

Munchkin Boilers VISION 1 TIPS

Understanding Vision 1

The basic principle of Vision 1 is the ability to operate two different temperatures of supply water from the 925 boiler control. Essentially what you have is two distinct thermostat and circulator relays.

The higher temperature (194 degrees Revision R Circuit Boards will allow this value to be adjustable}) water, (which is traditionally used to supply an indirect water heater) 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. See page 28 in the Vision manual, Drawing 4H.

To begin: One item that has been overlooked is that the boiler MUST be piped per the Vision 1 manual, with the Super Stor tank being able to operate independently of the central heat circulator. The Vision 1 system prioritizes the Super Stor tank by shutting off the central heating circulator.

As with all Munchkin installations CIRCULATOR SIZING is critical. The general rule is 1GPM for every 10,000 BTUs of boiler output (i.e.: a 140M would need 14 GPM). The Vision 1 manual outlines the proper pump recommendations for both the central heat and Super Stor.

If either of the Indirect Sensor wires or Outdoor Sensor wires are disconnected, the boiler will operate as if that particular input does not exist.

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A standard aquastat may be used in the place of the tank sensor. It will provide an on/off signal only to the 925 control board, and therefore the tank temperature setting must be made at the aquastat. The priority timing will remain in effect.

If **another manufacturer's indirect fired water heater** is being used (shame on you) the Vision 1 tank sensor may still be used. If the tank has an OEM built in control, the thermostat leads provided with the tank may be used. In that case, the tank will operate as described above for a standard aquastat.

The priority timing works as follows:
Upon a DHW demand, the central heat circulator is disabled and the DHW circulator is energized. If the DHW demand is not satisfied within the pre determined priority time, the system will shut off the DHW pump and energize the central heat pump for that same amount of time. The system will continue to toggle between the two until either one is satisfied. If there is only a single demand on the system, the priority timing does not come into play, and the single load will operate indefinitely.

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The boiler display is showing E03:

Again, this relates to the above. E03 is indicative of the control being set to DI.

The hot water tank is satisfied, but the heat will not run:

First, disconnect the two blue sensor wires from the DHW sensor. If the heat suddenly comes on, there is either a wiring or sensor problem. In most cases, electrical interference from line voltage is corrupting the sensor signal from the tank. The solution is to isolate the sensor wires from the offending line voltage wires.

If there is an outdoor sensor attached, disconnect one of the light green leads connected to the sensor. This will operate the boiler at its highest set point. If there is an error in the set up of the heat curve, or an issue with the wires or sensor, this will by-pass the sensor and operate the boiler.

VERY IMPORTANT:

In setting up the Vision 1 programming, settings 3 and 9 are LIMITS. The actual HIGH operating temperature and DHW temperature are set as you would for a standard boiler (by pressing S3). In other words, if setting 9 in Vision 1 is set to 130, the highest anyone could set S3 would be 130. This is done to prevent less informed people of possibly damaging their heating systems or flooring.

Following are the Vision 1 settings for the 925 control

****Settings 16 through 19 are the newest options and are not available on earlier control boards.****

Changes made in the programming will not take effect while there is a call for heat. The boiler MUST be in an idle state.

1 de Not Applicable (BE CAREFUL not to change. See above)

2 149°F Not Applicable

3 185°F Maximum Temperature that the SuperStor Indirect Fired Water Heater can be set to VIA S3 (Note: Does not apply if used with Mechanical Control) Range: 95°F to 185°F

4 36°F Not Applicable

5 7°F Allows the installer to change the differential in the Indirect Fired Water Heater (Does not apply if used with a Mechanical Control) Range: 1°F to 18°F

6 0 Minutes Indirect Circulator Post Purge Time this only pertains if there is no other call for heat: 0 to 60 min.

7 68°F Outdoor temperature that you wish the central heating should be disabled—(warm weather shut-off) Range: 41°F to 122°F

***8 5°F Allows the installer to change the Minimum Outside Design Temperature. Range: -49°F to 32°F (See the chart on page 14, Fig. 4-1 to set outdoor reset curve) TRANSLATION : When it's this cold outside...**

***9 201°F Allows the installer to change the Design Supply Water Temperature from the Munchkin based on the Minimum Outside Design Temperature (See the chart on page 14, Fig. 4-1 to set outdoor reset curve): 203°F to 77°F TRANSLATION:I want my boiler water this temperature.**

***10 68°F Allows the installer to change the Maximum Outside Design Temperature for Central Heating. (See the chart on page 14, Fig. 4-1 to set outdoor reset curve) Range: 95°F to 32°F TRANSLATION: When it gets this warm outside...**

***11 95°F Allows the installer to change the Design Supply Water Temperature from the Munchkin based on the Maximum outside Design Temperature. (See Fig. 4-1 on page 13) Range: 32°F to 185°F TRANSLATION:..I want my boiler to operate at this (lower) temperature**

12 68° F Allows the installer to set the lowest temperature on the Munchkin for Central Heating. Range: 32°F to 194°F This is the lowest that anyone will be able to set the boiler water temperature VIA S3.

13 0 Minutes Allows the installer to change the Central Heating Circulator Post Purge Time once the thermostat is satisfied. Range 0 to 10 min. again, provided that there is no call for hot water.

14 30 Minutes Allows the installer to set the Maximum run time for the Indirect Fired Water Heater and the Minimum run time for Central Heating. Range 0 to 60 Minutes

15 0 Bus address for Vision 3 (0= zone master 1-8 — cascade slave)

16 -0 – 10 volt / Booster enable function (1= enabled)

17 0 – 10 volt selector (0=temperature, 1= Tekmar power)

18 Step modulation (heating mode) 0=off, 1= on (you can now over ride the 6 step ramp up to high fire in primary (central) heating mode. If turned on (1), the boiler will ignite and immediately ramp up to high fire, then modulate down from there as the load requires.

19 Supply temperature to Vision 1 secondary temperature. (this was previously locked in to 194. You now have the option of setting two different supply temperatures i.e.: 120 for radiant, and 150 for air handlers. NOTE: The vision 1 secondary zone will still be prioritized, and will NOT respond to the outdoor sensor