

# Munchkin Boilers Vision 3 Tips

## Understanding Vision 3

Vision 3 controls allow an operator to very simply combine up to 8 Munchkin boilers to provide a widely modulating boiler system.

Basically, the Vision 3 system monitors both the outdoor temperature and the temperature of the secondary loop. The Vision 3 control will call in the individual boilers as necessary to reach and maintain the target temperature of the secondary loop.

**No connection to boilers is recognized:**

Make sure that the individual boilers have been given addresses. Each boiler has to be given a bus address through the Vision 1 programming on the 925 control (setting 15).

The bus address has to be numbered 1-4, or 1-8, depending on which Vision 3 module you have.

**Be certain to lock in the programming of the bus address by pressing the S4 button for 1 second.**

**No boiler in the group can be addressed 0, or the Vision 3 panel will not accept any of the boilers.**

If two boilers are addressed the same, the Vision 3 panel will try to operate both at the same time. And not well, I might add.

Be certain that the inner (logic) board is firmly pressed onto the wiring connection pins at the bottom. Push directly on the handle at the bottom of the board.

Be certain that the Vision 3 panel is connected to either a THERMOSTAT (or jump the T T connections) or a 0-10 volt input BUT NOT BOTH.

If the installation is in a harsh environment, where vibration may loosen the connection, remove the center wiring knock-out from the Vision 3 case (directly beneath the handle).

## Questions

**Call TSI Hydronics or Tech Service department at:**

Green Bay Office  
920.499.1300  
800.776.2014

Madison Office  
608.271.7500  
800.366.0930

Jamie ext. 221  
Dave ext. 220  
Corey ext. 248

Dan ext. 334  
Jeff ext. 317  
Dan K ext. 370

**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.

**This information covers Vision 3 Munchkin installations.**

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## Everything operates but the loop is not heating correctly: (Continued)

The grey T T wires on the boilers should not be connected to anything. Just leave them disconnected.

It is possible to have boilers piped and wired per **Vision 1** connected into a Vision 3 group. In this instance, any boiler that is generating hot water in Vision 1 priority mode will register as not available for the Vision 3 group. Once the priority hot water demand is satisfied, the individual boiler will register as available for the Vision 3 group.

If **all** of the boilers lock out, the system will not recognize that it is below capacity, and therefore the **Extra Boiler** output will not become energized.

### Fuses

The fuses on the Vision 3 logic board are as follows:

F1	Vision 3 logic board	1.0 AMP
F2	Cascade Pump	6.3 AMP
F3	Indirect Pump	6.3 AMP
F4	Auxiliary Fan	6.3 AMP
F5	Extra Boiler	6.3 AMP

### COMBUSTION SETTINGS

HIGH FIRING RATES and LOW FIRING RATES ON ALL MODELS

	Natural Gas		Propane LP	
	low	high	low	high
Carbon Monoxide CO ppm	0-20 ppm	80 - 135 ppm	0-20 ppm	80 -150 ppm
Carbon Dioxide CO 2	8-1/2 %- 9-1/2%	8-1/2 %- 9-1/2 %	9-1/2 %- 10-1/2 %	9-1/2 %- 10-1/2 %

**All gas lines need a minimum of 10 feet.**

**This line length must be maintained**

**This line length must be maintained after a regulator before connecting to the factory supplied gas connection.**

**Gas piping should never be reduced below 3/4 of an inch black iron pipe.**

**Check internal gas cock and connections for leaks before firing system.**

### Primary Loop Flow Rates

The reference chart is found inside your installation manual shipped with your boiler.

A Strainer is recommended on all Munchkin boiler installations.

BOILER	TACO P/N	GRUNDFOS P/N
50M/80M	007	UPS 15-58FC SPD-2
140M	0010	UP 26-64 F
199M	0011	UP 26-96 F

**RECOMMENDED CIRCULATORS ARE BASED ON 1 GPM PER 10,000 BTU/HR**

