

AG1 Series Insert Manual



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

The AG1 Series Infrared Tube Heater is a positive pressure, single-stage radiant heater system. This insert manual is a supplement to the Tube Heater General Manual and provides specific information related to the AG1 Series model. 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)

LIOAG1a-Rev. 24414
Print: 2M-01/16(CDS)
Replaces: LIOAG1a-2M-12/13

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NOTE: See page 14 for a list of available models and specifications.

1.0 Safety



Read and understand all safety information and warnings in this insert manual and the Tube Heater General Manual before installation, operation and maintenance of the radiant tube heater system.

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.

120V
- 120V HEATER INPUT -
F/N: LLV3EP1

Air Metering Orifice
DO NOT REMOVE
TP-114 TP-3014 3"
F/N: LLAC
Air Metering Orifice

Back Panel

| DETROIT RADIANT INFRA-RED RADIANT TUBE HEATER | | |
|--|--|---------------------------------------|
| FOR OUTDOOR USE AND INDOOR (Non-Residential) INSTALLATION ONLY. Class 95 Permanent Label | | |
| MODEL NO. AG1-40 - 125N | INPUT BTU/Hr 125,000 | FOR USE WITH Natural Gas |
| Volts AC: 120V - 60Hz | Manifold Pressure: 3.5 Inches W.C. | Heater Type C1 |
| AMPS - Starting: 4.8 | Maximum Inlet Pressure: 14 Inches W.C. | Minimum Mounting Angle: 0 DEGREES |
| 1.1 | Minimum Inlet Pressure: 5.0 Inches W.C. | Maximum Mounting Angle: 45 DEGREES |
| Combustion Chamber: 4" Uncoated Aluminized | | |
| DESIGN COMPLIES WITH: ANSI Z83.20-2008 GAS FIRED LOW INTENSITY INFRA-RED HTR | | |
| DETROIT RADIANT PRODUCTS COMPANY 2140 HOOPER ROAD - WARREN, MI (981) 755-0950 - www.drp-co.com | | Serial No.: 0914XXXXXXXXX 0001 |

Rating Plate
F/N: LLTB018 (Natural Gas)
F/N: LLTB019 (Propane Gas)

Top Panel

AG1-40-125N Serial No.: 0914XXXXXXXXX 0001
Production Code: AG1-125 Stock/None
Version: 914 Add-On: N/A
Data on this label is for the model shown on this label. If your heater has been converted, this information is not accurate. Please contact the factory for assistance.

BURNER COMPONENTS: (Specify TP-30)

| | | | |
|-----------------------------|------|----------------|------------------|
| Gas Valve: 3009-224-F | 840 | Photo LED | 827 |
| Circuit Board: Micro60-24 | 851 | Flame Rod | N/A |
| Wire Harness: 3 PCS Harness | 862 | Transformer: | 40 VA 806 |
| N.C. Switch: None | N/A | Flame Log | 55A |
| I.O. Vt. Orifice: N/A | N/A | Air Fan: | 50Hz - 120V 55B |
| N.C. Switch: None | N/A | Air Fan Usage: | When Specified |
| I.C. Vt. Orifice: None | N/A | Relief: | None |
| Relief Valve: IS2010BFF3199 | 264E | Relief Valve: | None |
| Relief Valve: Grey (1-7) | | Relief Valve: | 3T - plug 832 |
| Relief Valve: Nylon | 50 | Relief Valve: | 2-1/2" Dia 66 |
| Relief Valve: Low-Mid | 3072 | Relief Valve: | 7/8" FC Flare 83 |
| Relief Valve: 4" Brd. | 262 | Relief Valve: | None |
| Relief Valve: Yellow - 24V | 828 | Relief Valve: | None |

HEATER TYPE: C1 C2 C3
Air: TP-2048 10 10 9
Gas: TP-2048 2 1/4" 2 1/4" 2 1/4"

Internal Use Only:
Electric: LLV7000 Special: Micro 60
Tag: None Special: Plug Wh

Bottom Panel

F/N: LLLOGO
(Note model number when reordering)

F/N: LLTCL001 Clearance to Combustibles Label.

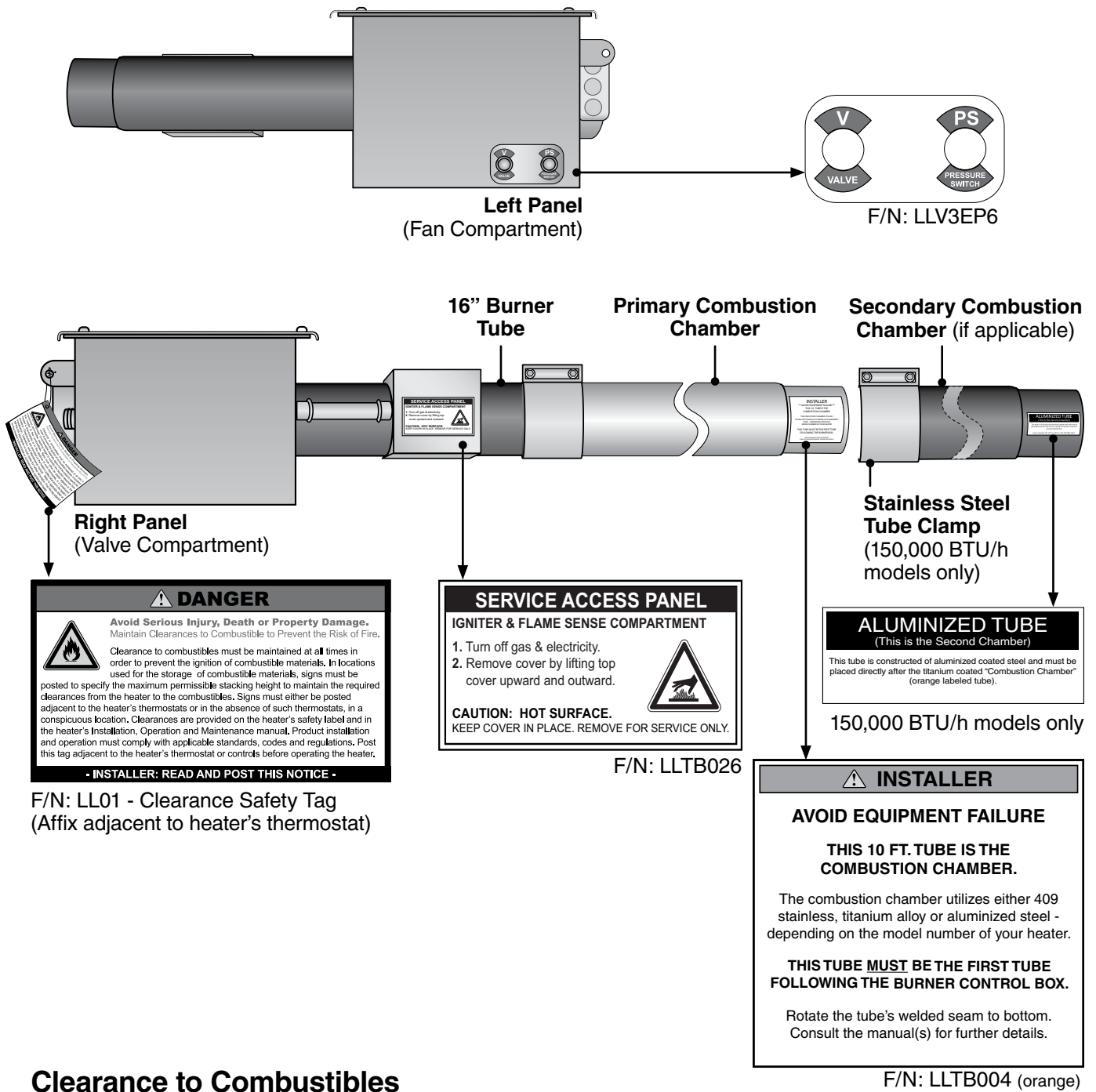
AG1-40-125N Serial No.: 0914XXXXXXXXX 0001
Production Code: AG1-125 Stock/None
Version: 914 Add-On: N/A
Data on this label is for the model shown on this label. If your heater has been converted, this information is not accurate. Please contact the factory for assistance.

BURNER COMPONENTS: (Specify TP-30)

| | | | |
|-----------------------------|------|----------------|------------------|
| Gas Valve: 3009-224-F | 840 | Photo LED | 827 |
| Circuit Board: Micro60-24 | 851 | Flame Rod | N/A |
| Wire Harness: 3 PCS Harness | 862 | Transformer: | 40 VA 806 |
| N.C. Switch: None | N/A | Flame Log | 55A |
| I.O. Vt. Orifice: N/A | N/A | Air Fan: | 50Hz - 120V 55B |
| N.C. Switch: None | N/A | Air Fan Usage: | When Specified |
| I.C. Vt. Orifice: None | N/A | Relief: | None |
| Relief Valve: IS2010BFF3199 | 264E | Relief Valve: | None |
| Relief Valve: Grey (1-7) | | Relief Valve: | 3T - plug 832 |
| Relief Valve: Nylon | 50 | Relief Valve: | 2-1/2" Dia 66 |
| Relief Valve: Low-Mid | 3072 | Relief Valve: | 7/8" FC Flare 83 |
| Relief Valve: 4" Brd. | 262 | Relief Valve: | None |
| Relief Valve: Yellow - 24V | 828 | Relief Valve: | None |

HEATER TYPE: C1 C2 C3
Air: TP-2048 10 10 9
Gas: TP-2048 2 1/4" 2 1/4" 2 1/4"

Internal Use Only:
Electric: LLV7000 Special: Micro 60
Tag: None Special: Plug Wh



Clearance 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 vapor 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 Series tube heater and configuration must be maintained.

