



STERLING
Installation, Operation
& Maintenance

Sterlco® 56T Temperature Control Valve

Tel: (262) 641-3808 • Fax (262) 641-8625 • www.steamcontrolproducts.com • Effective: April 1, 2017

INSTALLATION

PRE-INSTALL INSPECTION:

Temperature control valves are instruments, not pipefittings. A dent in the body or a sharp bend in the capillary may prevent them from operating. DO NOTE use pipe wrenches! DO NOT subject controls to water hammer conditions or excessive pressures.

A Y-strainer should always be installed just ahead of each control valve to protect it from large particles of dirt. This system MUST be kept free of sediment, scale, etc.

Temperature ranges come pre-set from the factory. Reference pre-set values for standard ranges in the chart below. Contact factor for special ranges. Values can be adjusted within the nameplated temperature range. See adjustment instructions below.

TEMP. RANGE	CLOSED	FULLY OPEN
40°F- 100°F	70°F	90°F
60°F- 140°F	100°F	120°F
100°F- 175°F	135°F	155°F
125°F- 200°F	155°F	175°F
140°F- 240°F	190°F	210°F
200°F- 275°F	235°F	255°F

ADJUSTMENT:

A temperature adjustment can be made within the range of the control, by simply turning an adjusting cup in the direction indicated on the nameplate. Turn the adjustment cup only a little at a time, then let the temperature reach equilibrium before adjusting further.

BULB LOCATION:

This is perhaps the most important factor in a good installation. The entire bulb, not just part of it, must be exposed to the fluid of which the temperature is to be controlled. In a circulating system, the bulb must be directly in the line of flow. In a tank, it must be in a representative location, not in a corner, which may be warmer or cooler than the rest of the tank. The bulb orientation can be mounted in any direction except from the bottom up. The temperature at the bulb is the only one, which can be controlled. If a bulb well is used, the bulb bushing must be taken off.



VALVE LOCATION:

This valve must be located close to the cooling equipment. Where feasible, as in a heat exchanger, the valve should be in the cooling water outlet line rather than the supply line. This keeps the exchanger filled with water and prevents the control from being affected by extreme variations of cooling water temperature.

CAPILLARY LOCATION:

DO NOT mount next to a steam line or in a cold draft. If capillary is exposed to extreme temperatures, it may be desirable to wrap it with insulation material.

VALVE POSITION:

Preferable with an adjusting cup at the top, but can usually be used in any other position. If possible, let the capillary run downward from the valve to the bulb. All valve bodies have arrows showing the direction of flow. If installed backward, they will be noisy or inoperative.

OPERATION

The 56T temperature control valve is consider a reverse acting valve used for cooling applications. The valve is normally close and will fully open through an adjustment of temperature ranges. Each valve will consist of a thermo-assembly which is gas filled (gases will vary depending on temperature ranges). The valve controls the flow of cooling water in response to changes in temperature being sense by



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the sensing bulb. Remember that this is a modulating control valve as it does not instantly open wide and shut tight like an electrical control device. In normal operation, the control valve remains in close position which is automatically adjusted whenever conditions require it. When there is an increase in temperature the thermo-assembly will exert a force against a spring. Once the thermo-assembly force exceeds the spring force the seat disc will move away from the valve seat and allow for water to flow through the valve. When there is decrease in temperature the thermo-assembly force is reduced in which the spring force will exceed that of the thermo-assembly to close the valve.

MAINTENANCE

The only servicing normally required is to keep the control clean. The valve can be inspected and cleaned by accessing it through the inlet and outlet, without disassembly. The bulb must not become coated with any substance that interferes with the transmission of heat.

