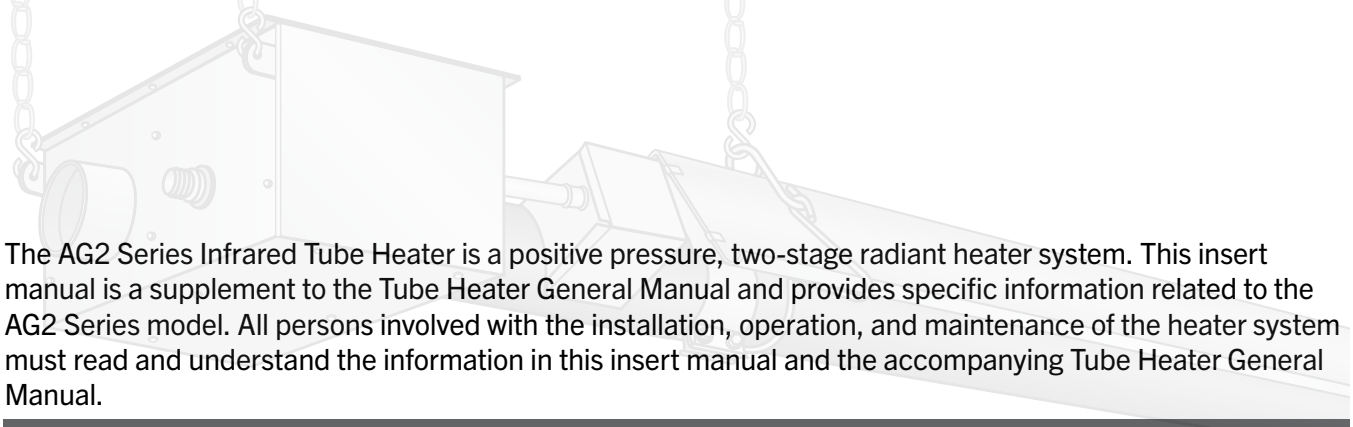
AG2 Series
Insert Manual

C US

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



The AG2 Series Infrared Tube Heater is a positive pressure, two-stage radiant heater system. This insert manual is a supplement to the Tube Heater General Manual and provides specific information related to the AG2 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)

LIOAG2a-Rev. 24414
Print: 1M-03/25(CDS)
Replaces: LIOAG2a-1M-01/23(CDS)

Contents

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

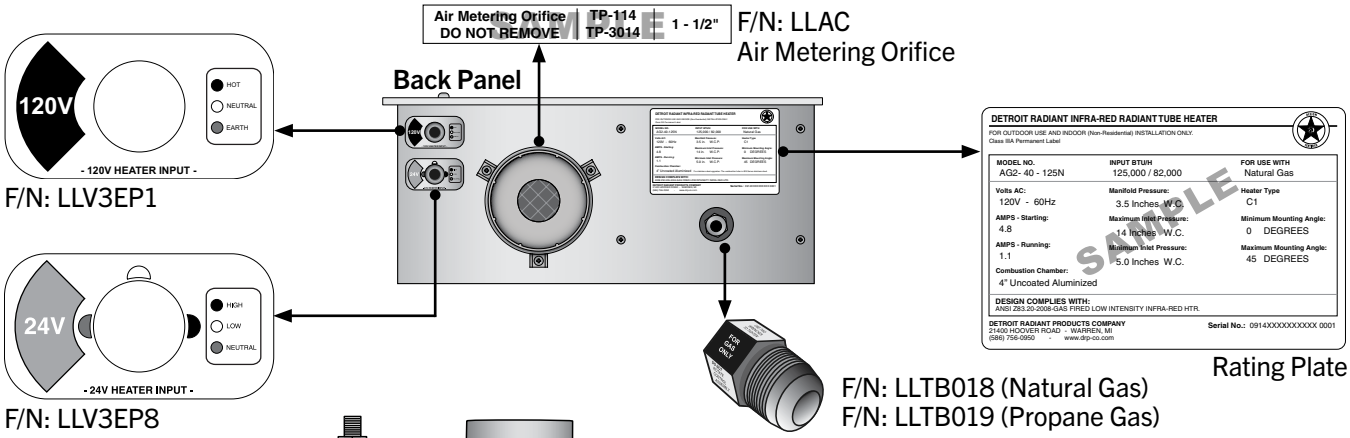
1.0 Safety

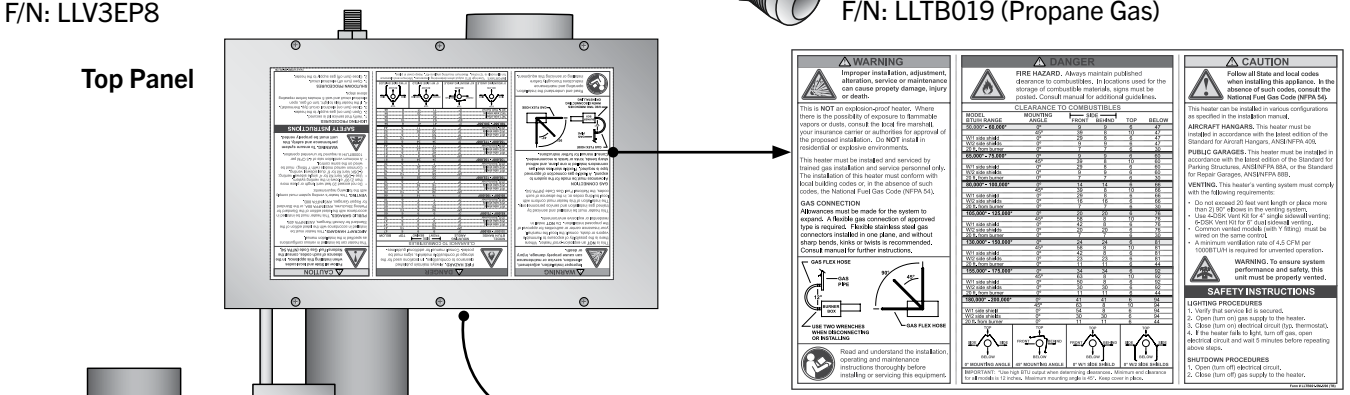
⚠ WARNING

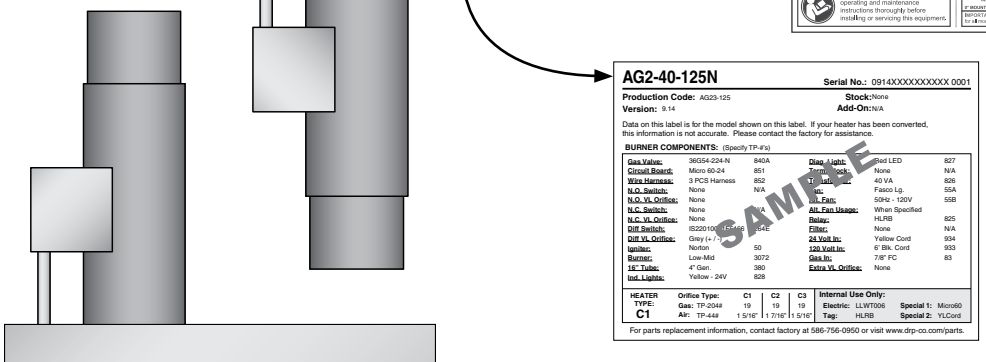
Read and understand all safety information and warnings in this manual before installation, operation, and maintenance of the radiant tube heater system.

Safety Labels and Their Locations

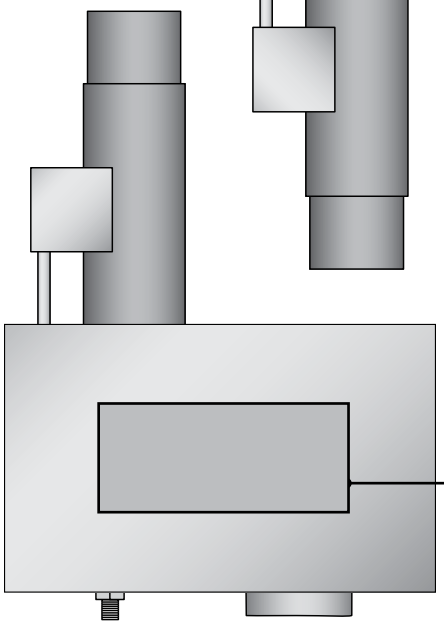
Product safety signs or labels should be replaced by the product user when they no longer are legible. Contact either your local distributor or the product manufacturer for obtaining replacement signs or labels.







Burner Control Box Component Label (located under the top panel)



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

LED CODE	FAULT STATUS	FAULT CODE DELAY
Initial flash on power up, then steady off	No fault, normal operation	No delay
Steady on	Module failure / Internal fault	No delay
1 flash	Ignition failure	3 minutes
2 flashes	APS air flow fault NOTE: fan/intake/exhaust	1-30 seconds
4 flashes	Erroneous flame signal	No delay
No flash on 117V start-up	Transformer fault	No delay

NOTE: Lockout LED CODE appears on completion of the soft lockout operation.

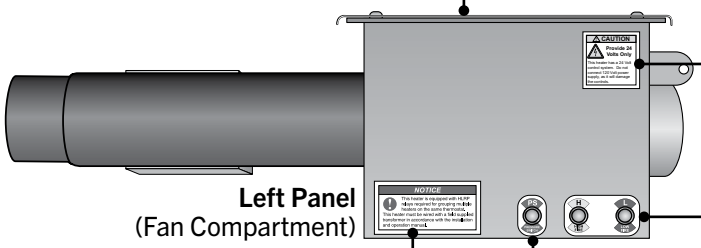
F/N: LLTB007(3)
Located in control box

⚠ CAUTION

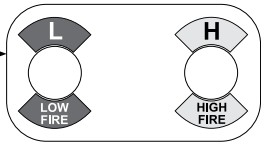
Provide 24 Volts Only

This heater has a 24 Volt control system. Do not connect 120 Volt power supply, as it will damage the controls.

F/N: LLDR003
Affixed on models with relays installed.



