

SYSTEM CHARGING AND STARTUP PROCEDURE

CLOSED LOOP AF-12 WITH RHEEM SOLARAIDE TANK & WEBSTONE VALVES

1. Follow this procedure step by step for easy filling of the closed loop type solar domestic hot water heating system and achieve positive air elimination.
2. For most two-panel systems you will need about 8 to 10 gallons of 50-50 propylene glycol/water mixture. Start with a 5-gallon bucket filled with the mix and add to it as the filling process continues.
3. Connect the hose from your fill pump to the drain elbow just below the solar circulating pump. Connect another hose to the drain fitting on the Webstone combination purge fitting located on the return line and have it exit back into the bucket with the fluid.
4. Open the bottom drain. Open the ball valve just above the solar circulating pump. Position the two valves on the Webstone combo purge fitting as shown in step #1 so that the ball valve is partially open and the drain valve is fully open.
5. Begin filling the system. The coil in the tank will fill first and force all air out of the coil. When fluid begins to flow out of the return line hose notice that the air is purged. Once the fluid is flowing smoothly with no air, close the ball valve on the Webstone combo fitting. Leave the drain valve open. The valve configuration is shown in step #2.
6. At this point you will probably need to add more fluid to the bucket. The solar panels will now start filling and you will get a large amount of air out of the hose returning to the bucket. As some point liquid will start spitting into the bucket.
7. Make sure you keep sufficient fluid in the bucket so that the pump does not ingest any air into the system. When the flow from the return hose is steady, start closing the drain valve slowly to about the 50% closed position. You will probably notice some increased air coming out of the hose. Allow this circulation to take place for a few minutes, slowly closing the return line drain until no more air is mixed with the fluid.
8. Now build the pressure to about 40 PSI. Close the drain below the solar circulating pump. Normal position for the valves is shown in step #3. Open the return line ball valve. Turn the solar pump on. To check for circulation, rapidly close the return line ball valve. You should hear the fluid stop in the piping and notice a rapid change in the pressure gauge.
9. Allow the system to circulate for at least ten minutes. Check connections for leaks. After ten minutes slowly bleed the pressure down to about 30 PSI if the system is cold, about 35 PSI if the system is hot.
10. This will complete the startup of the system. Turn the solar control unit to the AUTO position.



Step #1. This is the position of the Webstone combination purge valve handles for initial filling of the solar system. In this configuration the coil will fill first and automatically purge itself of air. After fluid runs smoothly proceed to step #2.



Step #2. This is the position of the Webstone combination purge valve handles for filling of the solar collector panels after the coil is filled. All air from the solar panels and piping will be forced out of the hose connected to the drain fitting back into the bucket used for filling the system. Once fluid starts flowing from the hose, gradually close the small drain valve until no more air is present in the fluid. After fully closing the drain valve proceed to step #3.



Step #3. This is the normal configuration of the Webstone combination purge valve for operation of the solar system. The ball valve is open, the drain valve is closed and the safety cap is in place to prevent accidental fluid loss. The valve must be initially installed in this configuration to operate properly.