

Submittal Data

Model AM

Low Intensity Adaptive Modulating Infrared Heaters



SUPERIOR
RADIANT PRODUCTS

Project _____
 Engineer _____
 Contractor _____
 Model # _____

Date: _____
 Submitted by: _____
 Approved by: _____

General Specification

Fuel Type <i>(Check one)</i> Natural Gas LPG		Heat Exchanger <i>(Check one)</i> Heat Treated Aluminized Steel	Accessories <i>(Check all that apply)</i> Modulating Thermostat, 24v Modulating BACnet Thermostat Multiplex Controller Potentiometer Control Remote Indoor Sensor
Inlet Gas Pressure Minimum Natural Gas @ 5.3" W.C. LPG @ 11.8" W.C. Maximum Natural Gas & LPG @ 14"		Electrical: <i>(Select thermostat)</i> 120VAC, 60 Hz, 1A 84" long, 3 Prong Power Lead Low Voltage Thermostat Modulating	
Manifold Gas Pressure AM 80 3.65" W.C.(N) 10.00" W.C.(P) AM 115 4.05" W.C.(N) 10.70" W.C. (P) AM 150 4.05" W.C. (N) 10.80" W.C. (P) AM 200 4.30" W.C. (N) 10.10" W.C. (P)		Flue/Air Connections 4" Diameter Connection Maximum Vent Length = 30 feet Maximum Fresh Air length = 30 feet Vent + Fresh Air = 50 Feet Max	Ubend pkg. Elbow pkg. Side reflector and brackets Lower shield and brackets Flue Connecting Tee (4x4x6) Gas flex connector Shut off valve
Gas Connection 1/2" NPT (female)			

MODEL	RATE BTUH	FACTORY APPROVED HEATER LENGTH		PROJECT MODIFICATION	Quantity on Project
		<i>(Check length - feet)</i>			
AM 80	80,000 - 48,000	20	30		
AM 115	115,000 - 69,000	30	40		
AM 150	150,000 - 90,000	40	50		
AM 200	200,000 - 115,000	50	60		



Introduction

Superior Radiant offers its 20 years of infrared expertise in a cost effective unitary heater design as culmination of that commitment. Series AM models are field assembled, low intensity infrared heaters that are easy to install and maintain, and which were engineered with significant input from our customers. They are designed to provide economical operation and trouble-free service for years to come.

The following is for engineer submittal purpose only and should not be used to replace the full Installation and Operation Manual

Installation Codes

Installations must comply with local building codes, or in their absence, the latest edition of the national regulations and procedures as listed below.

General Installation and Gas Codes

Heaters must be installed only for use with the type of gas appearing on the rating plate, and the installation must conform to the National Fuel Gas Code, ANSI Z223.1/NFPA 54 in the US and CAN/CGA B149.1 and B149.2 *Installation Codes* in Canada.

Gas Supply Lines

Gas supply pipe sizing must be in accordance with the National Fuel Gas Code, ANSI Z223.1/NFPA 54 in the US and CAN/CGA B149.1 and B149.2 *Installation Codes* in Canada.

Electrical

All heaters must be electrically grounded in accordance with the National Electric Code, ANSI/NFPA 70 in the US, and the Canadian Electric Code, CSA C22.1 in Canada, and must comply with all local requirements.

Venting

Refer to the National Fuel Gas Code, ANSI Z223.1/NFPA 54 in the US and CAN/CGA B149.1 and B149.2 *Installation Codes* in Canada for proper location, sizing and installation of vents as well as information on clearance requirements when penetrating combustible walls for venting purposes.

General Specifications

General Specifications

Gas Supply

Inlet Pressure

Natural Gas:	Minimum	5.3" W.C.	Propane Gas:	Minimum	11.8" W.C.
	Maximum	14.0" W.C.		Maximum	14.0" W.C.

Manifold Pressure

	Natural Gas:	Propane Gas:
<i>AM - 80</i>	3.65" W.C.	10.00" W.C.
<i>AM - 115</i>	4.05" W.C.	10.70" W.C.
<i>AM - 150</i>	4.05" W.C.	10.80" W.C.
<i>AM - 200</i>	4.30" W.C.	10.10" W.C.

Inlet Connection

Natural Gas or Propane: 1/2" female NPT

Electric Supply

120 VAC, 60 HZ, 1.2 Amp: 84" cord with grounded 3 prong plug

Flue and Outside Air Connection

4" O.D. male connection for flue adapter and outside air (optional) provided at the heater

