

# MP3 Series Insert Manual



For complete installation instructions, see the Tube Heater General Manual that accompanies this Series Insert Manual.

**RE-VERBER-RAY**

by Detroit Radiant Products Company

The MP3 Series Infrared Tube Heater is a positive pressure, modulating radiant heater system. This insert manual is a supplement to the Tube Heater General Manual and provides specific information related to the MP3 Series models. All persons involved with the installation, operation, and maintenance of the heater system must read and understand the information in this insert manual and the accompanying Tube Heater General Manual.

## WARNING



Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury, or death. Read the installation, operation, and maintenance instructions thoroughly before installing or servicing this equipment.

This heater must be installed and serviced by trained gas installation and service personnel only. Failure to comply could result in personal injury, asphyxiation, death, fire, or property damage.



In locations used for the storage of combustible materials, signs must be posted to specify the maximum permissible stacking height to maintain the required clearances from the heater to the combustibles. Signs must either be posted adjacent to the heater thermostats or, in the absence of such thermostats, in a conspicuous location.



**Not for residential use!** Do not use this heater in the home, sleeping quarters, attached garages, etc. **Installation of a commercial tube heater system in residential indoor spaces may result in property damage, serious injury, asphyxiation, or death.**

## For Your Safety

### If you smell gas:

- Do not try to light any appliance.
- Do not touch any electrical switch.
- Do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone.
- Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

**INSTALLER:** Present this manual to the end user.

Keep these instructions in a clean and dry place for future reference.

Model#: \_\_\_\_\_ Serial #: \_\_\_\_\_  
(located on rating label)

LIOMP3-Rev. 33123  
Print: XM-01/24 (CDS)

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**NOTE:** See Page 10 for a list of available models and specifications.

## **WARNING**

### **California Proposition 65**

This product can expose you to chemicals including lead and carbon monoxide, which are known to the State of California to cause birth defects or other reproductive harm.

For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

# 1.0 Safety

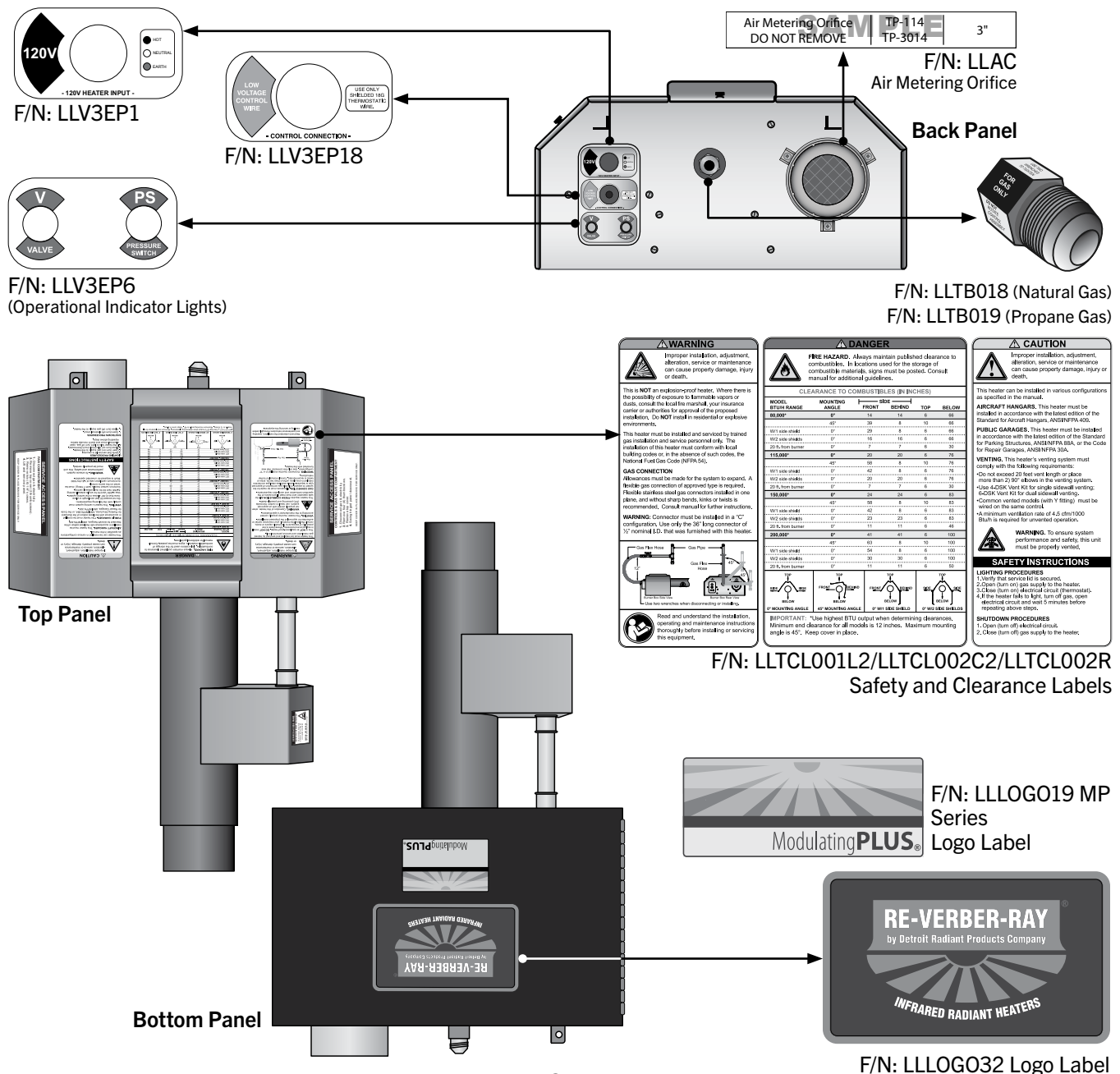
## ⚠ WARNING

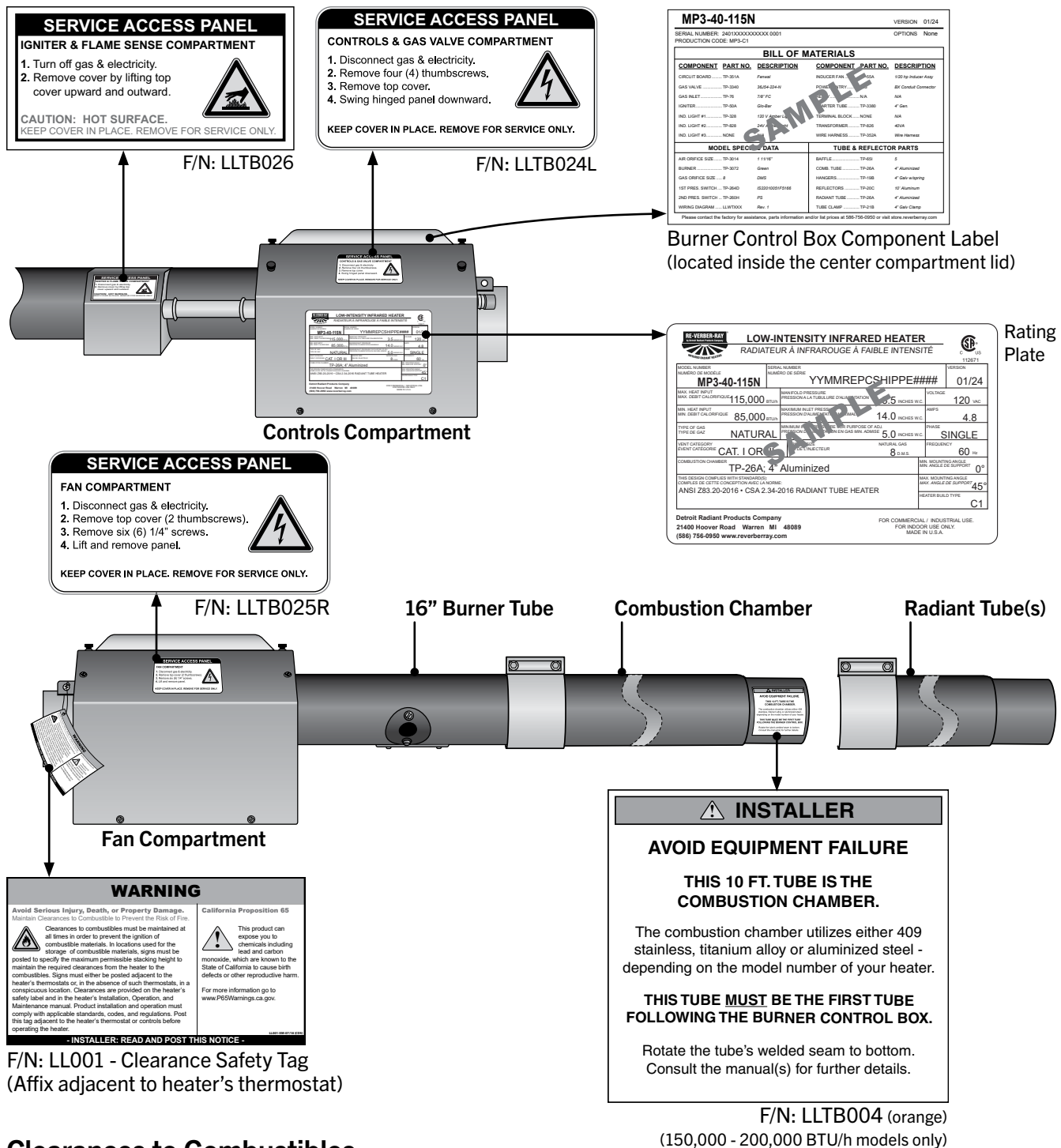


Improper installation, adjustment, alteration, service, or maintenance can cause property damage, serious injury, or death. Read and understand the installation, operating, and maintenance instructions thoroughly before installing or servicing this equipment. Only trained, qualified gas installation and service personnel may install or service this equipment.

