

25 MT Direct Acting Temperature Regulator

Available Types

25 MT Cast Iron

Limiting Conditions

Maximum operating pressure 250 psi (17.2 bar)
 Maximum working temperature 450°F (232°C)
 Temperature of bulb should not exceed 350°F (177°C)

Sizes and pipe connections

½" screwed NPT, API or BSP

Materials

No.	Part	Material	
1	"M" Body	Cast Iron	ASTM A 126 class B
2	Gasket	Asbestos	
19	"T" Body		
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 B 16
35	Case Tube	Brass	ASTM B 135 (330)
36	Retaining Nut	Brass	ASTM B 16
37	Pilot Mounting Screws	Steel	AISI 1035 Gr 5
38	Capillary Tube	Varies with style selected	
39	Bulb	Varies with style selected	

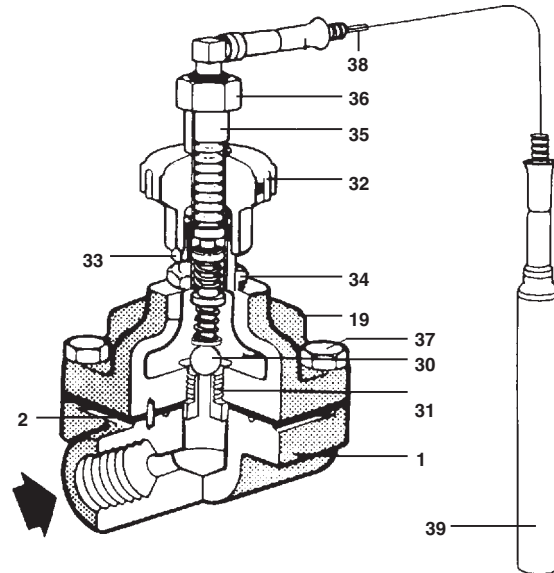
Temperature Ranges

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

Installation

The 25 MT is best installed in a horizontal line with the adjustment knob at the top. A strainer before the valve will protect it from line dirt. Fit the strainer on its side and insure adequate clearance for screen removal.

Use fullway pattern isolating valves and piping of adequate size to carry the steam flow. Carefully uncoil the flexible tubing avoiding sharp bends and kinks. Support the flexible tubing to protect it against mechanical damage. Keep flexible tubing



away from hot pipelines or other hot surfaces. Carefully locate the sensor bulb in the medium being heated. Insure the entire length of the bulb is immersed, with a good circulation over it. Monitor the temperature using a thermometer located close to the sensor bulb. When the bulb is used in a thermowell, use a heat conducting compound, oil or water to improve response time. If the calibrated scale on the valve is so oriented that the pointer at the set temperature is not readily seen by the operator, slacken nut 34. Rotate the entire adjustment assembly as necessary and retighten nut 34.

Start-up

1. First make certain that all stop valves are closed.
2. Adjust the temperature pilot to the temperature required by turning the red adjustment knob 32. Caution: Do not loosen Allen set-screw in the red temperature knob.
3. Open stop valves in the following order:
 - a. Open stop valve ahead of steam trap on steam supply line. This will insure condensate-free steam as the regulator inlet.
 - b. Open downstream stop valve.
 - c. Slowly open inlet stop valve.
4. After the system has stabilized, check thermometer temperature. Readjustment of the temperature setting knob 32 may be necessary. Note: in the event the temperature indicated on the calibrated dial does not agree with the thermometer, the temperature pilot can be recalibrated to match the thermometer.
5. Important—Retighten all pilot flange connections to insure steam tight joints.

General Inspection

While a program of planned maintenance is always to be recommended, the Spirax Sarco 25 MT will give long and trouble-free service if correctly selected, installed, and kept reasonably free of dirt and foreign matter. These are most likely to collect during installation, and later trouble can be avoided by inspecting the installation a few days after first commissioning.

1. Clean all pipeline strainers (remove screens to clean).
2. Check the main valve seat: (30).
3. Check all joints for leakage.