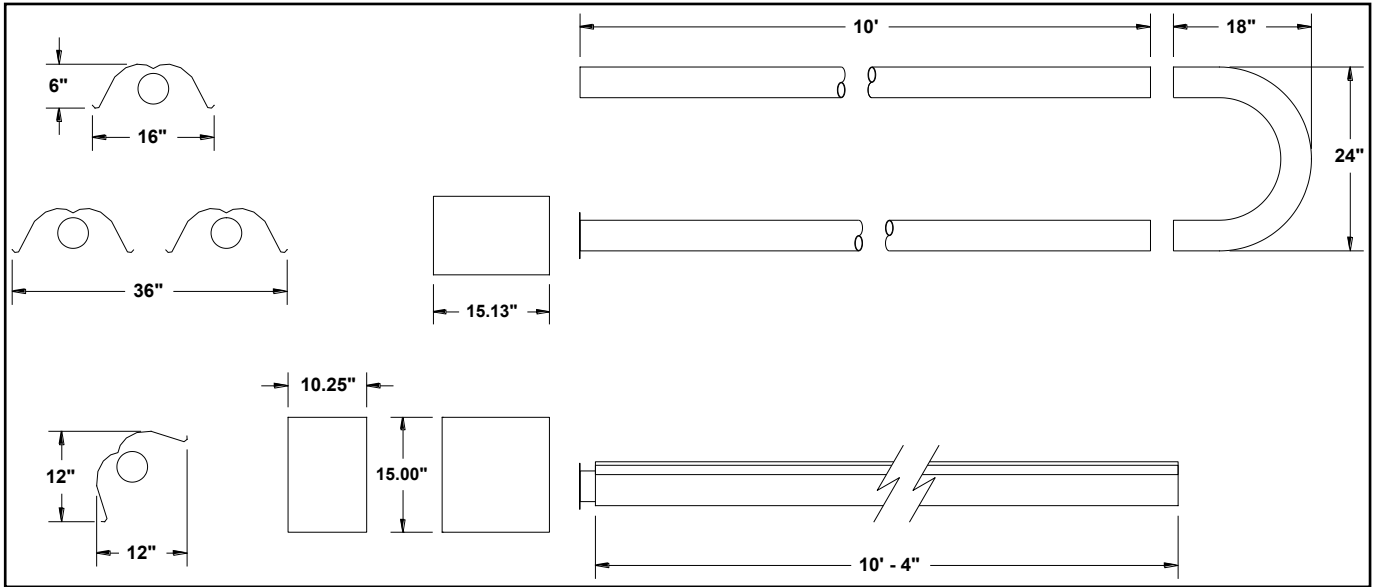


Figure 1: Overall Dimensional Information

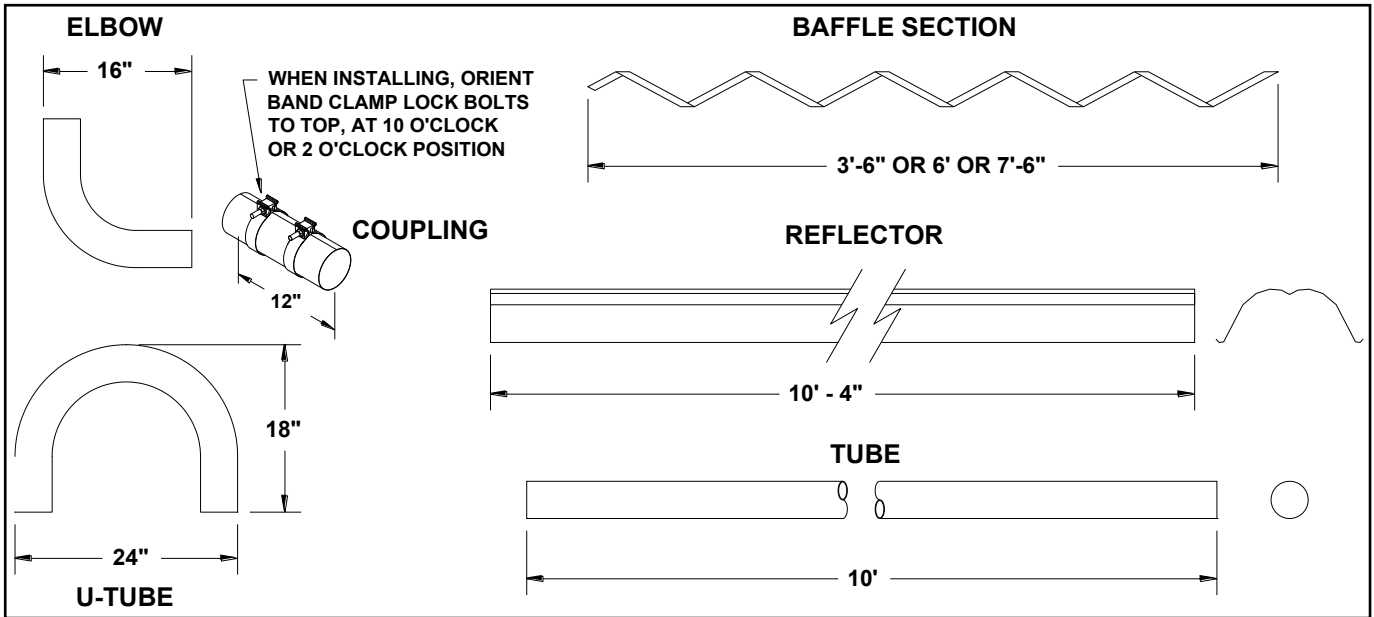


Figure 2: Component Dimensional Information

Configurations

Model	Rate (BTU/Hr)	Heat Exchanger Length (ft.)		Baffle Length (ft.)	Baffle Kit P/N
		Minimum	Maximum		
AM - 80	48,000 - 80,000	20'	30'	12'	CT047
AM - 115	69,000 - 115,000	30'	40'	12'	CT047
AM - 150	90,000 - 150,000	40'	50'	12'	CT047
AM - 200	115,000 - 200,000	50'	60'	8'+4' (see fig.4 below)	CT095

Table 1: Configuration Information

Note:

- Baffles are always placed in the last section of radiant tube, unless stated / shown otherwise.
- Baffles are either aluminized or stainless steel sections 4', 6' and 8' long.
- When 12' is required the 6' aluminized steel baffle is lengthened forward (*toward the burner*) with a 6' stainless steel section.

