



APPLICATION PROFILE #7

UTILIZING HOT CONDENSATE/FLASH STEAM FOR AUXILIARY HEATING

The superintendent of a mid-size steam plant supplying a centralized steam distribution system took a unique approach to solving two problems on the system.

The first problem was a back pressure build up in the condensate return system due to mechanical-design steam traps discharging at close to steam temperature. This resulted in high temperatures in the return, with a two phase flow of hot condensate combined with flash steam, pressurizing the return and surging within the condensate flash tanks. The resulting high temperature/back pressure greatly reduced the capacity of steam traps throughout the distribution system. In several cases it reduced the heat output of some equipment, and increased water-hammer problems in steam feeder lines.

A second problem within the distribution system was the lack of adequate space heaters or unit heaters in a number of work and storage areas, even though steam and return lines were run through the area.

The unique approach to solving both problems was to utilize the hot condensate from drip stations to supply steam/hot water unit heaters for auxiliary heating, controlling the hot water/condensate discharge from the heater with the **THERM-OMEGA-TECH's HAT valve** (Heat Actuated Trap). The design of the **HAT** valves allows the user to select the actual operating temperatures of the HAT valve maximizing recovery of usable heat (ie: open for discharge at 150°F; valve closes on a 10°F(5.6°C) rise - no flow at 160°F(71°C).

Fig. 1 - Typical steam main drip trap installations.

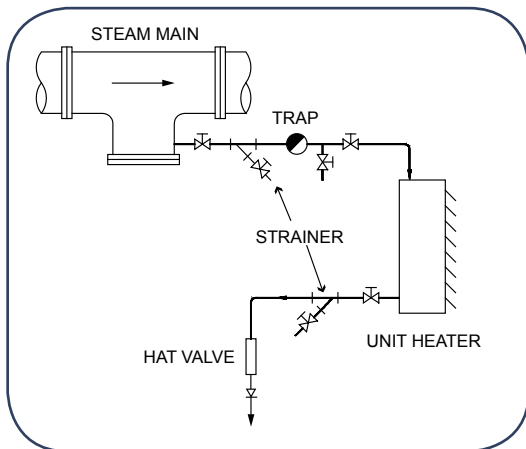
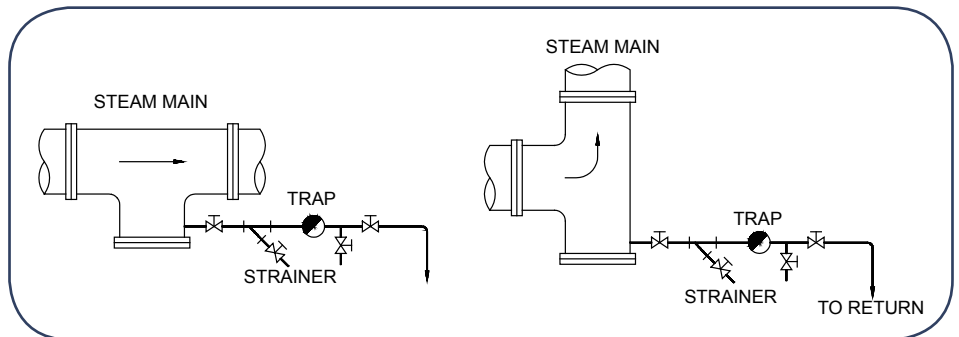


Fig. 2 - Typical installation of unit heater, supplied from drip station, with HAT valve controlling discharge from unit heater. Refer to **THERM-OMEGA-TECH's HAT** data sheet for sizes and temperature range of the **HAT** valve.

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Therm-Omega-Tech, Inc. reserves the right to change the design and specifications without notice



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