3.9.2 Well Water valve Operation and Service Tips

Hydro-Temp systems that utilize well water are equipped with a set of pressure regulated water valves. These valves regulate the amount of water that will go through the system, and stop the water flow when the system is off. With the pressure regulated water valves more water is used when the system is under load and less water if the system is running under normal conditions. The Hydro-Temp system is very conservative on water consumption. There will always be two valves, one for heating and one for cooling. On priority hot water systems there may also be a solenoid valve to stop the water if there is a cooling and hot water call at the same time. The heating and cooling water valves are the same valve except the valve body is flipped depending on its use. The heating water valve can be identified by looking at the valve body; you will see on top of the valve body DA and the bottom RA. The cooling water valve will have RA on top and DA on bottom.

On all 410A systems the heating water valve will normally start opening when the suction pressure on the sensing element drops to approximately 120 psi. It will be wide open if the pressure drops below 100 psi. This is of course depending on the pressure exerted by the spring on top of the valve. To adjust the heating water valve look at chart below. (Fig. 3.20)
The cooling water valve will normally start opening when the hot gas pressure exceeds approximately 325 psi. It will be wide open if the pressure exceeds 375 psi. This like the other valve depends on the pressure exerted by the spring. To adjust the cooling water valve look at the chart below. (Fig. 3.21)
The sensing elements are connected to the refrigerant line just before entering the water coil. This line will be a high-pressure line in cooling and a low-pressure line in heating. The water valve will consist of a spring, valve body, valve seats, and the sensing element. If water starts running while the unit is off, you should check for two things. First check the refrigerant pressure. If it is below 100 psi the unit is low on refrigerant. Or check the valve seats in the water valve for something that could stop the valve from completely seating off. If sand or any other objects are a problem you should install a filter strainer. If a valve seat is worn it should be replaced.

Figure 3.20 Heating Water Valve

HEATING WATER VALVE
Opens on refrigerant pressure decrease
Turn adjustment counterclockwise to increase water flow (compress spring)
Adjusting the heating water valve would directly affect the suction of the compressor. Normal suction pressure in heating would be approximately 110 psi.

Figure 3.21 Cooling Water Valve

COOLING WATER VALVE
Opens on refrigerant pressure increase
Turn adjustment screw clockwise to increase water flow (release spring)
Adjusting the cooling water valve would directly affect the high side of the compressor. Normal discharge pressure in cooling would be approximately 350 psi.