Left Panel
(Fan Compartment)

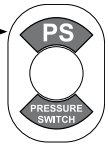


F/N: LLV2EP9

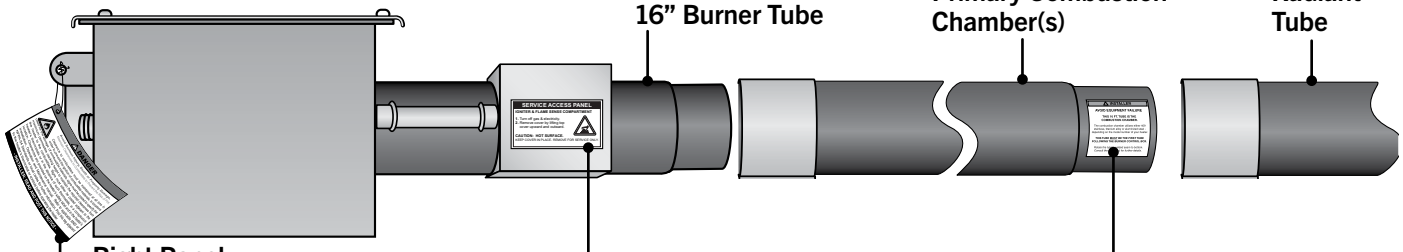
NOTICE

This heater is equipped with HLRP relays required for grouping multiple heaters on the same thermostat. This heater must be wired with a field supplied transformer in accordance with the installation and operation manual.

F/N: LLTB034
Affixed on models with relay(s) installed



F/N: LLV2EP15



Right Panel
(Valve Compartment)

⚠ DANGER

Avoid Serious Injury, Death or Property Damage.
Maintain Clearances to Combustible to Prevent the Risk of Fire.

Clearance to combustibles must be maintained at all times in order to prevent the ignition of combustible materials. 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's thermostats or in the absence of such thermostats, in a conspicuous location. Clearances are provided on the heater's safety label and in the heater's Installation, Operation and Maintenance manual. Product installation and operation must comply with applicable standards, codes and regulations. Post this tag adjacent to the heater's thermostat or controls before operating the heater.

- INSTALLER: READ AND POST THIS NOTICE -

F/N: LL01 - Clearance Safety Tag
(Affix adjacent to heater's control)

SERVICE ACCESS PANEL

IGNITER & FLAME SENSE COMPARTMENT

1. Turn off gas & electricity.
2. Remove cover by lifting top cover upward and outward.

CAUTION: HOT SURFACE.
KEEP COVER IN PLACE. REMOVE FOR SERVICE ONLY.

F/N: LLTB026

⚠ INSTALLER

AVOID EQUIPMENT FAILURE

THIS 10 FT. TUBE IS THE COMBUSTION CHAMBER.

The combustion chamber utilizes either 409 stainless, titanium alloy or aluminized steel - depending on the model number of your heater.

THIS TUBE MUST BE THE FIRST TUBE FOLLOWING THE BURNER CONTROL BOX.

Rotate the tube's welded seam to bottom. Consult the manual(s) for further details.

F/N: LLTB004 (orange)
(150,000 BTU/h models and all heaters with 409 stainless steel tubes)

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 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.

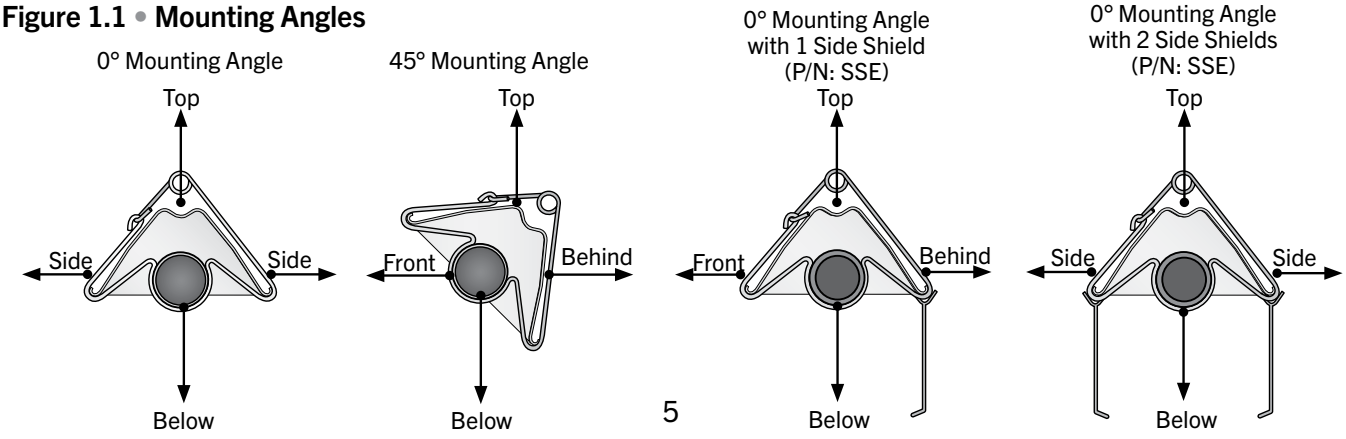
Chart 1.1 • Clearances to Combustibles in Inches (see Figure 1.1 for Mounting Angles)

Model Number	Mounting Angle*	Sides		Top**	Below
		Front	Behind		
AG2 (20, 30, 40) - (65, 75) [N, P]	0°	9	9	6	60
	45°	39	8	10	60
with 1 side shield	0°	29	8	6	60
with 2 side shields	0°	9	9	6	60
20 ft. from burner	0°	7	7	6	30
AG2 (20, 30, 40, 50) - (80, 100) [N, P]	0°	14	14	6	66
	45°	39	8	10	66
with 1 side shield	0°	29	8	6	66
with 2 side shields	0°	16	16	6	66
20 ft. from burner	0°	7	7	6	30
AG2 (40, 50) - 125 [N, P]	0°	20	20	6	76
	45°	58	8	10	76
with 1 side shield	0°	42	8	6	76
with 2 side shields	0°	20	20	6	76
20 ft. from burner	0°	7	7	6	30
AG2 (40, 50, 60) - 150 [N, P]	0°	24	24	6	81
	45°	58	8	10	81
with 1 side shield	0°	42	8	6	81
with 2 side shields	0°	23	23	6	81
20 ft. from burner	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, PVC conduit/pipe, 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 2.1a • Combustion Air Intake • Broiler House (0° Control Box Orientation)

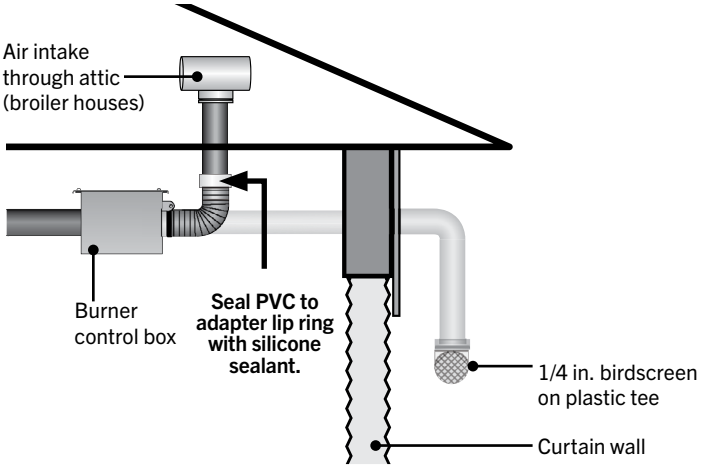
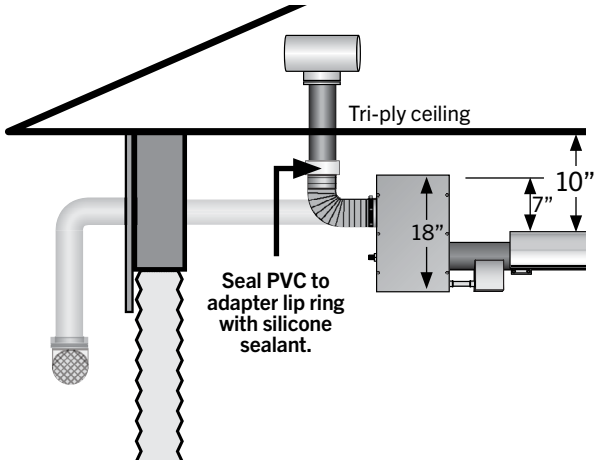


Figure 2.1b • Combustion Air Intake (Alternate 90° Control Box Orientation)



Electrical Requirements

Connecting the thermostat with a voltage other than 24 V may damage the heater. The AG2 Series requires a 24 V connection to the thermostat. This is supplied by an external transformer (field supplied). See below.

- 120 V, 60 Hz GRD, 3-wire
- 24 V control connection
- Starting current: 4.8 amps
- Running current: 1.1 amps

The AG2 Series is equipped with internal relays (HLRP). 24 volts must be supplied to each heater's black 4-core control cord. 120 volts is supplied to the heater's black cord; observe polarity.

Confirm proper two stage electrical wiring by cycling heater between stages. Confirm proper operation of high fire, low fire, and off cycles.

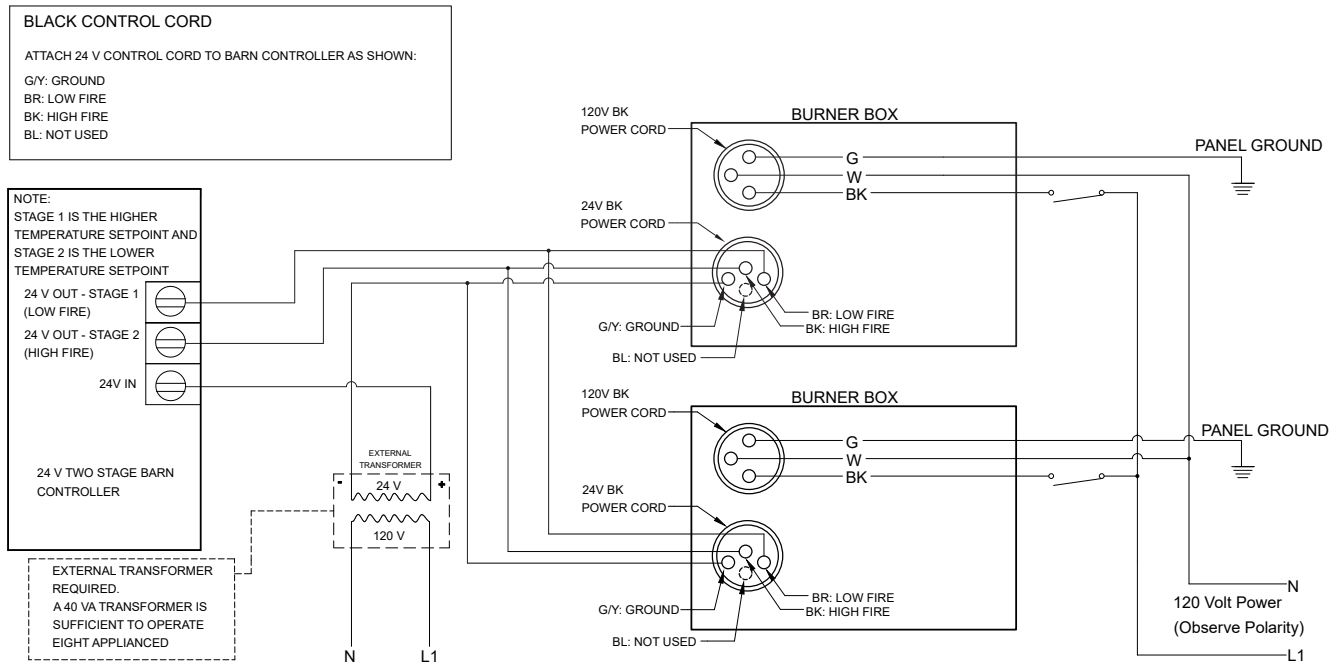
Wiring

⚠ WARNING

Electric Shock
Field wiring to the tube heater must be connected and grounded according to the guidelines in the Tube Heater General Manual and Series Insert Manual and in accordance with national, state, provincial, and local codes. In the United States, refer to the most current revisions to the ANSI/NFPA 70 Standard. 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. **With Relay Control**

