

# FLO-RITE-TEMP Accumulation System

## For peak load conditions or to avoid large intermittent steam demands

The FLO-RITE-TEMP water heater accumulation system is designed to provide a specified volume of accumulated hot water for short duration peak loads or when steam is in short supply and a recovery time can be tolerated. During periods of low or no demand, the water in the accumulator tank is heated to the set point temperature by the FLO-RITE-TEMP water heater.

An accumulator or storage tank is installed in parallel with the FLO-RITE-TEMP water heater. Cold water is piped to the inlet of the water heater and into the bottom of the accumulator tank. Hot water flows from the FLO-RITE-TEMP directly to the accumulator tank through a pump that is controlled by an aquastat. When the pump is off and hot water demand is present the flow goes to the accumulator tank via a bypass around the pump. This would occur when there is hot water demand and the temperature in the tank is at set point.

When the system is started the water in the accumulator tank is cold which causes the aquastat to turn the pump on. Water flows out of the bottom of the tank to the inlet of the FLO-RITE-TEMP. The water continues this cycle until the aquastat in the tank senses the appropriate temperature. At that time the pump shuts off and the water is ready for use. The globe valve on the bottom of the accumulator tank should be adjusted at **full system demand** so that a pressure differential of approximately 8 psi is read across the FLO-RITE-TEMP or the temperature out of the FLO-RITE-TEMP starts to drop off.

(This would indicate a flow that is exceeding the maximum capacity of the unit.)

In operation, hot water is drawn off the top of the tank at the same time as cold water enters from the bottom and hot water from the FLO-RITE-TEMP enters the tank from the side. When the peak load stops and the aquastat senses the cooler water in the tank, the pump starts and the heating process begins another cycle.

A bypass line from the heater to the hot water demand is shown and is normally kept closed. When the accumulator tank requires maintenance this bypass allows the tank to be isolated, with hot water being supplied by the FLO-RITE-TEMP only.

- Advantages of the accumulation system are:
  - Accumulation tank temperatures are restored over a period of time avoiding large intermittent steam demands.
  - Providing the FLO-RITE-TEMP's safety features to the entire system.
  - Providing accurate hot water temperature control.
  - Providing a back up alternative during tank maintenance.

To allow accumulator tanks to be relatively small in size because hot water demand is supplemented by the FLO-RITE-TEMP.