TROUBLESHOOTING

If the control does not appear to be holding temperatures steady, or if not enough cooling is obtained, first check for external conditions which may prevent the control from operating correctly. Examples are: low or fluctuating water

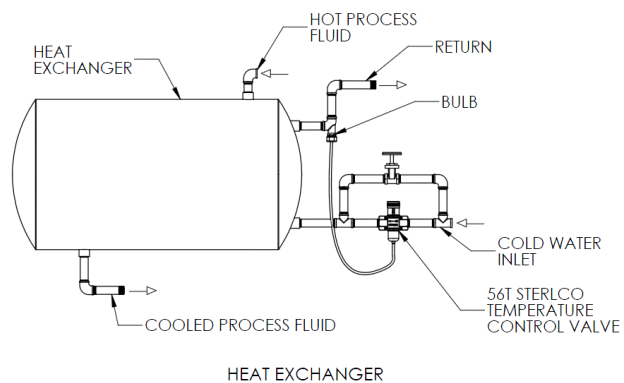
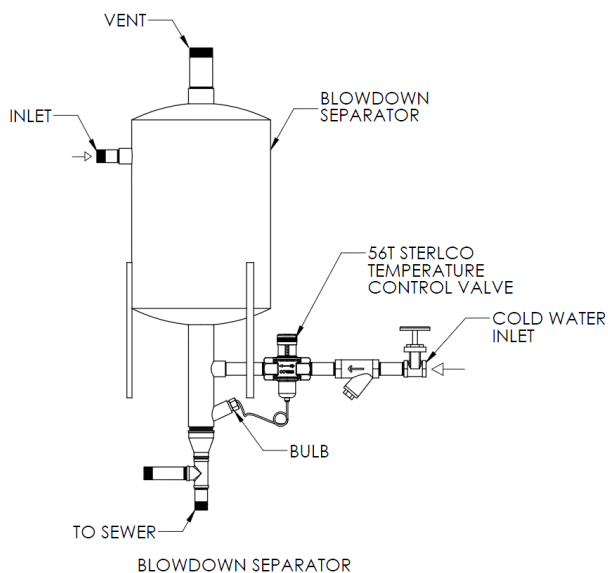
supply pressure; damaged or obstructed valves, traps, strainers or other accessories; supply piping too small; dirty bulb or poor bulb location.

If the valve will not close, check for dirt or foreign matter between disc and seat. The valve can be inspected through the inlet and outlet openings without disassembly, and can usually be cleaned out with an air hose. If valve stays closed regardless of the temperature at the bulb, the thermostat may have lost its fill and become inoperative. To check this, remove valve and bulb from the line, set the control at about the middle of the range, and insert the bulb in water hotter than the maximum of the range. If the Thermo-assembly does not open, repairs to the thermostat are required.

If there is a leak to the exterior of the body, some part may be loose or partially disassemble. Otherwise, a seal bellows may be damaged requiring replacement.

If the valve chatters, this usually means a loose or disassembled interior part. Chattering is sometimes caused by other devices near the control, and can sometimes be eliminated by changing piping arrangements, valve position, or supply pressure.