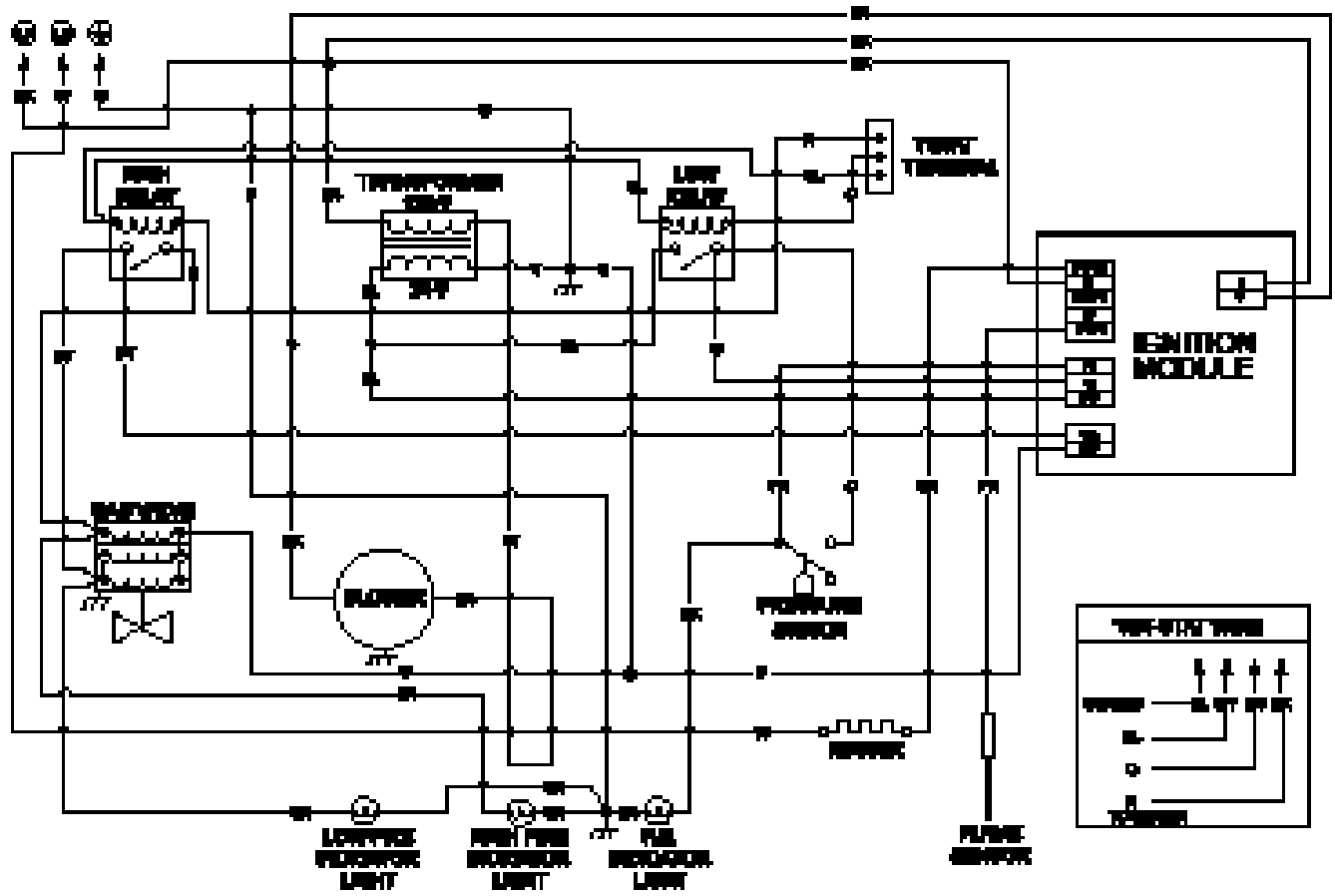


⚠ CAUTION

When utilizing PVC conduit and/or pipe, all clearances to combustibles must be maintained (see pgs. 7-9). Some materials, including many types of plastic, are subject to degradation at lower temperatures. It is the installer's responsibility to ensure that materials adjacent to the heater are protected from degradation. If you are unsure of the proposed installation, consult the factory.

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



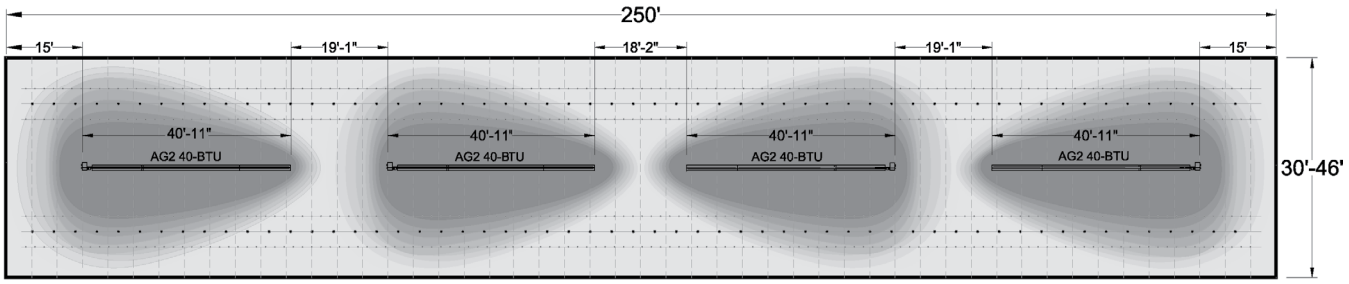
WIRING INFORMATION:

LINE VOLTAGE:
- FACTORY STANDARD
- FACTORY OPTION
- FIELD INSTALLED

LOW VOLTAGE:
- FACTORY STANDARD
- FACTORY OPTION
- FIELD INSTALLED

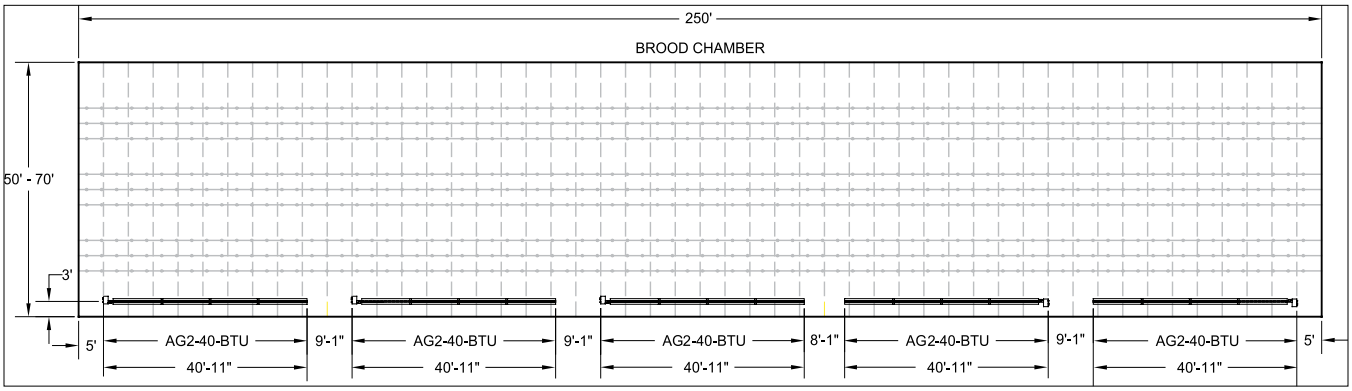
Figure 2.4 • Sample Brooder Installation Diagrams

A. Center House Installation



NOTE: Utilize elongated hangers (TP-19E) on houses 60 feet or more with center house mounting to allow for a wider throw pattern.

