

Nc If this appears on the display it is usually the result of an improper neutral connection supplying the boiler. Check all wiring, assuring that the neutral is connected and that the ground has no stray current in it.

F00

If you experience an F00 code on startup of a new boiler, disconnect the two gray TT wires from whatever they are attached to and wire them together. Reset the boiler. The F00 code had appeared as a result of reversed polarity on the gray wires. This will also appear if the TT wires are shorted out to water pipes, conduit, or the like.

F09

An F09 that appears on initial startup of a Munchkin is usually the result of an improper air/gas mixture. Every unit is fired before delivery and set at 100 ppm, however gas has differing calorific values in different areas.

To initially start a challenging boiler, cover the air intake on the left side of the blower $\frac{1}{2}$ to $\frac{3}{4}$ of the way with your hand (essentially choking the unit). The unit should fire. Once a solid flame is established, you should be able to set the CO levels to 105 to 110 ppm on high fire by adjusting the throttle adjustment screw (page 10 in the manual).

Check through the viewing port that the ignitor (11 o'clock position on the face plate) is sparking. Ascertain that the gap is $\frac{1}{4}$ inch.

Be sure that the ignitor is directed downward toward the burner. The spark should be visible through the viewing port.

F10

F10 is indicative of a failure while running.

Check that the condensate drain is clear, and that condensate can flow freely from the boiler. Back ups create steam which suffocates the

flame, throws off rectification, or in the worst case, soaks the refractory plates, causing the spark to ground out instead of sparking.

Check what the flame rod is reading by depressing and holding the S4 button. It will display d1. Press and release the button until d7 appears. The d7 reading should be 4.0 or stronger, and is directly related to the CO output of the boiler (see below).

The CO levels at the exhaust breach should be 105-110 ppm on high fire on all units. See page 10 in the manual for adjustment procedures.

If there is a concentric vent kit installed, check that it has been properly assembled and GLUED. Exhaust gas recirculation will cause the unit to fire then fail almost immediately.

On a Munchkin 80, check that the brass vent barb on the rear of the gas valve is not blocked by the rear of the boiler cabinet. If so, shift the boiler slightly forward in the cabinet.

Alarm Contact

The 925 control is equipped with an alarm contact that will provide 110 volts to an alarm or light whenever a fault code is encountered. When considering an alarm/light, remember the limitations of amp draw on the control.

Freeze Protection

The Munchkin boiler has built in freeze protection: When the boiler senses its internal temperature is 45 degrees, the central heating circulator is energized. If the temperature continues to fall, at 38 degrees the burner is energized until the internal temperature reaches 50 degrees.

The circulator pump(s) are exercised for 20 seconds every 24 hour period. If the unit is being used in a snow melt application where cold water will be returned during the exercising, special care should be taken.

Water Capacity

80M = 2 QUARTS

140M = 3.7 QUARTS

199M = 4.5 QUARTS

Glycol / Antifreeze preferably 30% maximum mixture

At 30% glycol

Boiler BTU input loss is - 15% & a 5% increase in head against the circulator

At 50% glycol

Boiler BTU out put loss is - 30% & a 50% increase in head against the circulator

Amps Draw

.87 amps draw upon start up

.37 amps draw running

Flow Rates

The recommended flow rate for the Munchkin boiler is 1GPM for every 10,000 BTUs of boiler capacity (80,000 BTU boiler needs 8 GPM, 140,000- 14GPM, etc.)

The maximum flow rate is 125% of the above stated numbers (maximum for an 80M is 10GPM.)

Vision 1

The basic principle of Vision 1 is the ability to operate two different temperatures of supply water from one control. Essentially what you have is two distinct thermostat and circulator relays. The higher temperature (194 degrees) water can be used for the generating hot water, a high temperature heating loop, or both, by splitting the loop with zone valves, a mechanical aquastat (L4080B) on the Super Stor, and a two zone relay. The water temperature delivered to the high temperature loop is fixed at 194 degrees, but the priority timing is adjustable from 1 to 60 minutes.

If the hot water will operate, but the central heat pump will not energize, check the following:

When using the Vision 1 indirect water sensor, be sure to keep it as far away as possible from all line voltage wiring. The blue sensor wires can pick up interference from the line voltage wires and send false signals back to the control board. The most common occurrence is that the hot water tank will be satisfied, but the 925 control holds off the central heat circulator for hot water priority. The easiest way to diagnose this is to simply disconnect both blue wires from the control.

Also check that the #1 function in your Vision programming is **de**. If it shows as d I or d0, use the S1/S2 button to return it to **de**.

E03- This code will appear if the above setting is set to DI

Status Menu

Installers are also able to check the current status of the Munchkin parameters by pressing the S/4 key for 3 seconds. Once activated, the display will show d1 alternating value of the actual outlet temperature.

Actual values are displayed for each function. To view the next value, simply press the S/4 key to go to the next displayed value. Listed below are the values which can be displayed. These values cannot be changed.

To exit this menu, simply press the S3/program key to resume normal operation.

Function Value

d1/ Actual Temperature from outlet sensor

d2/ Actual Temperature from inlet sensor

d3/ If using a standard mechanical control, the control will display for closed for open

If the sensor is connected to the SuperStor Indirect Fired Water Heater it will measure the actual temperature.

d4/ Not used

d5/ Actual Temperature from the outdoor sensor

d6/ Actual Fan speed multiplied by 10 (Example: If fan speed displayed is

RPM x 10 = 4100 actual fan speed)

d7/ Actual Ionization current read from Flame Rectification probe

d8/ Actual Status of the Central Heating Circulator Off = , On =

d9/ Actual Status of the Indirect Fired Circulator Off = , On =

d10/ Actual Status bus communication = connected, = not connected

SECTION 7: TEST MODE

This function is intended to simplify the gas valve adjustment if needed. Listed below are the recommended limits on each Munchkin Heater and the Combustion Settings (**Fig. 7-2, pg. 16**).

Automatic modulation does not take place when the controller is in Test mode, only temperature limitation based on the Munchkin Central Heating set point. The user will be allowed to increase or decrease the fan speed by pressing in either the S1/- or S2/+ keys.

To activate the Test mode simply press the **S2/+** and **S3/Program** key together for 1 second. Once activated, you will see in the display **ser** and 1/10 of the actual fan speed. The measurement of the combustion levels should always be taken at the highest and lowest fan speed. After 10 minutes, the Test mode stops automatically. To exit Test Mode press S1/- and S2/+ key together for 1 second.

Gas Valves

If you find that the **HONEYWELL** gas valve has been adjusted to the point of not knowing where it is, simply turn the throttle screw completely in (clockwise) until it seats, then turn it out (counter-clockwise) 6 ½ turns.

If the gas valve is a **DUNGS** (on the T50/T80 models), again, turn the Throttle adjustment screw clockwise until it seats, then back it out 7 full turns for LP gas, or 10 full turns for natural gas.

At that point the unit should at least operate and allow you the ability to perform combustion tests to attain peak efficiency.