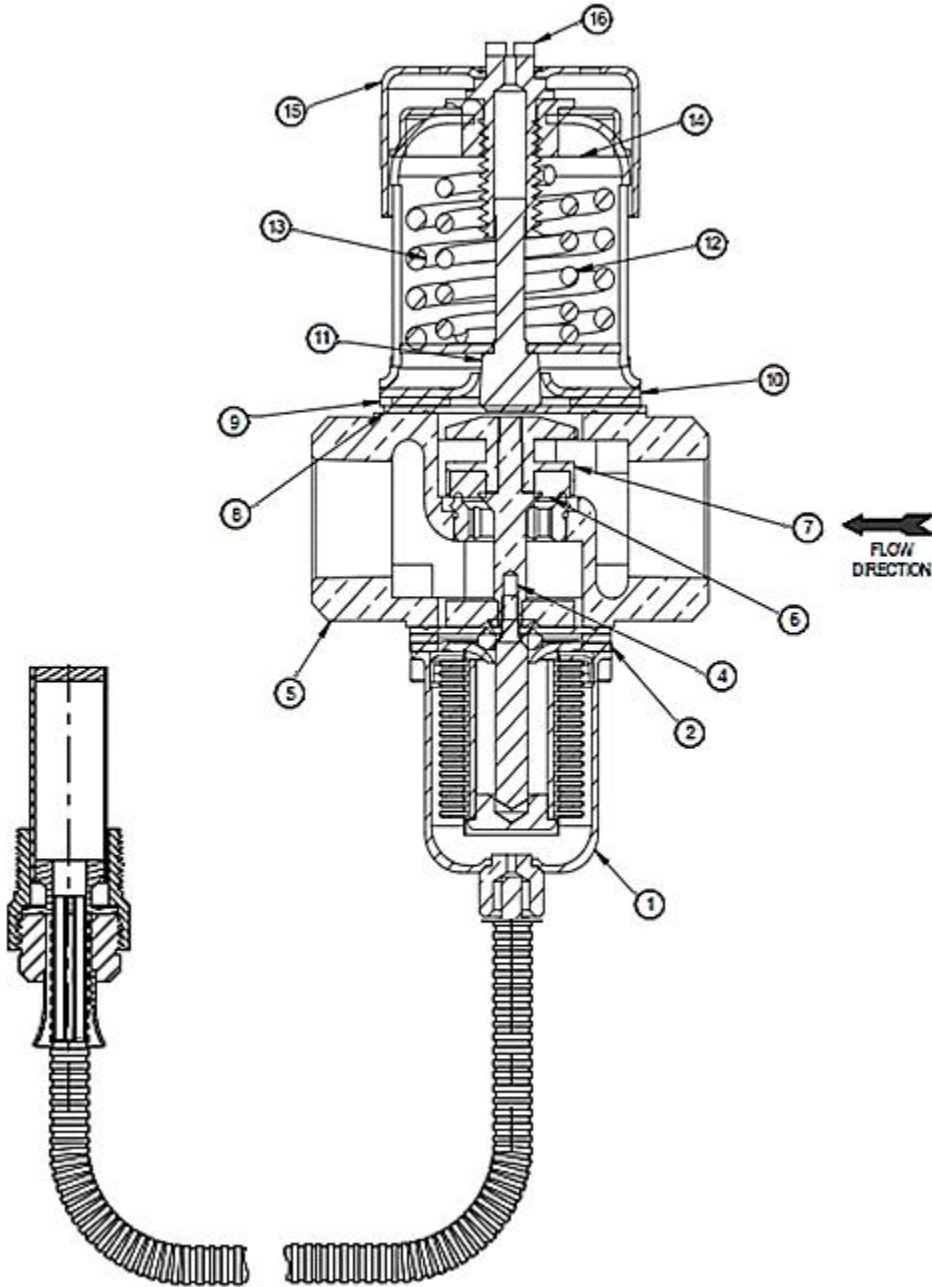
COOLING APPLICATIONS





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56T REVERSE ACTING VALVE (3/8" – 1-1/4")