## Safety Labels and Their Locations

Product safety signs or labels should be replaced by the product user when they no longer are legible. Contact either your local distributor or the product manufacturer for obtaining replacement signs or labels.





## Clearances to Combustibles

### ⚠ WARNING



Placement of explosive objects, flammable objects, liquids, and vapors close to the heater may result in explosion, fire, property damage, serious injury, or death. Do not store or use explosive objects, liquids, or vapors in the vicinity of the heater.

**Clearance to combustibles** is defined as *the minimum distance that must exist between the tube surface, or reflector, and any combustible items* (see Figure 1.1). It also pertains to the distance that must be maintained from moving objects around the tube heater.

When installing the tube heater system, clearances to combustibles for the model tube heater and configuration must be maintained. Refer to Chart 1.1 below to determine the required distances for your model.

**Chart 1.1 • Clearances to Combustibles in Inches** (See Figure 1.1 for Mounting Angles)

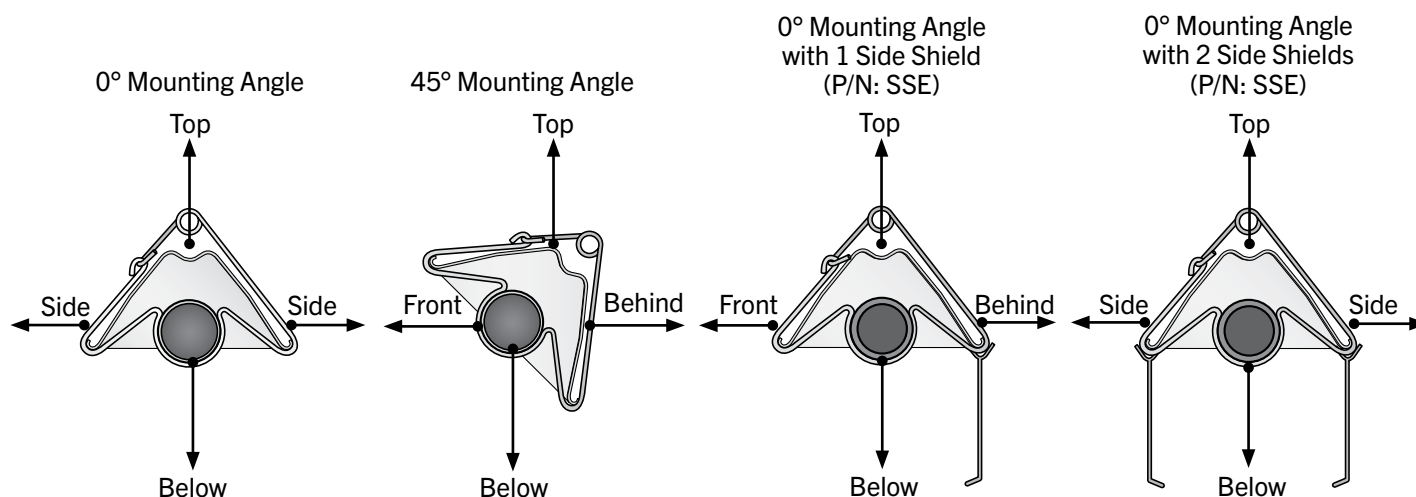
| Model Number  | Mounting Angle*  | Sides |        | Top | Below |
|---|--|-------|--------|-----|-------|
|   |  | Front | Behind |     |       |
| MP3-(20,25,30,40)-(75,80)[N,P]<br><br>with 1 side shield<br>with 2 side shields<br>20 ft. from burner | 0°   | 14    | 14     | 6   | 66    |
|   | 45°  | 39    | 8      | 10  | 66    |
|   | 0°   | 29    | 8      | 6   | 66    |
|   | 0°   | 16    | 16     | 6   | 66    |
|   | 0°   | 7     | 7      | 6   | 30    |
|   | MP3-(30,40,50)-115[N,P]<br><br>with 1 side shield<br>with 2 side shields<br>20 ft. from burner | 0°    | 20     | 20  | 6     |
| 45°   |  | 58    | 8      | 10  | 76    |
| 0°  |  | 42    | 8      | 6   | 76    |
| 0°  |  | 20    | 20     | 6   | 76    |
| 0°  |  | 7     | 7      | 6   | 30    |
| MP3-(40,50,60)-150[N,P]<br><br>with 1 side shield<br>with 2 side shields<br>20 ft. from burner        |  | 0°    | 24     | 24  | 6     |
|   | 45°  | 58    | 8      | 10  | 83    |
|   | 0°   | 42    | 8      | 6   | 83    |
|   | 0°   | 23    | 23     | 6   | 83    |
|   | 0°   | 11    | 11     | 6   | 46    |
|   | MP3-(50,60,70)-200[N,P]<br><br>with 1 side shield<br>with 2 side shields<br>20 ft. from burner | 0°    | 41     | 41  | 6     |
| 45°   |  | 63    | 8      | 10  | 100   |
| 0°  |  | 54    | 8      | 6   | 100   |
| 0°  |  | 30    | 30     | 6   | 100   |
| 0°  |  | 11    | 11     | 6   | 50    |

The minimum end clearance for all models is 12 inches.

\* Maximum mounting angle is 45°. Heaters mounted on an angle between 0° and 45° must maintain clearances posted for 0° or 45°, whichever is greater.

The stated clearance to combustibles represents a surface temperature of 90°F (50°C) above room temperature. Building materials with a low heat tolerance (such as plastics, vinyl siding, canvas, tri-ply, etc.) may be subject to degradation at lower temperatures. It is the installer's responsibility to ensure adjacent materials are protected from degradation.

**Figure 1.1 • Mounting Angles**



## 2.0 Installation

### WARNING



Improper installation, adjustment, alteration, service, or maintenance can cause property damage, serious injury, or death. Read and understand the installation, operating, and maintenance instructions thoroughly before installing or servicing this equipment. Only trained, qualified gas installation and service personnel may install or service this equipment.

**Not for residential use!** Do not use this heater in the home, sleeping quarters, attached garages, etc. Installation of a commercial tube heater system in residential indoor spaces may result in property damage, serious injury, or death.

Instructions for the following are detailed in the Tube Heater General Manual:

- Design considerations
- Hanger suspension and placement
- Tube layout and assembly
- Burner control box suspension
- Reflectors (and accessories)
- Venting and combustion air intake
- Gas requirements
- Baffle assembly

**Note:** Electronic versions of all manuals are available at [www.detroitradiant.com](http://www.detroitradiant.com), or upon request.

### Gas Requirements

| Type of Gas | Manifold Pressure* |                | Inlet Pressure   |                  |
|-------------|--------------------|----------------|------------------|------------------|
|             | @ Maximum Rate     | @ Minimum Rate | Minimum          | Maximum          |
| Natural     | 3.5 Inches. W.C.   | VARIES         | 6.0 Inches W.C.  | 14.0 Inches W.C. |
| Propane     | 10.0 Inches. W.C.  | VARIES         | 12.0 Inches W.C. | 14.0 Inches W.C. |

\* Heater manifold pressure is pre-set at the factory—no field adjustments are necessary. Rates listed are for troubleshooting. Consult factory with questions. During the verification process, a tolerance of  $\pm 10\%$  of the full scale is acceptable due to varying atmospheric conditions.



**IMPORTANT:** Consult the Tube Heater General Manual for gas connection requirements.

### Electrical Requirements

- 120 Volt - 60 Hz GRD, 3-wire
- 0–10 VDC thermostat connection
- Starting current: 4.8 amps
- Running current: 1.1 amps