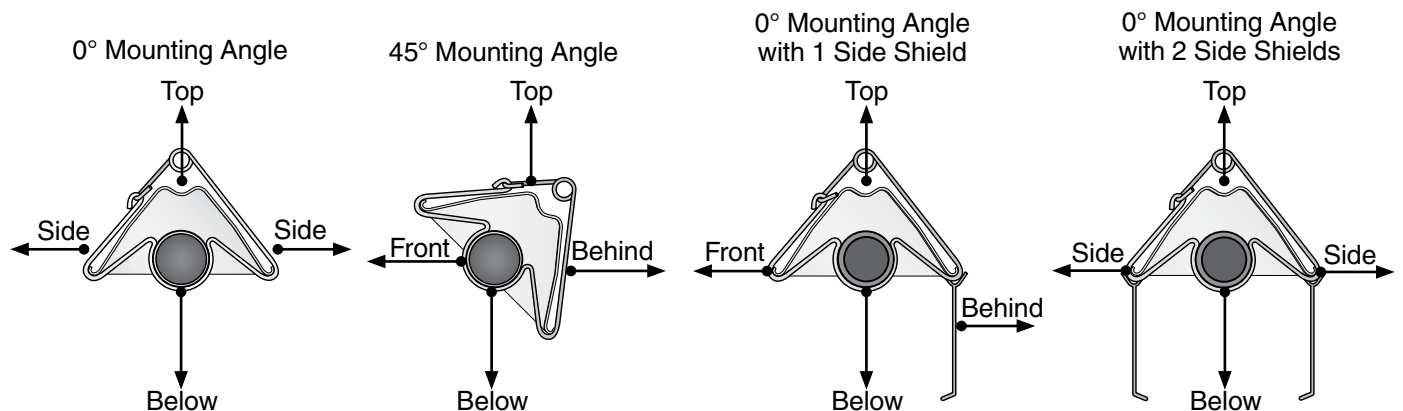
Chart 1.1 • Clearance to Combustibles in Inches (see Figure 1.1 for Mounting Angles)

| Model Number | Mounting Angle* | Sides | | Top** | Below |
|--|-----------------|-------|--------|-------|-------|
| | | Front | Behind | | |
| AG1 (20, 30, 40) - 50 [N, P] with 1 side shield with 2 side shields 20 ft. from burner | 0° | 9 | 9 | 6 | 47 |
| | 45° | 39 | 8 | 10 | 47 |
| | 0° | 29 | 8 | 6 | 47 |
| | 0° | 9 | 9 | 6 | 47 |
| | 0° | 7 | 7 | 6 | 30 |
| AG1 (20, 30, 40) - 60 [N, P] with 1 side shield with 2 side shields 20 ft. from burner | 0° | 9 | 9 | 6 | 47 |
| | 45° | 39 | 8 | 10 | 47 |
| | 0° | 29 | 8 | 6 | 47 |
| | 0° | 9 | 9 | 6 | 47 |
| | 0° | 7 | 7 | 6 | 30 |
| AG1 (20, 30, 40) - 75 [N, P] with 1 side shield with 2 side shields 20 ft. from burner | 0° | 9 | 9 | 6 | 60 |
| | 45° | 39 | 8 | 10 | 60 |
| | 0° | 29 | 8 | 6 | 60 |
| | 0° | 9 | 9 | 6 | 60 |
| | 0° | 7 | 7 | 6 | 30 |
| AG1 (20, 30, 40, 50) - (80, 100) [N, P] with 1 side shield with 2 side shields 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 |
| AG1 (40, 50) - 125 [N, P] with 1 side shield with 2 side shields 20 ft. from burner | 0° | 20 | 20 | 6 | 76 |
| | 45° | 58 | 8 | 10 | 76 |
| | 0° | 42 | 8 | 6 | 76 |
| | 0° | 20 | 20 | 6 | 76 |
| | 0° | 7 | 7 | 6 | 30 |
| AG1 (40, 50, 60) - 150 [N, P] with 1 side shield with 2 side shields 20 ft. from burner | 0° | 24 | 24 | 6 | 81 |
| | 45° | 58 | 8 | 10 | 81 |
| | 0° | 42 | 8 | 6 | 81 |
| | 0° | 23 | 23 | 6 | 81 |
| | 0° | 11 | 11 | 6 | 44 |

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 assure that adjacent materials are protected from degradation.

* Heaters mounted on an angle between 1° to 29° must maintain clearances posted for 0° or 30°; whichever is greater.
 ** Maintain a 10 in. (0° mounting angle) or 12 in (1-45° mounting angle) clearance from ceilings constructed of tri-ply plastic or plastic fogger lines.

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 (**Note:** Placement for poultry facilities on page 9).
- Tube layout and assembly
- Burner control box suspension
- Reflectors (and accessories)
- Venting and combustion air intake
- Gas requirements
- Baffle assembly

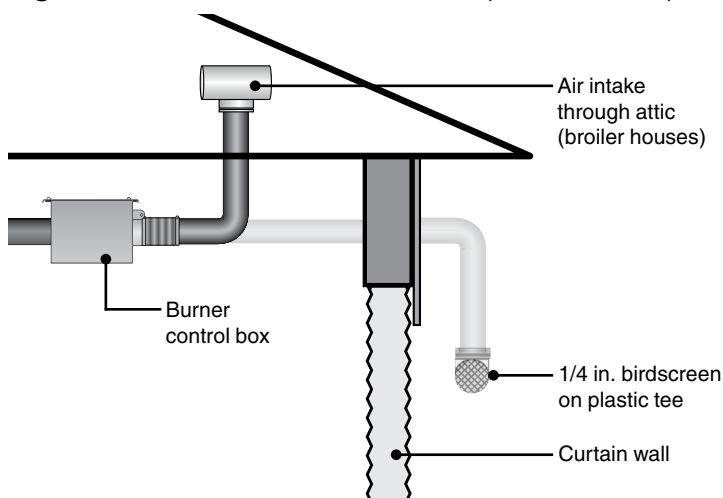
NOTE: Electronic versions of all manuals are available at www.detroitradiant.com.

Combustion Air

The combustion air intake collar is also a factory preset air orifice. Non-contaminated air for combustion **must** be ducted to the heater in all agricultural applications. **Do not** take combustion air from pressurized attic spaces, with the exception of broiler houses.

Locate the air intake away from any steam source. Use caution when locating air intake above curtain walls, as they can leak. When curtain walls are present, use 4-inch light gauge PVC air intake material from curtain sidewall to the heater; do not exceed 25 feet. With an elbow, drop intake one foot below the top of the curtain wall. Cap intake with a 1/4-inch birdscreen. Figure 2.1.

Figure 2.1 • Combustion Air Intake (Broiler House)



Electrical Requirements

- 120 Volt - 60 Hz GRD, 3-wire.
- Starting current 4.8 amps.
- Running current 1.1 amps.
- 120 Volt control voltage.

Wiring

⚠ WARNING

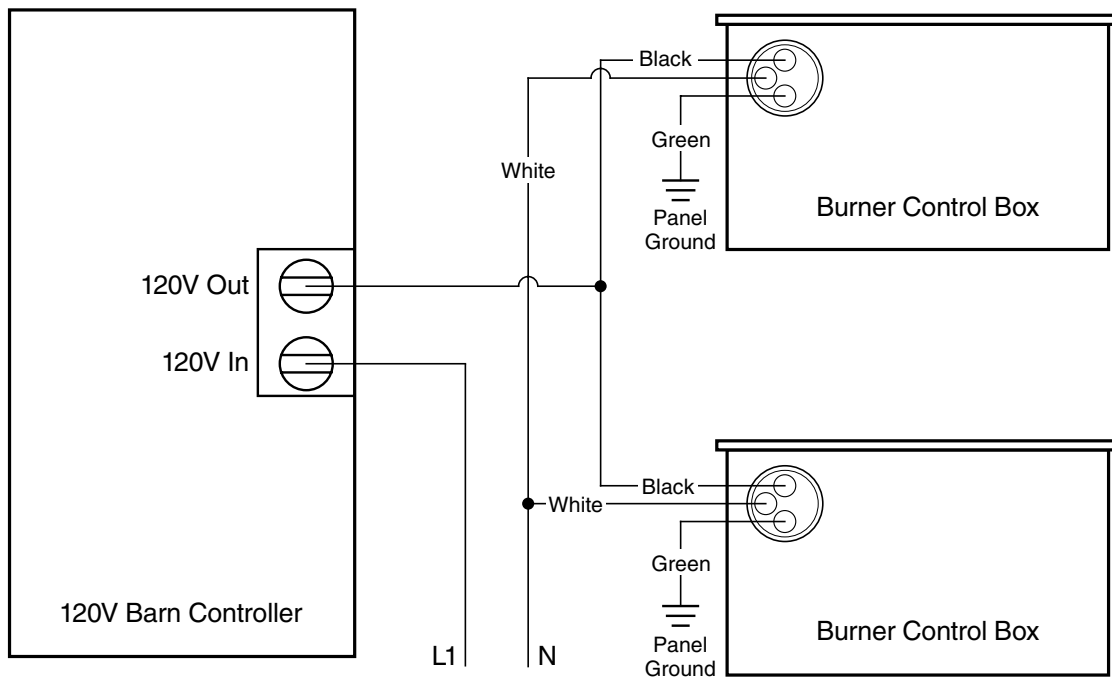


Electric Shock

Field wiring to the tube heater must be connected and grounded in accordance with national, state, provincial, local codes and to the guidelines in the Tube Heater General Manual and Series Insert Manual. In the United States refer to the most current revisions to the ANSI/NFPA 70 Standard and in Canada refer to the most current revisions to the CSA C22.1 Part I Standard.

Figure 2.2 • Field Wiring Diagrams

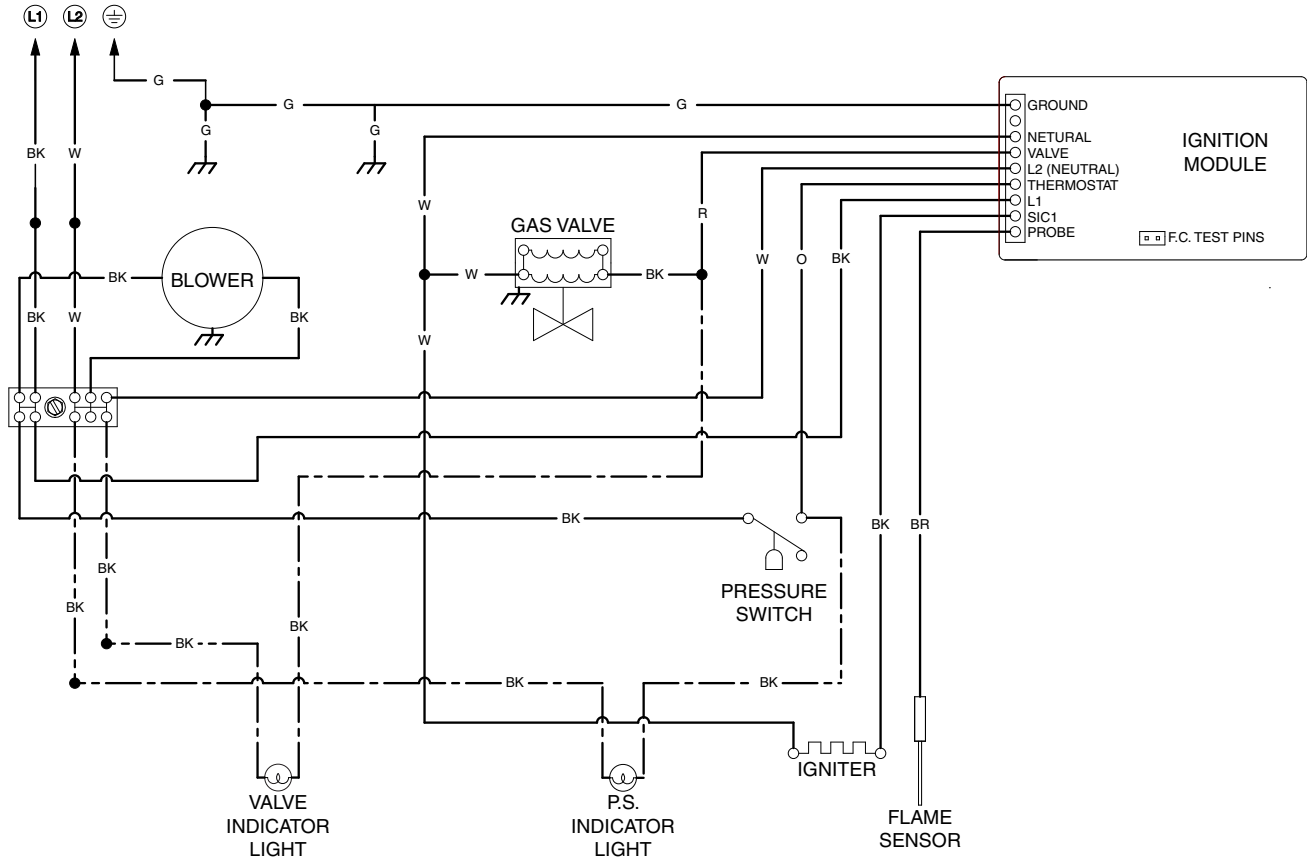
A. Multiple Heaters, Single Control.



