



HEAT EXCHANGE AND TRANSFER, INC.  
500 Superior Street • Carnegie, PA 15106  
(412) 276-3388 • Fax: (412) 276-3397  
E-Mail: sales@heat-inc.com  
Web: www.heat-inc.com

SERVICE MANUAL

SM-100-LIST

February, 2005

## INITIAL STARTUP CHECKLIST

**NOTE:** Check all safety systems at the proper time with the following being done in the listed sequence.

1. Open all air vents
2. Fill system through the fill/drain port using a drum pump or HEAT Inc.'s PFS-1, Pump/Filter System.
3. Cycle control valves while system is filling.
4. Stop filling when level in expansion tank sight glass is 1/3 full. Close fill/drain valve and all air vent valves.
5. Let fluid settle a few minutes, open all air vent valves to bleed entrapped air through the expansion tank.
6. With power on and heater(s) off, check pump rotation by jogging the "START" and "STOP" push buttons. Correct rotation if necessary.
7. With heater(s) off, circulate the fluid until all entrapped air bleeds off.
8. Check expansion tank level, if below 1/4 full, add fluid through the fill/drain port.
9. If the system has an adjustable high temperature switch, set it 35° F above normal operating temperature.  
**NOTE:** Most system's high temperature switch is pre-set at the factory and cannot be changed.
10. Set temperature controller at 150° F
11. Turn heater "ON", bleed air from fluid.
12. When fluid temperature reaches 150° F and no additional air is in the fluid, reset controller to 200° F.
13. When fluid temperature reaches 200° F and no additional air is in the fluid, reset controller to 250° F.
14. While temperature increases, check the fluid level and appearance in expansion tank sight glass. If level is low, add fluid through the fill/drain port. If fluid is cloudy or milky, moisture is present. Run the system at this temperature until fluid is clear. If fluid does not become clear in a short time, replace it or run it through HEAT's PFS-1 "Pump/Filter System."
15. Observe system for any boiling or vapors in the fluid.
16. Close all venting and purge valves at 250° F.
17. If no vapors are present, increase the set point in 50° F increments until the desired temperature is reached.
18. Operate system at desired temperature for at least 30 minutes without any evidence of vapors or boiling.
19. Record all operating data at the normal operating temperature (incoming voltage, heater amperage, motor amperage, discharge pressure and process delta temperature).
20. If there is a cooling cycle, turn it "ON" and record all cooling data.