### NOTICE

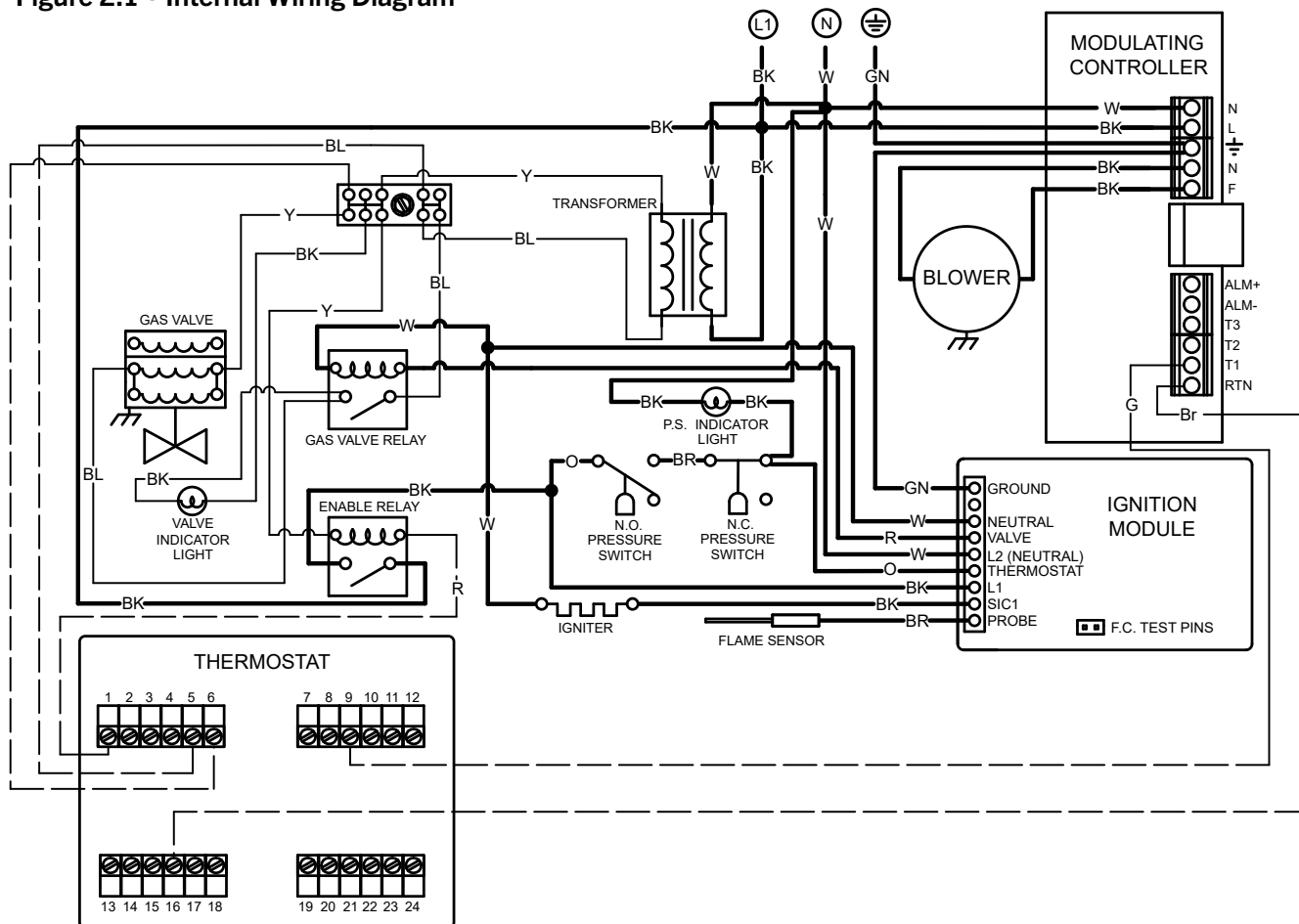
Shielded thermostat wire of 18 AWG is recommended for connection to the heater from the thermostatic controller.

## Internal Wiring Diagram

**Before field wiring this appliance - Check existing wiring; replace if necessary.**

**Note:** If any of the original wire supplied with the appliance must be replaced, it must be replaced with wiring material having a rating of at least 600 V, 105°C.

**Figure 2.1 • Internal Wiring Diagram**



### WIRING INFORMATION:

#### LINE VOLTAGE:

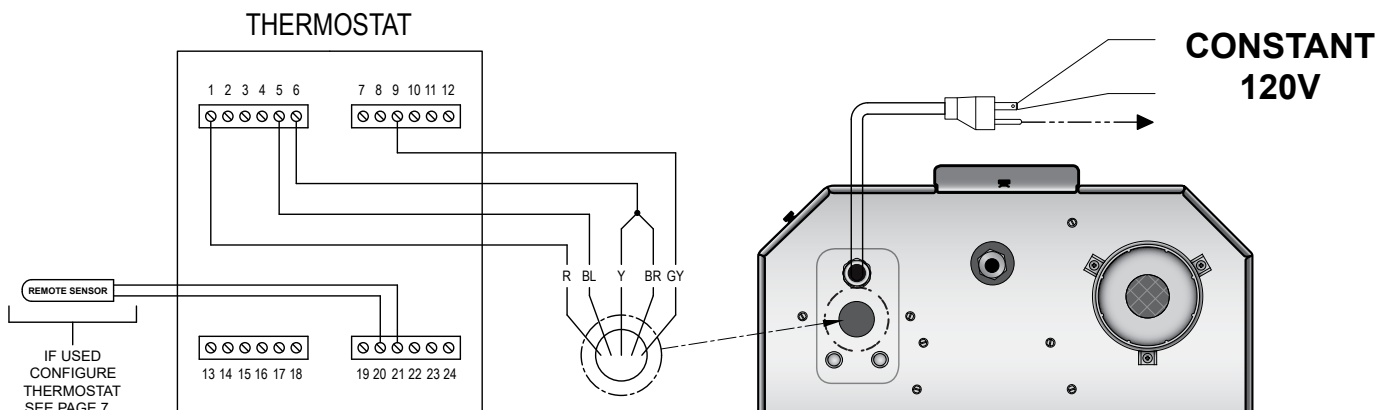
FACTORY STANDARD \_\_\_\_\_  
 FACTORY OPTION - - - - -  
 FIELD INSTALLED - - - - -

#### LOW VOLTAGE:

FACTORY STANDARD \_\_\_\_\_  
 FACTORY OPTION - - - - -  
 FIELD INSTALLED - - - - -

## Field Wiring

Figure 2.2 • Single Heater, Single Thermostat Connection



## Controlling Multiple Heaters with a Single Control Device

When multiple heaters are operated by the same control device (for example, common vented heaters), an external relay kit (P/N: ERK) must be utilized (one per heater). This allows the heater's 24 V supply voltage to be isolated from the external control voltage of the thermostats. The ERK is to be installed on or near the heater. Follow the instructions that accompany the accessory for more information and wiring diagrams

Figure 2.3 • Multiple Heaters, Single Thermostat Connection with External Relay Kit Using 1 Bank

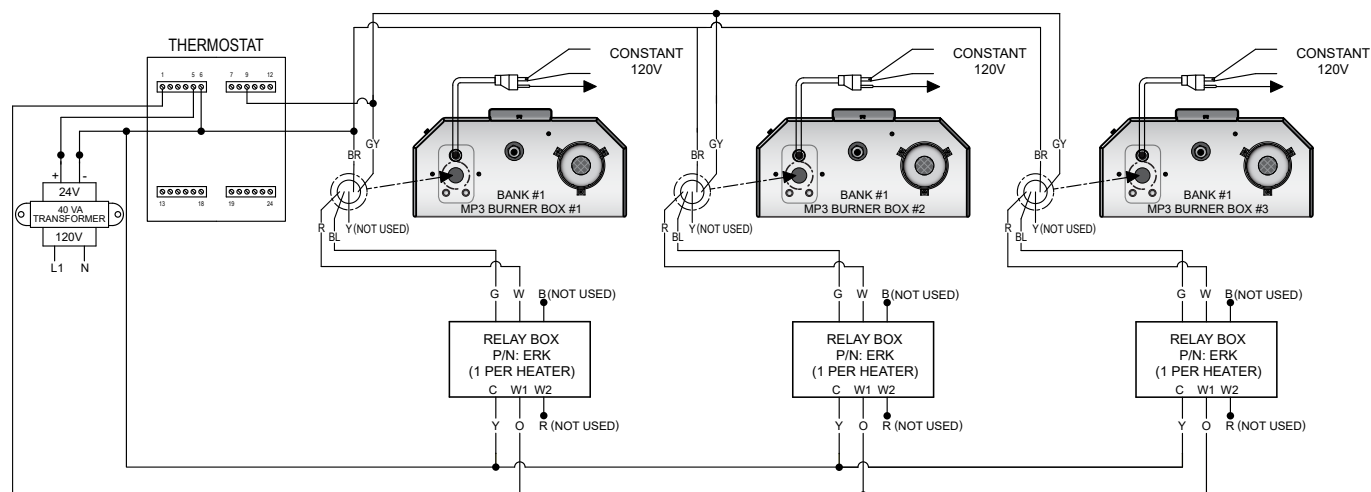
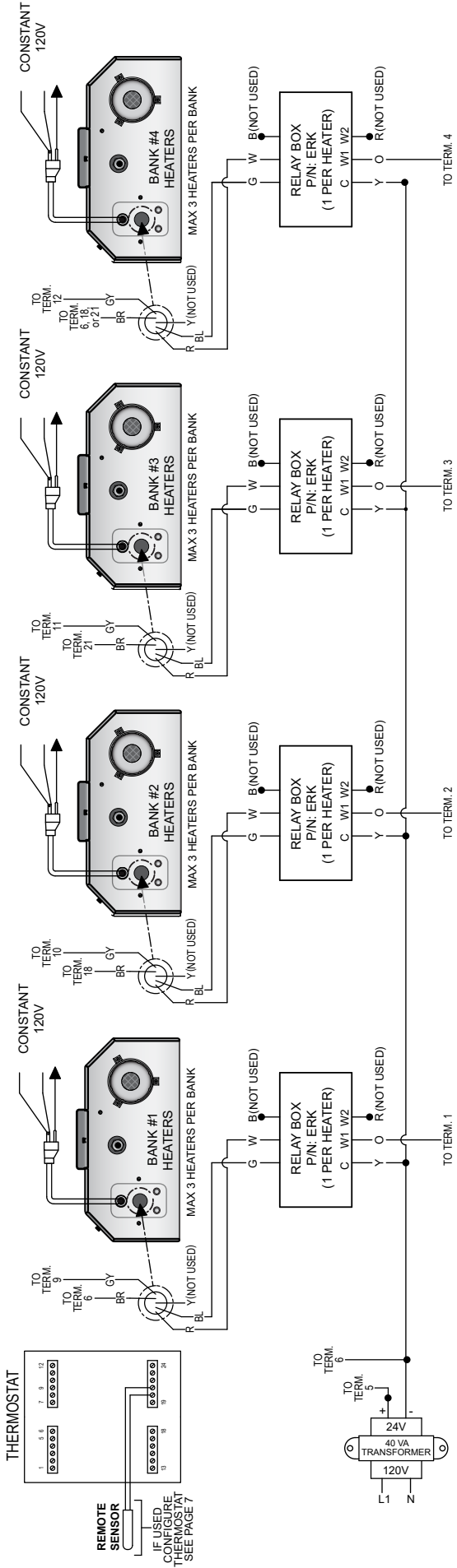