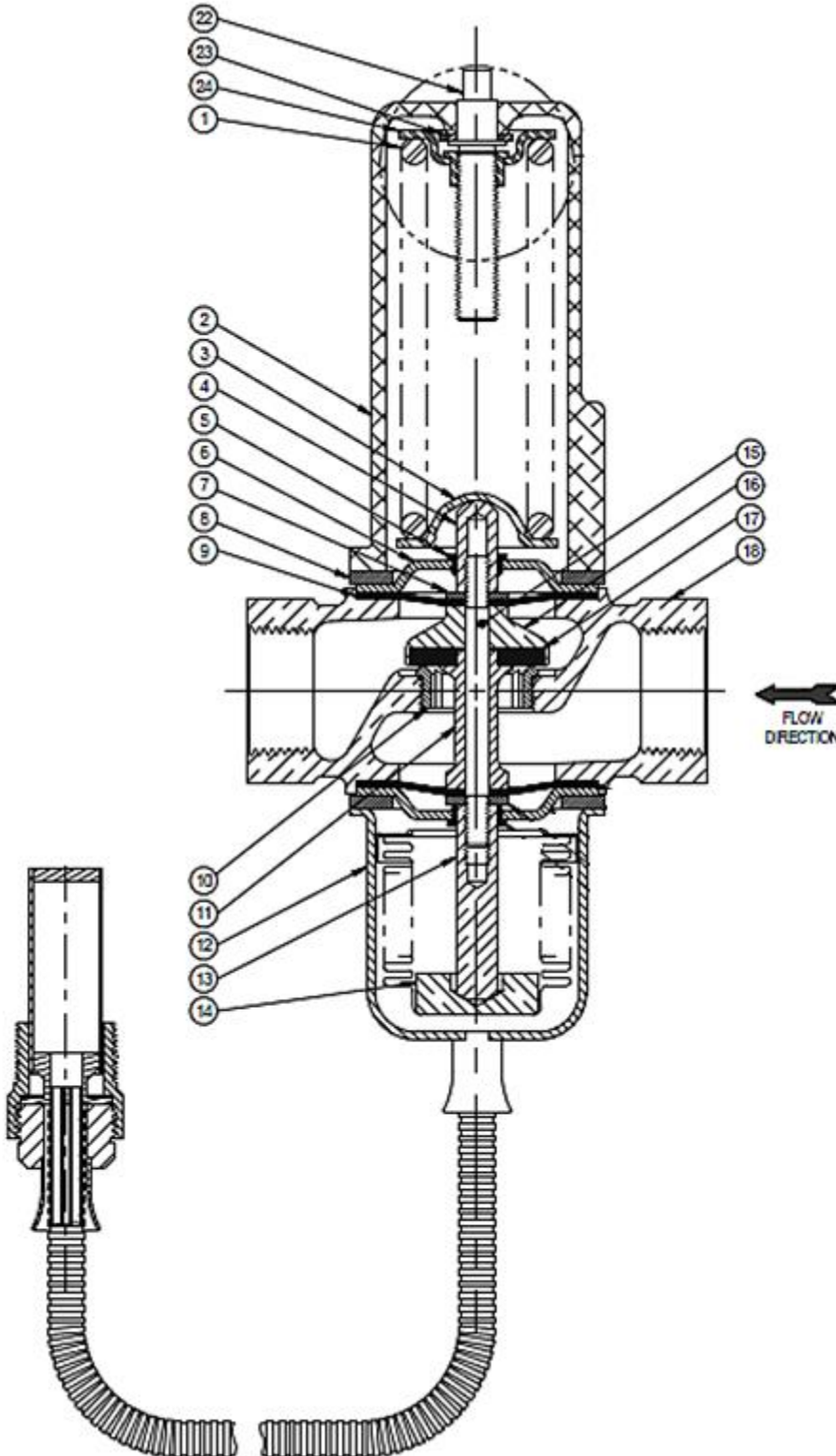


REFERENCE NUMBER	DESCRIPTION
1	Thermostatic Assy
2	Spacer Plate
4	Upper Diaphragm
5	Valve Body
6	Seat Bead
7	Seat Disc
8	Lower Diaphragm
9	Spacer Plate
10	Guide Plate
11	Pushrod Assy
12	Inner Spring
13	Outer Spring
14	Disc Retainer
15	Adjustment Cover
16	Machine Screw



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56T REVERSE ACTING VALVE (1-1/2")