B. Side Wall Installation



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

C. 30 ft., 40 ft. and 50 ft. Tube Brooder Installation (houses with 4 ft. and 5 ft. on center truss locations).

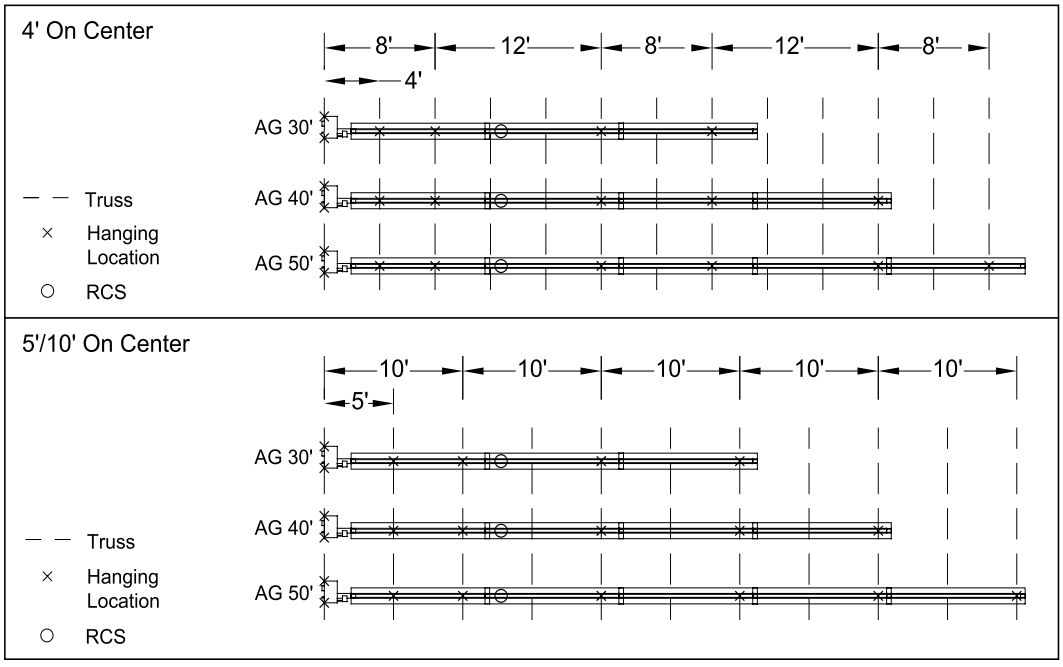
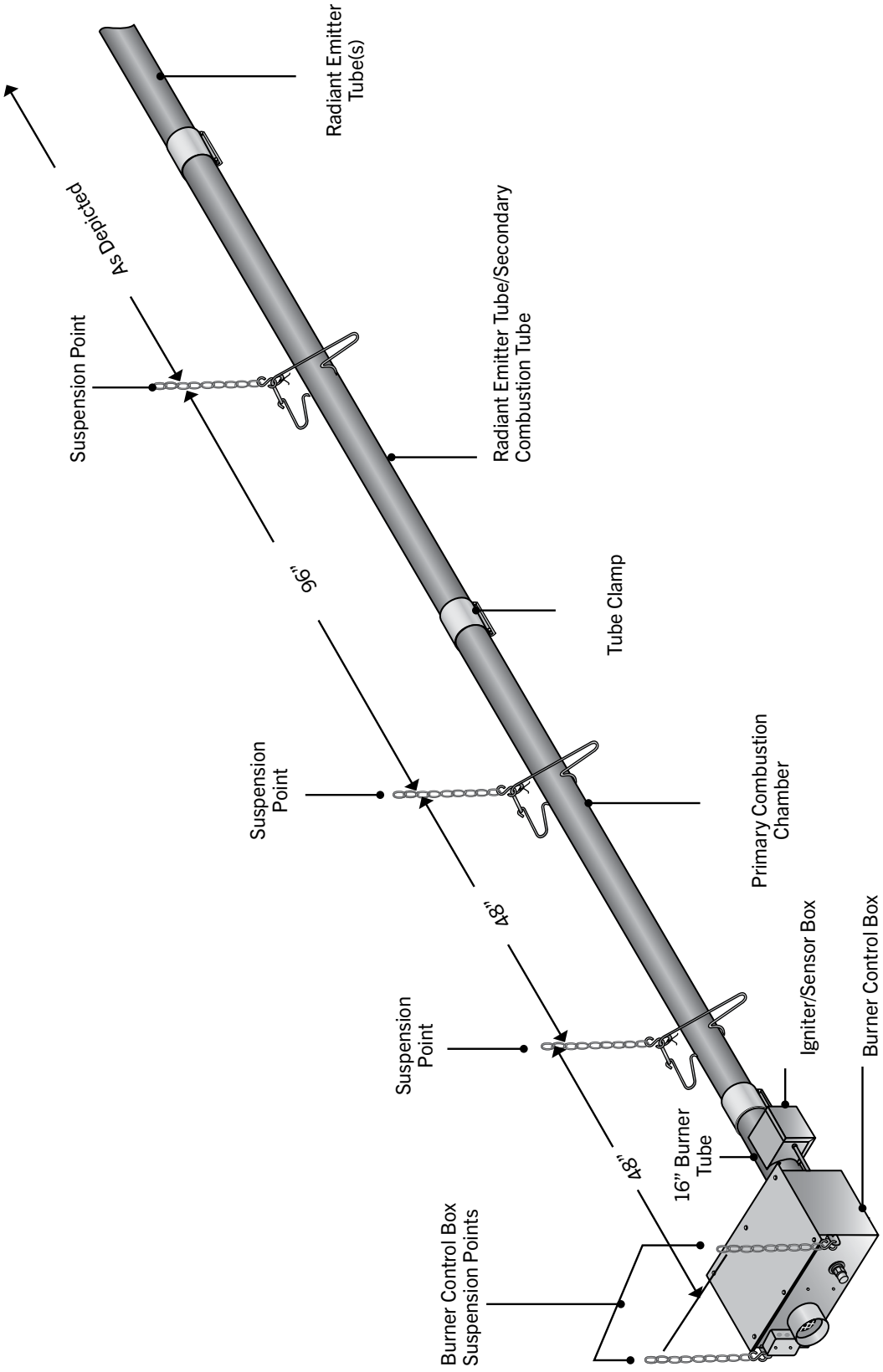