Figure 2.4 • Multiple Heaters, Single Thermostat Connection with External Relay Kit Using All 4 Banks



## Product Specifications

Chart 2.1 • Specifications

| Model Number | Gas Type (Select One) | Standard Modulating Range (BTU/h Input) | Straight Length | U-Tube Length | Min. Dist. From Burner to Elbow or U-bend | Standard Weight (lbs.) | Stainless Steel Weight (lbs.) | Recommended Mounting Height | Combustion Chamber (Black Coated) | Radiant Emitter Tube(s) (Black Coated) | 36" Baffle Pieces |
|--------------|-----------------------|---|-----------------|---------------|---|------------------------|-------------------------------|-----------------------------|-----------------------------------|--|-------------------|
| MP3-20-75    | N or P                | 65,000 - 75,000                         | 21'-9"          | 13'-1"        | 10 ft.                                    | 120                    | 145                           | 12' to 20'                  | Alum                              | Alum                                   | 5 ½               |
| MP3-20-80    | N                     | 65,000 - 80,000                         | 21'-9"          | 13'-1"        | 10 ft.                                    | 120                    | 145                           | 12' to 20'                  | Alum                              | Alum                                   | 5 ½               |
| MP3-25-80    | N or P                | 65,000 - 80,000                         | 26'-5"          | **15'-3"      | 10 ft.                                    | 145                    | 180                           | 12' to 20'                  | Alum                              | Alum                                   | 5 ½               |
| MP3-30-80    | N or P                | 65,000 - 80,000                         | 31'-5"          | **17'-9"      | 10 ft.                                    | 160                    | 195                           | 12' to 20'                  | Alum                              | Alum                                   | 4                 |
| MP3-30-115   | N or P                | 85,000 - 115,000                        | 31'-5"          | **17'-9"      | 15 ft.                                    | 160                    | N/A                           | 14' to 22'                  | Alum                              | Alum                                   | 6                 |
| MP3-40-80    | N or P                | 65,000 - 80,000                         | 41'-1"          | 22'-9"        | 10 ft.                                    | 190                    | 235                           | 12' to 20'                  | Alum                              | Alum                                   | 3                 |
| MP3-40-115   | N or P                | 85,000 - 115,000                        | 41'-1"          | 22'-9"        | 15 ft.                                    | 190                    | 235                           | 15' to 25'                  | Alum                              | Alum                                   | 5                 |
| MP3-40-150   | N or P                | 110,000 - 150,000                       | 41'-1"          | 22'-9"        | 20 ft.                                    | 190                    | 235                           | 15' to 28'                  | Titan                             | Alum                                   | 5                 |
| MP3-50-115   | N or P                | 85,000 - 115,000                        | 50'-9"          | **27'-5"      | 15 ft.                                    | 235                    | 290                           | 15' to 28'                  | Alum                              | Alum                                   | 3                 |
| MP3-50-150   | N or P                | 110,000 - 150,000                       | 50'-9"          | **27'-5"      | 20 ft.                                    | 235                    | 290                           | 17' to 30'                  | Titan                             | Alum                                   | 4                 |
| MP3-50-200   | N or P                | 135,000 - 200,000                       | 50'-9"          | **27'-5"      | 25 ft.                                    | 235                    | N/A                           | 19' to 37'                  | Titan                             | Alum                                   | 3                 |
| MP3-60-150   | N or P                | 110,000 - 150,000                       | 60'-5"          | 32'-5"        | 20 ft.                                    | 265                    | 330                           | 17' to 32'                  | Titan                             | Alum                                   | 3                 |
| MP3-60-200   | N or P                | 135,000 - 200,000                       | 60'-5"          | 32'-5"        | 25 ft.                                    | 265                    | 330                           | 19' to 37'                  | Titan                             | Alum                                   | 2                 |
| MP3-70-200   | N or P                | 135,000 - 200,000                       | 70'-1"          | **37'-3"      | 25 ft.                                    | 300                    | N/A                           | 19' to 42'                  | Titan                             | Alum                                   | 2                 |

\* Model requires stainless steel tube clamp (P/N: TP-220) to be located at the seam between the primary combustion chamber and the secondary combustion tube downstream of the burner control box.

\*\* Model requires 5EA-SUB accessory package when installing in a 'U' configuration (P/N: TF1B).

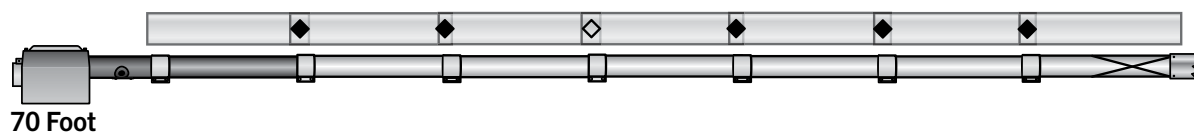
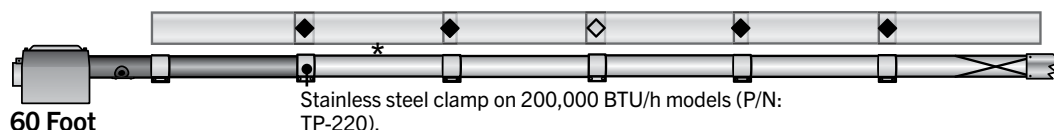
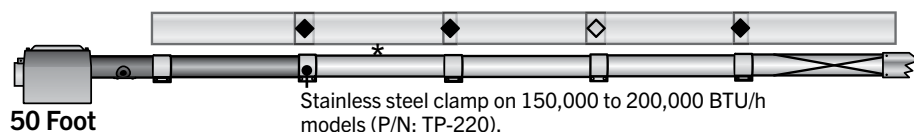
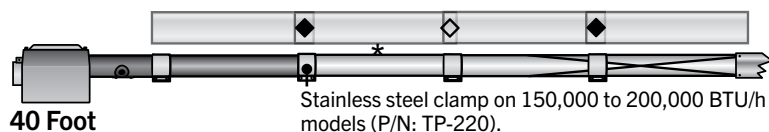
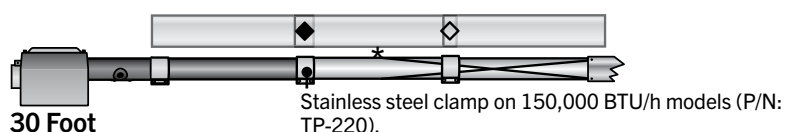
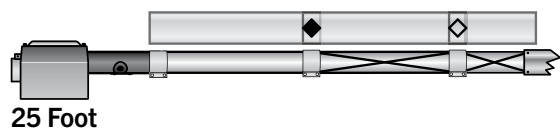
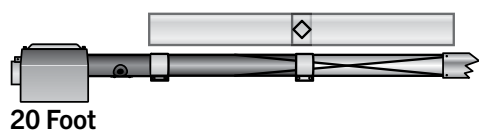
**IMPORTANT:** Reference box label to determine the number of required baffle sections for each model heater.

**Titan** = Black coated titanium stabilized aluminized steel.

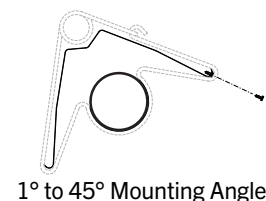
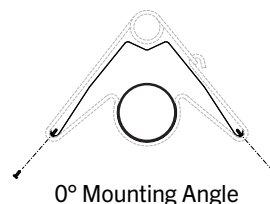
**Alum** = Black coated aluminized treated steel.

## Tube Installation Sequence

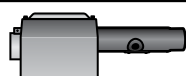
Chart 2.2 • Tube Installation Sequence, Baffle Location, and Secured Joints for Reflectors



**NOTE:** When securing joints on reflectors which are rotated on an angle from horizontal, secure joint only on top side of reflector to allow for sufficient heater expansion and contraction.



### Key



Burner Control Box  
w/16 in. Burner Tube



Expansion Joint on  
Reflectors



Secured Joint on  
Reflectors (see note)



Primary Combustion  
Chamber with Clamp



Radiant Tube  
Exchanger with Clamp



Baffle Location



Secure vent material to exchanger with three #8 sheet metal screws. Seal with high temperature silicone sealant. Do not use tube clamp.

