7.0 The Heat Pump Troubleshooting

The most difficulties occur from installation errors or improper equipment applications. Be certain the equipment has been properly installed.

The annunciation panel lights simplify troubleshooting.

7.1 Installation Problems

If the heat pump does not operated correct when the first installed, check the following list

1. Unit is not connected to an adequate power supply or is miss-wired.
2. One or more water valves left closed.
3. The water pump has not been completely air purged.
4. Tank thermostat is not properly adjusted.
5. Tank is not adequately purged of scale and sediment.
6. The motor of Compressor, fan and water pump are installed in a reverse direction.

The most of the above errors may cause the “HIGH PRESSURE” indicator to light.

7.2 Operating Problems

In general, if a problem occurs after a unit has been operated. Ecotech heat pump is designed to show the front control panel with LED, temperature gauges indicated the solutions to more quickly solve the problems. The most likely operating problems are expected to be following:

1. Refrigerant loss
2. Over refrigerant filling
3. Dirty air filter, or airflow is restricted
4. Clogged Evaporator
5. Ambient air temperature is too low or too high
6. Loose electrical connection
7. Thermostat malfunction

8. Internal Component failure
9. Condensate pan or drain tube are clogged or the unit is not properly level
10. Clogged refrigerant cycle
11. Water flow obstruction in pump, condenser, or connecting water lines causing to shutdown circuit breaker by flow switch.

7.3 Problems and Solutions

Problems	Recommended Solutions
1. Water is not hot.	1). System faults/check led faults on the front control panel a). HIGH /LOW PRESSURE SWITCH FAULT b). WATER FLOW OBSTRUCTION c). WATER PUMP IS NOT WORKING d). ELECTRIC WIRING IS MISS-PHASE 2). Thermostat is set too low or is defect. 3). CW/ HW piping is mismatch causing turbulence water temperature 4). Cold water dip tube in tank is defective 5). Heat pump not properly connect to tank 6). Refrigerant is too low 7). Heat pump/storage or combination undersized for application. Addition heating capacity /or/ heat pump unit.
2. Water is TOO Hot.	1). Thermostats is set too high. 2). Valves partially closed. 3). Internal component failure
3. The noisy.	1). Compressor is irregular noisy, check electric wiring It has to been wired through a phase protection 2). Check for loose sheet metal fasteners 3). Make sure the unit is not attached to, or leaning against, a wall which can vibrate. Place vibration dampeners underneath unit. Relocate if necessary. 4). Blower wheel loose on motor shaft. Tighten 5). Tighten the nut , Not crew to harder or looser 6). Check Fan motor may not have oil, fill more liquid
4. cIRCULATING PUMP is not operating	1). Water Flow rate may be an obstruction, check the valve is closed 2). Check electric power, voltage is correct 3). Check high Pressure switch and flow switch damage cutting off frequently.
5. Power consumption is rated unusual.	1). Dirty air filter or air flow is restricted / Clean 2) . Clean evaporator coil 3). Dirty corrosion on heating surface/ Clean 4). Low ambient temperature. 5). Block flow in refrigerant circuit 6). Refrigerant loose/ leaking
6. Water on floor	1). Check tubing, valves and fittings for leaks 2). Make curtain that the heat pump is properly tilted. 3). Check condensate drain line for obstructions, clogs, or sharp bends 4). Make sure the condensate trap has been properly installed. 5). Blow into condensate drain line to remove obstructions not visible. 6). If leak continues after the unit is turned off and is coming from inside the heat pump, there is an internal leak
7. Trips a circuit breaker / or Heat pump blows a fuse	1). Circuit does not have adequate impurity. Refer to nameplate for circuit requirement 2). Short or loose connection in field wiring 3). unit has an internal short circuit or loose connection.
8. Frost formation on evaporator	1). Insufficient air flow through unit (ice may form over entire evaporator surface) 2). Low ambient temperatures under high humidity conditions. 3). Ice on evaporator coil, indicating a partial refrigerant loss 4). Block flow in refrigerant circuit
9. Heat Pump is not running	1). Safety switch and circuit breaker on. 2). Faulty field wiring 3). High Pressure limit switch kicked out 4). Thermostat failed or was improperly installed 5). Thermostat is set too low. 6). Internal wiring or component failure 7). Defective anti-short cycle timer.

7.4 Enunciator Light(s) Complaint

LIGHTS ON	Recommended Solutions
1. No lights on	Heat Pump will not run, check 1). Circuit breaker off or tripped, fuse blown 2). Safety switch off 3). Bulb(s) burned out. Replace 4). Internal component failure
2. Heat pump will not run but power light on	1). Pump is air locked. Purge pump 2). Inadequate pump flow. Check pipe size requirements in this manual 3). Sediment in tank or lines. Purge tank or lines 4). Thermostat is set too high or defective. Turn down setting to 55C 5). Problem with refrigerant circuit
3. Hi-Low Pressure On	1). Evaporator coil dirty or blocked. Clean coil and remove blockage 2). Inadequate waste heat available. Relocate unit to an area having higher air temperatures, or increase heat input into installation area. 3). Refrigerant leak 4). Defective low pressure switch 5). Defective blower

IMPORTANT: Reset the Heat Pump by removing then restoring power to the unit at the breaker or from the manual switch. There will be three (3) minute delay before heat pump restarts. If the heat pump cuts out again on LOW or HIGH Pressure, additional troubleshooting is necessary to find the cause.

DO NOT CONTINUE TO RESET THE HEAT PUMP, AS CONTINUED SHORT-CYCLING MAY STRESS OR DAMAGE INTERNAL COMPONENTS.