spirax sarco®

Pilot Operated Temperature Regulators 1/2" to 4" 25T

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-1-1123-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"	2½", 3", 4"
Connections	NPT	ANSI 125 flgd.	NPT	ANSI 300 flgd.
Construction	Cast Iron		Cast Steel	
Options		ANSI 250 flgd.		ANSI 150 flgd.
	Non-Standard capillary tubing length (see TIS 1.1123) in 5 ft. intervals to a maximum of 50 ft.			

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.

Capacities

For selection and sizing data, see TI-1-1124-US.

Limiting Operating Conditions

Max. Operating Pressure NPT: 250 psig (*17 barg)* @ 450˚F *(232˚C)*

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

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

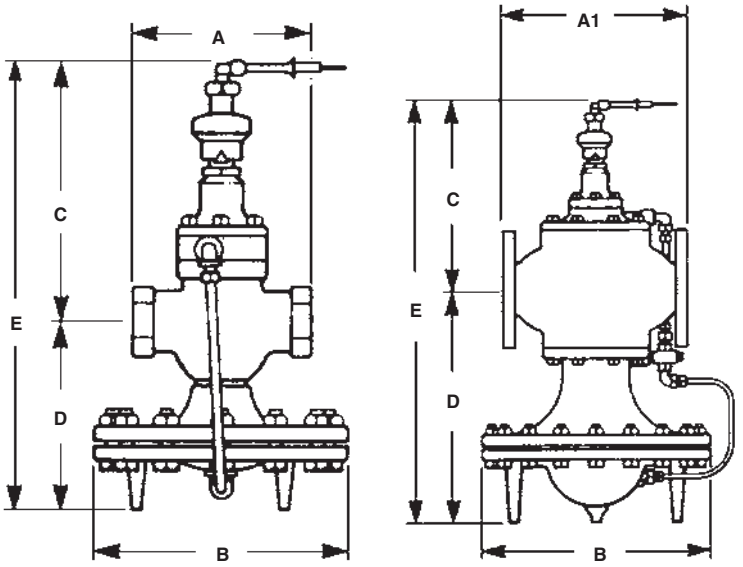
Pressure Shell Design Conditions

PMA Max. allowable pressure
Cast Iron: 250 psig/0-450˚F *17 barg/0-232˚C*
Cast Steel: 300 psig/0-450˚F *20 barg/0-232˚C*

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

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.



½" to 2" 2½" 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	–	–	7.6	9.8	6.2	16.0	27 lb	30 lb
	140	–	–	*194*	*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*	*179*	*441*	*17.9 kg*	*19.5 kg*
2"	8.5	–	–	10.6	10.9	8.2	19.1	64 lb	70 lb
	216	–	–	*270*	*278*	*208*	*486*	*29 kg*	*31.8 kg*
2½"	–	10.9	11.5	13.6	11.7	13.9	25.6	152.5 lb	166 lb
	_	*276*	*292*	*346*	*297*	*354*	*651*	*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*	*294*	*367*	*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
	–	*352*	*368*	*397*	*325*	*410*	*735*	*127 kg*	*138 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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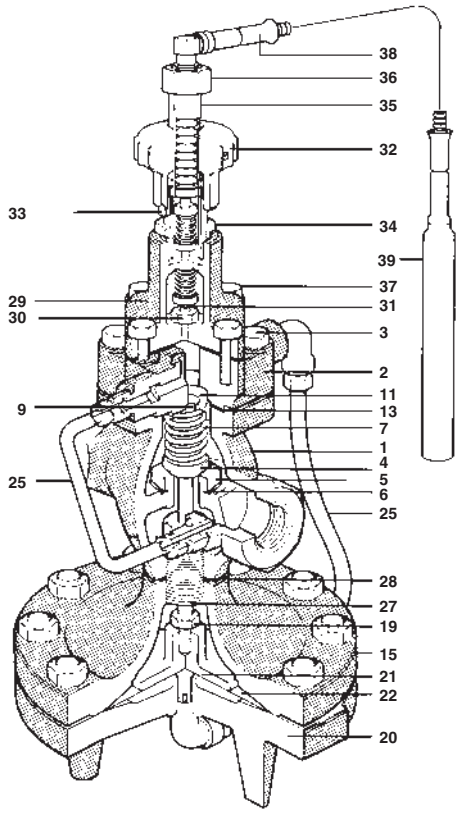
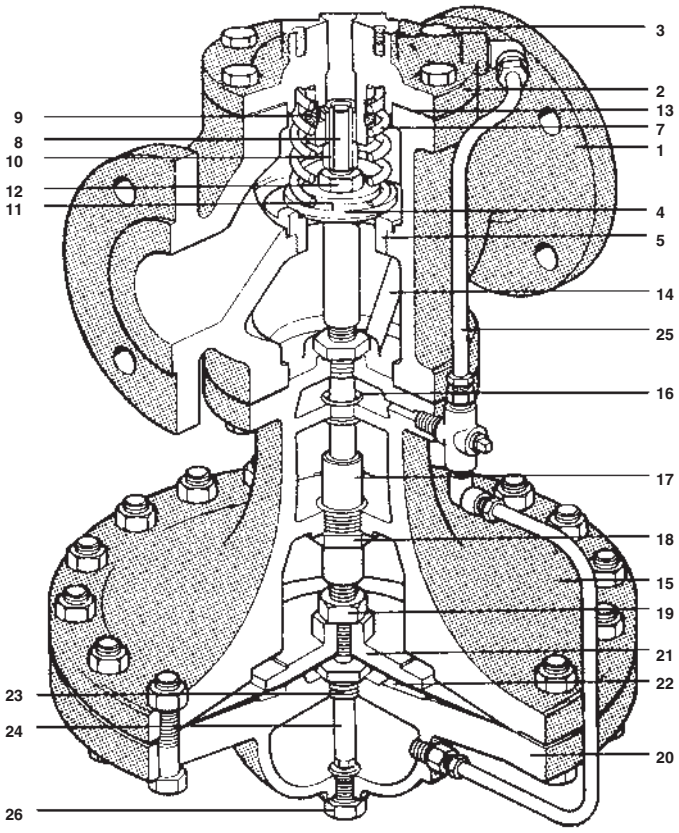
1/2" to 4" 25T



