HeatTransfer
Advanced Heating and
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Specification for Heat Transfer Products, Inc. Rev 2– 399 Munchkin Commercial Boiler

Typical Specification for the Rev 2-399 Munchkin High Efficiency Boiler Model Number 399M (Modulation Range 100,000 to 399,000)

The Boiler shall be a Munchkin Boiler, manufactured by Heat Transfer Products Inc. Model 399M . Having a modulation range input of 100,000 to 399,000 Btu / hr Output and shall be operated on Natural Gas or L.P. Gas.

The heat exchanger shall be constructed of 316L stainless steel. The 316L stainless steel combustion chamber shell shall be designed to drain condensation to the back of the heat exchanger section. A thermoplastic condensate hose with a built in trap shall allow condensation to drain from the heat exchanger sections. The heat exchanger tubes shall be rolled and formed in a helical pattern. These tubes shall be secured in a welded module and shall not require any gaskets. The water side and combustion gas side will have baffle plates that will allow the boiler to control the flow of each medium in order to condense the flue gas. The entire heat exchanger shall be insulated and secured in a plastic enclosure. All components shall be located in the front of the heater for easy access for future serviceability. The boiler shall bear the ASME "H" Stamp with a working pressure of 160 PSI and shall be National Board Listed. The complete heat exchanger assembly shall carry a 12 year limited warranty.

The boiler shall be a sealed combustion system, taking only outside air for combustion and exhausting the flue gas with plastic schedule 40 or 80 PVC or CPVC pipe.
CAUTION: Foam Core pipe is not an approved material for either intake/exhaust piping.
The boiler's total combined equivalent venting length, less fitting allowances for both the intake and exhaust venting shall not exceed 85' in 4" pipe size or 125' in 6"pipe size.

The boiler shall have a 1-1/4 NPT gas connection on the right side with electrical and 2" NPT water connections on the left hand side of the boiler. The venting connection shall be located in the rear of the boiler. The operation of the boiler shall be in a closed loop pressurized system, which must have a properly sized thermal expansion tank and to meet local codes. The Boiler's construction is in accordance with ANSI Standard for Gas Fired Low-Pressure steam and Hot Water Boilers, ANSI Z21.13b-2002, and Canadian National Standard CGA-4.9a-2002. The boiler shall be UL/ULC (File # MH 27745) listed and exceed the minimum efficiency requirements of Ashrae/103-93. The boiler shall have a thermal efficiency of 93.4% and a combustion efficiency of 95.1%.

The boiler shall have an integrated digital control system utilizing an algorithm to fully adjust the firing rate while maintaining the desired output temperature. Combustion gas and air are premixed prior to introduction to the stainless steel “inconel” burner using a low voltage gas valve and variable speed fan. The boiler control uses pulse width modulation to send a speed command signal to the fan which varies the volume of combustion air and gas supplied to the burner. The control is connected to a digital display that provides information on the operation of the boiler. The control shall provide means for adjustments of the operating temperature from 50F to 203 F, a differential temperature adjustment 5 to 30 degrees and temperature measurement in Fahrenheit F or Celsius C. The control shall provide a button for a manual ECO reset . In the event of a fault in the boiler, the display will show a fault code to aid in troubleshooting.

The boiler shall be factory assembled and test fired to ensure the correct operating parameters of the boiler. Combustion tests shall also be performed during testing to assure compliance to boiler parameters. Complete operating and installation instructions are to be furnished with every boiler .

Maximum unit dimensions shall be : **Length** 40-1/2”,**Width** 18-1/4” and **Height** 25-7/8” Maximum unit **Weight** approx. 252 pounds.

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