Figure 2.5 • Heater Suspension Layout • Four (4) Foot Truss Mounts

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



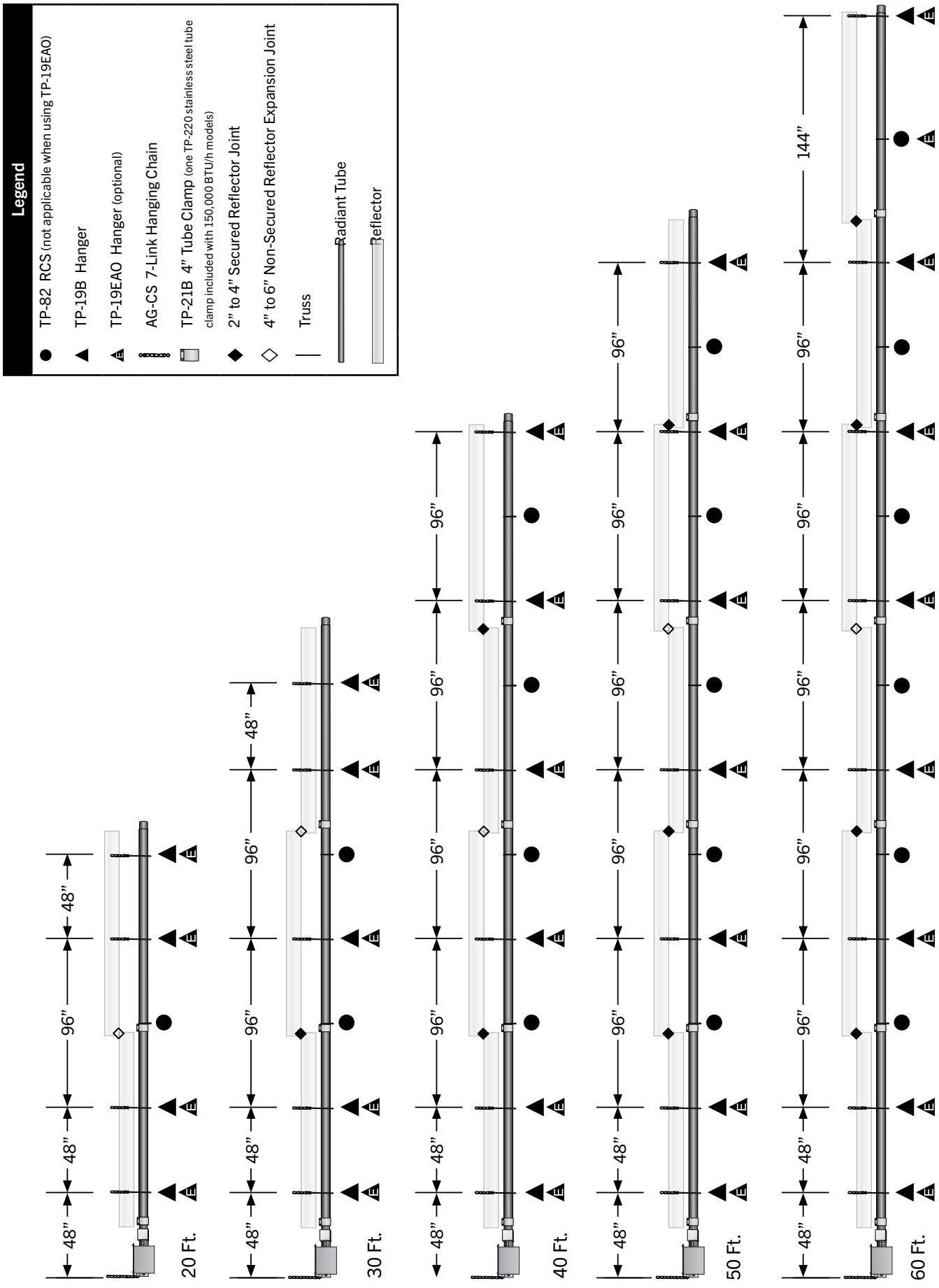
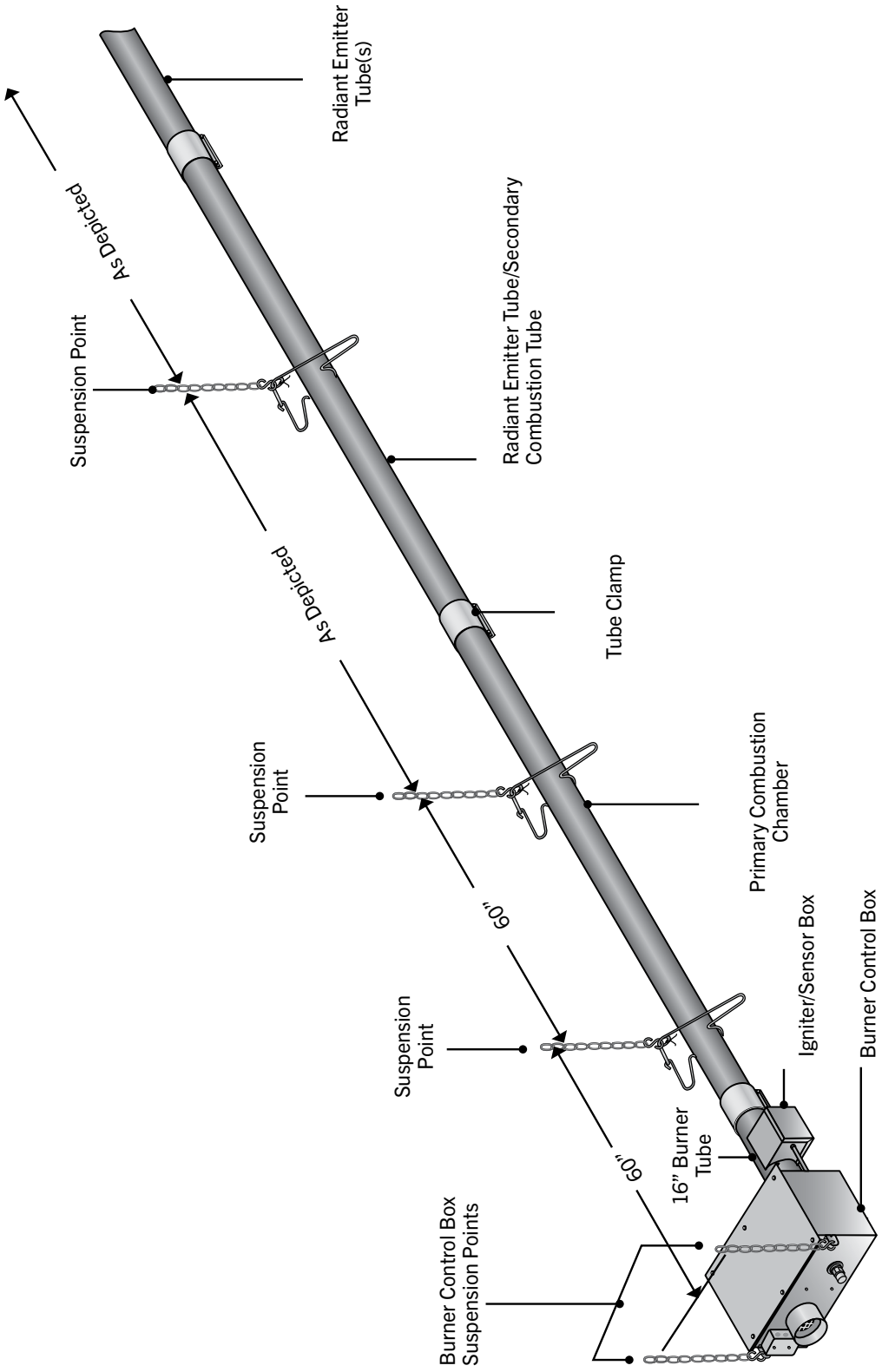
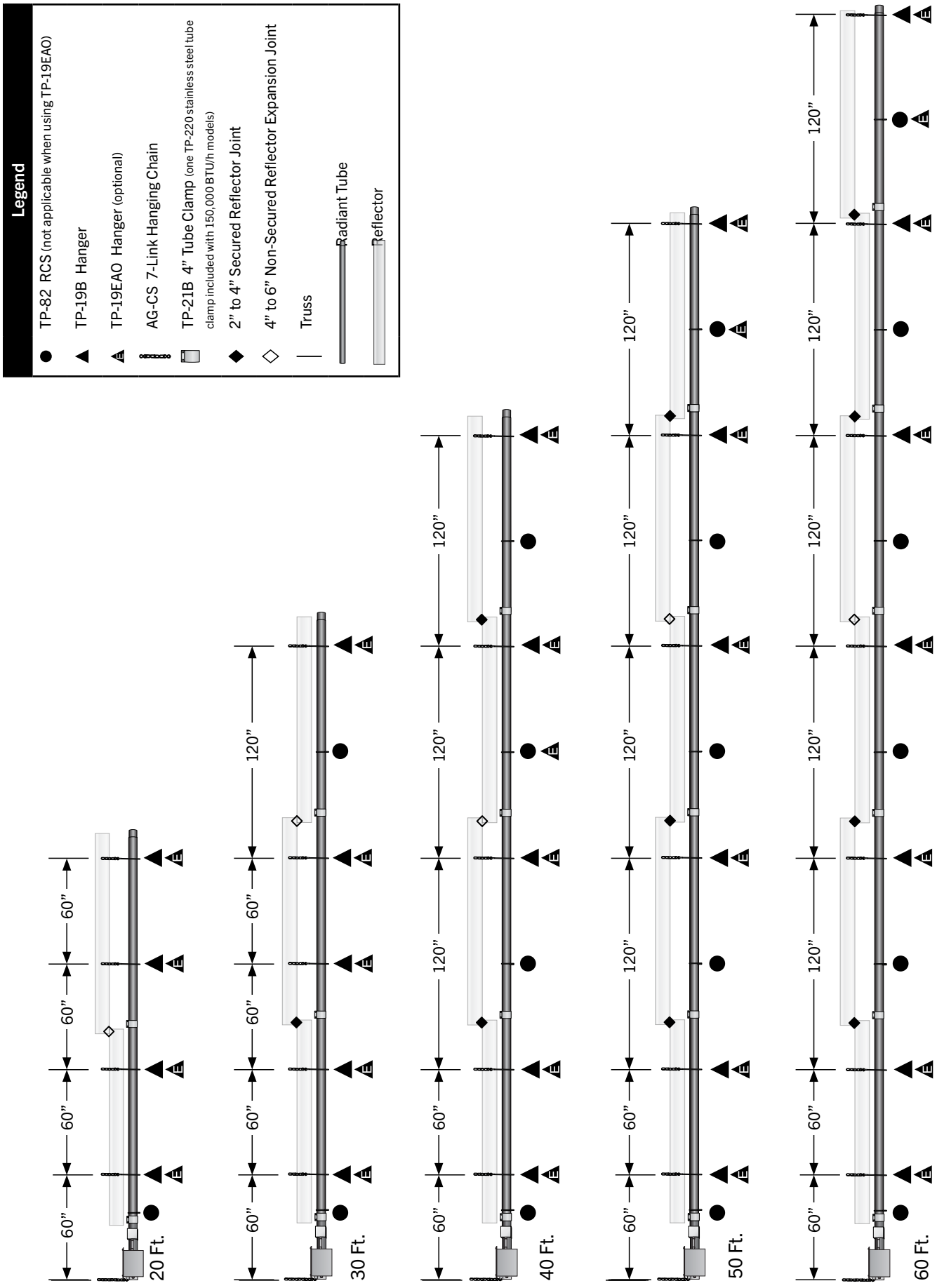

Legend
TP-82 RCS (not applicable when using TP-19EAO)
TP-19B Hanger
TP-19EAO Hanger (optional)
AG-CS 7-Link Hanging Chain
TP-21B 4" Tube Clamp (one TP-220 stainless steel tube clamp included with 150,000 BTU/h models)
2" to 4" Secured Reflector Joint
4" to 6" Non-Secured Reflector Expansion Joint
Truss
Radiant Tube
Reflector
48"
96"
144"
20 Ft.
30 Ft.
40 Ft.
50 Ft.
60 Ft.

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 (not applicable when using 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
60"
120"
20 Ft.
30 Ft.
40 Ft.
50 Ft.
60 Ft.

Specifications

Chart 2.1 • Specifications

Model Number	Gas Type (select one)	BTU/H (High Fire)	BTU/H (Low Fire)	Straight Length	U-Tube Length	Standard Weight (lbs.)	Recommended Mounting Height Above Animals	Combustion Chanber (uncoated)	Radiant Emitter Tube(s) (uncoated)^	Radiant Surface Area (sq. ft.)	36" Baffle Sections	Optional Alum-AO Quantity
AG2-20-65	Nat. or Prop.	65,000	50,000	21'-7"	13'-0"	120	6' to 9'	Alum	HRT	20.2	5	1
AG2-20-75	Nat. or Prop.	75,000	50,000	21'-7"	13'-0"	120	7' to 10'	Alum	HRT	20.2	5	1
AG2-20-80	Nat. or Prop.	80,000	52,000	21'-7"	13'-0"	120	8' to 14'	Alum	HRT	20.2	5	1
AG2-30-65	Nat. or Prop.	65,000	50,000	31'-3"	**17'-8"	160	6' to 9'	Alum	HRT	30.4	5	2
AG2-30-75	Nat. or Prop.	75,000	50,000	31'-3"	**17'-8"	160	7' to 10'	Alum	HRT	30.4	5	2
AG2-30-80	Nat. or Prop.	80,000	52,000	31'-3"	**17'-8"	160	8' to 14'	Alum	HRT	30.4	5	2
AG2-30-100	Nat. or Prop.	100,000	65,000	31'-3"	**17'-8"	160	8' to 14'	Alum	HRT	30.4	6	2
AG2-40-65	Nat. or Prop.	65,000	50,000	40'-11"	22'-8"	190	6' to 9'	Alum	HRT	40.5	5	3
AG2-40-75	Nat. or Prop.	75,000	50,000	40'-11"	22'-8"	190	7' to 10'	Alum	HRT	40.5	5	3
AG2-40-80	Nat. or Prop.	80,000	52,000	40'-11"	22'-8"	190	8' to 14'	Alum	HRT	40.5	5	3
AG2-40-100	Nat. or Prop.	100,000	65,000	40'-11"	22'-8"	190	7' to 11'	Alum	HRT	40.5	5	3
AG2-40-125	Nat. or Prop.	125,000	82,000	40'-11"	22'-8"	190	9' to 14'	Alum	HRT	40.5	5	3
AG2-40-150*	Nat. or Prop.	150,000	100,000	40'-11"	22'-8"	190	10' to 14'	Ti-AL	HRT	40.5	5	3
AG2-50-100	Nat. or Prop.	100,000	65,000	50'-7"	**27'-4"	235	8' to 11'	Alum	HRT	50.6	5	4
AG2-50-125	Nat. or Prop.	125,000	82,000	50'-7"	**27'-4"	235	9' to 14'	Alum	HRT	50.6	5	4
AG2-50-150*	Nat. or Prop.	150,000	100,000	50'-7"	**27'-4"	235	10' to 14'	Ti-AL	HRT	50.6	5	4
AG2-60-150*	Nat. or Prop.	150,000	100,000	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.