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

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

Figure 2.3 • Internal Wiring Diagrams



WIRING INFORMATION:

LINE VOLTAGE:

- FACTORY STANDARD —————
- FACTORY OPTION - - - - -
- FIELD INSTALLED - · - · - ·

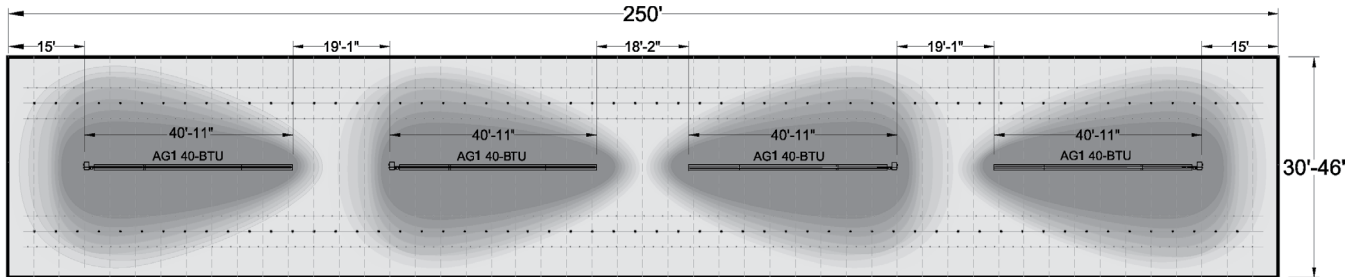
LOW VOLTAGE:

- FACTORY STANDARD —————
- FACTORY OPTION - - - - -
- FIELD INSTALLED - · - · - ·

Installation Diagrams

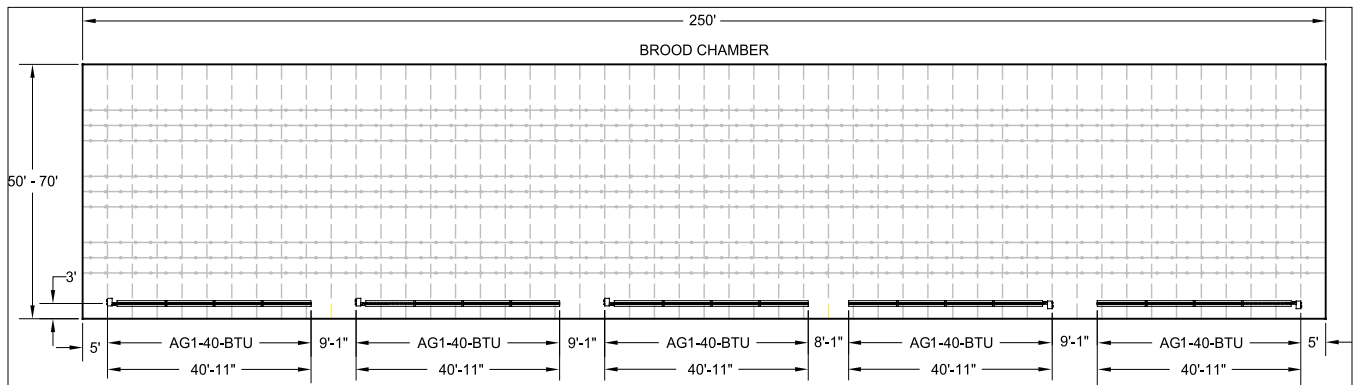
Figure 2.4 • Sample Brooder Installation Diagrams

A. Center House Installation



NOTE: Utilize elongated hangers (TP-19E) on houses 50 feet or more with center house mounting to allow for a wider throw pattern.

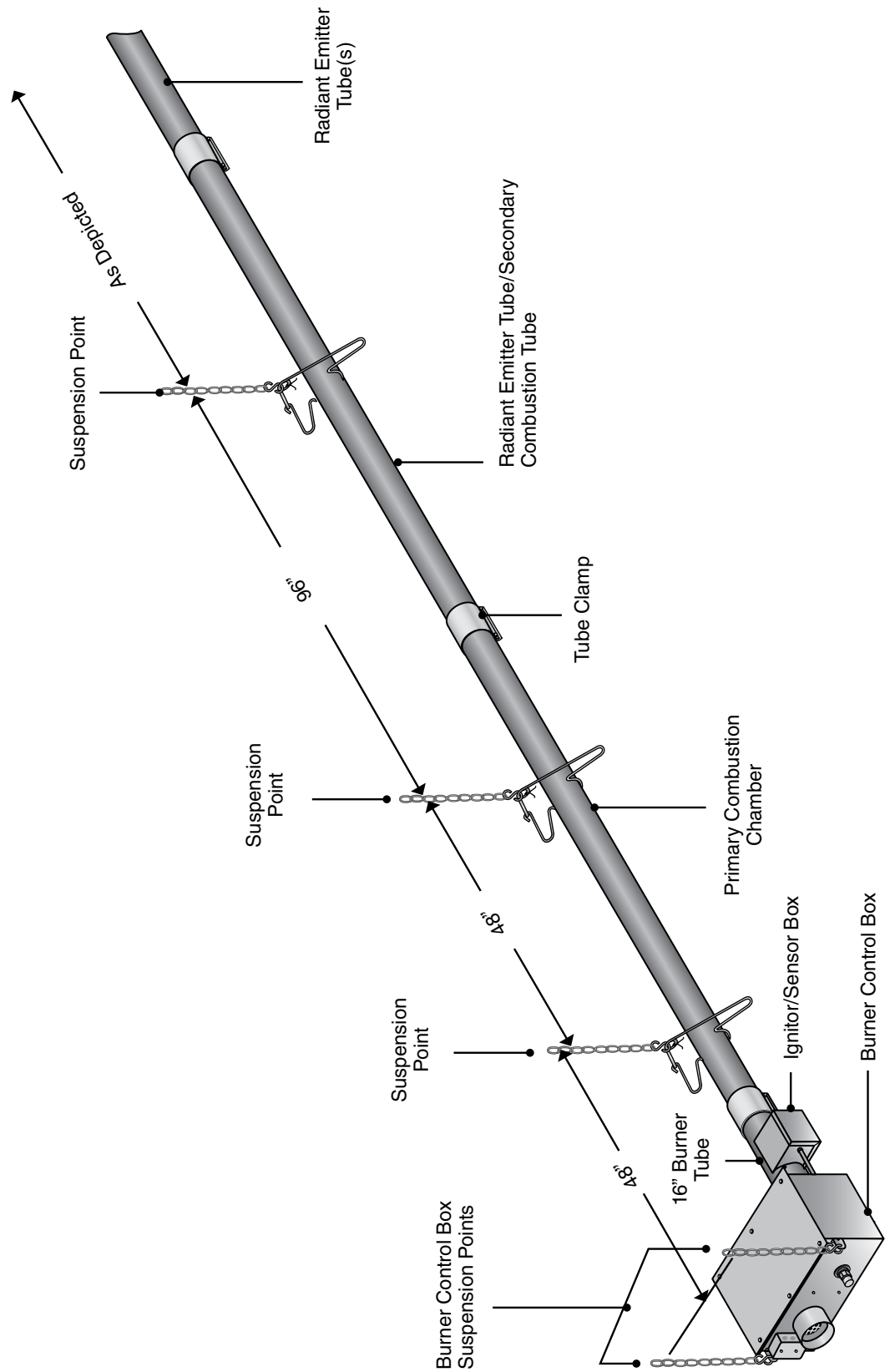
B. Sidewall Installation



NOTE: Mount Reflector at a 45° angle toward center. **NOTE:** Standard hangers (TP-19B) can only be used when sidewall mounting. Elongated hangers (TP-19E) are not to be used.

Figure 2.5 • Heater Suspension Layout • Four (4) Foot Truss Mounts

NOTE: Figure depicts the use of standard TP-19B hangers.



Legend

- TP-82 RCS (TP-82E Elongated hanger is used when installing optional TP-19EAO)
- ▲ TP-19B Hanger
- ▲ TP-19EAO Hanger (optional)
- ⋯ AG-CS 7-Link Hanging Chain
- 🔗 TP-21B 4" Tube Clamp (one TP-220 stainless steel tube clamp included with 150,000 BTU/h models)
- ◆ 2" to 4" Secured Reflector Joint
- ◇ 4" to 6" Non-Secured Reflector Expansion Joint
- Truss
- ▬ Radiant Tube
- ▬ Reflector

