

Type T-44 Self-Powered Cooling Control

Maximum Water Pressure
T-44, 125 psi/8.6 bar

Piping Hookup

The T-44 Cooling Control should be installed with the thermostat directly in the liquid being cooled, i.e., oil and solvent coolers; or in the cooling water discharge line in the case of condensers, compressor jackets and solvent recovery coils.

When the load is intermittent the piping between control valve, coil and thermostat must be kept as short as possible. Oversized or long lengths of piping increase the minimum flow required to keep the thermostat responsive to changing loads.

A three valve bypass hookup is recommended on continuous service applications to permit inspection or repair.

Strainer

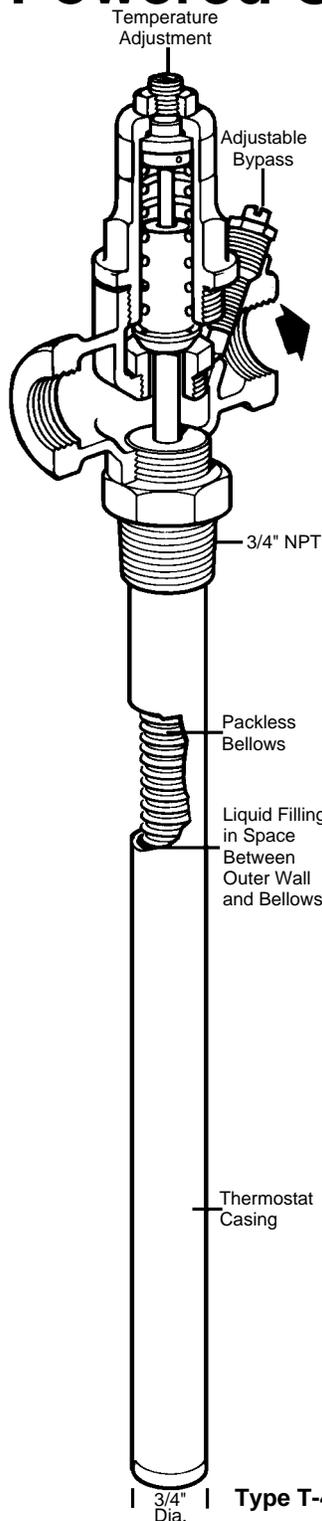
If foreign material enters the valve, it will increase erosion of the valve parts and may completely clog the valve causing overheating. To avoid these troubles, a strainer must be used to protect the control valve from pipe scale and dirt.

Thermometers

A thermometer should be installed near the control thermostat to permit proper adjustment of the control and as a check on operation.

Installation

The control should be installed vertically and the piping in which the thermostat is located must be arranged to keep the heat exchanger and thermostat well full of cooling water at all times. After the piping in which the thermostat will be located is assembled and checked for sufficient clearance, remove any protective piping (C) and insert the thermostat. When tightening the threaded connection, align the valve so the incoming cold water will flow in the direction of the arrow cast on the body.



Remove the thread protectors from the valve and connect the piping without straining the valve body. Wrenches should be applied only to the hexagonal parts of the regulator—never on the valve body.

Operation

In the T-44 the space between the outer thermostat tube and the packless bellows seal is filled with a fluid which gives uniform movement per degree of temperature change. When the temperature of the liquid surrounding the thermostat increases, the filling expands moving the valve head further from its seat to increase the flow of cooling water. A decrease in the temperature of the thermostat causes the filling to contract and the valve throttles to reduce the flow of water.

Bypass Valve Adjustment

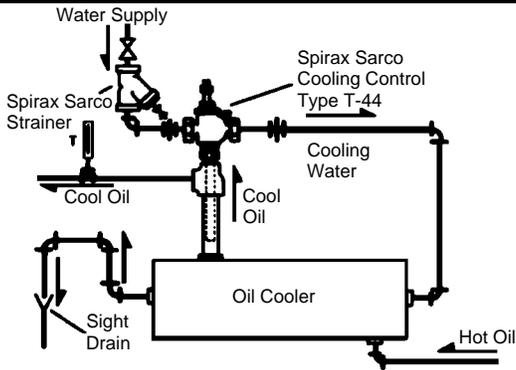
The bypass valve (4) should be kept closed on applications where the control thermostat is installed directly in the fluid being controlled. When the thermostat is installed in the cooling water discharge, the bypass should be adjusted approximately 3/4 turn open, or the minimum flow necessary to keep the control responsive to changing loads.