½" to 2"



2½" to 4"

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, 1½", 25 & 2" 25S	AISI 420F
		all other sizes	AISI 420
5	Main Valve Seat	Stainless Steel 1½"-2"	400 Series Stn - Stl.
		2½" - 4"	AISI 303
6	Main Valve Seat Gasket	Copper	ASTM-B272
7	Valve Return Spring	Stainless Steel	AISI 631
8	Valve Stem	Stainless Steel	AISI 303
9	Strainer Screen	Stainless Steel	AISI 304
10	Valve Stem Sleeve	Stainless Steel	AISI 420F
11	Spring Guide	Cast Iron ½"-2"	ASTM A 126 CL B
		CRS 2½" - 4"	AISI 1117
12	Nut	Steel	ASTM A307
13	Cover Gasket	Graphite	
14	Pressure Equalizer Pipe	Stainless Steel	AISI 304
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	AISI 303
17	Diaphragm Plate Stem	Stainless Steel	AISI 304
18	Diaphragm Stem Guide	Stainless Steel	AISI 303
19	Nut	Brass ½" - 2"	ASTM B16
		Steel 2½" - 4"	ASTM A307
20	Lower Diaphragm Case	Cast Iron	ASTM A 126 CL B
		Cast Steel	ASTM A216 Gr WCB
21	Diaphragm Plate	Brass ½" - 2"	ASTM B124 (377)
		C.I. 2½" - 4"	ASTM A126 CL B
22	Main Diaphragm (2 ply)	Stainless Steel	ASTM A240
23	Bushing	CRS	AISI 1117
24	Tube & Orifice	Stainless Steel	AISI 304
25	Tubing Assembly	Copper	ASTM B280 (122)
		Brass	ASTM B16
26	Plug (Cast Iron)	Brass	ASTM B16
	(Cast Steel)	Steel	ASTM A105
27	Connector Stud	Stainless Steel	AISI 303
28	Body Gasket	½" - 2" Copper Clad	Non-Asbestos Fill
		2½" - 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	AISI 303
31	Pilot Valve Head	Stainless Steel	AISI 440A
32	Adjustment Knob	Phenolic	ASTM D 700 Ty2
33	Pointer	Stainless Steel	AISI 301
34	Extension Nut	Brass	ASTM B16
35	Case Tube	Brass	ASTM B 135 (330)
36	Retaining Nut	Brass	ASTM B 16
37	Pilot Mounting Screws	Steel	ASTM A449
38	Capillary Tube	Varies with style selected	
39	Bulb	Varies with style selected	
60	Pilot Gasket	Stainless Steel	AISI Type 302

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-1-1120-US and TI-1-1121-US.

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