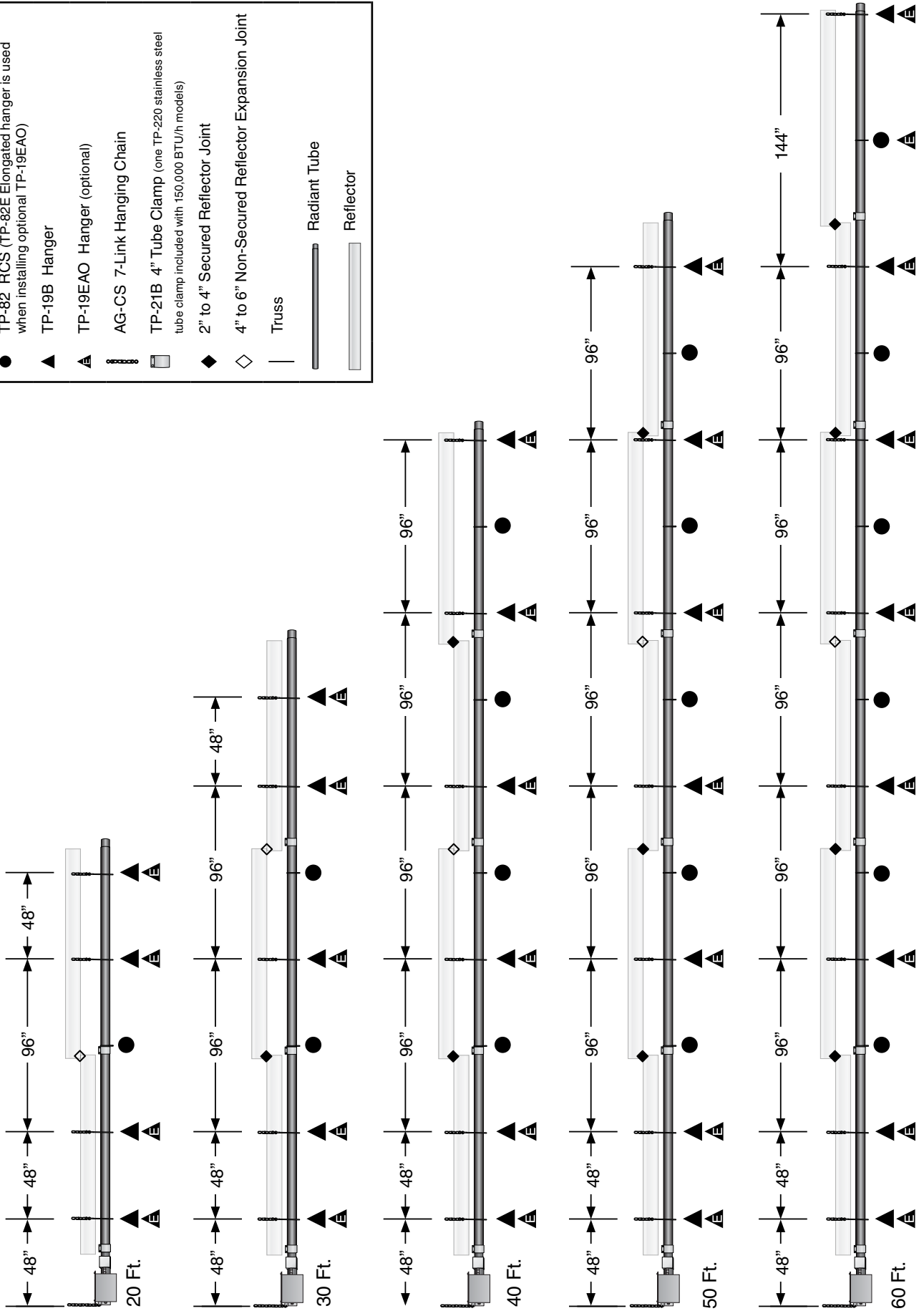
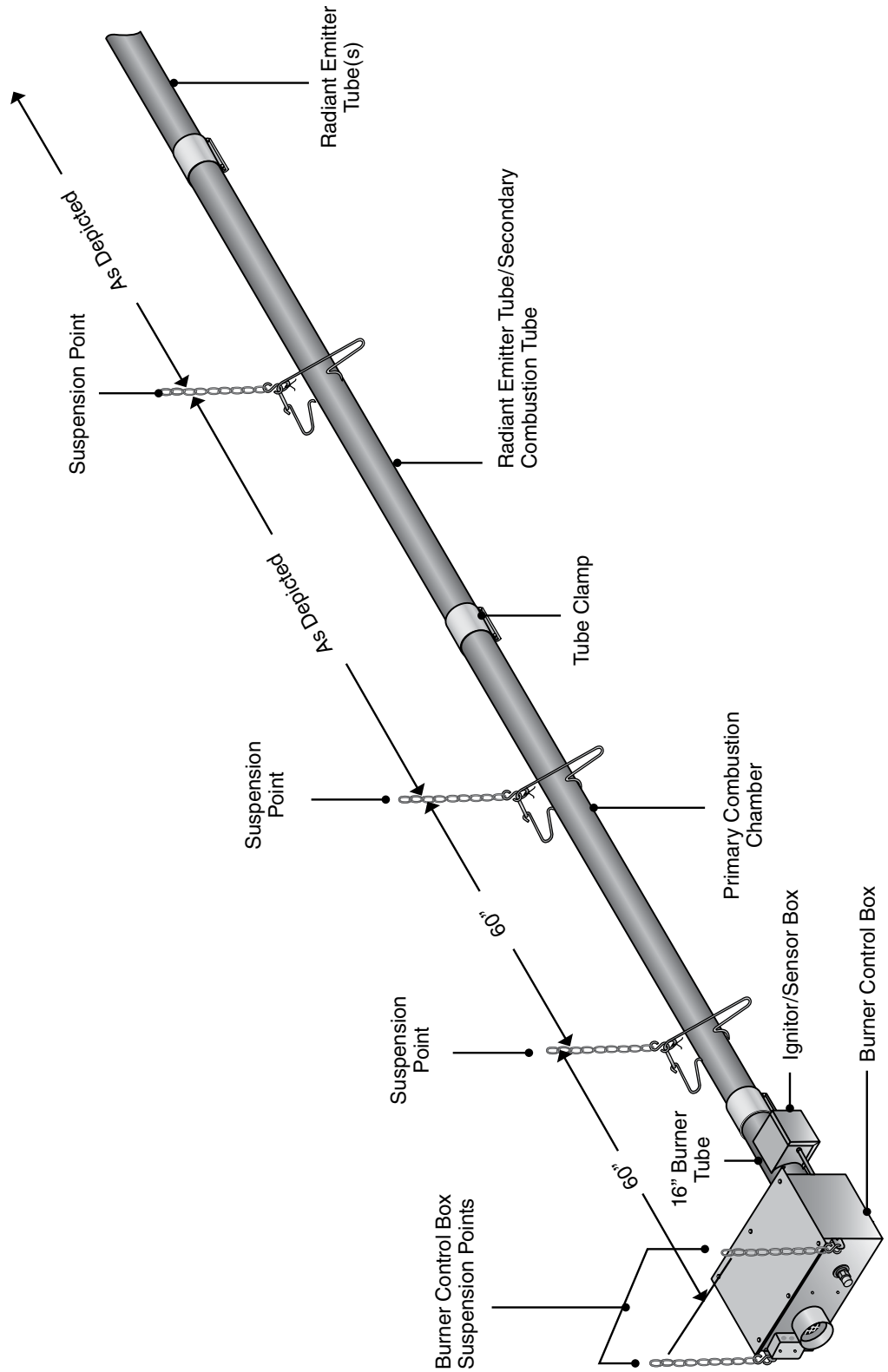


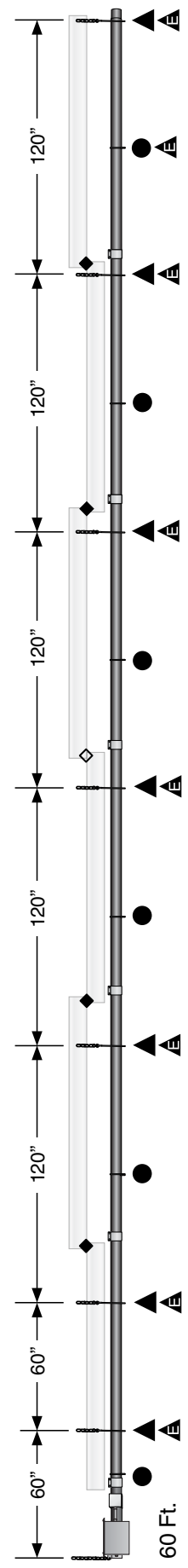
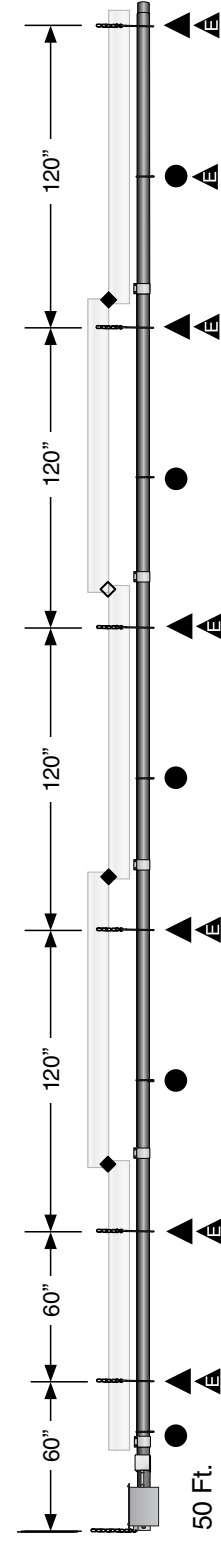
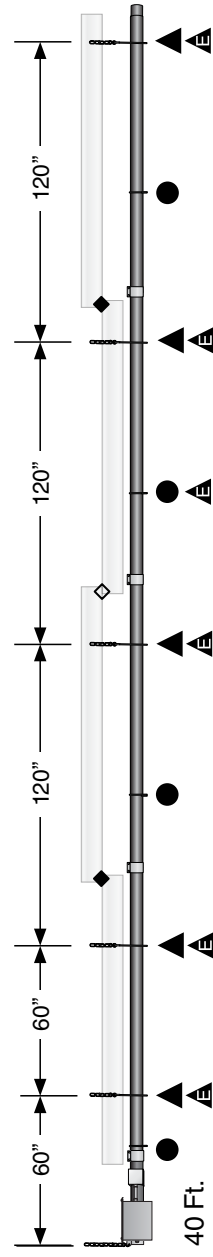
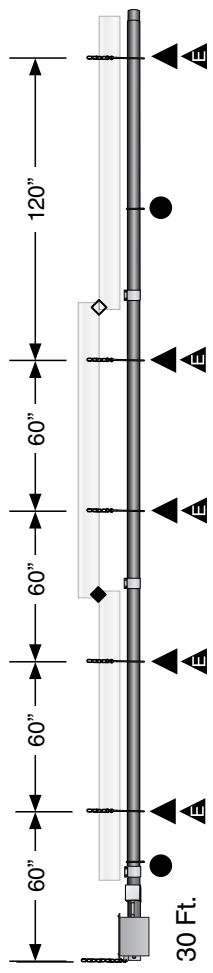
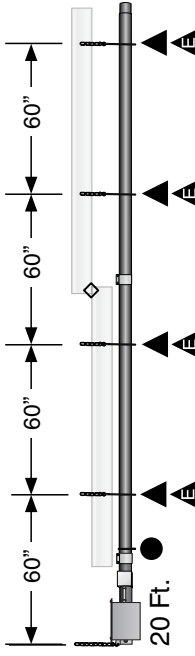
Figure 2.6 • Heater Suspension Layout • Five (5) Foot Truss Mounts

NOTE: Figure depicts the use of standard TP-19B hangers.



