

Troubleshooting Guide

MightyTherm HH 2000-5000

Water dripping in firebox.

Possible Cause	What To Do
A. If boiler is used with an air conditioning system, chilled water may be flowing either by gravity or pressure through boiler and creating condensation on boiler tubes.	A. Install flow-check valve or programmed bypass valve in the system for change-over from heating to cooling.
B. Tube in heat exchanger has overheated and ruptured.	B. A tube failure always caused by (a) scale formation in the tube or (b) inadequate water flow through the boiler.

Boiler will not fire.

Possible Cause	What To Do
A. Electric power is off.	A. Check to see that main power switch is "ON." Use testing device to trace power to heater junction box.
B. Operating or safety control has opened circuit to electric gas valve.	B. Turn off power. Use continuity across terminals of each operating and safety control switch up to the electric gas valve. Replace defective control.
C. Pilot flame is out.	C. Relight pilot per instruction.
D. Manual reset device has tripped.	D. Follow instructions for start-up. Reset pilot safety and all manual reset safety switches and reset manual safety gas valve.
E. No gas pressure to burners.	E. Trace gas line to service shutoff cock. If service cock is open, trace gas line to meter. If no pressure is present at meter, call for public utility service. If gas is present in boiler inlet, check pressures in following sequence: (1) downstream from pressure regulator. (2) downstream from electric gas valve. Replace or adjust as necessary.
F. Electric gas valve operator is burned out or shortened.	F. Disconnect wiring harness at gas valve terminals. Check continuity to actuator coil. If open circuit or short is indicated, replace coil or operator.

Boiler is pounding, Knocking or emitting steam from relief valves.

Possible Cause	What To Do
A. Low or no water flow.	A. This condition is usually caused by lack of adequate water flow through boiler. Check the following: 1. Is the heater wired into the pump circuit so that the boiler cannot fire unless the pump is running? 2. Check to see that all valves in system are open to be sure that water can circulate through the boiler and the system. 3. If the system has automatic water valves (2-way or 3-way) that can cut off the water flow through the boiler check to see that they are equipped with end-switches which shut the boiler down when the water flow through the boiler is reduced by 70% from full flow. Also be sure that manual bypasses are provided around two-way zone valves where necessary in order to assure 15% of full flow through the boiler at all times. 4. Examine pump for clogged impeller 5. Water flow through the system may be impeded by air locks at high points. Residual oil in system tends to collect at high points and clog automatic air vents. Be sure that all high points are adequately vented.
B. Low or no system pressure	B. Check for inoperative water makeup valve or pump. Also clean strainer in pressure reducing valve which furnishes makeup water. Look for closed valve in makeup water line or a leak in the system.
C. Clogged "Y" strainer.	C. Remove strainer element and clean screen.
D. Debris from system piping is blocking tubes.	D. Remove header covers. Examine all tubes and waterways. Use new gaskets when reassembling. Clean out tubes.
E. Scale has formed in tubes.	E. This is always caused by the inflow of raw water into the system. Check for leak in system, especially at pump packing. Check for water-logged expansion tank. This condition will cause water to discharge through the relief valve every time the boiler fires and permits raw water to enter the system every time it cools down. Drain expansion tank.

Pressure relief valves leaking intermittently or steadily.

Possible Cause	What To Do
A. Static pressure in system exceeds setting of relief valve.	A. Calculate height of water in system above boiler. Install new valve with psi setting 25% above required static system working pressure. Do not exceed 160 psi.
B. Expansion tank is waterlogged.	B. Drain expansion tank, then reopen it to the system. Look for leaks in expansion tank or fittings. Calculate required volume of expansion tank in relation to system to determine that tank is adequate.
C. Valve between system and expansion tank is closed.	C. Open valve so that pressure in system will be open to tank.

Soot in flueways or in tubes, or noxious fumes indicative of bad combustion.

Possible Cause	What To Do
A. Combustion air supply to heater room is inadequate.	A. Check air supply opening. Look for debris in screen or louvre which covers combustion air opening, or for material blocking the opening.
B. Stack or vent is blocked or restrictive.	B. Look for blocked stack and excessive number of elbows in stack or excessive length of horizontal runs.
C. Severe down draft is causing spillage of flue products into room.	C. Check for (1) proper vent cap on stack; (2) adequate height of stack above roof; (3) equipment exhausting air from inside of building; and (4) setting on the barometric damper if applicable and (5) proper installation of draft diverter.
D. Gas pressure to burners is excessive.	D. Check gas pressure with manometer, and adjust with heater firing at full rate.
E. Boiler not fitted for the fuel being supplied	E. See nameplate for correct fuel.
F. Boiler installed at high altitude without proper derating.	F. Installations at altitudes in excess of 2000 ft. above sea level are subject to jurisdiction of the local inspection authorities.
G. Water entering boiler is 105°F	G. Add balancing valves if needed to raise entering temperature.