



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. See adjustment instructions below.



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 temperature at the bulb is the only one, which can be controlled.

VALVE LOCATION: (D150-G: HEATING)

The supply line in must be close to the inlet. When heating with steam, always use a float and thermostatic trap at the condensate outlet from the heating equipment. Don't install the control valve at the condensate outlet or water hammer; or poor control may result.

VALVE LOCATION: (R150-G: COOLING)

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 NOTE 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.

DIRECT ACTING (HEATING)		
TEMP. RANGE	OPEN	FULLY CLOSED
55°F- 95°F	65°F	75°F
85°F- 125°F	95°F	105°F
105°F- 145°F	115°F	125°F
130°F- 175°F	140°F	150°F
150°F- 190°F	160°F	170°F
175°F- 215°F	185°F	195°F
185°F- 225°F	195°F	205°F

REVERSE ACTING (COOLING)		
TEMP. RANGE	CLOSED	FULLY OPEN
55°F- 95°F	75°F	85°F
85°F- 125°F	105°F	115°F
105°F- 145°F	125°F	135°F
130°F- 175°F	150°F	160°F
150°F- 190°F	170°F	180°F
175°F- 215°F	195°F	205°F
185°F- 225°F	205°F	215°F

ADJUSTMENT:

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



STERLING

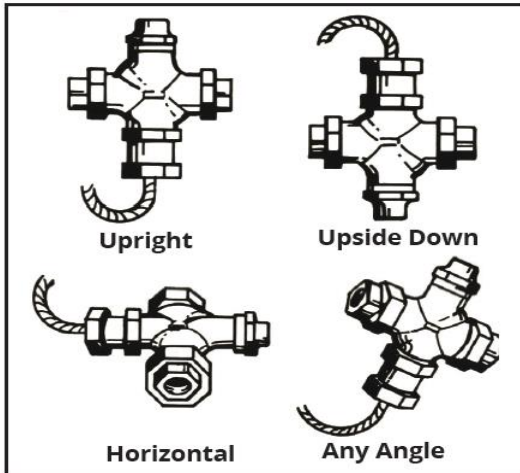
Installation, Operation & Maintenance

Sterlco® 150-G Temperature Control Valve

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

VALVE POSITION:

Preferable with an adjusting screw 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

DIRECT ACTING (D150-G):

The D150-F temperature control valve is considered a direct acting valve used for heating applications. The valve is normally open and will fully close 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 steam in response to changes in temperature being sense by the sensing bulb. Remember that this is a modulating control valve as it does not instantly shut tight and open wide like an electrical control device. In normal operation, the control valve remains in a constant, partially open position, which is automatically adjusted whenever conditions require it. When increase in temperature is sense the thermo-assembly will exert a force against a spring. Once the thermo-assembly force exceeds the spring force the seat disc will move towards the valve seat to shut off the flow of steam through the valve. When there is decrease in temperature the thermo-assembly force is reduce in which the spring force will exceed that of the thermo-assembly to open the valve.

REVERSE ACTING (R150-G):

The R150-G temperature control valve is considered a reverse acting valve used for cooling applications. Unlike the direct acting this valve is normally close and will crack open through an adjustment of temperature ranges. In normal operation,

the control valve remains in close position which is automatically adjusted whenever conditions require it. When increase in temperature is sense 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 liquid to flow through the valve. When there is decrease in temperature the thermo-assembly force is reduce 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 heating or cooling is obtained, first check for external conditions which may prevent the control from operating correctly. Examples are: low or fluctuating steam or 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 overheating results because a direct-acting (heating valve stays open or a reverse acting (cooling 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 direct acting control does not close or the reverse acting control 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 damages 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.



