FLO-RITE-TEMP
Recirculation System Piping and Operation

Because of its relatively small size and compactness, the FLO-RITE-TEMP can easily be installed close to the point of water use eliminating the need for a recirculation system.

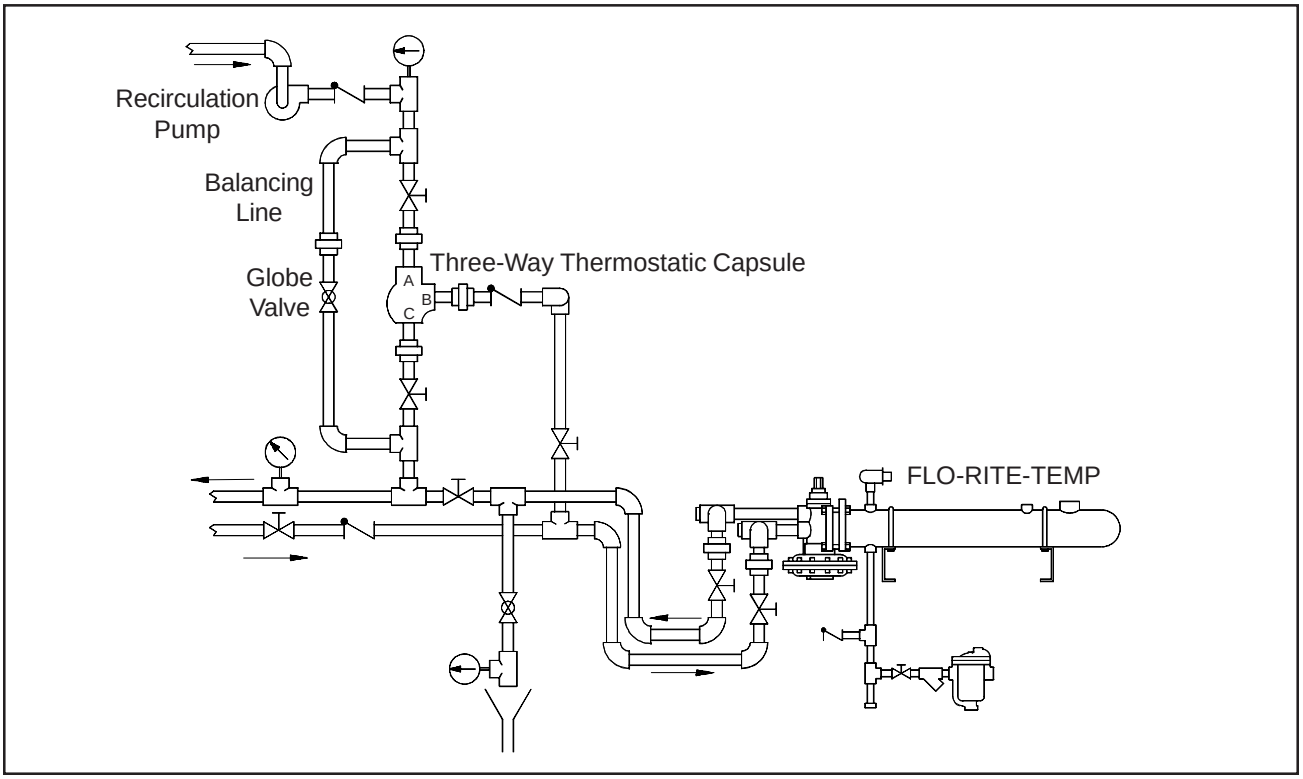
In applications where water heaters are located in basements or utility rooms and feed an entire building or wing a recirculation system or loop must be utilized to assure instantaneous hot water to all usage points.

The recirculation system is made up of several different components designed to work together to maintain the temperature of the water in the loop at times of low or no flow.

Recirculation Pump - This is a constant GPM pump that runs continuously regardless of the hot water demand from the loop. Its function is to continually recirculate the water in the loop in order to maintain the temperature during low or no flow conditions. As a rule of thumb, the capacity of the pump should be approximately 10 to 15 percent of the maximum capacity of the FLO-RITE-TEMP and be able to overcome any head found in the loop. The recirculation pump however, may be larger than 15 percent. But when a larger pump is used, a full line size bypass or balance line with a globe valve must be piped to divert most of the flow around the thermostatic capsule. And avoid adding excessive head for the pump to pump against.

Three-Way Thermostatic Capsule - This device has a nominal set point roughly 15 to 20 degrees below the set point of the FLO-RITE-TEMP and will maintain the temperature in the loop between the set point of the capsule and the set point of the FLO-RITE-TEMP. During long periods of no demand the capsule senses the temperature of the recirculated water and compares it with its pre-set temperature. If the temperature in the loop drops below the capsule's set point because of radiation loss from the piping and no hot water demand from the loop, then the capsule begins to divert some of the loop's flow to the inlet of the FLO-RITE-TEMP (ports A to B) for reheating. This diversion will bring the temperature of the loop back up to its required temperature. Once the temperature in the loop is over the capsule's set point all flow from the recirculation pump now goes straight through the capsule (ports A to C) and the return water is fed back to the hot water supply line. To regulate flow to the capsule, a balancing line with globe valve is required.

This diverting recirculating system eliminates the need for aquastats and any electrical wiring. It is a self contained, self regulating system that controls the temperature of the water in the loop during low or no hot water demand situations. When there is a demand for hot water the temperature of the water introduced into the system is instantly controlled by the FLO-RITE-TEMP feed forward mode of operation.



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