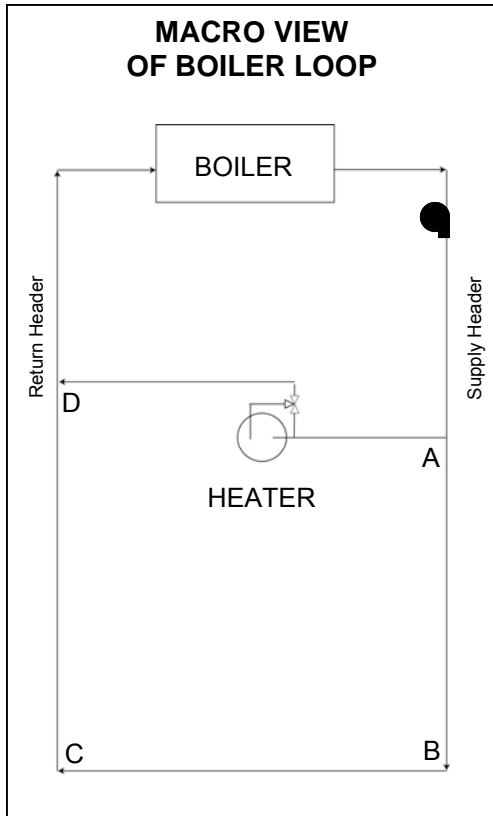
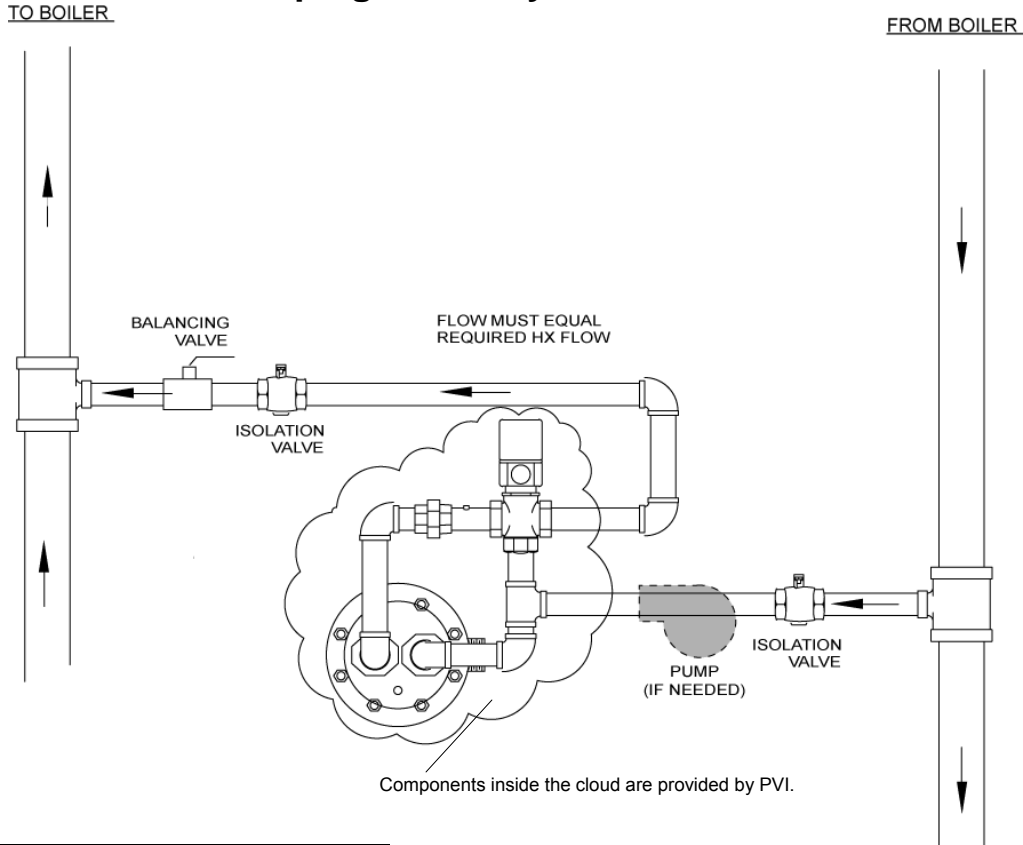


QuickDraw® WATER HEATERS

Piping for 3-way Valve Control



To satisfy the hot water recovery rate, a QuickDraw water heater requires the flow rate indicated on the data sheets for the specific heater model number and the specific domestic and boiler water temperature deltas. To accomplish adequate flow, the pressure drop through the boiler loop from points A to B to C to D (macro view illustration) must be greater than or equal to the pressure drop through the heater circuit (A to D directly).

To calculate pressure drop, the flow coefficients of the 3-way control valves are in the chart below. The following formula is used to calculate ΔP through the valve:

$$\Delta P = (\text{gpm}/C_v)^2$$

The pressure drop through the heat exchanger can be conservatively estimated at 1 psi. Pressure drop through piping, fittings and isolation valves must also be added.

If pressure differential between supply and return headers is insufficient to cause adequate flow, a supplemental pump may be installed in the heater piping where shown. It would be wired to the heater to run only on a call for heat.

Valve Size (inches)	C _v	Valve Size (inches)	C _v
1/2	4.4	2	41
3/4	7.5	2-1/2	71
1	14	3	101
1-1/4	20	4	170
1-1/2	28		



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