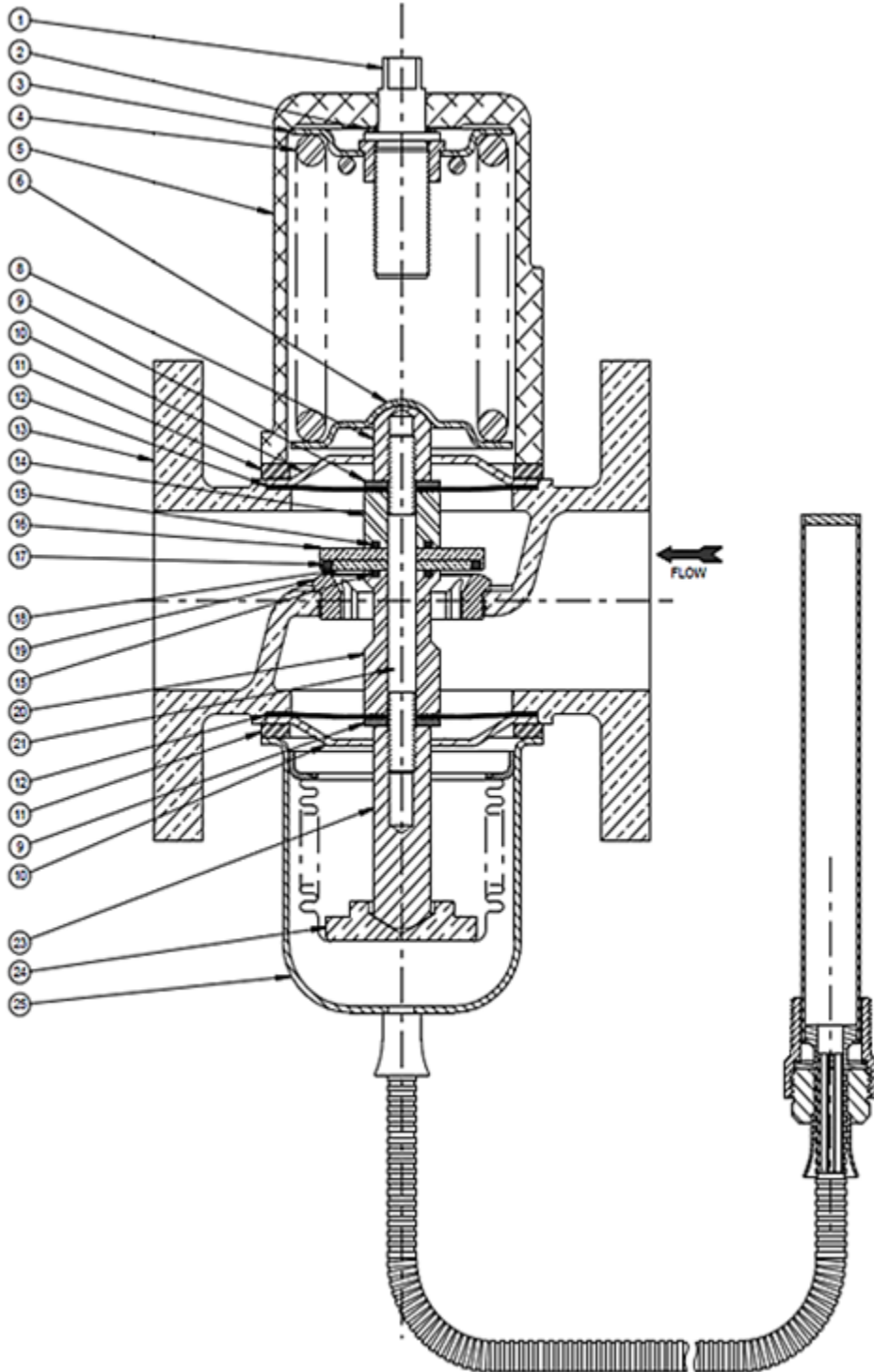


REFERENCE NUMBER	DESCRIPTION
1	Power Spring
2	Spring Housing
3	Spring Plate, Lower
4	Push Rod, Spring
5	Guide, Push Rod
6	Diaphragm Housing
7	Diaphragm Plate
8	Retainer Plate
9	Diaphragm
10	Valve Seat
11	Intermediate Spool
12	Thermostatic Assy
13	Push Rod, Bellows
14	Thrust Plt, Bellows
15	Connecting Screw
16	Seat Disc Retainer
17	Seat Disc
18	Valve Body
19	Screw, Spring Housing
20	Lockwasher
21	Screw, Bellows Housing
22	Adjusting Screw
23	Washer
24	Spring Plate, Upper



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56T REVERSE ACTING VALVE (2" FLANGE)