To set the bypass, loosen packing nut (4A) and turn valve stem (4) clockwise until valve is closed, then open 3/4 turn and tighten packing nut.

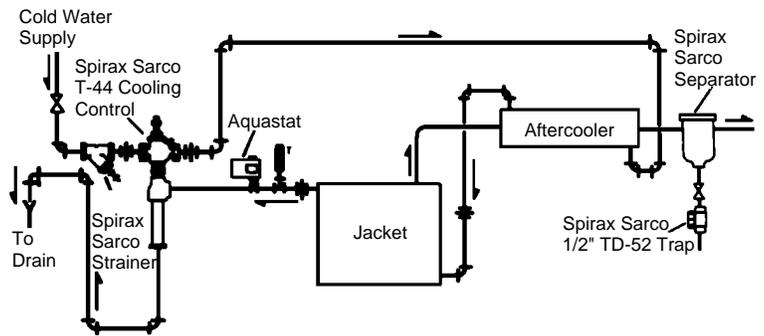
Insufficient flow is indicated when the discharge temperature fluctuates above and below the desired point, or on "start up" when water in the coil or jacket is overheated before it has time to reach the thermostat to open the valve. This condition must be corrected by increasing the bypass opening because repeated overheating will shorten the life of the bypass valve when fully open is:

Pressure drop psi	10	20	30	40
Flow GPM	1.2	1.6	1.85	2.1

3/4" Dia. | Type T-44



Controlling Temperature of Product



Automatic Control of Small Compressor with Overheat

Temperature Adjustment

If it is necessary to make an adjustment to obtain the desired temperature, loosen lock nut (1B) and turn adjustment screw (1A) in direction indicated on the name band or cap.

T-44: Turn adjustment slot clockwise with screwdriver to increase temperature, counterclockwise for lower temperatures.

Temperature can be adjusted $\pm 25^\circ\text{F}$ from center point of range and must be made gradually, allowing time for thermostat to reach equilibrium.

To Inspect Type T-44

Unscrew cap (12) and lift out spring (3). With a screwdriver in the slot of adjustment head (6A) unscrew the valve head and stem assembly (6), lift out of body (11). Remove dirt and all deposits. Badly worn parts should be replaced.

Caution: Do not damage seating surfaces.

To reassemble:

- (a) Insert valve head and stem assembly (6) in place.
- (b) Put valve spring (3) in place.
- (c) Loosen lock nut (1B) and place cap (12) with adjustment stem assembly (1) in place over valve spring (3). Press cap and associated parts downward compressing spring (3), at the same time turning adjustment screw (1A) with a screwdriver so that adjustment key (1C) engages the slot in adjustment head (6A). Then push cap (12) downward until it engages the threads in body (11). Tighten securely.

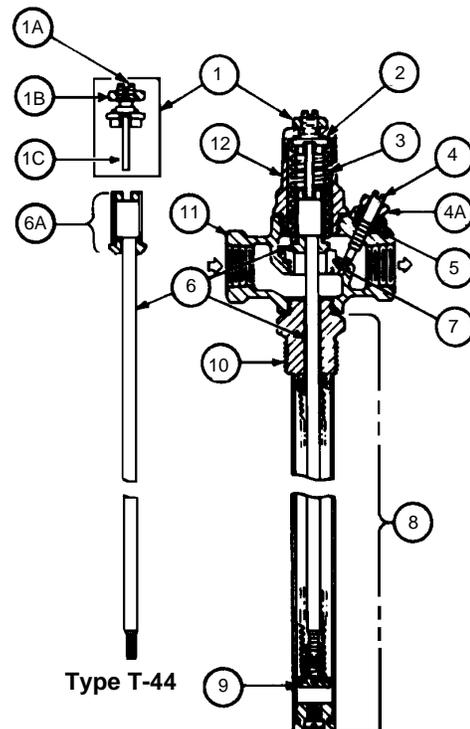
Turn adjustment screw (1A) clockwise three turns to engage thread at bottom of stem. Then reset control to desired temperature and tighten lock nut (1B).

Replacements

To replace the thermostat::

- (a) Loosen lock nut (1B) and, by turning adjustment screw (1A) in the counterclockwise direction, unscrew the valve head and stem assembly (6) from diaphragm cap (9). Then using a wrench on tank union (10) unscrew the thermostat assembly (8) from valve body (11).
- (b) Slide new thermostat in place over valve head and stem assembly (6) and tighten tank union (10) securely in place in body (11).

Readjust the regulator to the temperature required and tighten lock nut (1B).



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