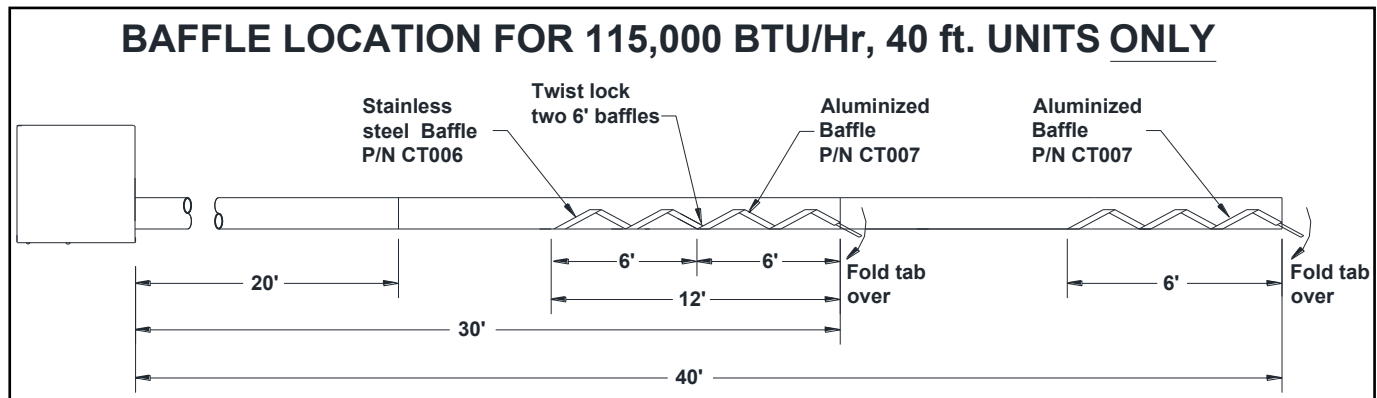


Figure 3: Baffle Location AM - 115 Models only

Special configurations continued:

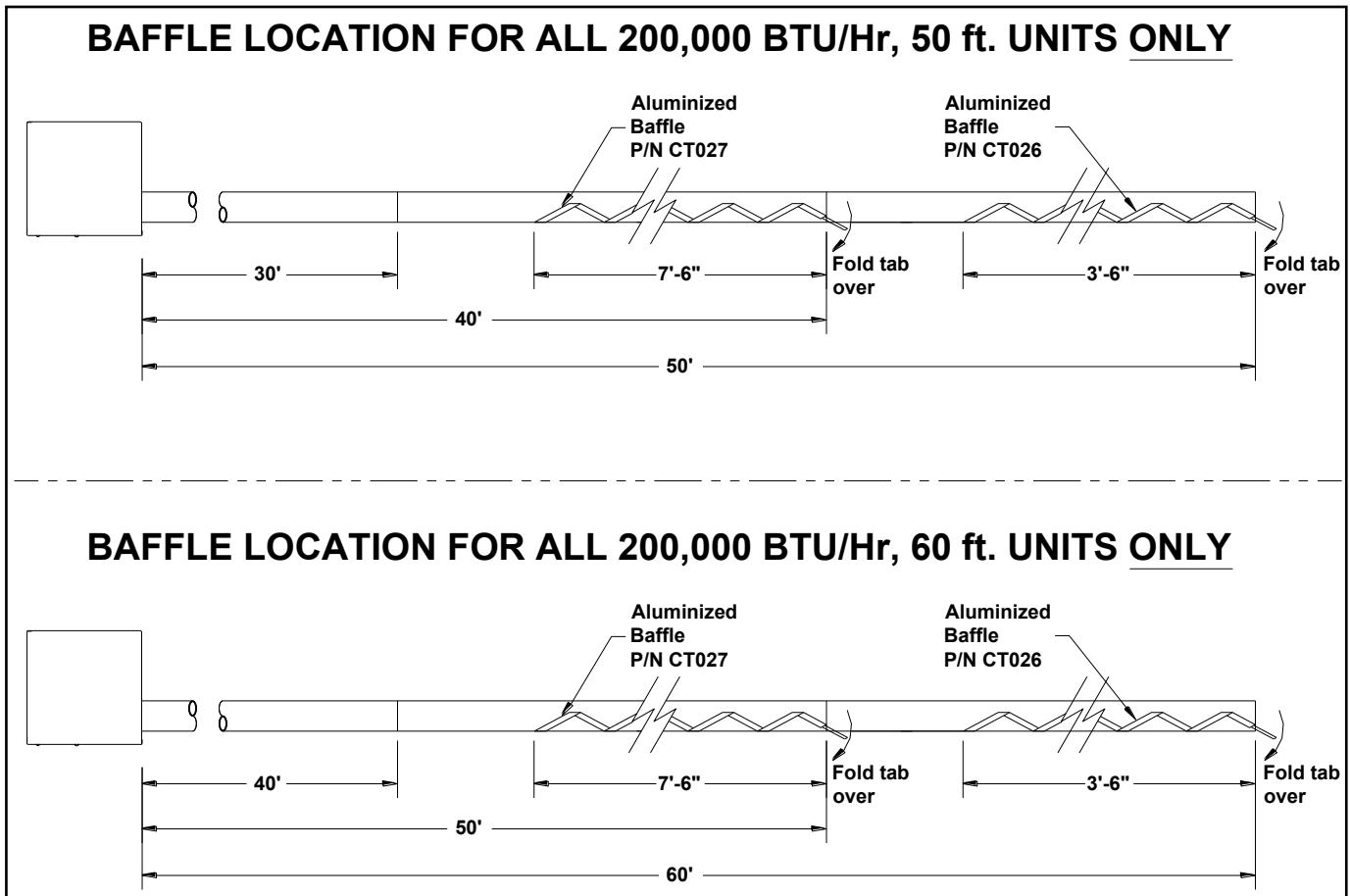


Figure 4: Baffle Location AM - 200 Models only.

