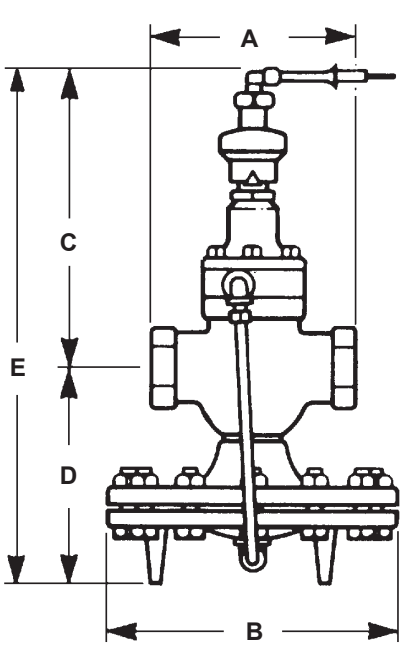
2"* to 4" *ANSI 300 ONLY



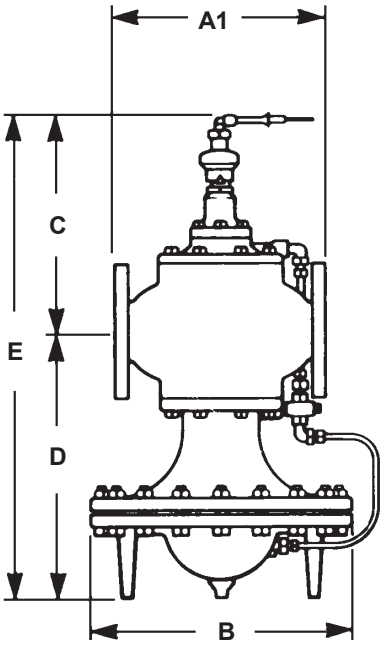
No.	Part		Material
21	Diaphragm Plate		Brass ½" - 2"
			C.I. 2"* - 4"
22	Main Diaphragm (2 ply)		Stainless steel
23	Bushing		CRS
24	Tube & Orifice		Stainless steel
25	Tubing Assembly		Copper
			Brass
26	Plug	(Cast iron)	Brass
		(Cast steel)	Steel
27	Connector Stud		Stainless steel
28	Body Gasket		½" - 2" Copper Clad
			2"* - 4" Graphite

No.	Part	Material	
29	Pilot Valve Body	Cast iron	ASTM A 126 CL B
		Cast steel	ASTM A216 Gr WCB
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	
60	Pilot Gasket	Stainless steel	

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



½" to 2"



2"* to 4"

		ANSI 125	ANSI 250 ANSI 300					Weight	
Size	A	A1	A1	B	C	D	E	Cast iron	Cast steel
½", ¾"	5.5	–	–	7.6	9.8	6.2	16.0	27 lb	30 lb
	140	–	–	(193)	(249)	(157)	(406)	(12.2 kg)	(13.6 kg)
1"	6.0	–	–	8.6	9.75	6.75	16.5	34 lb	37 lb
	152	–	–	(219)	(248)	(171)	(419)	(15.4 kg)	(16.8 kg)
1¼", 1½"	7.25	–	–	8.6	10.3	7.1	17.4	39.5 lb	43 lb
	184	–	–	(219)	(262)	(180)	(442)	(17.9 kg)	(19.5 kg)
2"	8.5	–	9.0	10.6	10.9	8.2	19.1	64 lb	70 lb
	216	–	(229)	(270)	(277)	(208)	(485)	(29 kg)	(31.8 kg)
2½"	–	10.9	11.5	13.6	11.7	13.9	25.6	152.5 lb	166 lb
	–	(277)	(292)	(346)	(297)	(353)	(650)	(69.2 kg)	(75.3 kg)
3"	–	11.75	12.5	13.6	11.6	14.4	26.0	183.5 lb	200 lb
	–	(298)	(318)	(346)	(295)	(365)	(660)	(83.2 kg)	(90.7 kg)
4"	–	13.9	14.5	15.6	12.8	16.1	28.9	279.5 lb	305 lb
	–	(353)	(368)	(397)	(325)	(409)	(734)	(127 kg)	(138 kg)

Capacities
For selection and sizing data, see TI-P235-18-US.

Sample Specification
Temperature Regulators 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 and 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.

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 valve. The trap and regulator should both be protected with a strainer. The thermostatic bulb must be carefully located in the medium being heated. Complete installation instructions are given in IM-1-1116-US.

Maintenance
Complete installation and maintenance instructions are given in IM-1-1116-US, a copy of which is supplied with each valve. Available spare parts are shown on TI-P717-09-US and TI-P235-02-US.