Legend

- TP-82 RCS (TP-82E Elongated hanger is used when installing optional TP-19EAO)
- ▲ TP-19B Hanger
- ▲ TP-19EAO Hanger (optional)
- ⋯ AG-CS 7-Link Hanging Chain
- 🔧 TP-21B 4" Tube Clamp (one TP-220 stainless steel tube clamp included with 150,000 BTU/h models)
- ◆ 2" to 4" Secured Reflector Joint
- ◇ 4" to 6" Non-Secured Reflector Expansion Joint
- | Truss
- ▬ Radiant Tube
- ▬ Reflector



Specifications

Chart 2.1 • Specifications

| Model Number | Gas Type (select one) | BTU/H (High Fire) | Straight Length | U-Tube Length | Standard Weight (lbs.) | Recommended Mounting Height Above Animals | Combustion Chamber (uncoated) | Radiant Emitter Tube(s) (uncoated) [^] | Radiant Surface Area (sq. ft.) | 36" Baffle Sections | Optional Alum-AO Quantity |
|--------------|-----------------------|-------------------|-----------------|---------------|------------------------|---|-------------------------------|---|--------------------------------|---------------------|---------------------------|
| AG1-20-50 | Nat. or Prop. | 50,000 | 21'-7" | 13'-0" | 120 | 6' to 9' | Alum | HRT | 20.2 | 5 | 1 |
| AG1-20-60 | Nat. or Prop. | 60,000 | 21'-7" | 13'-0" | 120 | 6' to 9' | Alum | HRT | 20.2 | 5 | 1 |
| AG1-20-75 | Nat. or Prop. | 75,000 | 21'-7" | 13'-0" | 120 | 7' to 10' | Alum | HRT | 20.2 | 5 | 1 |
| AG1-20-80 | Nat. or Prop. | 80,000 | 21'-7" | 13'-0" | 120 | 8' to 14' | Alum | HRT | 20.2 | 5 | 1 |
| AG1-30-50 | Nat. or Prop. | 50,000 | 31'-3" | **17'-8" | 160 | 7' to 10' | Alum | HRT | 30.4 | 5 | 2 |
| AG1-30-60 | Nat. or Prop. | 60,000 | 31'-3" | **17'-8" | 160 | 7' to 10' | Alum | HRT | 30.4 | 5 | 2 |
| AG1-30-75 | Nat. or Prop. | 75,000 | 31'-3" | **17'-8" | 160 | 7' to 10' | Alum | HRT | 30.4 | 5 | 2 |
| AG1-30-80 | Nat. or Prop. | 80,000 | 31'-3" | **17'-8" | 160 | 8' to 14' | Alum | HRT | 30.4 | 5 | 2 |
| AG1-30-100 | Nat. or Prop. | 100,000 | 31'-3" | **17'-8" | 160 | 8' to 14' | Alum | HRT | 30.4 | 6 | 2 |
| AG1-40-50 | Nat. or Prop. | 50,000 | 40'-11" | 22'-8" | 190 | 7' to 10' | Alum | HRT | 40.5 | 5 | 3 |
| AG1-40-60 | Nat. or Prop. | 60,000 | 40'-11" | 22'-8" | 190 | 7' to 10' | Alum | HRT | 40.5 | 5 | 3 |
| AG1-40-75 | Nat. or Prop. | 75,000 | 40'-11" | 22'-8" | 190 | 7' to 10' | Alum | HRT | 40.5 | 5 | 3 |
| AG1-40-80 | Nat. or Prop. | 80,000 | 40'-11" | 22'-8" | 190 | 8' to 14' | Alum | HRT | 40.5 | 5 | 3 |
| AG1-40-100 | Nat. or Prop. | 100,000 | 40'-11" | 22'-8" | 190 | 7' to 11' | Alum | HRT | 40.5 | 5 | 3 |
| AG1-40-125 | Nat. or Prop. | 125,000 | 40'-11" | 22'-8" | 190 | 9' to 14' | Alum | HRT | 40.5 | 5 | 3 |
| AG1-40-150* | Nat. or Prop. | 150,000 | 40'-11" | 22'-8" | 190 | 10' to 14' | Ti-AL | HRT | 40.5 | 5 | 3 |
| AG1-50-100 | Nat. or Prop. | 100,000 | 50'-7" | **27'-4" | 235 | 8' to 12' | Alum | HRT | 50.6 | 5 | 4 |
| AG1-50-125 | Nat. or Prop. | 125,000 | 50'-7" | **27'-4" | 235 | 9' to 14' | Alum | HRT | 50.6 | 5 | 4 |
| AG1-50-150* | Nat. or Prop. | 150,000 | 50'-7" | **27'-4" | 235 | 10' to 14' | Ti-AL | HRT | 50.6 | 5 | 4 |
| AG1-60-150* | Nat. or Prop. | 150,000 | 60'-3" | 32'-4" | 265 | 10' to 14' | Ti-AL | HRT | 60.7 | 5 | 5 |

* 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).

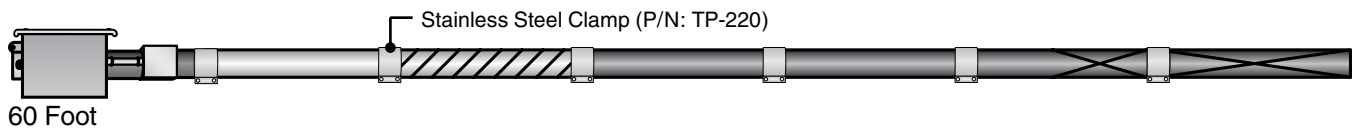
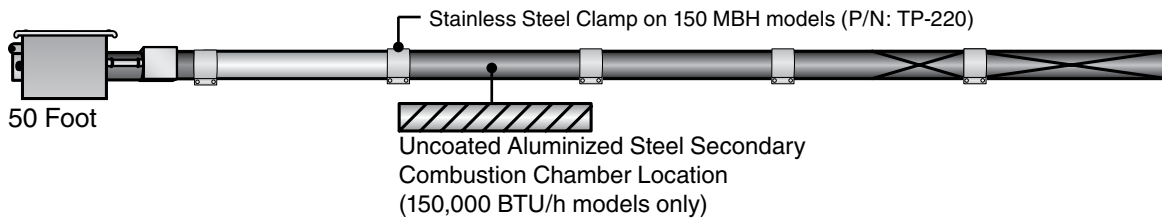
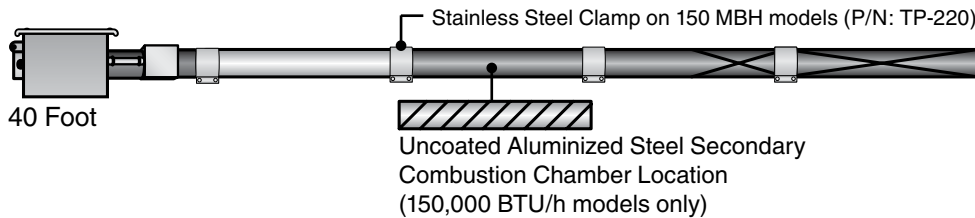
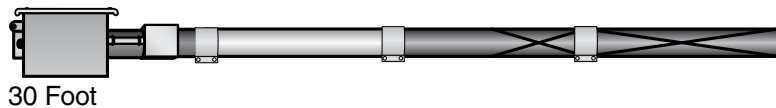
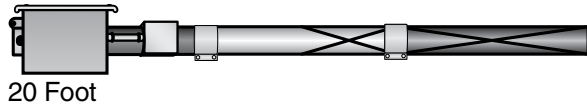
[^] ALUM-AO: Upgrade hot-rolled steel (HRT) radiant tubes to 16 gauge, black coated, aluminized steel for maximum efficiency and longevity. **NOTE:** This option is highly recommended in contaminated or moisture laden environments (i.e. poultry applications). See Chart 2.1 for quantity needed per heater.

AGAO-SS: Upgrade burner control box from coated steel to 304 Series stainless steel.

Tube Installation Sequence

Figure 2.7 • Tube Installation Sequence

Important! The combustion chamber & radiant tube sections must be installed in the following order.



| Key | |
|-----|--|
| | Burner Control Box with 16" Burner Tube |
| | Uncoated Steel Primary Combustion Chamber |
| | Uncoated Aluminized Steel Secondary Combustion Chamber (150,000 BTU/h models only) |
| | Hot-Rolled Steel Radiant Emitter Tube or ALUM-AO |
| | Tube Clamp |
| | Baffle Location |

NOTE: Refer to the Tube Heater General Manual, Chart 3.6 (page 23) for secured reflector joints.

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

Starting Circuit: Upon a call for heat, the fan is energized. Once operational static pressure is achieved, the differential switch will close initiating the ignition sequence. After a 5-second delay, the glo-bar is energized for 45 seconds and the control allows the gas valve to open.

The trial for ignition is 8 seconds. If flame sense is not established within 8.5 seconds, the heater will attempt two (2) additional ignition sequences before proceeding to soft lockout. Soft lockout automatically retries after one (1) hour or the control can be reset by briefly interrupting the power source.

Running Circuit: After ignition, the flame rod monitors burner flame. If sense of flame is lost, the control immediately acts to reignite the gas-air mixture (identical to the starting sequence). If flame sense is not established within 8.5 seconds, the heater will attempt two (2) additional ignition sequences before proceeding to soft lockout. The control can be reset by briefly interrupting the power source.

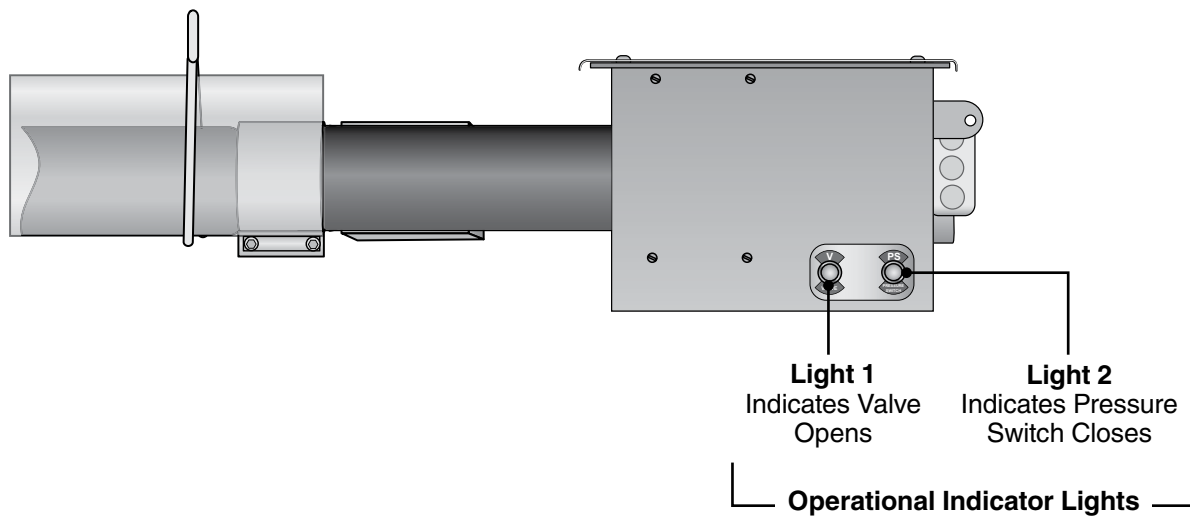
Thermostat

Note: Different thermostats operate according to their particular features. Refer to thermostat specifications for details.