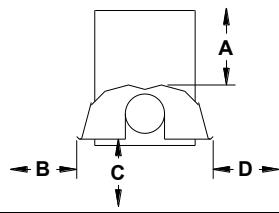
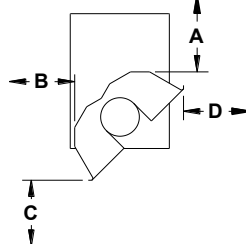
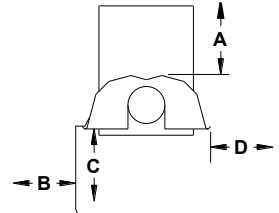
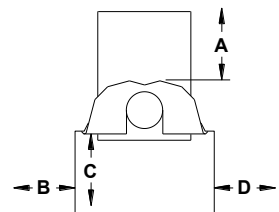
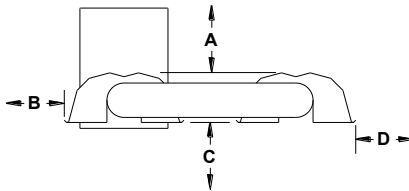
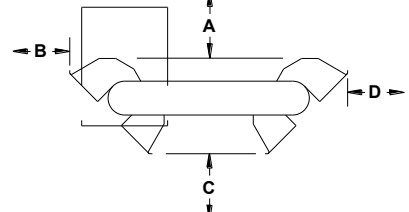
Clearance to Combustibles

A general clearance of 18" (0.5 m) in every direction is recommended for servicing around each Burner, if possible.

In addition to this it is very important to observe the minimum clearance to combustibles at all times to avoid any possibility of property damage or personal injury.

Clearance to Combustibles

Table 2: Minimum Clearance to Combustibles

Reflector Configurations	Dim	Model No.: AM			
		80	115	150	200
Horizontal 	A	2"	4"	4"	6"
	B	26"	33"	36"	44"
	C	62"	71"	74"	80"
	D	26"	33"	36"	44"
45° Reflector Tilt 	A	4"	6"	6"	8"
	B	4"	4"	4"	4"
	C	58"	70"	71"	78"
	D	50"	63"	64"	72"
One Side Extension 	A	2"	4"	4"	6"
	B	4"	4"	4"	6"
	C	63"	76"	78"	84"
	D	42"	50"	52"	56"
Two Side Extension 	A	2"	4"	4"	6"
	B	18"	22"	24"	29"
	C	64"	78"	80"	86"
	D	18"	22"	25"	29"
U-Tube, Horizontal 	A	2"	4"	4"	6"
	B	28"	34"	37"	45"
	C	62"	74"	76"	82"
	D	26"	33"	36"	44"
U-Tube, Opposite 45° 	A	4"	4"	4"	10"
	B	50"	63"	64"	72"
	C	54"	69"	71"	78"
	D	18"	22"	24"	29"
Unvented	Above	18"	18"	18"	18"
	End	26"	26"	32"	32"
Vented	End	18"	18"	18"	18"

Installation

Installation Sequence

Generally, there is no unique sequence for installation of the burner or heat exchanger. A review of the job site will usually indicate a logical installation order. However, time and expense can be saved if installation is begun at the most critical dimension, watching for interference from overhead doors, cranes, auto lifts etc. Figure 5 provides a general overview of the components utilized in the installation, as well as their general relationship.