\* A secondary combustion chamber is installed as the second tube downstream from the burner control box on 150,000 to 200,000 BTU/h models.

## 3.0 Operation

### ⚠ WARNING



This heater must be installed and serviced by trained gas installation and service personnel only.

Do not bypass any safety features or the heater's built in safety mechanisms will be compromised.

**Note:** Reference the Tube Heater General Manual for installation requirements.

### Sequence of Operation

There are three (3) main control devices for the MP3 Series heater.

- The TH-PC-M (or other compatible) thermostat sends a 24 VAC signal to the heater to enable the unit to call for heat, and a 0–10 VDC signal to modulate the heater based on demand.
- The TP-351A ignition controller is responsible for the ignition sequence, flame monitoring, and safety lockout features.
- The TP-3250A modulating controller is responsible for the modulation of the fan speed which pneumatically modulates the gas valve based on pressure.

#### Starting Circuit:

The power cord supplies 120 V at all times to an internal transformer and TP-3250A modulating controller. The transformer directs power via a blue (+24 VAC) wire and yellow (-24 VAC) wire to supply power to the thermostat.

Upon a call for heat, the thermostat will send two signals out. First, +24 V will be sent to the red wire of the control input on the heater. This is for the enable relay and will energize the TP-351A ignition module. Second, the thermostat will send a 0–10 VDC through the brown (-) and gray (+) wires going to the control input of the unit. The TP-3250A awaits a 0–10 VDC signal to initiate fan control. Once a signal is received, the TP-3250A sends voltage to the fan based on demand (1 VDC being the lowest and 10 VDC being the highest demand).

The fan will pressurize the air chamber being monitored by the normally open (N.O.) pressure switch. Once pressure has been achieved, voltage will be routed to the normally closed (N.C.) pressure switch responsible for monitoring blockages in the exhaust. If no blockages are present, the N.C. switch will stay closed and direct power back to the ignition module, initiating the next sequence.

The ignition board will send 120 VAC to the glo-bar for approximately 45 seconds after which the ignition board will send 120 V to the gas valve relay coil. When the ignition board detects flame, the igniter is deactivated and the gas valve relay coil remains powered, closing the relay and directing 24 VAC to the gas valve. Flame should now be present on the burner and visible through the sight glass.

#### Running Circuit:

At this point, the TP-351A will use the flame rod to sense flame. Flame rectification can be measured in micro amps at the flame current test pins on the TP-351A).

If the burner fails to light or flame is not detected within eight (8) seconds, the gas valve circuit is de-energized and the control performs an inter-purge delay before attempting another ignition sequence. The control will attempt two (2) additional ignition trials before entering the soft lockout sequence, which turns off the gas valve immediately, though the blower will continue to operate. After one (1) hour, if the thermostat is still calling for heat, the TP-351A will automatically reset and attempt a new trial for ignition. After multiple attempts to ignite the burner have failed, the TP-351A enters a hard lockout mode, and the control will not open the gas valve without manual intervention via resetting the thermostat or removing the 120 VAC for a period of 5 seconds. The blower will continue to operate while the heater is in hard lockout.

## Diagnostics

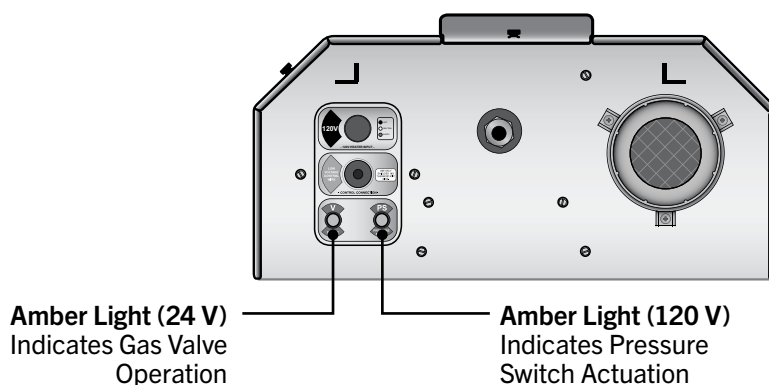
### Lockout:

The controls will automatically lockout the heater system when an external or system fault occurs. There are two types of lockout:

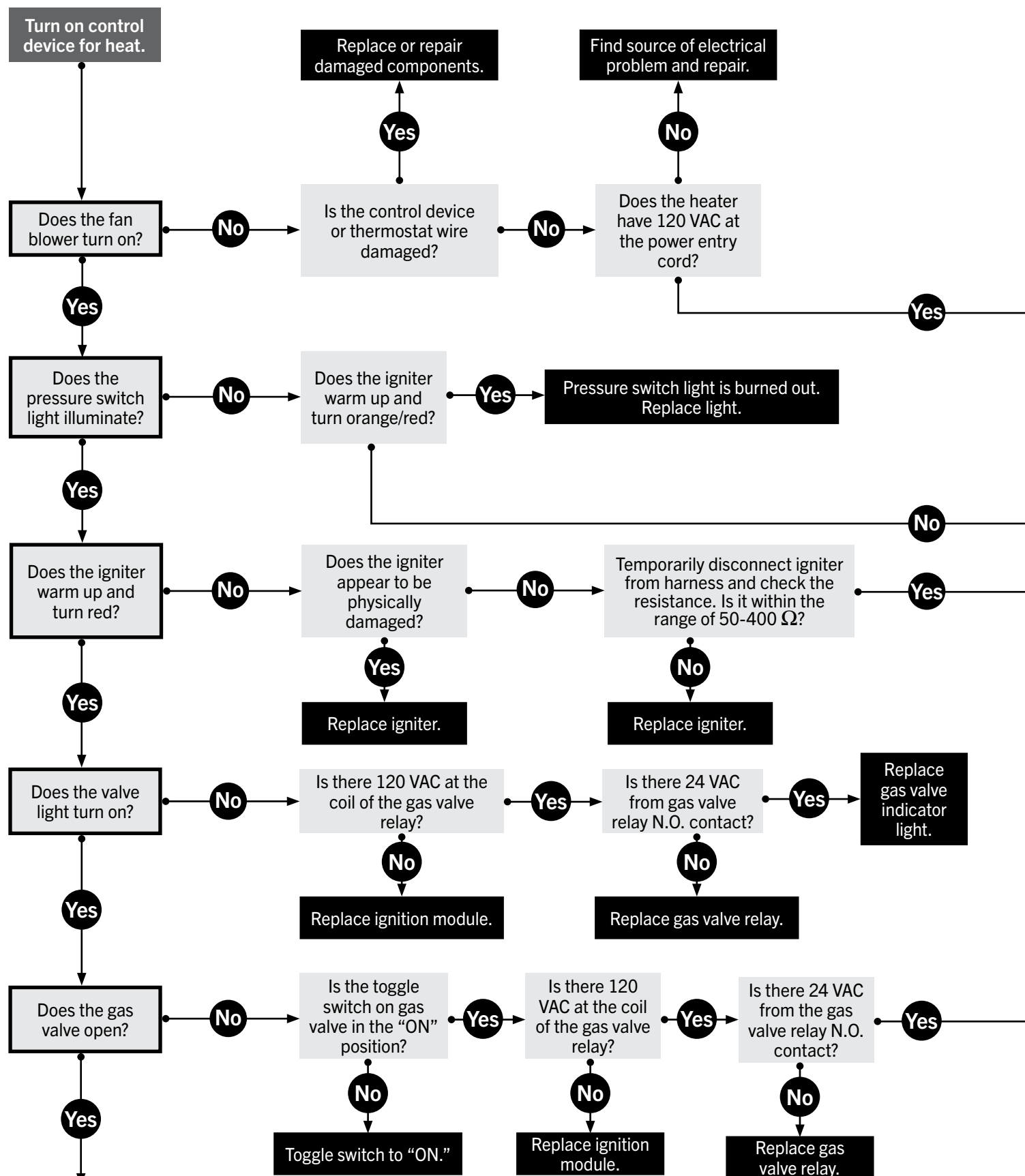
**Soft Lockout:** The heater will attempt to light three times. In the event of a failed ignition (gas pressure, valve, no flame sense, etc.), the heater will enter Soft Lockout mode for 15 minutes, then attempt to light three more times before entering Hard Lockout mode. The blower will continue to operate.

**Hard Lockout:** If proof of flame is not established, a component failure occurs, or blockages are evident, the heater will enter Hard Lockout mode. If lockout occurs, the control can be reset by briefly interrupting the power source. The control will not open the gas valve unless there is an interruption by the user, though the blower will continue to operate.