Operational Indicator Lights

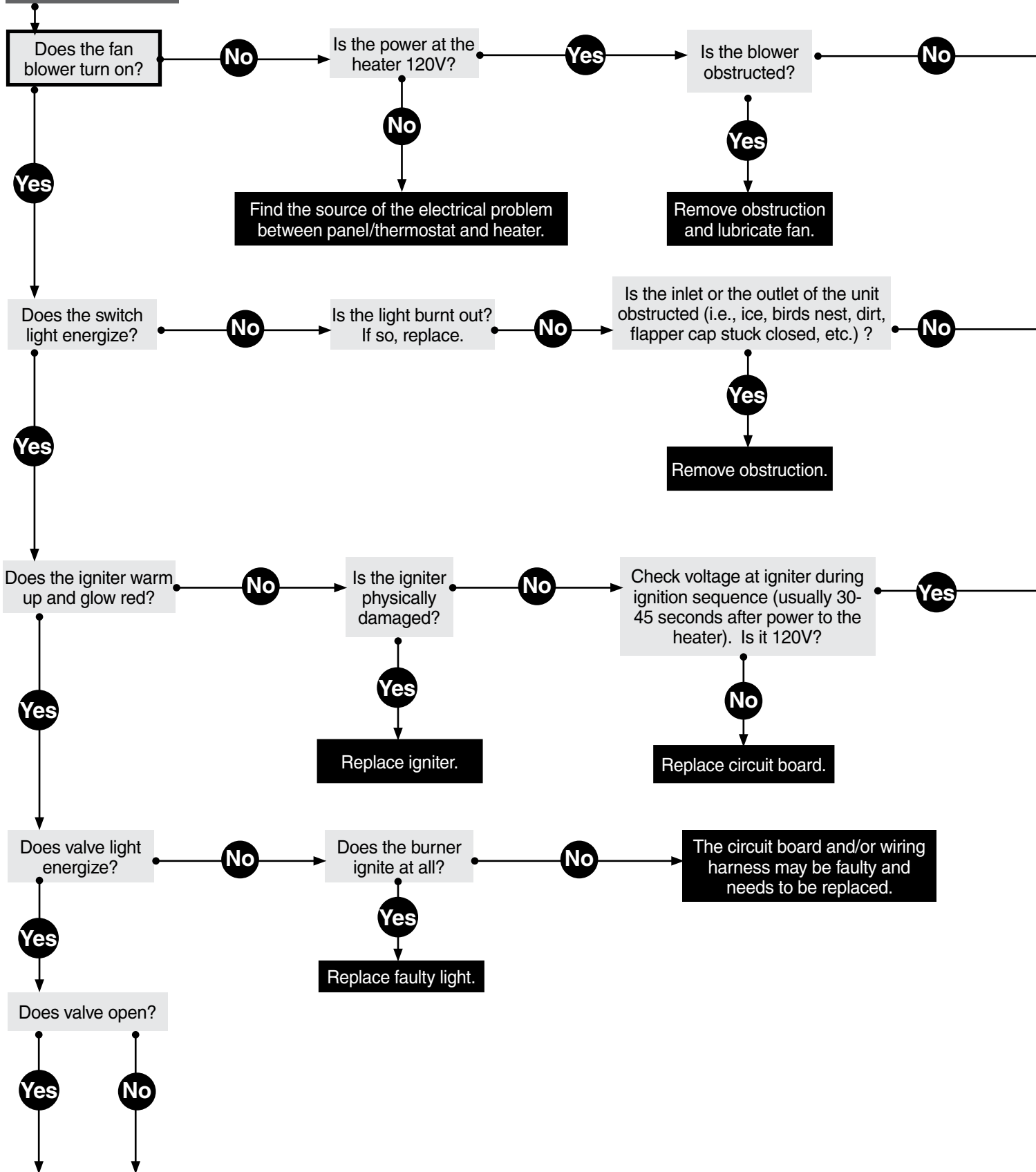
The externally located operational indicator lights are provided to assist in troubleshooting the heater. Refer to the following pages for additional troubleshooting information.

Figure 3.1 • Operational Indicator Lights



4.0 Troubleshooting Guide

Turn up thermostat



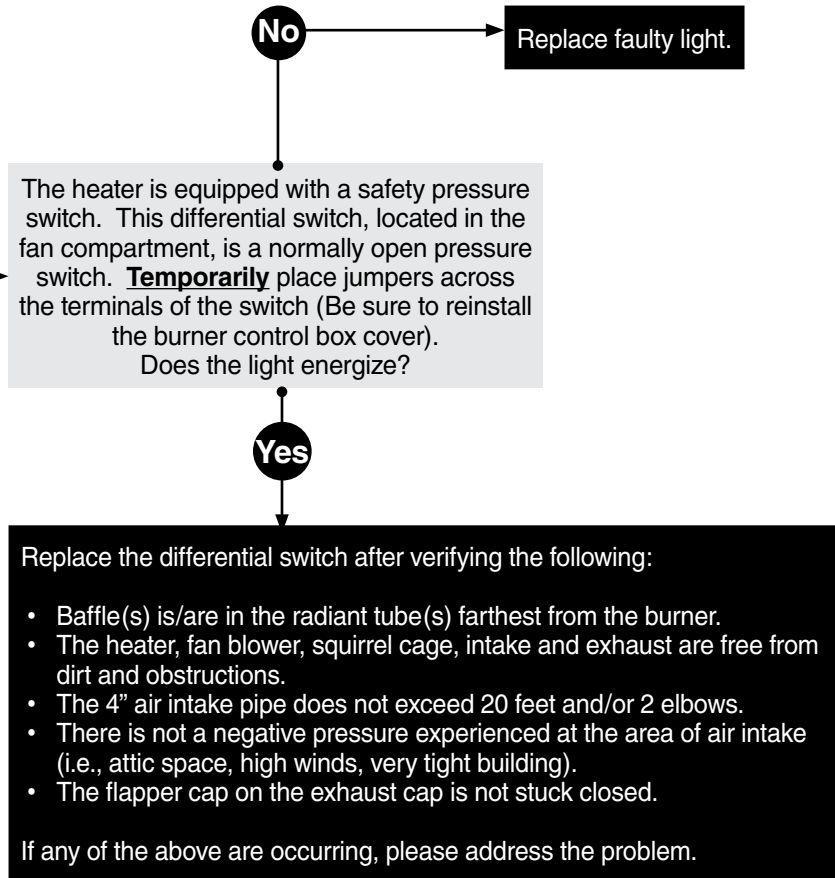
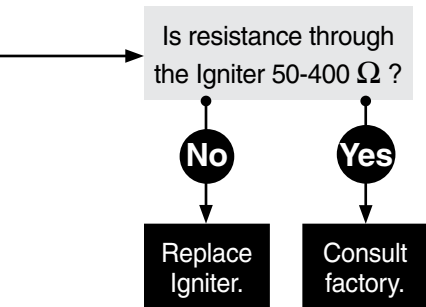
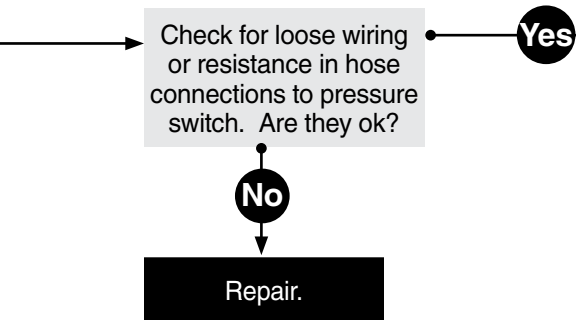
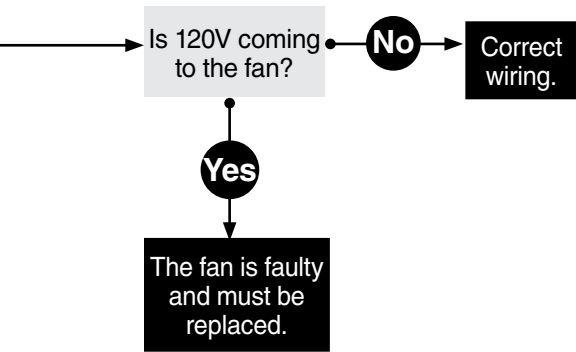
Continued on page 20.

NOTICE

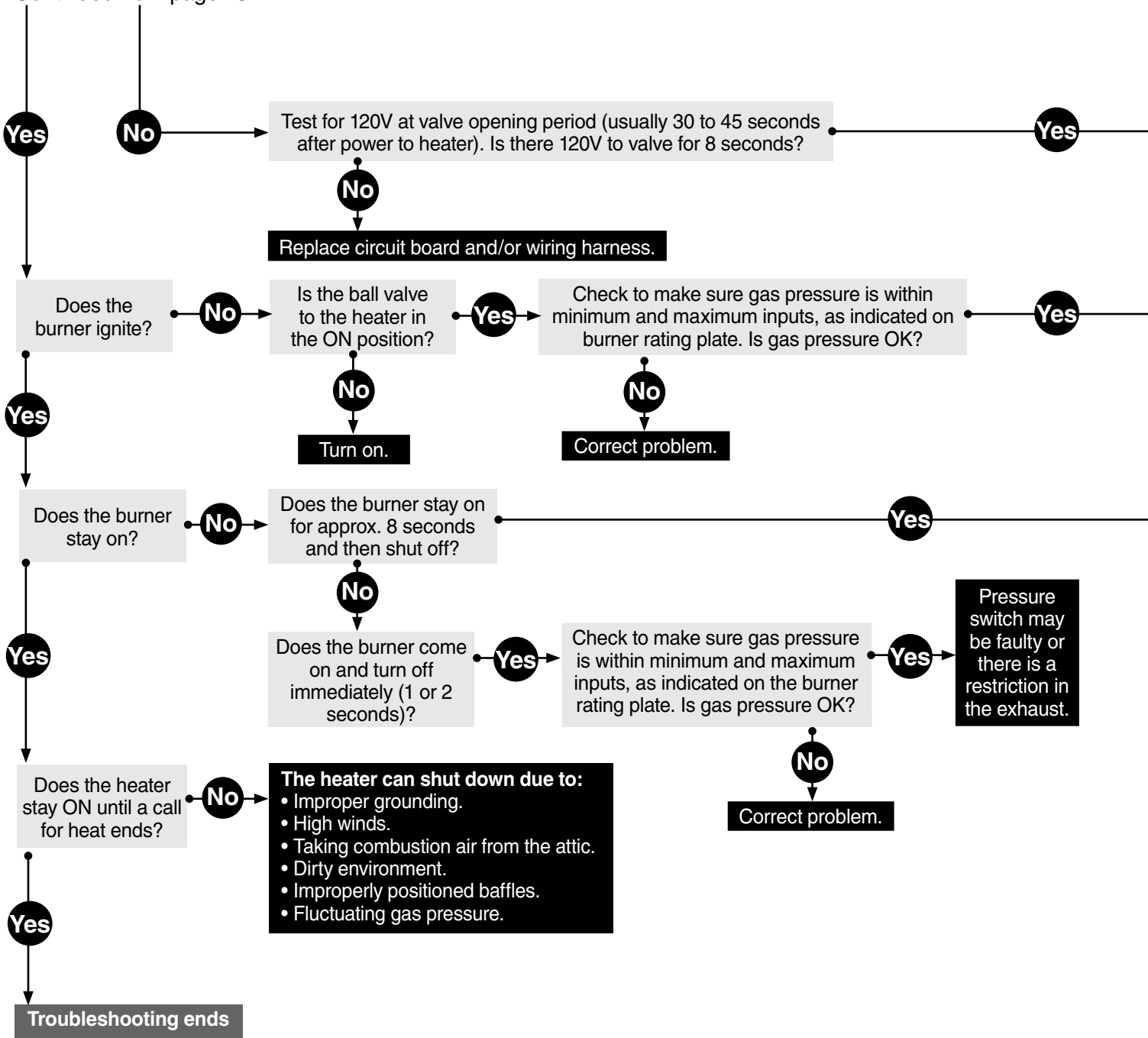
Bypassing any switch is intended for testing purposes only. Do not leave switch bypassed during normal operation or the heater's built-in safety mechanisms will be compromised.