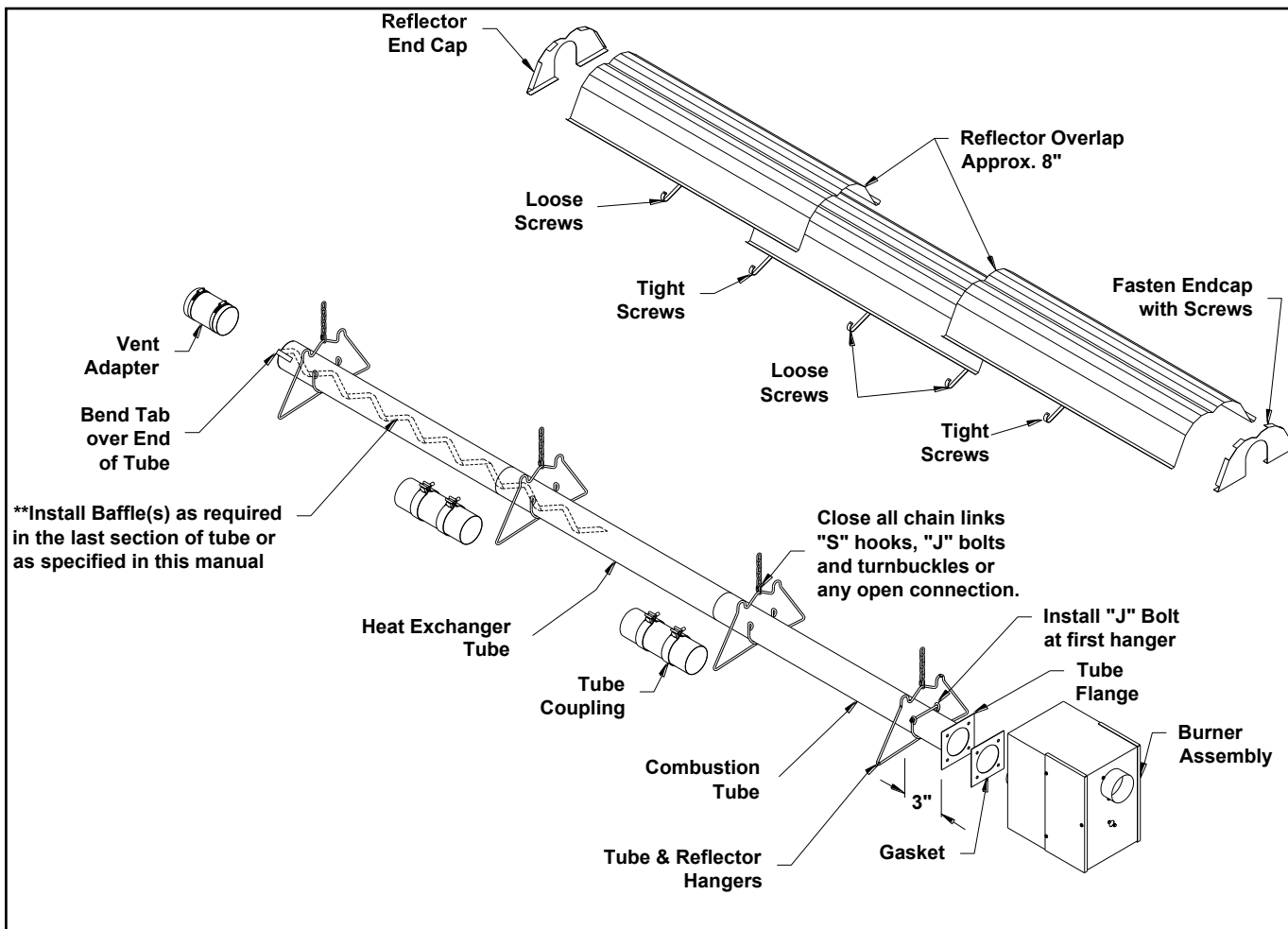


Figure 5: General Overview of Installation

Venting / Combustion Air Ducting

General Requirements

- Refer to the *National Fuel Gas Code*, ANSI Z223.1 (NFPA 54) in the US and CAN/CGA B149.1 and B149.2 *Installation Codes* in Canada, as well as all local requirements for general venting guidance.
- Series AM Infrared Heaters may be installed vented or unvented.
- Series AM Infrared Heaters may be vented horizontally or vertically using conventional venting materials.
- Optional outside air supply may be directed to the heater horizontally or vertically.

Un-Vented Operation

- Requirements for combustion air supply and dilution air vary by jurisdiction, building type and specific installation details. **See local codes for guidance.** In general, fresh air ventilation must be provided to the building space at **(3 cfm per 1000 BTU/Hr in Canada)(4 cfm per 1000 BTU/HR US)**.

Vented Operation

In all cases, be sure vent pipes and outside air supply ducts are sealed with approved sealant, such as high temperature RTV silicone. Double wall venting (B vent) may not require sealant.

