RECIRCULATION MODIFICATION

MODELS: 170VP

WARNING

LP & NG ARE EXTREMELY FLAMMABLE SO TAKE EXTRA PRECAUTIONS WHEN PERFORMING ANY WORK TO THE HEATER

Modification of the model 80VP and 125VP water heater is required for hydronic heating and other recirculation applications.

Many high temperature, high flow applications using an AquStar 170 water heater require that the heater be modified to reduce pressure drop to allow for the maximum water flow. The water valve assembly (part #38411) of the Model 170 has a fixed diameter venturi which controls burner activation. The "Industrial" or "I" version replacement water valve assembly (Part # 38412 available from CEC) decreases the pressure drop and increases the maximum flow rate, as well as raising the minimum burner activation flow rate of the heater to approximately 4 gallons per minute. **(The 170 water valve can be field modified as shown below).**

1. The water valve is connected to the main gas valve housing by two screws. Loosen these two screws and unthread the union fittings on the water valve to remove it from the gas valve housing. **NOTE:** Between the main gas valve housing and the water valve is a spring loaded gas valve, to ensure that it does not release, as you start to separate the water valve from the gas housing, retighten one or both of the screws that you have loosened to prevent the gas valve from springing out.
2. Remove and discard the flow restrictor (part #26674), located just above the water valve assembly.
3. The bottom passage of the water valve (part #38411) needs to be drilled out to 5/16 inch. **NOTE:** After drilling out the venturi hole, open the water valve and thoroughly wash away all brass shavings. To re-assemble, follow the water valve diagram below.
4. To re-attach the water valve assembly, with the push rod in place, press the water valve against the gas valve housing. Then loosen the screws that were holding the spring loaded gas valve in place and push the water valve in, and retighten the two screws. Install the washers (part# 25775) and tighten the unions.
5. To lessen pressure drop, remove and discard the inlet filter (part #39924). On a new installation do this after first flushing water through the system to remove any debris.