Figure 3.1 • Operational Indicator Lights



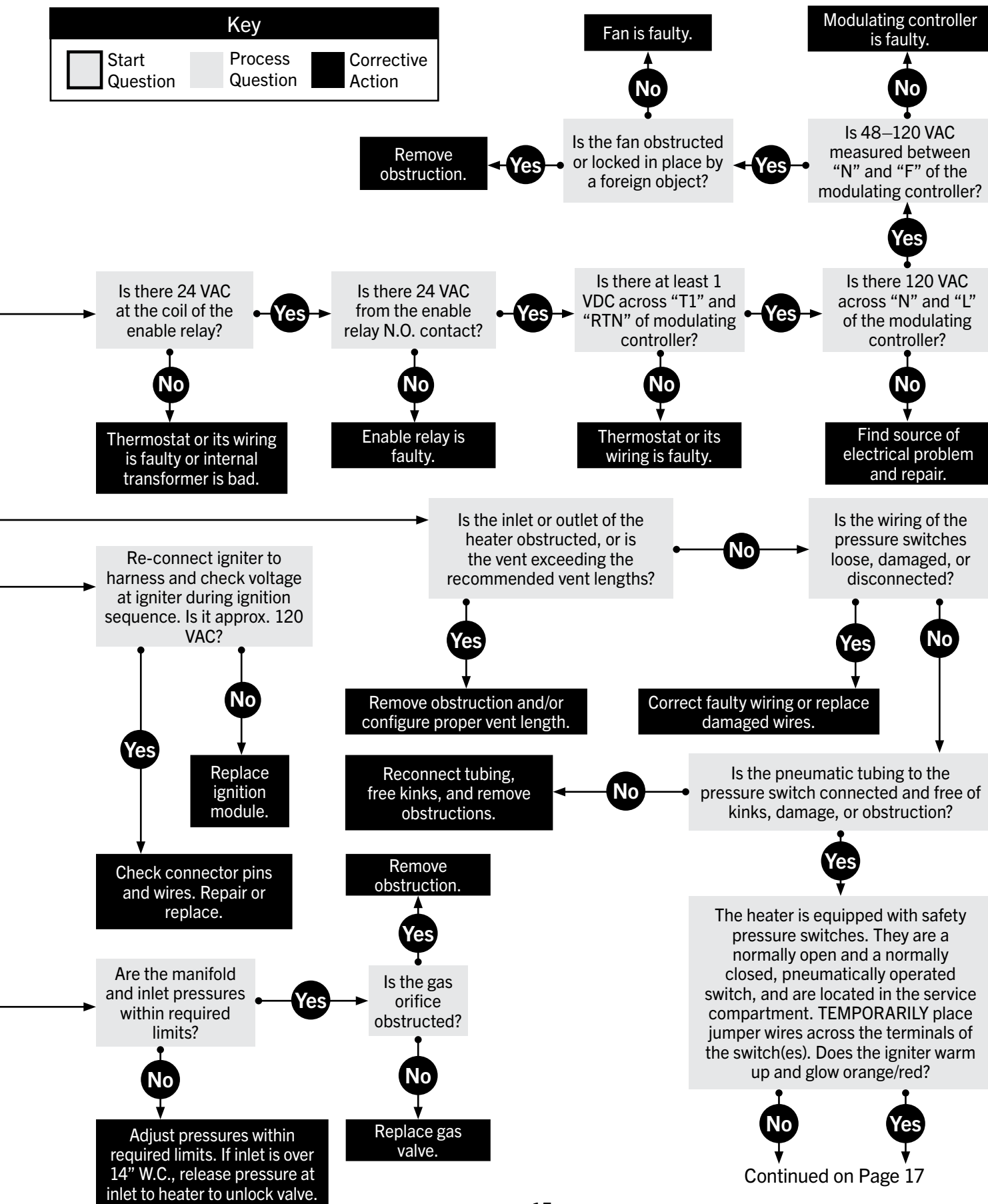
# 4.0 Troubleshooting Guide



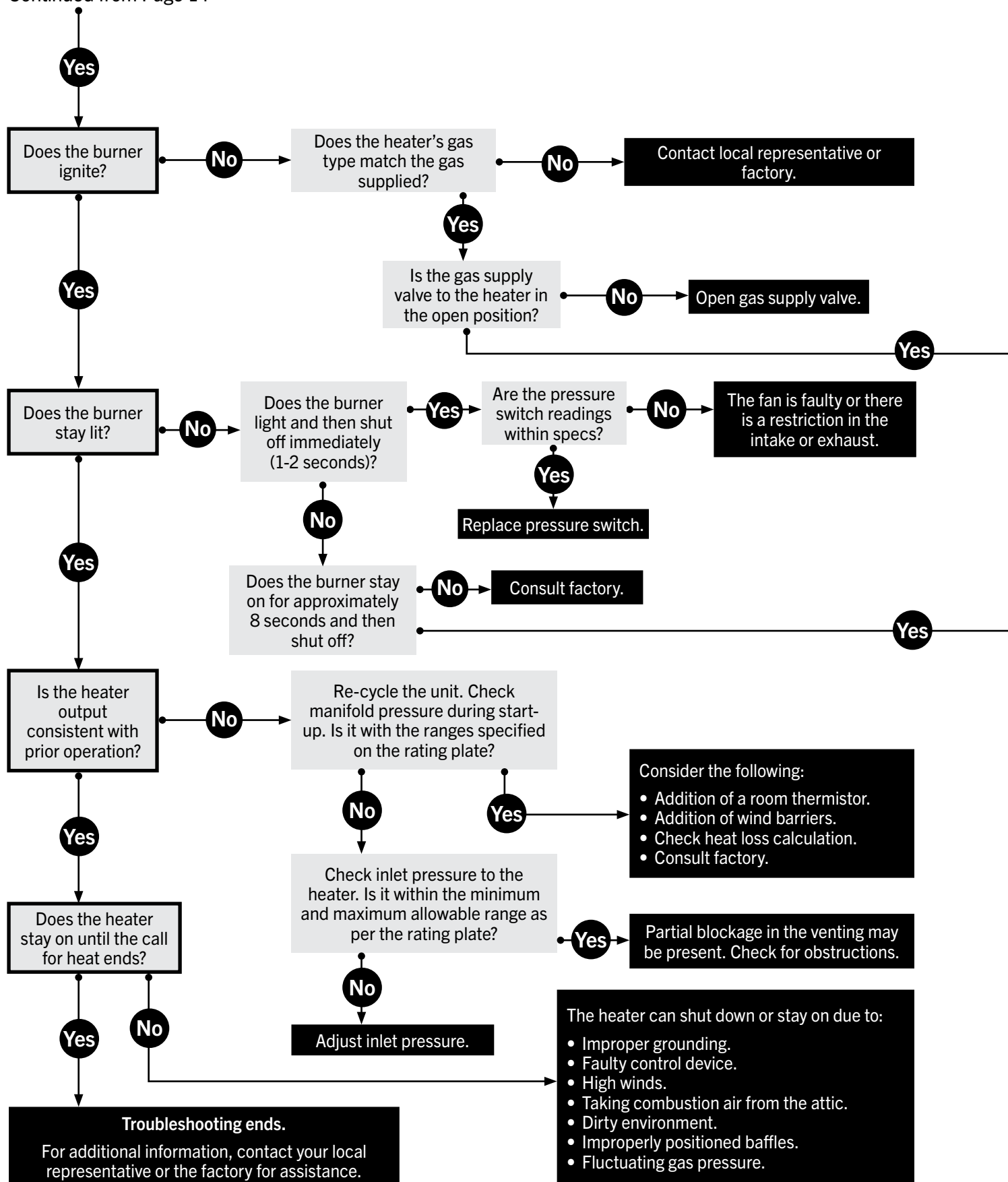
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**NOTICE**

Bypassing any switch is intended for testing purposes only. Do **not** leave switch bypassed during normal operation or the heater's built-in safety mechanisms will be compromised.