Horizontal Venting

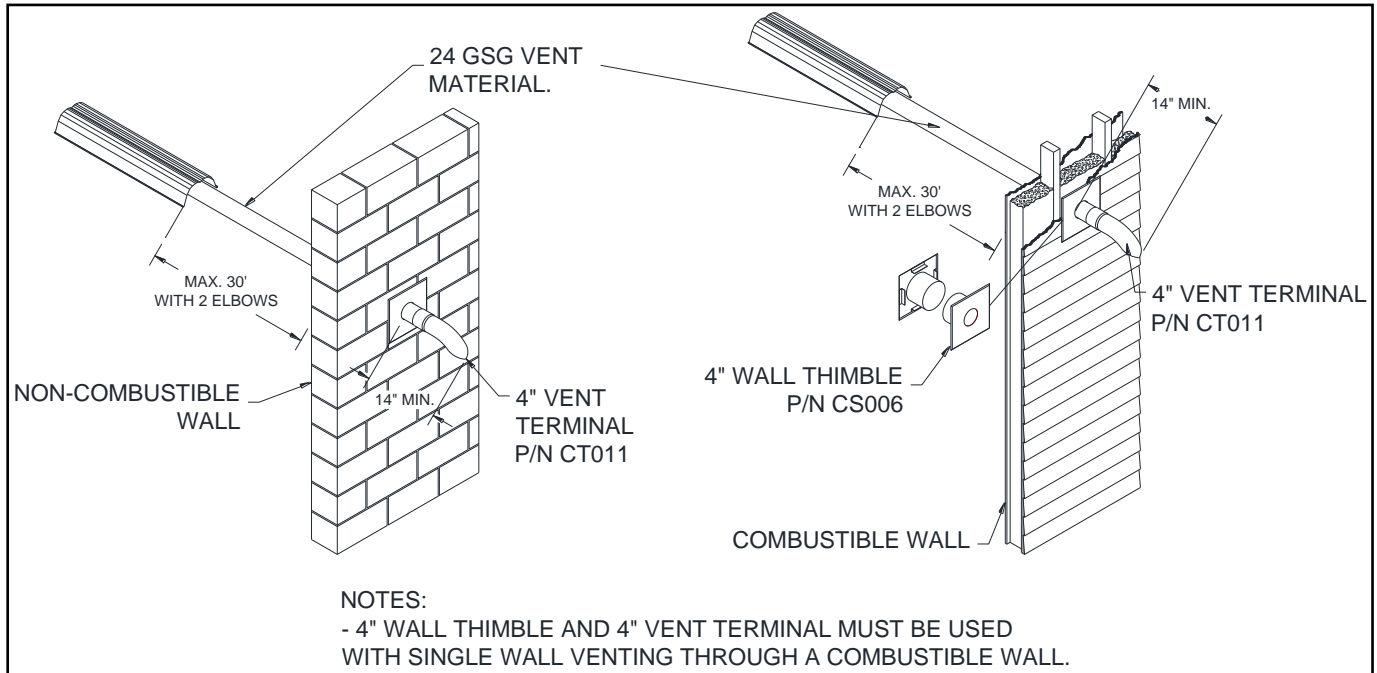


Figure 25: Horizontal Venting

Venting / Combustion Air Ducting

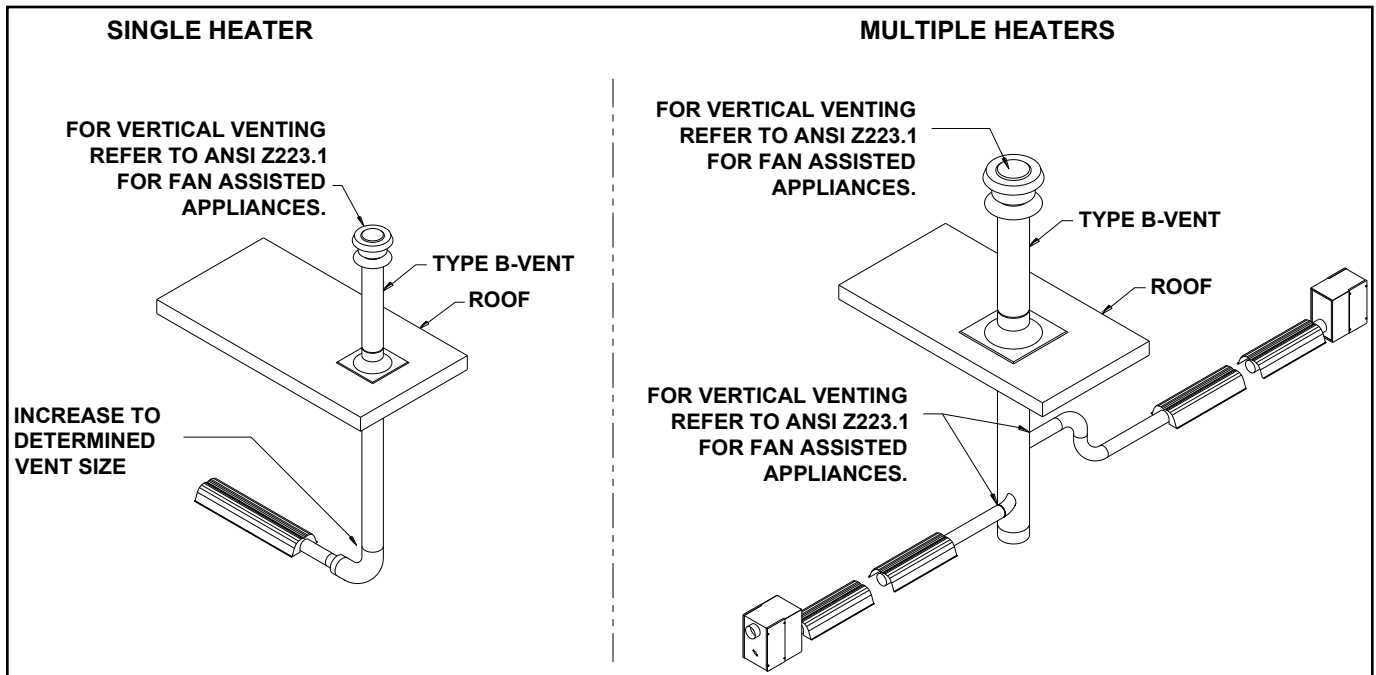


Figure 26: Common Vertical Venting

Common Horizontal Venting

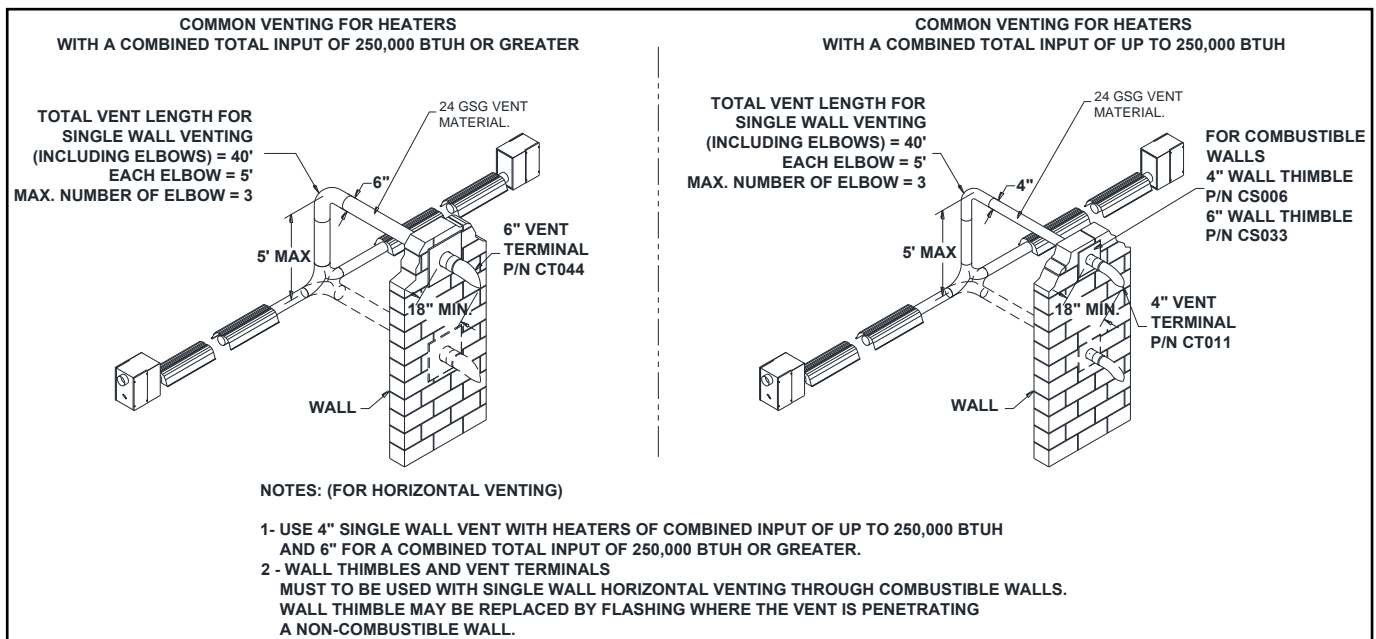


Figure 27: Common Horizontal Venting

Electrical Wiring

General Requirements

Heaters are normally controlled by modulating thermostats. In all cases, heaters must be grounded in accordance with the *National Electric Code*, ANSI/NFPA 70 in the US, and the *Canadian Electric Code*, CSA C22.1 in Canada, and must comply with all local requirements. Heaters may also be controlled with a manual line switch or timer switch potentiometer with or without timer in place of a thermostat. Refer to Figure 31 for guidance on electrical wiring of heaters.

If any of the original wire as supplied with the heater must be replaced, it must be replaced with wiring having a rating of at least 105°C temperature service and 600 volts capability.