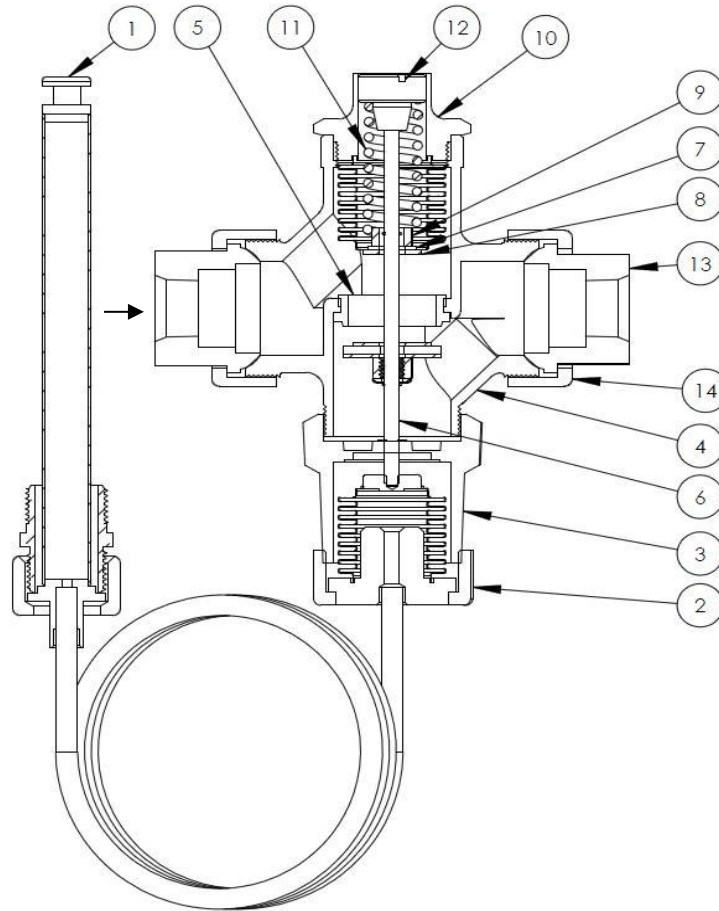
STERLING

**Installation, Operation
& Maintenance**

Sterlco® 150-G Temperature Control Valve

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

D150-G DIRECT ACTING VALVE

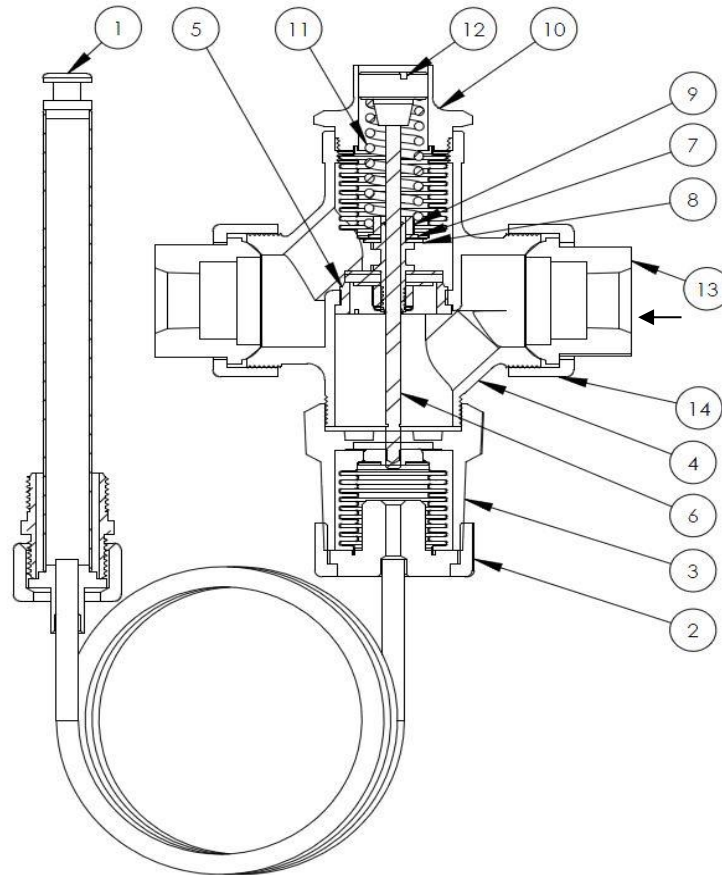


DRAWING REFERENCE NUMBER	DESCRIPTION
1	Standard Thermo Assembly
2	Clamp Nut
3	Thermo Housing
4	Valve Body
5	Valve Seat
6	Stem & Disc Assembly
7	Seal Washer
8	Spring Washer
9	Seal Nut
10	Stainless Steel Seal Bellows
11	Calibrating Spring
12	Calibrating Screw
13	Union Nipple
14	Union Nut



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

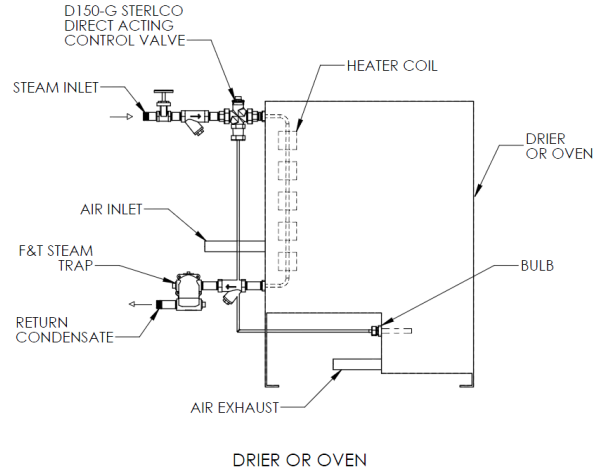
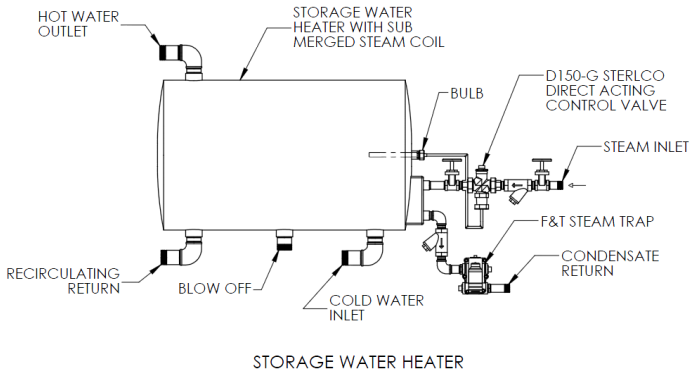
R150-G DIRECT ACTING VALVE



DRAWING REFERENCE NUMBER	DESCRIPTION
1	Standard Thermo Assembly
2	Clamp Nut
3	Thermo Housing
4	Valve Body
5	Valve Seat
6	Stem & Disc Assembly
7	Seal Washer
8	Spring Washer
9	Seal Nut
10	Stainless Steel Seal Bellows
11	Calibrating Spring
12	Calibrating Screw
13	Union Nipple
14	Union Nut



HEATING APPLICATIONS (D150-G)



COOLING APPLICATIONS (R150-G)