Inspecting and Replacing 25 MT Valve Head and Seat. (Refer to Figs)

Note: Inspecting and replacing valve head assembly can be done without removing the T body from the main valve base. However, if more convenient, the entire T body can be removed from the main base by removing the four flange screws 37.

Note: To replace the seat, the entire T body must be removed from the main valve.

1. Unscrew hexagon nut (34) and remove temperature adjustment assembly.
2. The pilot valve head assembly (E2), which includes the springs, Teflon seal, and valve head, can then be withdrawn and inspected.
3. If it is found after inspection that the head is worn, the entire assembly should be replaced. (Refer to Repair Parts List Page No. 42).
4. The pilot valve seat can be removed for inspection using a 1/2" hexagon socket wrench.
5. If the seat shows signs of wear, the seat should be replaced including a new seat gasket.

Recalibration of Temperature

The temperature adjustment dial can be recalibrated after servicing or to match the calibration of a thermometer on a particular application installed next to the temperature bulb. To recalibrate, proceed as follows:

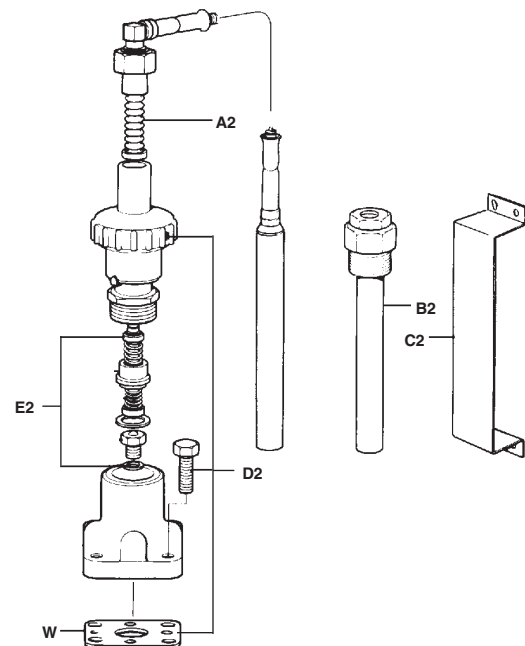
1. The control bulb must be immersed in a temperature within the range of the calibrated dial.
2. With steam pressure on the valve, turn temperature adjustment knob (32) slowly clockwise until main valve shuts off flow of steam.
3. Turn temperature adjustment knob (32) counterclockwise slightly, just enough to start a slight flow of steam.
4. Loosen small Allen set screw in red temperature adjustment knob (32) using a 3/32" hex Allen set screw wrench and pull knob upwards off its rubber support.
5. Rotate red temperature knob until temperature on scale matches temperature reading at the control bulb, then push knob downwards over the rubber support.
6. Retighten Allen set screw. Note: No attempt should be

made to recalibrate the temperature pilot for temperatures beyond the range shown on the calibrated dial. If the temperature range is to be changed, the entire pilot assembly including the thermostatic system must be replaced. (Refer to Spirax Sarco Replacement Parts Reference Guide.)

Replacement of Thermal System.

1. Loosen hexagon nut (36) and withdraw thermostatic bellows.
2. Insert replacement system in a similar manner making certain to tighten hexagon nut (36). **Caution:** Do Not over-tighten.
3. All replacement systems are interchangeable for the same range and generally readjustment of the temperature dial is not required. However, should this be necessary, follow the instructions as described under "Recalibration of Temperature Adjustment Dial".

Temperature Pilot Spare Parts



Thermal System (T1, T2, T3, T10, T11, T12)	A2
State bulb style, capillary tube length & temperature range	
Well (T5, T6, T7, T8, T11)	B2
State bulb style	
Wall Mounting Bracket (T9)	C2
State bulb style	
Complete Pilot Body Assembly	D2, W
Head & Seat Assembly	E2, W
Specify 15 psig or below Assembly or Standard	

For any additional information you may require, contact:
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