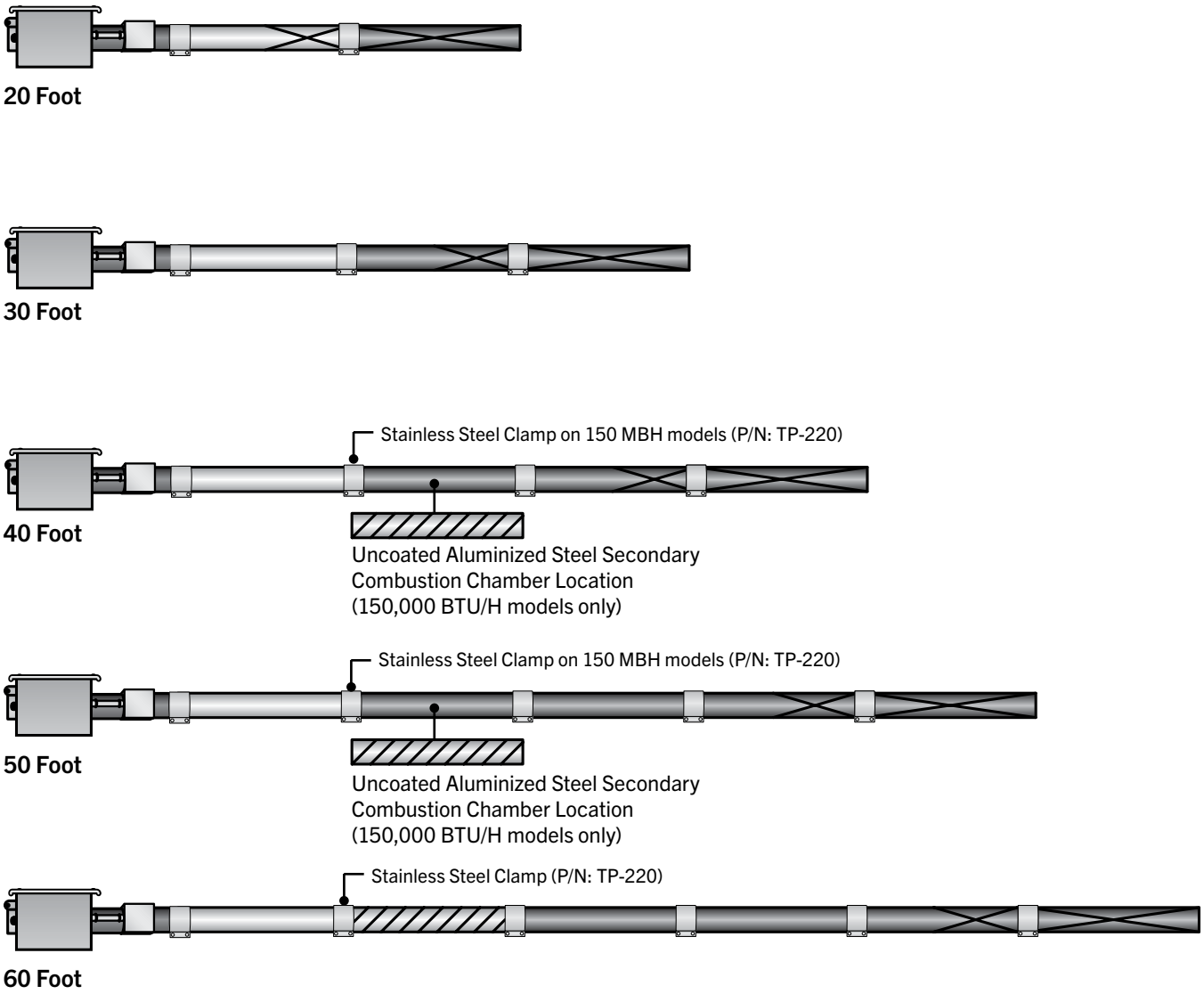
AGAO-SS: Upgrade burner control box from coated steel to 304 Series stainless steel.

Ti-AL = Titanium stabilized aluminized steel and aluminized treated steel.
Alum = Aluminized treated steel.
HRT = Hot-rolled steel.

Tube Installation Sequence

Figure 2.5 • 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
- Hot-Rolled Steel Radiant Emitter Tube or ALUM-AO
- Uncoated Titanuim or Aluminzed Steel Primary Combustion Chamber
- Tube Clamp
- Uncoated Aluminized Steel Secondary Combustion Chamber (150,000 BTU/H models only)
- 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

Standby: The 35-66 CONTROL continually checks for internal faults, circuit integrity and relay contact positioning.

Starting Circuit: Upon a call for heat, the control verifies that the differential switch is in the proper position (open). The control energizes the fan. Once operational static pressure is achieved, the differential switch will close initiating the ignition sequence. The glo-bar is powered and the gas valve opens after 45 seconds. If the flame is not sensed, the heater will attempt to re-ignite for a total of three (3) trials for ignition before proceeding to soft lockout.

Low Fire Running Circuit: After ignition, the flame rod monitors burner flame. If sense of flame is lost, the control closes the gas valve within one second and a new trial sequence (identical to the starting sequence) is initiated. 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.

High Fire Running Circuit: The second stage on the gas valve is powered directly from the second stage of the thermostat. In order for two stage to flow to a higher output, single stage must be energized as well. The thermostat determines which stage to maintain for the desired temperature.

Shut Down: When the thermostat is satisfied, the fan will enter a two (2) minute post-purge cycle.

Thermostat

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

AG2 Series heaters require a 24 V, two stage thermostat to operate. The burner control box is equipped with a 36" black 4-core 24 V control wire. Do not supply 120 V to the 24 V connection.

> **Theoretical Example:** The thermostat is set to 90°F. The thermostat's preset differential for high fire mode is 3°F.
>
> When the temperature drops below the setpoint of the thermostat (90°F), low fire will activate. If the temperature continues to drop below the setpoint by another 3°F (87°F), high fire will activate bringing the temperature back up to the thermostat's setpoint quickly.

Diagnostics

Lockout:

The control will automatically lockout the unit 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 attempt to light, (APS air flow, valve, no flame sense etc.), the heater will enter a soft lockout period for 30 minutes, then attempt to light three more times before entering Hard Lockout mode.

Hard Lockout: If proof of flame is not established, a component failure occurs or blockages are evident, the heater will enter hard lockout. If lockout occurs, the control can be reset by briefly interrupting the power source. Refer to Chart 3.1 below for a description of fault codes.

Figure 3.1 • Operational Indicator Lights

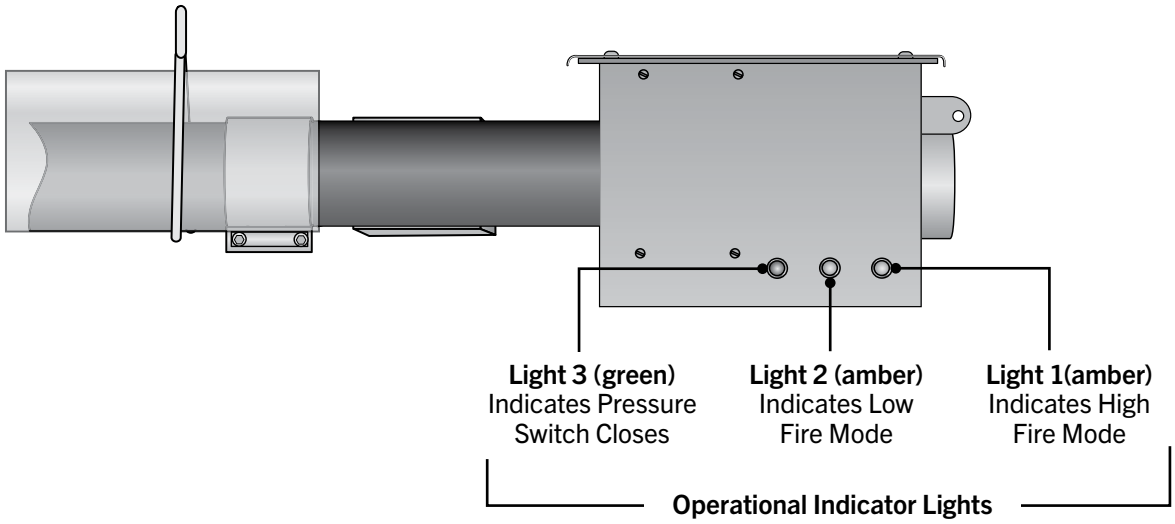
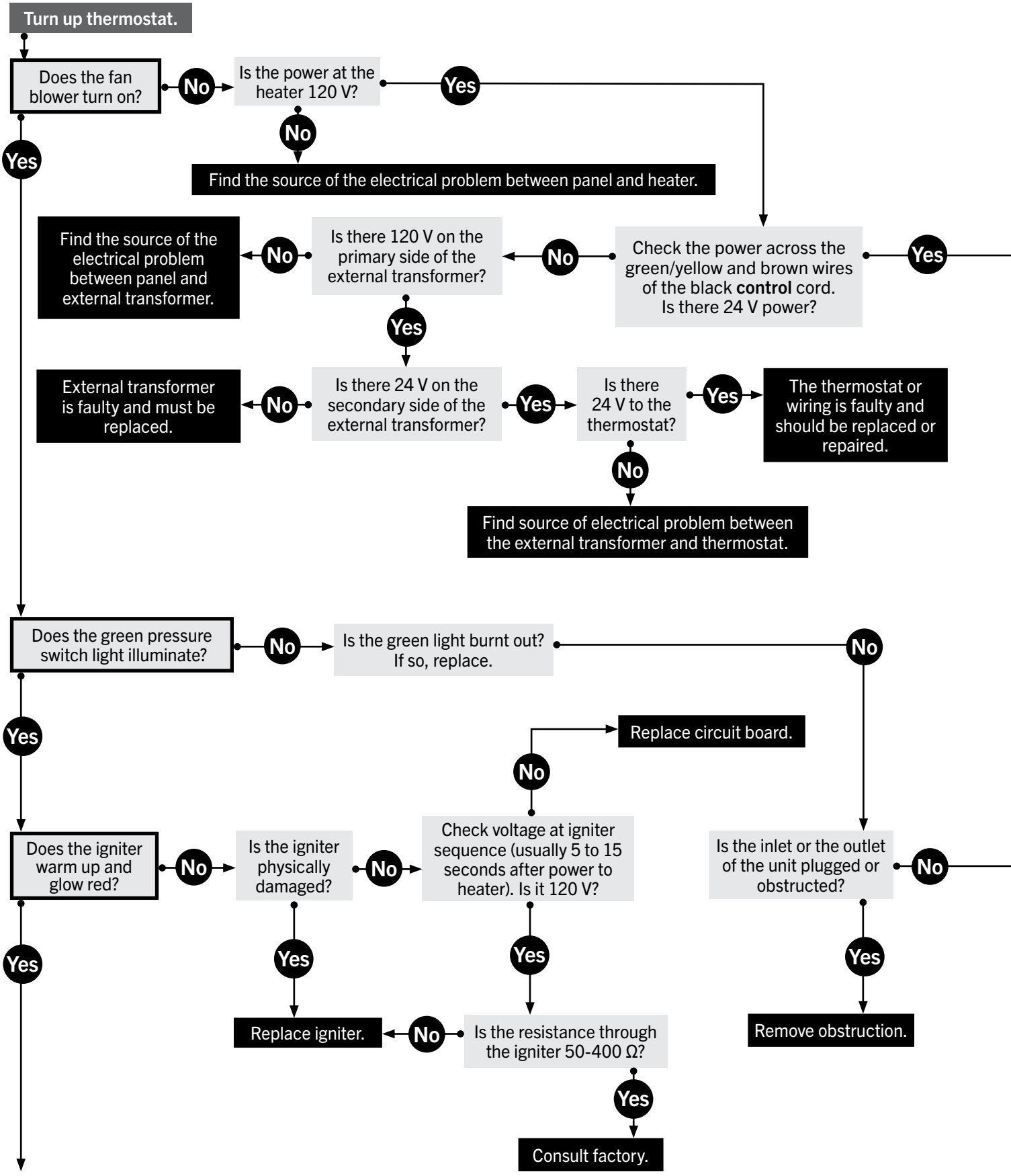