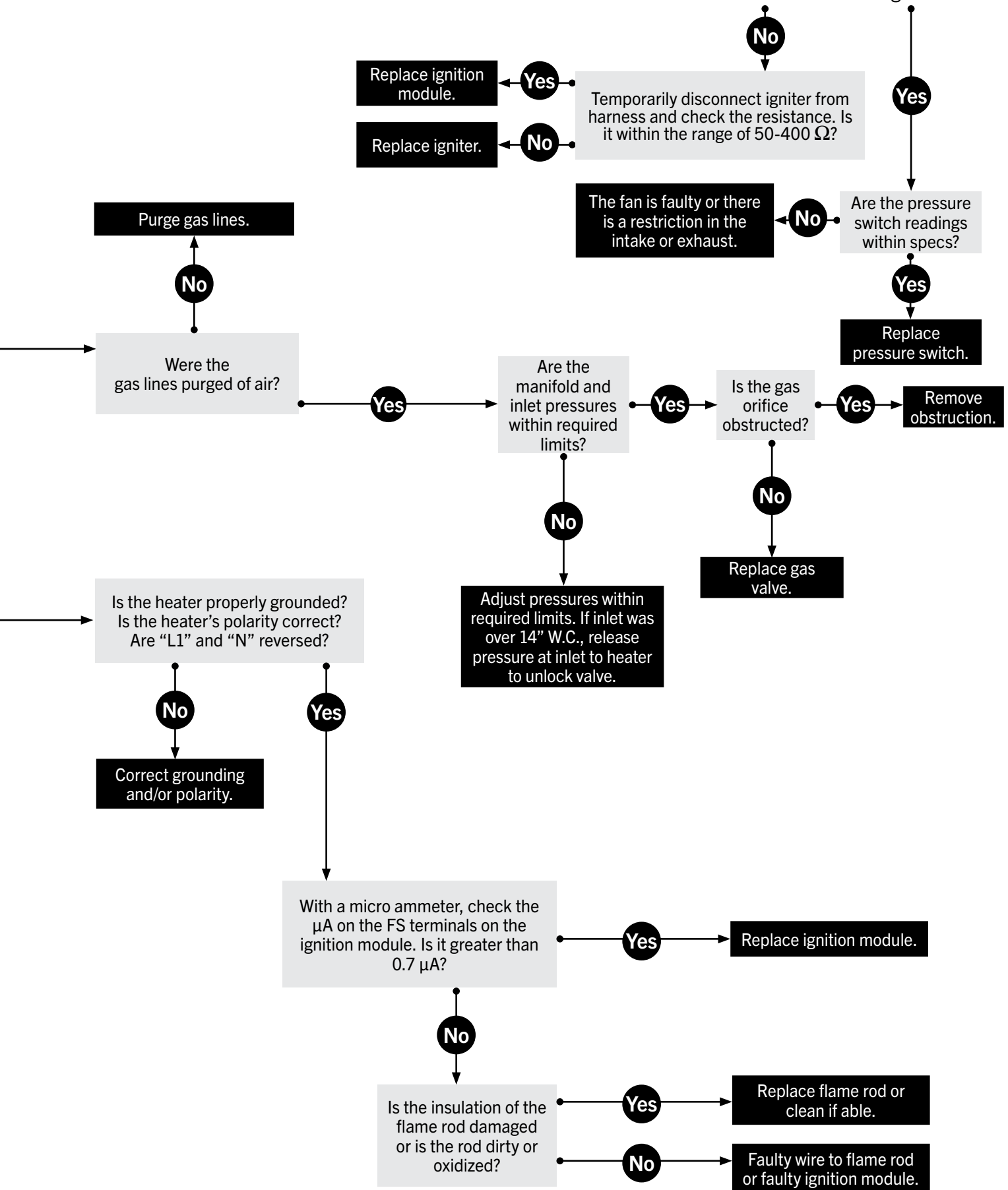


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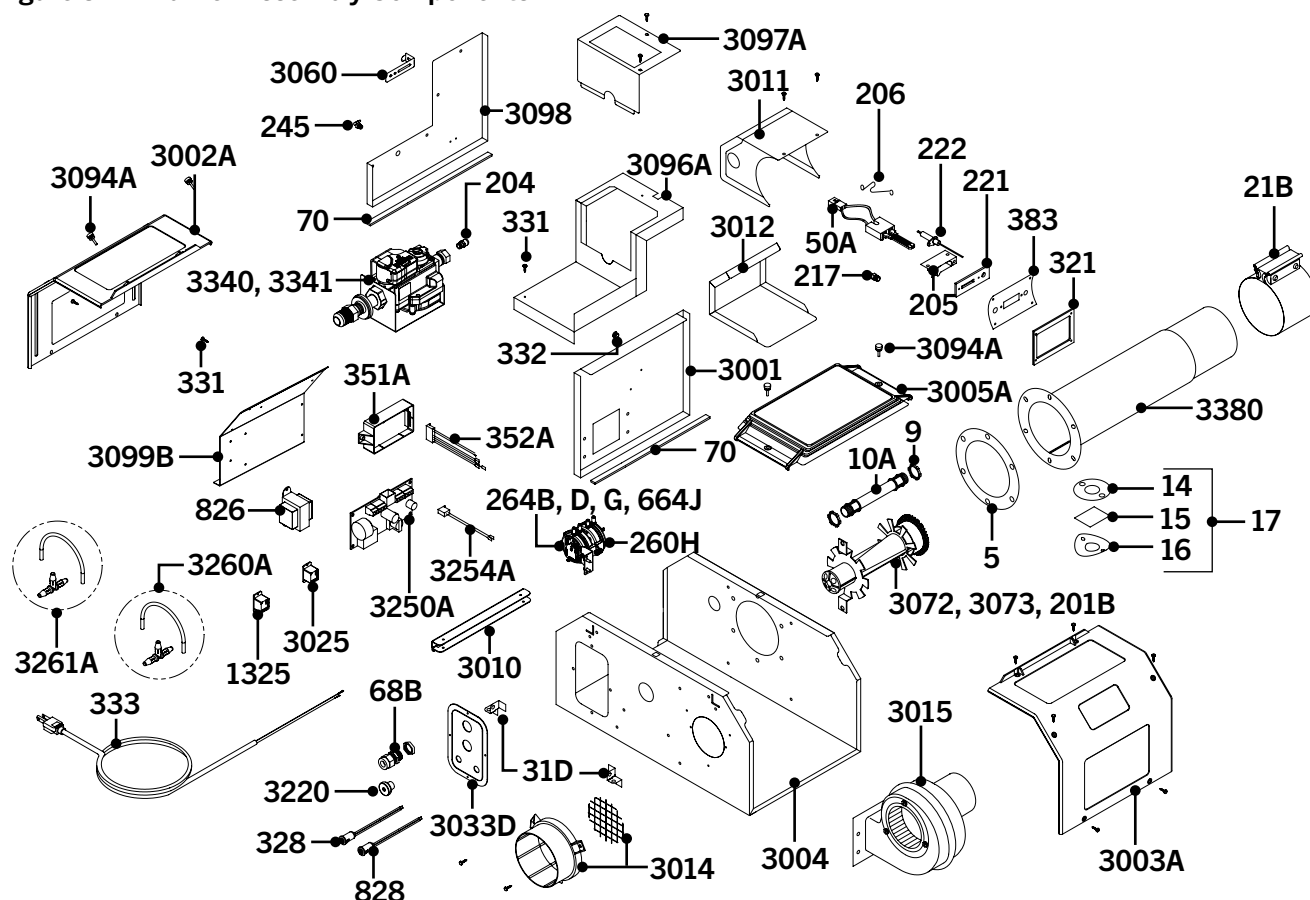


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## 5.0 Parts

### Figure 5.1 • Burner Assembly Components



### Chart 5.1 • Parts List

| Part # | Description  | Part #  | Description                                      |
|--------|--|---------|--|
| TP-5   | Flange Gasket  | TP-70   | 1/2" x 10" Control Box Gasket (Qty. 2)           |
| TP-9   | 3/4" EMT Conduit Coupling                            | TP-82   | Reflector Center Support (RCS)                   |
| TP-10A | 3/4" x 4" EMT Conduit                                | TP-105  | Aluminum Reflector End Cap                       |
| TP-14  | Sight Glass Gasket                                   | TP-106  | Reflector End Cap Clips (8 pieces)               |
| TP-15  | Sight Glass  | TP-111  | 5' x 4" Black Coated Aluminized Steel Tube       |
| TP-16  | Sight Glass Washer                                   | TP-112  | 5' Polished Aluminum Reflector                   |
| TP-17  | Sight Glass Kit                                      | TP-113  | Reflector Tension Spring                         |
| TP-19B | 4" Wire Hanger w/ Tension Spring                     | TP-201B | High BTU Burner (Color Code - TAN) (150-200 MBH) |
| TP-20C | 10 ft. Polished Aluminum Reflector                   | TP-204  | Gas Orifice (Consult Factory)                    |
| TP-20D | 10 ft. Stainless Steel Reflector                     | TP-205  | Glo-Bar Holder                                   |
| TP-21B | 4" Standard Tube Clamp                               | TP-206  | Glo-Bar Holder Spring Clip                       |
| TP-26A | 10 ft. Aluminized Radiant / Combustion Tube          | TP-217  | Brass 1/8" N.P.T. Barb Fitting                   |
| TP-26B | 10 ft. Titanium Stabilized Combustion Tube           | TP-220* | Stainless Steel Tube Clamp                       |
| TP-26D | 10 ft. 304 Stainless Steel Radiant Tube              | TP-221  | Glo-Bar Holder Gasket                            |
| TP-26E | 10 ft. 409 Stainless Steel Combustion Tube           | TP-222  | Flame Rod  |
| TP-31D | Interlocking Mounting Bracket (Qty. 2)               | TP-245  | Plastic 1/8" N.P.T. 90° Barb Fitting             |
| TP-50A | Glo-Bar Igniter                                      | TP-260H | N.C. Pressure Switch                             |
| TP-65H | 1 1/2 ft. Interlocking Turbulator Baffle (75-80 MBH) | TP-264B | N.O. Pressure Switch (75-80 MBH)                 |
| TP-65I | 3 ft. Interlocking Turbulator Baffle                 | TP-264D | N.O. Pressure Switch (115 MBH)                   |
| TP-68B | 1/2" Strain Relief Bushing                           | TP-264G | N.O. Pressure Switch (150 MBH)                   |