Key

- Start Question
- Process Question
- Corrective Action

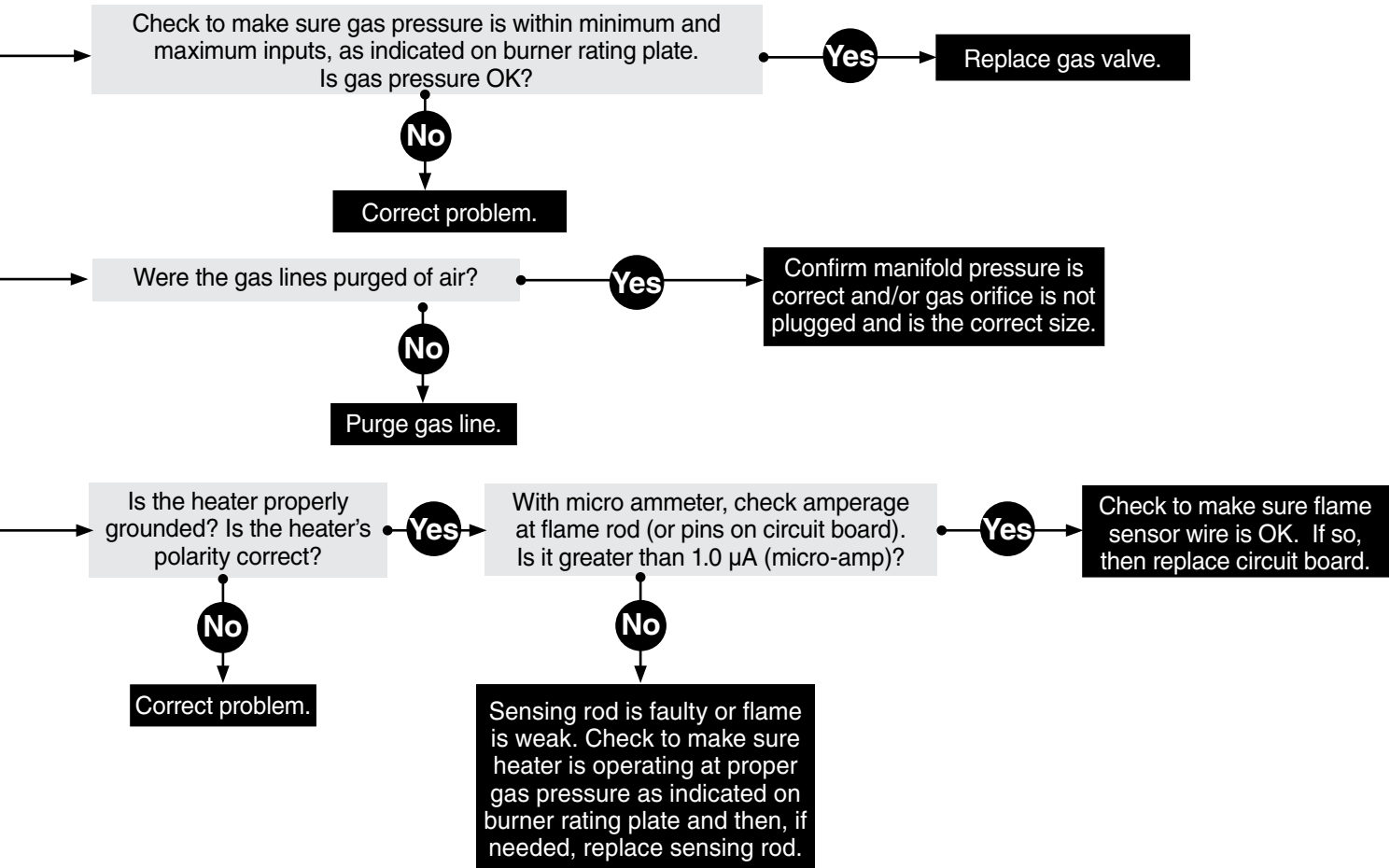


Continued from page 18.



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.



5.0 Parts

Figure 5.1 • Burner Assembly Components

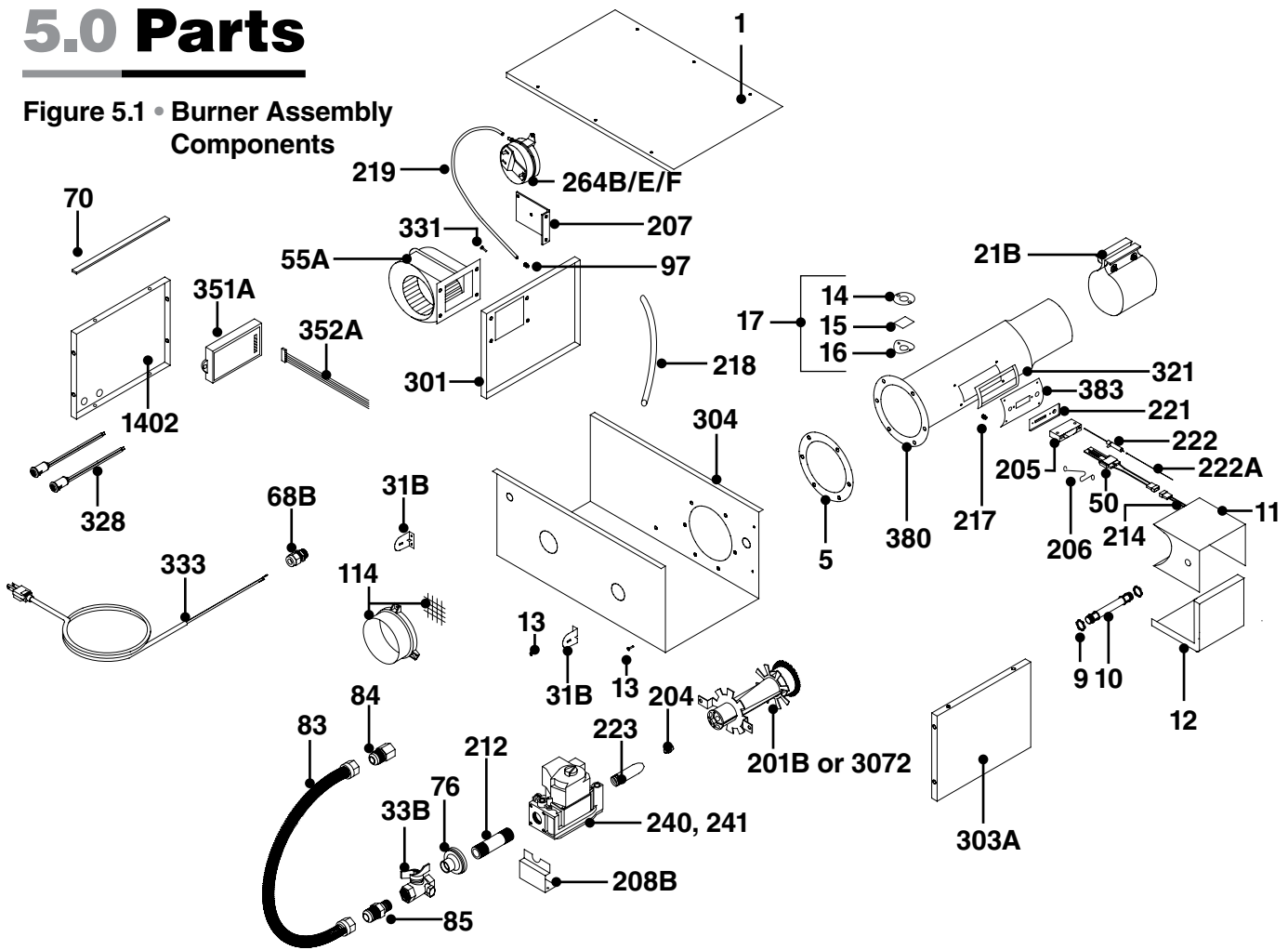
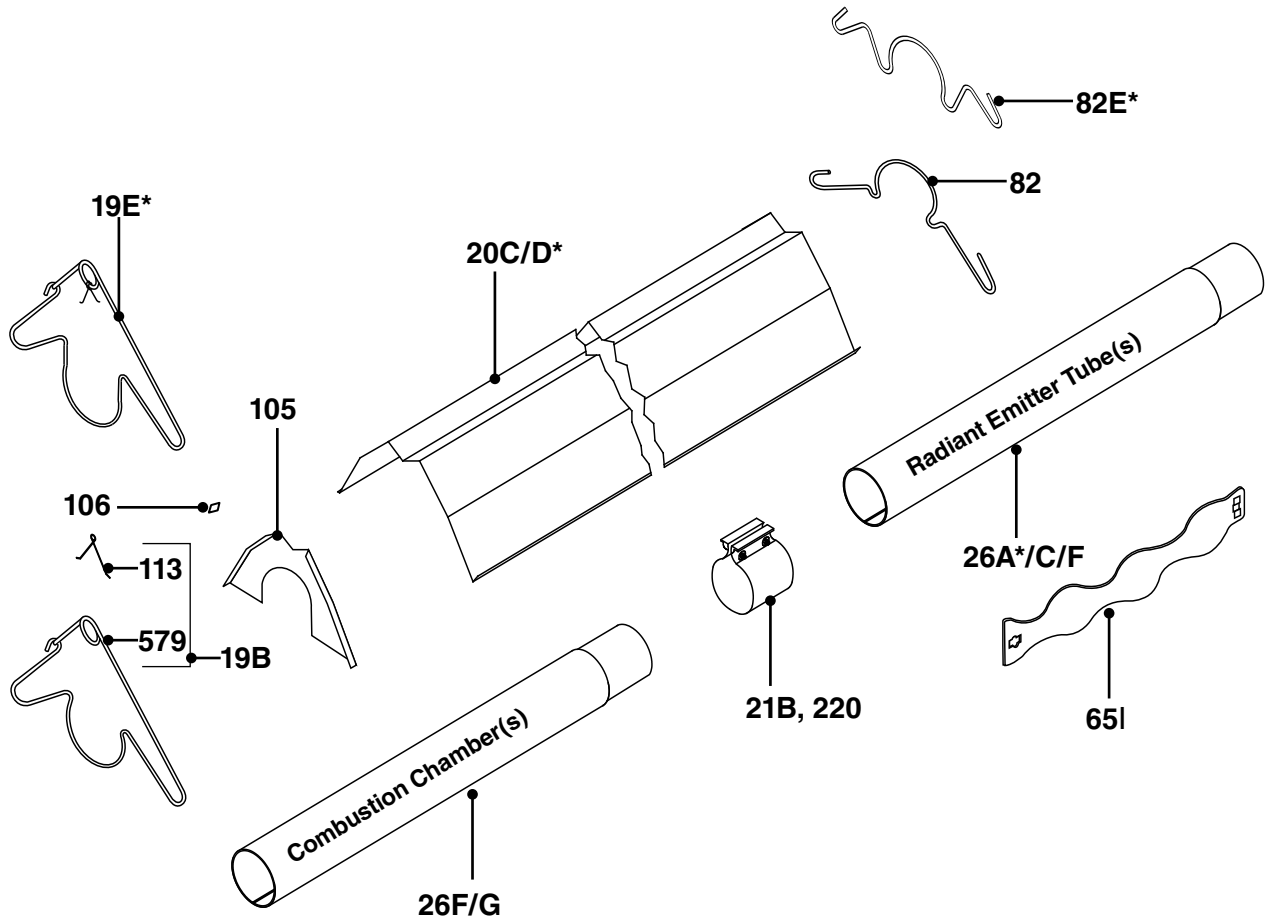