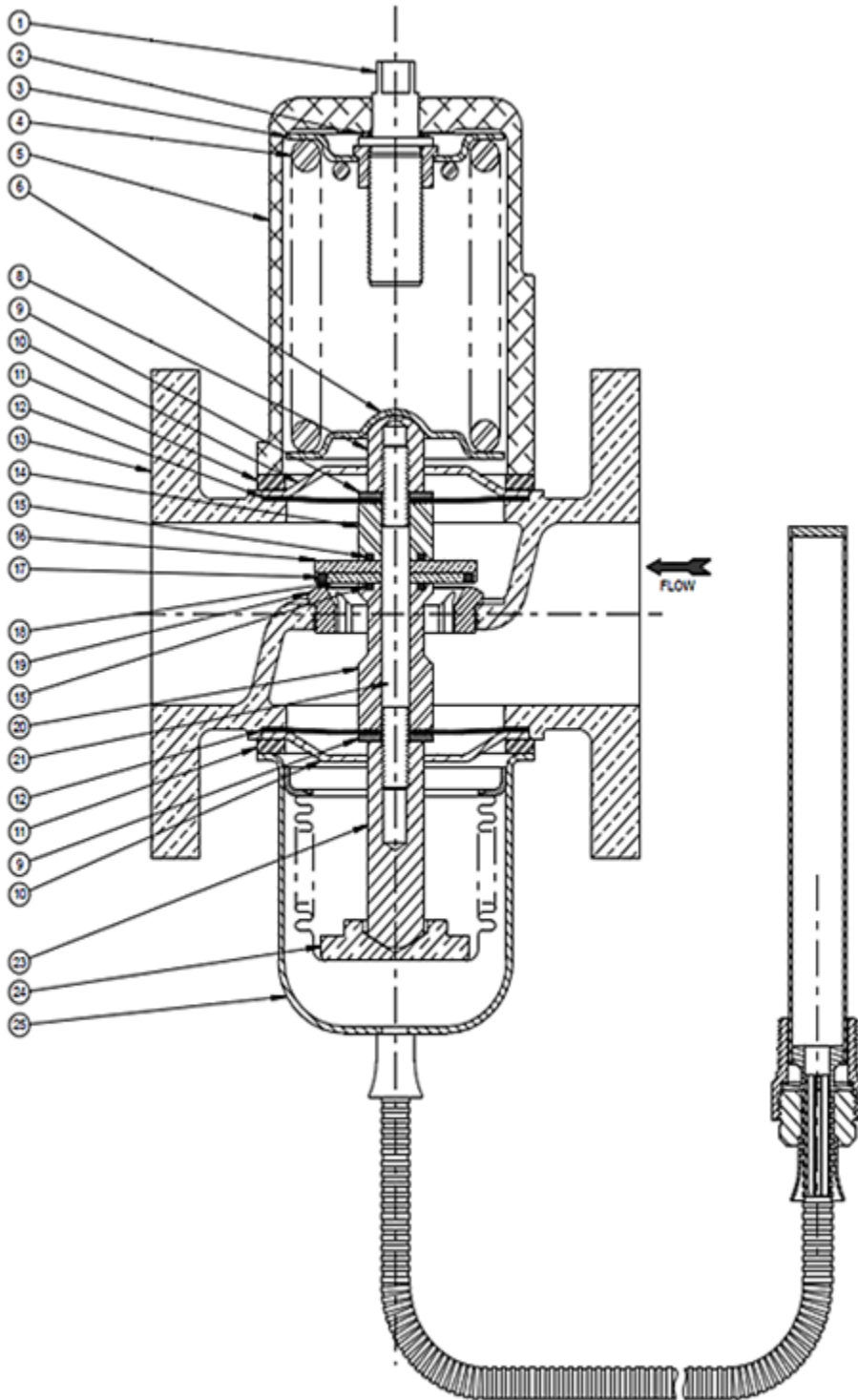


REFERENCE NUMBER	DESCRIPTION
1	Adjusting Screw
2	Washer
3	Spring Plate, Upper
4	Power Spring
5	Spring Housing
6	Spring Plate, Lower
8	Push Rod, Spring
9	Diaphragm Plate
10	Diaphragm Housing
11	Retainer Plate
12	Diaphragm
13	Valve Body
14	Diaphragm Support
15	O-Ring
16	Outer Seal Retainer
17	Seat Seal
18	Inner Seal Retainer
19	Valve Seat
20	Intermediate Spool
21	Connecting Screw
23	Push Rod, Bellows
24	Thrust Plate
25	Thermostatic Assy
26	Capscrew, Spring Housing
27	Lock Washer
28	Capscrew, Bellows



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56T REVERSE ACTING VALVE (2-1/2" FLANGE)



REFERENCE NUMBER	DESCRIPTION
1	Adjusting Screw
2	Washer
3	Spring Plate, Upper
4	Power Spring
5	Spring Housing
6	Spring Plate, Lower
8	Push Rod, Spring
9	Diaphragm Plate
10	Diaphragm Housing
11	Retainer Plate
12	Diaphragm
13	Valve Body
14	Diaphragm Support
15	O-Ring
16	Outer Seal Retainer
17	Seat Seal
18	Inner Seal Retainer
19	Valve Seat
20	Intermediate Spool
21	Connecting Screw
23	Push Rod, Bellows
24	Thrust Plate
25	Thermostatic Assy
26	Capscrew, Spring Housing
27	Lock Washer
28	Capscrew, Bellows