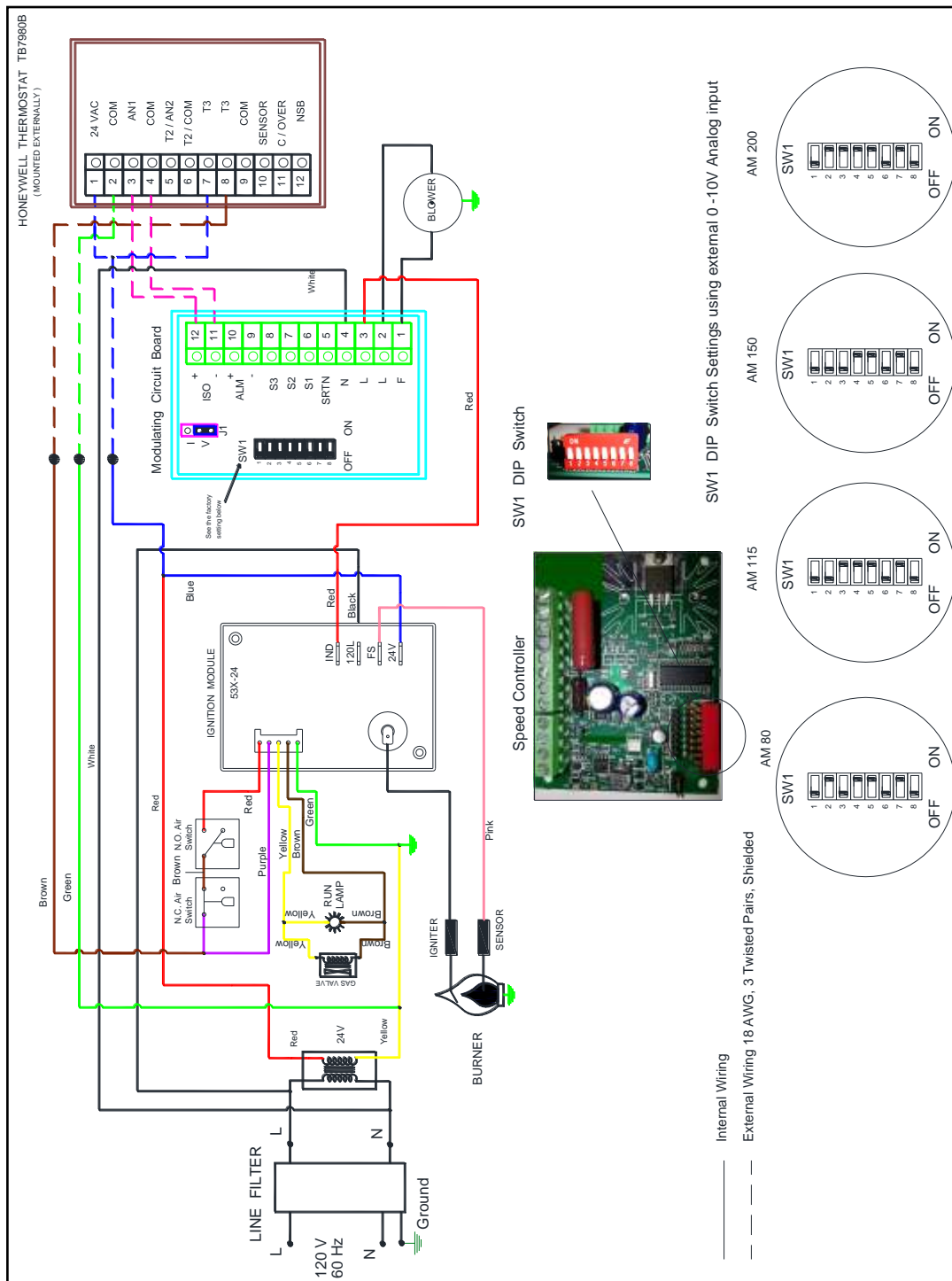


Figure 31: Wiring Diagram with Honeywell modulating thermostat

Wiring Diagram Continued:

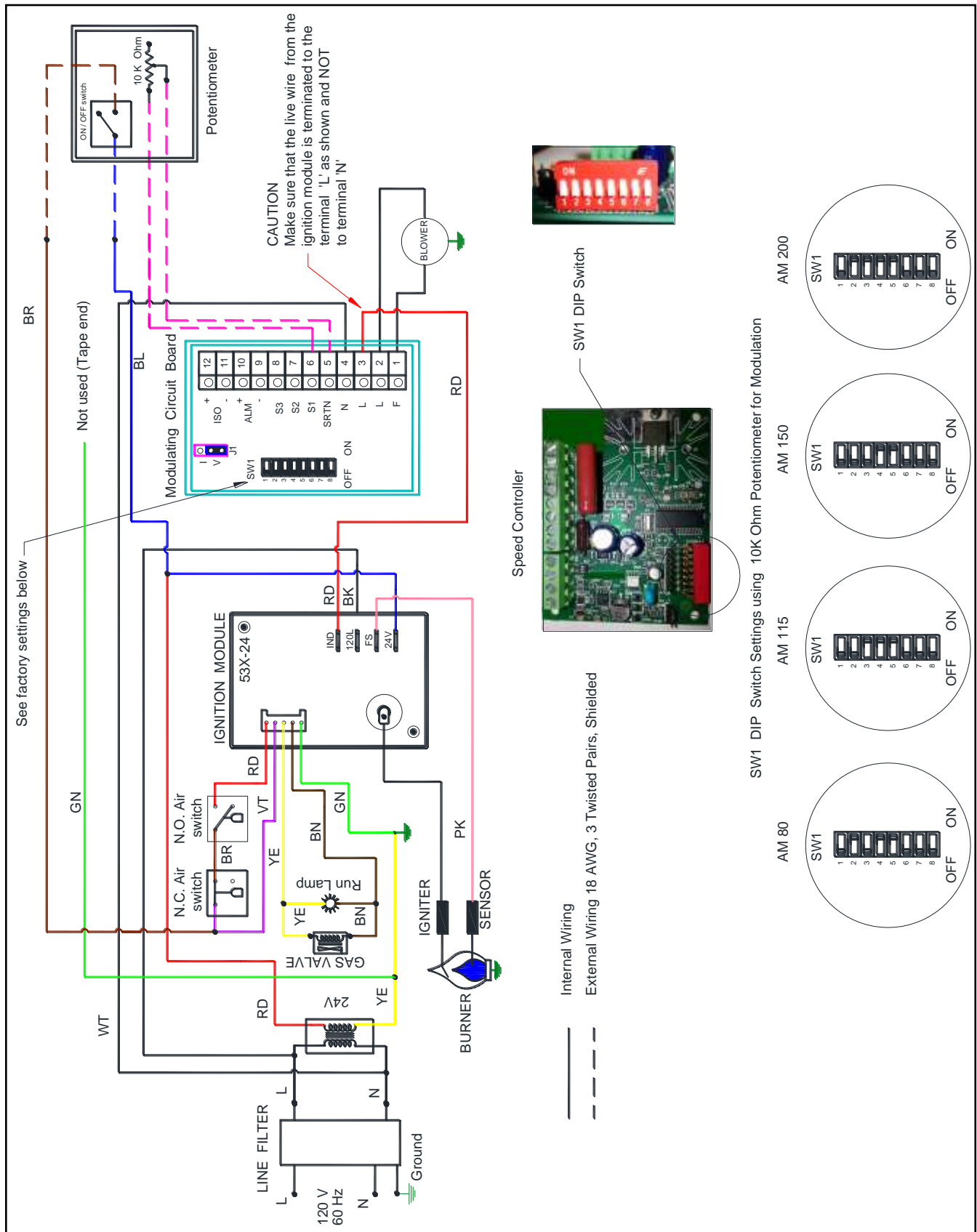


Figure 32: Wiring Diagram with a potentiometer