Chart 5.1 • Parts List

| Part No. | Description | Part No. | Description |
|----------|---|----------|---|
| TP-1 | Control Box Cover | TP-26F | 10 ft. Uncoated (ALUM) Combustion Tube |
| TP-5 | Flange Gasket | TP-26G | 10 ft. Uncoated (AL-TI) Combustion Tube |
| TP-9 | Conduit Coupling | TP-31B | Control Box Mounting Bracket (Qty. 2) |
| TP-10 | Conduit 4" x 1/2" | TP-33B | 1/2" Shut-Off Ball Valve / Inlet Tap |
| TP-11 | Glo-Bar Igniter Box | TP-50 | Glo-Bar Igniter |
| TP-12 | Glo-Bar Igniter Box Cover | TP-55A | Fan Blower |
| TP-13 | 8 x 1/2" Self-Drilling Screw | TP-65I | 36" Interlocking Turbulator Baffle |
| TP-14 | Sight Glass Gasket | TP-68B | Large Strain Relief Bushing with Lock Nut |
| TP-15 | Sight Glass | TP-70** | Control Box Cover Gasket (per foot) |
| TP-16 | Sight Glass Washer | TP-76 | Rubber Grommet |
| TP-17 | Sight Glass Kit | TP-82 | Reflector Center Support (RCS) |
| TP-19B | 4" Wire Hanger with Tension Spring | TP-82E* | Elongated Reflector Center Support (RCS) |
| TP-19E* | 4" Elongated Wire Hanger | TP-83 | 24" Stainless Steel Flexible Gas Connector |
| TP-20C | 120" Aluminum Reflector | TP-84 | 1/2" Female / Male Flare Fitting |
| TP-20D* | 120" Stainless Steel Reflector | TP-85 | 1/2" Male / Male Flare Fitting |
| TP-21B | 4" Standard Tube Clamp | TP-97 | 1/4" x 1/4" Brass Int./Ext. Atmos. Barb Fitting |
| TP-26A* | 10 ft. Aluminized Radiant / Combustion Tube | TP-105 | Aluminum Reflector End Cap |
| TP-26C | 10 ft. Hot Rolled (HRT) Steel Radiant Tube | TP-106 | Reflector End Cap Clips (Qty. 8) |

* Optional upgrade or add-on item. ** 6 feet total required to cover outer edges of the burner control box.

Figure 5.2 • Tube & Reflector Components

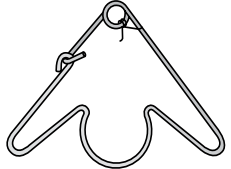

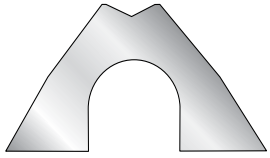
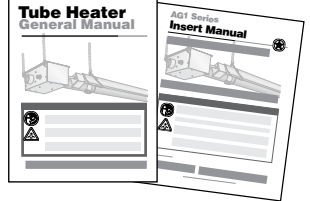
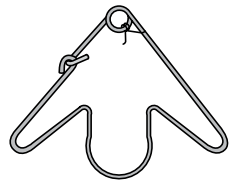

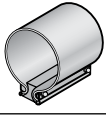



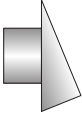
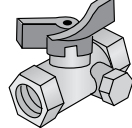




| Part No. | Description | Part No. | Description |
|----------|---|----------|--|
| TP-113 | Reflector Tension Spring | TP-241 | Gas Valve Assembly - Propane Gas |
| TP-114 | Plastic Air Orifice w/ Screen (consult factory) | TP-264B | Atmospheric Pressure Switch, 50-75 MBH |
| TP-201B | Burner (Tan) - consult factory | TP-264E | Atmospheric Pressure Switch, 100-125 MBH |
| TP-204 | Gas Orifice (consult factory) | TP-264F | Atmospheric Pressure Switch, 150 MBH |
| TP-205 | Glo-Bar Holder | TP-301 | Center Divider Panel |
| TP-206 | Glo-Bar Holder Spring Clip | TP-303A | End Panel, Right |
| TP-207 | Pressure Switch Mounting Bracket | TP-304 | Burner Control Box Outer Shell |
| TP-208B | Gas Valve Mounting Bracket | TP-321 | Ignition Plate Gasket |
| TP-212 | 1/2 in. x 3 in. Pipe Nipple | TP-328 | Amber Operational Indicator Light (Qty. 2) |
| TP-214 | Glo-Bar Wiring Harness | TP-331 | Green Self Tap Ground Screw |
| TP-217 | Pressure Switch Barb | TP-333 | 36 in. Black 120 Volt Plug |
| TP-218 | Differential Vinyl Sensing Tube (exhaust) | TP-351A | Mark17DU-117 Potted Circuit Circuit Board |
| TP-219 | Differential Vinyl Sensing Tube (burner) | TP-352A | Circuit Board Wiring Harness for TP-351A |
| TP-220 | 4" Stainless Steel Tube Clamp | TP-380 | 16 in. Burner Tube with Flange |
| TP-221 | Glo-Bar Holder Gasket | TP-383 | Glo-Bar Igniter Plate |
| TP-222 | Flame Rod | TP-579 | 4 in. Wire Hanger w/o Tension Spring |
| TP-222A | Flame Rod Wire | TP-1402 | End Panel, Left |
| TP-223 | Gas Manifold | TP-3072 | Burner (Green) - consult factory |
| TP-240 | Gas Valve Assembly - Natural Gas | | |

* Optional upgrade or add-on item.

Kit Contents Check List

Chart 5.2 • Kit Contents for AG1 Series - Reference the length column for your model.

| AG1 Series Kit Contents | | | | | | |
|---|---|--|---|-----------|-----------|-----------|
| <p>TP-19B 4 in. Hanger with Reflector Tension Spring</p>  | <p>TP-83 24 in. Stainless Steel Flexible Gas Connector</p>  | <p>TP-105 Reflector End Cap</p>  | <p>Tube Heater General and AG1 Series Insert Manuals F/N: LIOGTa & LIOAG1</p>  | | | |
| <p>TP-19EAO* Optional 4 in. Elongated Hanger</p>  | <p>TP-82 4 in. Reflector Center Support (RCS)</p>  | <p>TP-21B** 4 in. Tube Clamp</p>  | <p>AG-CS 7-Link Chain</p>  | | | |
| <p>TP-106 Reflector End Cap Clips</p>  | <p>TP-82E* 4 in. Elongated Refl. Center Support (RCS)</p>  | <p>WVE-GALV 4 in. Galvanized Steel Vent Cap</p>  | <p>TP-33B 1/2 in. Shut-Off Valve/Inlet Tap</p>  | | | |
| | | <p>TP-13 Self-Tap Screw</p>  | <p>S-Hook</p>  | | | |
| Part No. | Description | 20 Ft. | 30 ft. | 40 ft. | 50 ft. | 60 ft. |
| AG-CS | 7-Link Burner Box Hanging Chain | 6 | 7 | 8 | 9 | 10 |
| AK-SR4 | Agricultural Attic Intake Kit | Opt. (1) | Opt. (1) | Opt. (1) | Opt. (1) | Opt. (1) |
| S-Hook | 2 in. S-Hook | 6 | 7 | 8 | 9 | 10 |
| LIOGTa | General Tube Heater Manual | 1 | 1 | 1 | 1 | 1 |
| LIOAG1 | AG1 Series Insert Manual | 1 | 1 | 1 | 1 | 1 |
| TP-13 | Self-Tapping Screw | 4 | 8 | 12 | 16 | 20 |
| TP-19B | 4 in. Hanger w/ Tension Spring | 4 | 5 | 6 | 7 | 8 |
| TP-19EAO | 4 in. Elongated Hanger w/ Tension Spring | Opt. (4)* | Opt. (5)* | Opt. (6)* | Opt. (7)* | Opt. (9)* |
| TP-21B** | 4 in. Tube Clamp | 2 | 3 | 4 | 5 | 6 |
| TP-33B | 1/2 in. Shut-Off Valve & Inlet Tap | 1 | 1 | 1 | 1 | 1 |
| TP-82 | 4 in. Reflector Center Support | 1 | 2 | 4 | 5 | 6 |
| TP-82E | 4 in. Elongated Reflector Center Support | Opt (1)* | Opt (2)* | Opt. (4)* | Opt (5)* | Opt. (6)* |
| TP-83 | 24 in. Stainless Steel Flexible Gas Connector | 1 | 1 | 1 | 1 | 1 |
| TP-105 | Reflector End Cap | 2 | 2 | 2 | 2 | 2 |
| TP-106 | Reflector End Cap Clips | 8 | 8 | 8 | 8 | 8 |
| WVE-GALV | 4 in. Galvanized Steel Vent Cap w/ Flapper | 1 | 1 | 1 | 1 | 1 |

Filled By: _____

* Elongated Reflector Center Supports (TP-82E) are included in kit when the TP-19EAO option is selected (replaces TP-19B).

** One 4" stainless steel tube clamp (P/N: TP-220) is provided for each 150,000 BTU/h model. Place as shown on page 15.

Approvals

- CSA.
- Indoor/outdoor approval.
- Commercial/agricultural approval.

Limited Warranty

- See page 36 of the General Tube Heater Manual for terms and conditions.
- 1 year - Burner box components.
- 3 years - Combustion and radiant tubes.
- 5 years - Stainless steel burner.