Figure 5.2 • Tube and Reflector Components

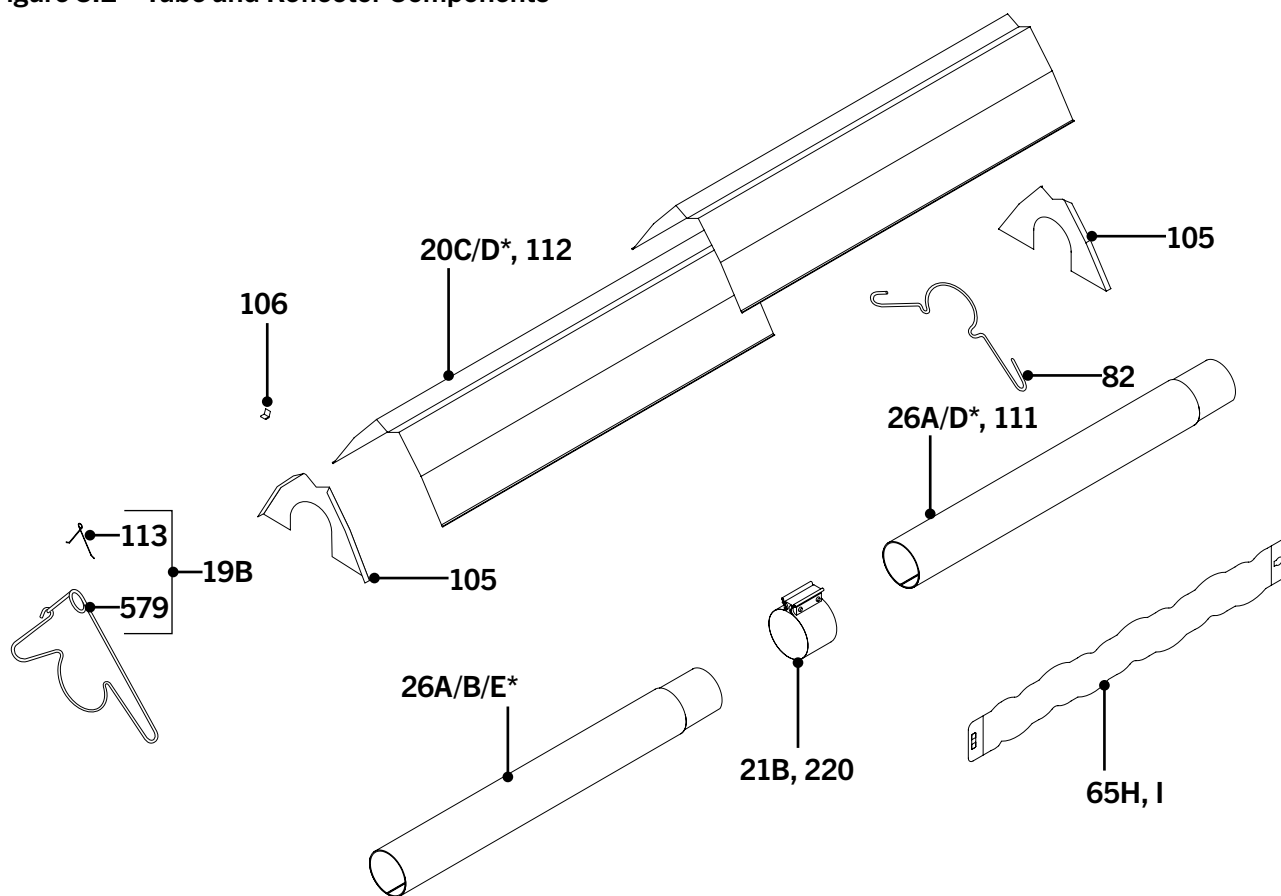
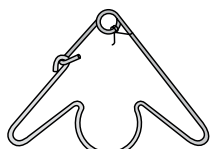

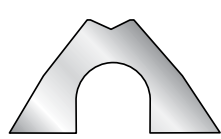


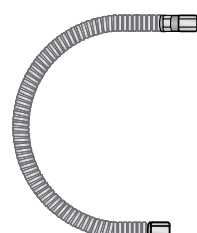
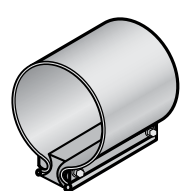
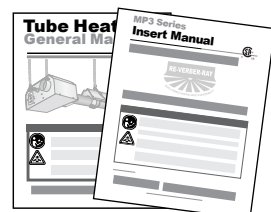


Chart 5.1 • Parts List (cont.)

| Part #   | Description  | Part #   | Description                                   |
|----------|--|----------|---|
| TP-321   | Ignition Plate Gasket                              | TP-3014  | Pastic Air Orifice with Screen                |
| TP-328   | 120 V Amber Indicator Light                        | TP-3015  | Fan Blower Assembly (PSC Motor)               |
| TP-331   | Green Self-Tap Ground Screw (Qty. 2)               | TP-3025  | 120 VAC Coil Relay                            |
| TP-332   | 1/4" Divider Grommet                               | TP-3033D | Power Entry Plate                             |
| TP-333   | 6 ft. Black Power Cord w/ Ground                   | TP-3060  | Pressure Switch Mounting Bracket              |
| TP-351A  | Potted Circuit Board - Ignition Controller         | TP-3072  | Low BTU Burner (Color Code - GREEN) (115 MBH) |
| TP-352A  | Wire Harness for Ignition Controller               | TP-3073  | Low BTU Burner (Color Code- RED) (75-80 MBH)  |
| TP-383   | Glo-Bar Igniter Plate                              | TP-3094A | #8-32 X 1/2" Metal Thumb Screw                |
| TP-579   | 4" Wire Hanger                                     | TP-3096A | Valve Compartment Bottom Panel                |
| TP-664J  | N.O. Pressure Switch (200 MBH)                     | TP-3097A | Valve Compartment Top Panel                   |
| TP-826   | 40 VA Transformer (120 V Primary / 24 V Secondary) | TP-3098  | Valve Compartment Side Panel                  |
| TP-828   | 24 VAC Yellow Operational Indicator Light          | TP-3099B | Controls Mounting Panel                       |
| TP-1325  | 25 VAC Coil Relay                                  | TP-3220  | Thermostat Wire Grommet                       |
| TP-3001  | Divider Panel                                      | TP-3340  | Natural Gas Valve Assembly                    |
| TP-3002A | Plastic End Panel, Control Compartment             | TP-3341  | Propane Gas Valve Assembly                    |
| TP-3003A | Plastic End Panel, Fan Compartment                 | TP-3250A | Circuit Board - Modulating Controller         |
| TP-3004  | Control Box  | TP-3254A | Wire Harness for Modulating Controller        |
| TP-3005A | Plastic Valve Chamber Lid                          | TP-3260A | 4 1/2" Pneumatic Tube & Tee Assembly          |
| TP-3010  | Service Panel Hinge                                | TP-3261A | 10" Pneumatic Tube & Tee Assembly             |
| TP-3011  | Igniter Box  | TP-3380  | 16" HSI Burner Tube w/Flange and Fittings     |
| TP-3012  | Igniter Box Cover                                  |          |   |

\* 150,000-200,000 BTU/h models only.

## Kit Contents

| MP3 Series Kit Contents - Reference the length column for your model.   |  |  |        |  |        |  |        |   |
|---|--|--|--------|--|--------|--|--------|---|
| <b>TP-19B 4" Hanger with Tension Spring</b><br><br><b>**TP-19C</b> |  | <b>TP-82 4" Reflector Center Support (RCS)</b><br><br><b>**TP-829</b> |        | <b>TP-105 Reflector End Cap</b><br><br><b>**TP-105A</b>                  |        | <b>TP-106 Reflector End Cap Clips</b><br> |        | <b>TP-3220 Thermostat Wire Grommet</b><br> |
| <b>FC-36 36" x 3/4" Stainless Steel Flexible Gas Connector</b><br> |  | <b>TP-21B 4" Tube Clamp</b><br><br><b>**TP-220</b>                    |        | <b>General Manual and MP Series Insert F/N: LIOGT3 &amp; LIOMP3</b><br> |        |  |        |   |
| Part No.  | Description                            | 20 ft.   | 25 ft. | 30 ft.   | 40 ft. | 50 ft.   | 60 ft. | 70 ft.  |
| FC-36   | 36" x 3/4" S.S. Flexible Gas Connector | 1  | 1      | 1  | 1      | 1  | 1      | 1   |
| TP-19B  | 4" Hanger w/ Tension Spring            | 3  | 4      | 4  | 5      | 6  | 7      | 8   |
| TP-21B  | 4" Tube Clamp                          | 2  | 3      | 3  | 4      | 5*   | 6*     | 7*  |
| TP-82   | 4" Reflector Center Support            | 2  | 2      | 3  | 4      | 5  | 6      | 7   |
| TP-105  | Reflector End Cap                      | 2  | 2      | 2  | 2      | 2  | 2      | 2   |
| TP-106  | Reflector End Cap Clips                | 8  | 8      | 8  | 8      | 8  | 8      | 8   |
| TP-3220   | Thermostat Wire Grommet                | 1  | 1      | 1  | 1      | 1  | 1      | 1   |
| LIOGT3  | V3 General Tube Heater Manual          | 1  | 1      | 1  | 1      | 1  | 1      | 1   |
| LIOMP3  | MP3 Series Insert Manual               | 1  | 1      | 1  | 1      | 1  | 1      | 1   |
| Filled By:  |  |  |        |  |        |  |        |   |

\* **NOTE:** One 4" stainless steel tube clamp (P/N: TP-220) is provided for each 150,000 - 200,000 BTU/h model. Place as shown on Page 11.

\*\* Part number for models upgraded with stainless steel options.

## Approvals

- CSA
- Indoor approval
- Outdoor approval with OD-Kit
- Commercial approval

## Limited Warranty

- 3 years - Burner box components
- 5 years - Combustion and radiant tubes
- 10 years - Stainless steel burner
- See Page 40 of the General Tube Heater Manual for terms and conditions.



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