Chart 3.1 • LED Fault Code Status (located internally on circuit board)

LED Code	Fault Status	Fault Code Delay*
Initial flash on power up, then steady off	No fault, normal operation	No delay
Steady ON	Module failure / Internal fault	No delay
1 flash	Ignition failure	3 minutes
2 flashes	APS air flow fault NOTE: Fan / Intake / Exhaust	1-30 seconds
4 flashes	Erroneous flame signal	No delay
No flash on 117 V startup	Transformer fault	No delay

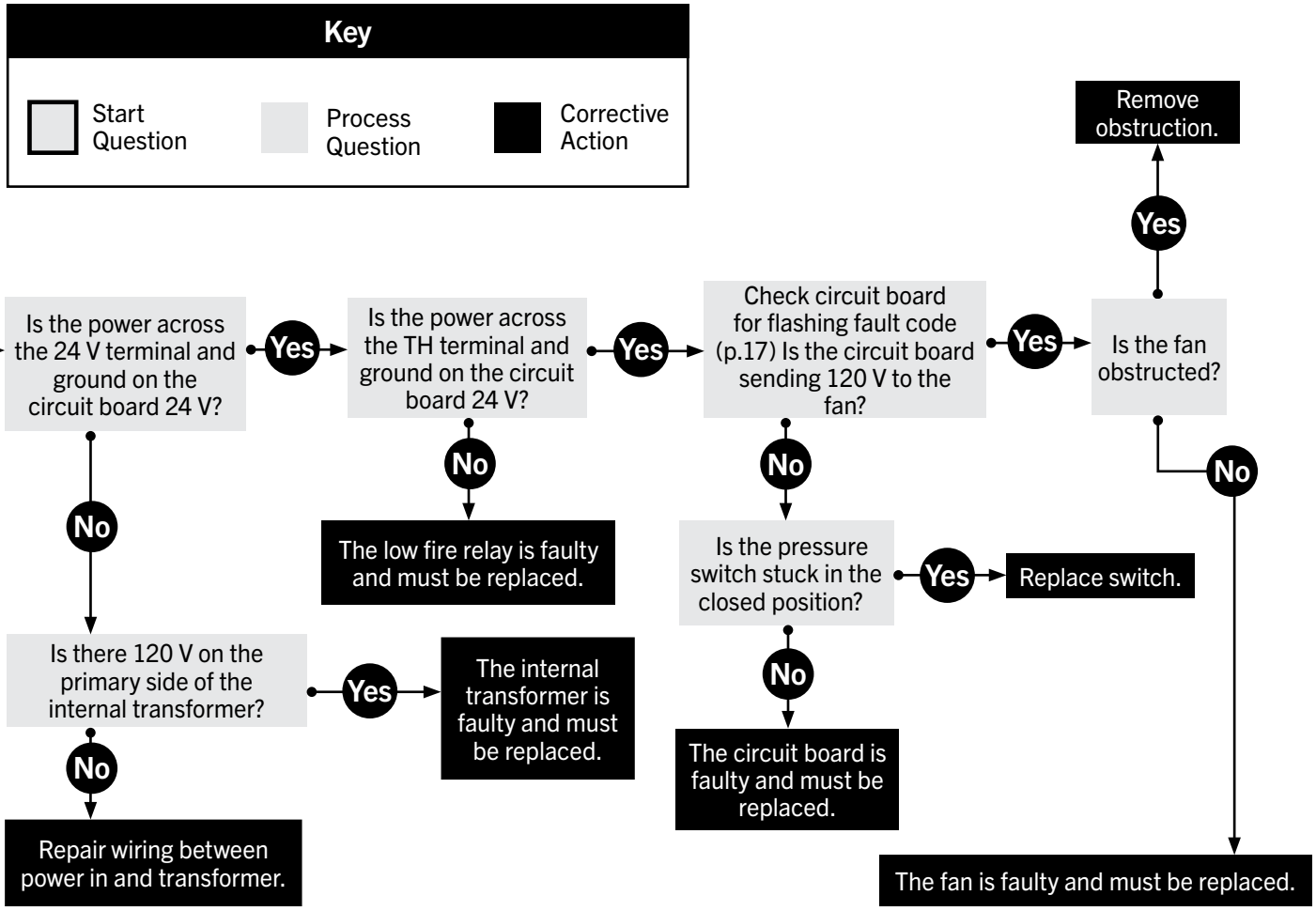
*Some flash codes have a time delay before the LED will flash.

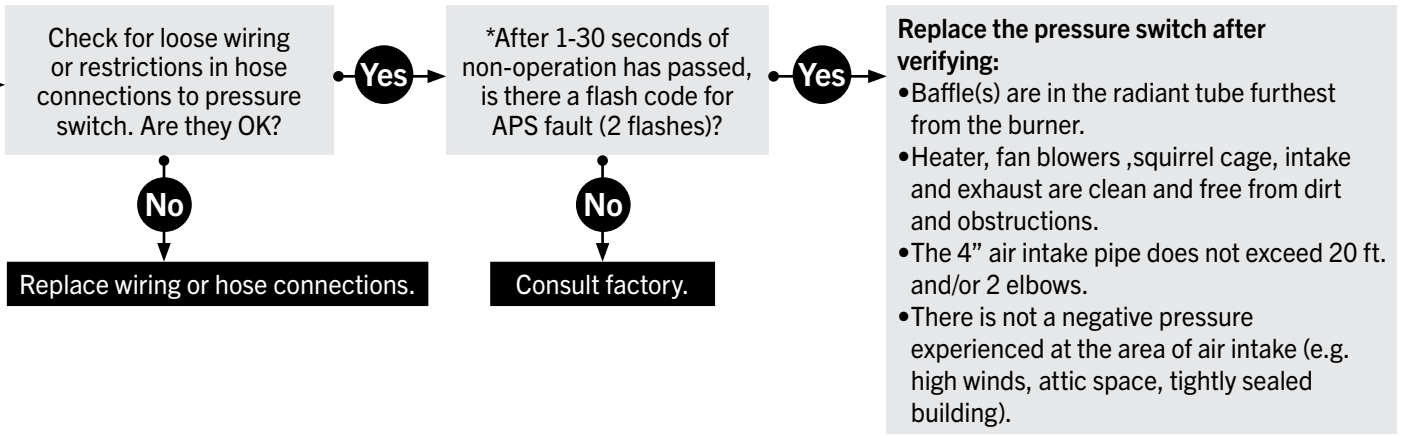
4.0 Troubleshooting Guide



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.



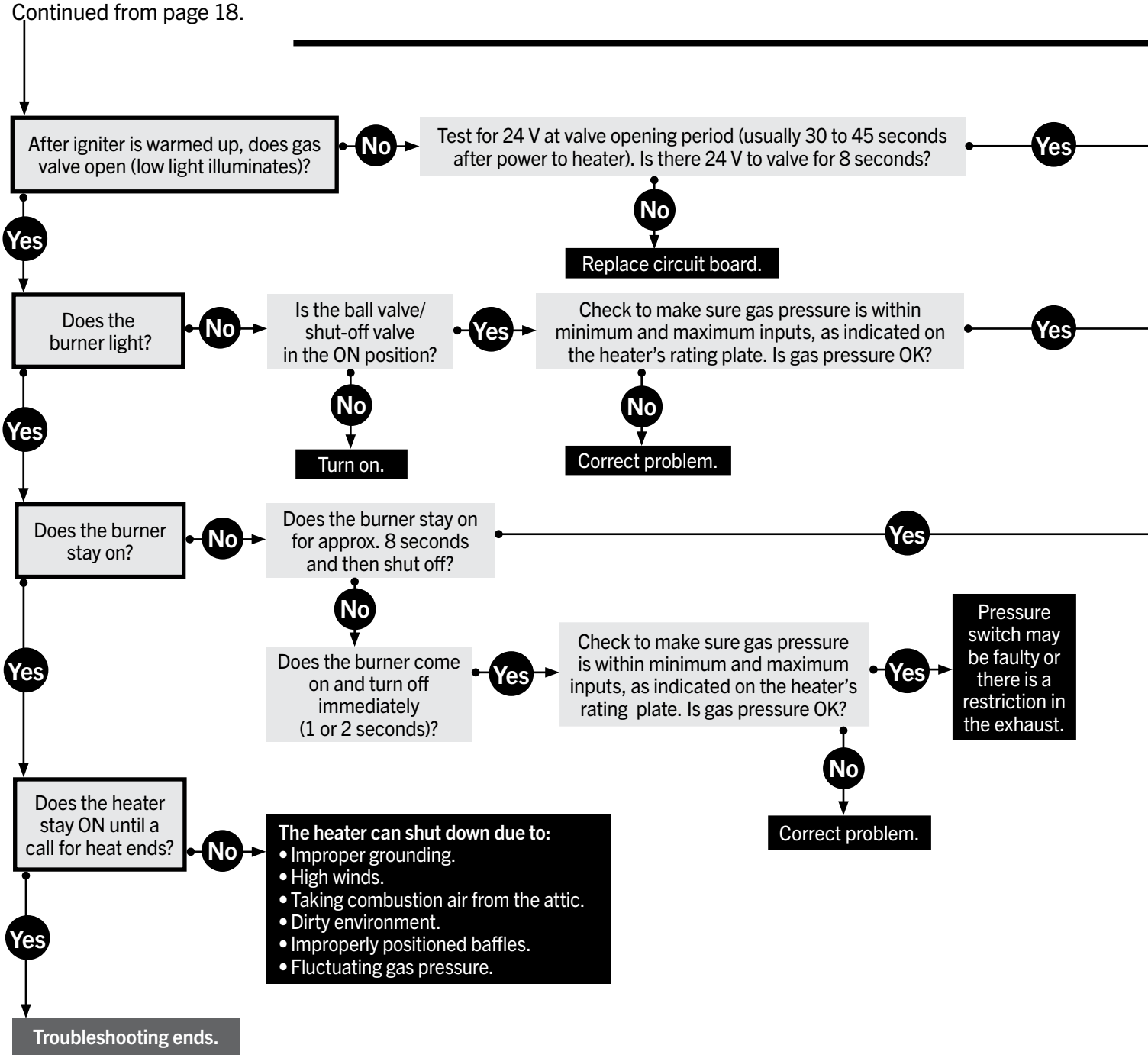


Replace the pressure switch after verifying:

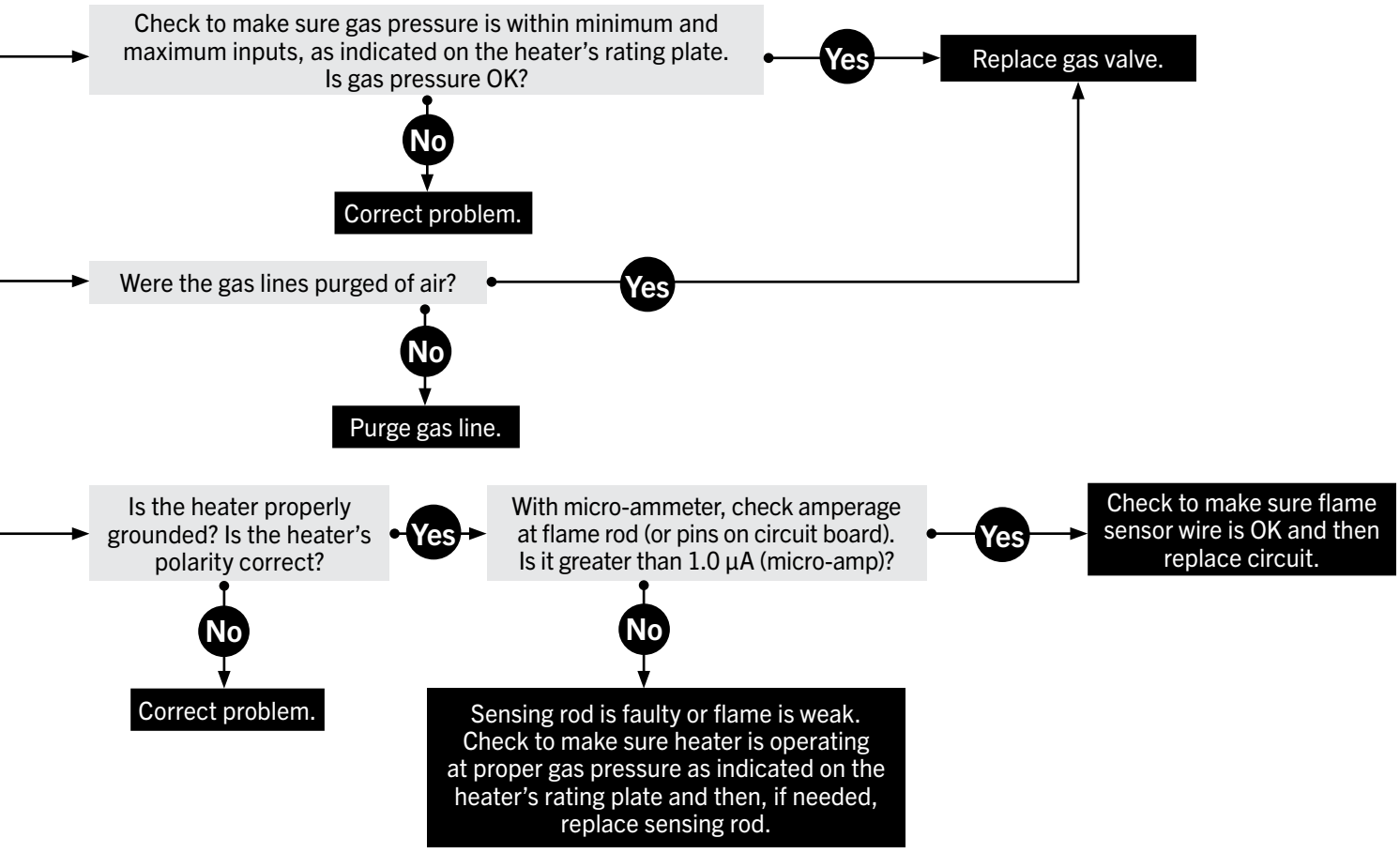
- Baffle(s) are in the radiant tube furthest from the burner.
- Heater, fan blowers ,squirrel cage, intake and exhaust are clean and free from dirt and obstructions.
- The 4" air intake pipe does not exceed 20 ft. and/or 2 elbows.
- There is not a negative pressure experienced at the area of air intake (e.g. high winds, attic space, tightly sealed building).

*Refer to LED diagnostic Fault Code Chart; p.17.

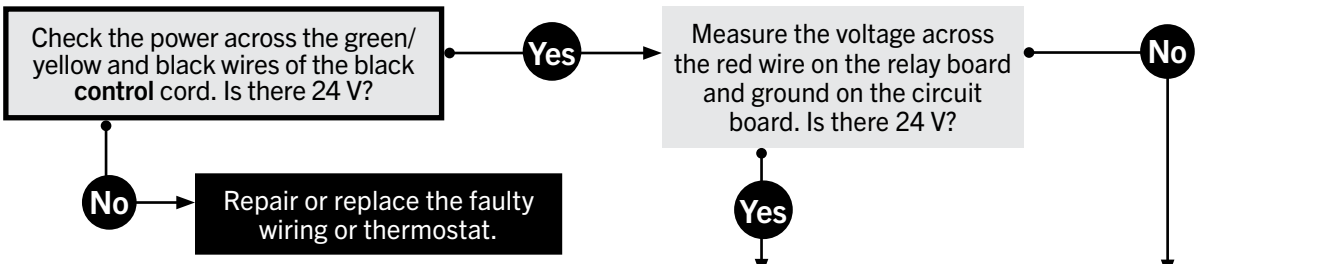
Continued from page 18.



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.



If the heater does not enter High Fire mode, check the following:



NOTE: To confirm that the heater is not in high fire mode, check the manifold pressure. If it is 3.5" (natural gas) or 10" (propane), the indicator light is faulty and should be replaced. If approximately 2.0" to 2.5" (natural gas) or 5.0" to 6.5" (propane), the heater is in low fire mode and the troubleshooting steps described here should be followed.

5.0 Parts

Figure 5.1 • Burner Assembly Components

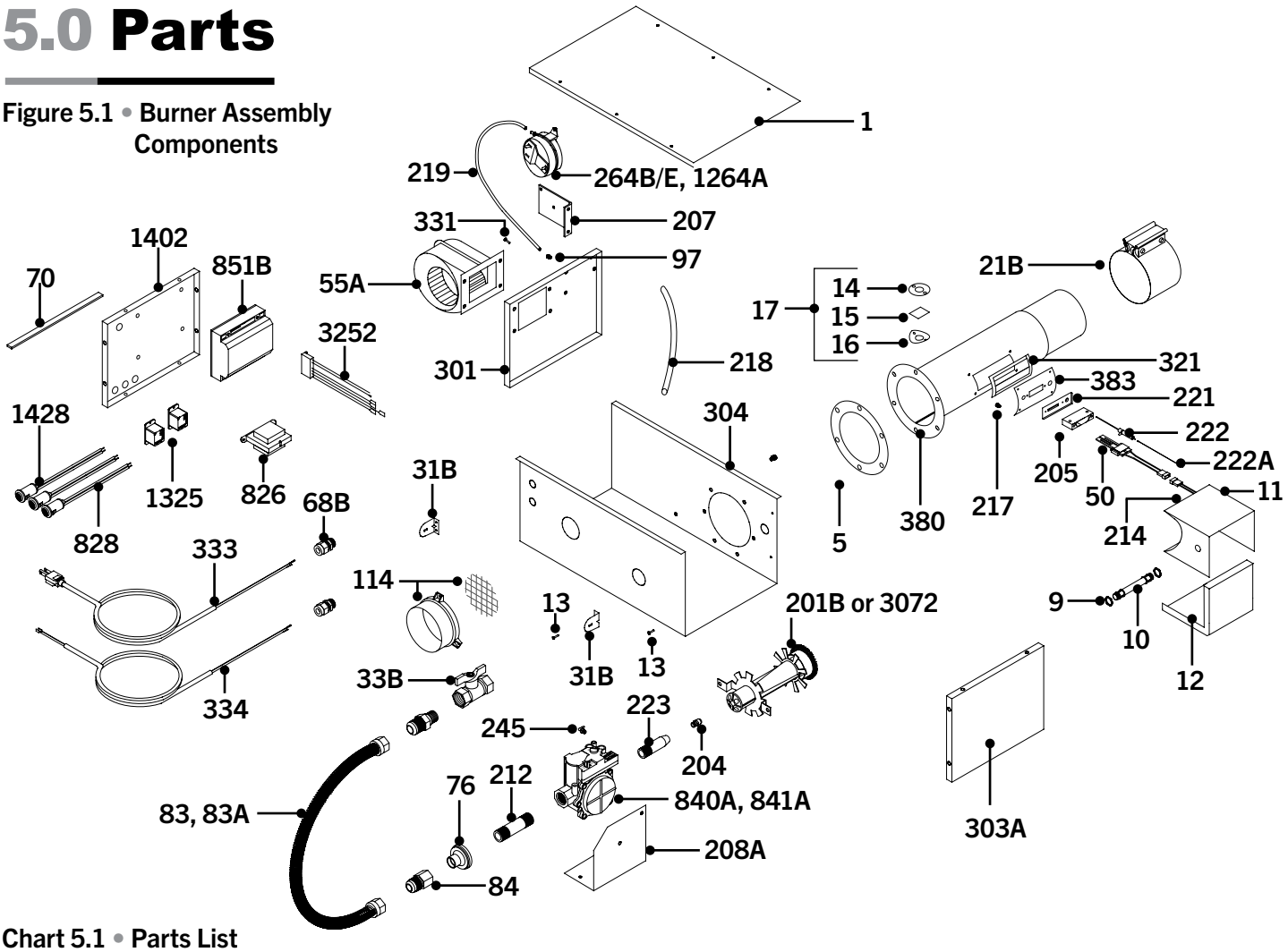
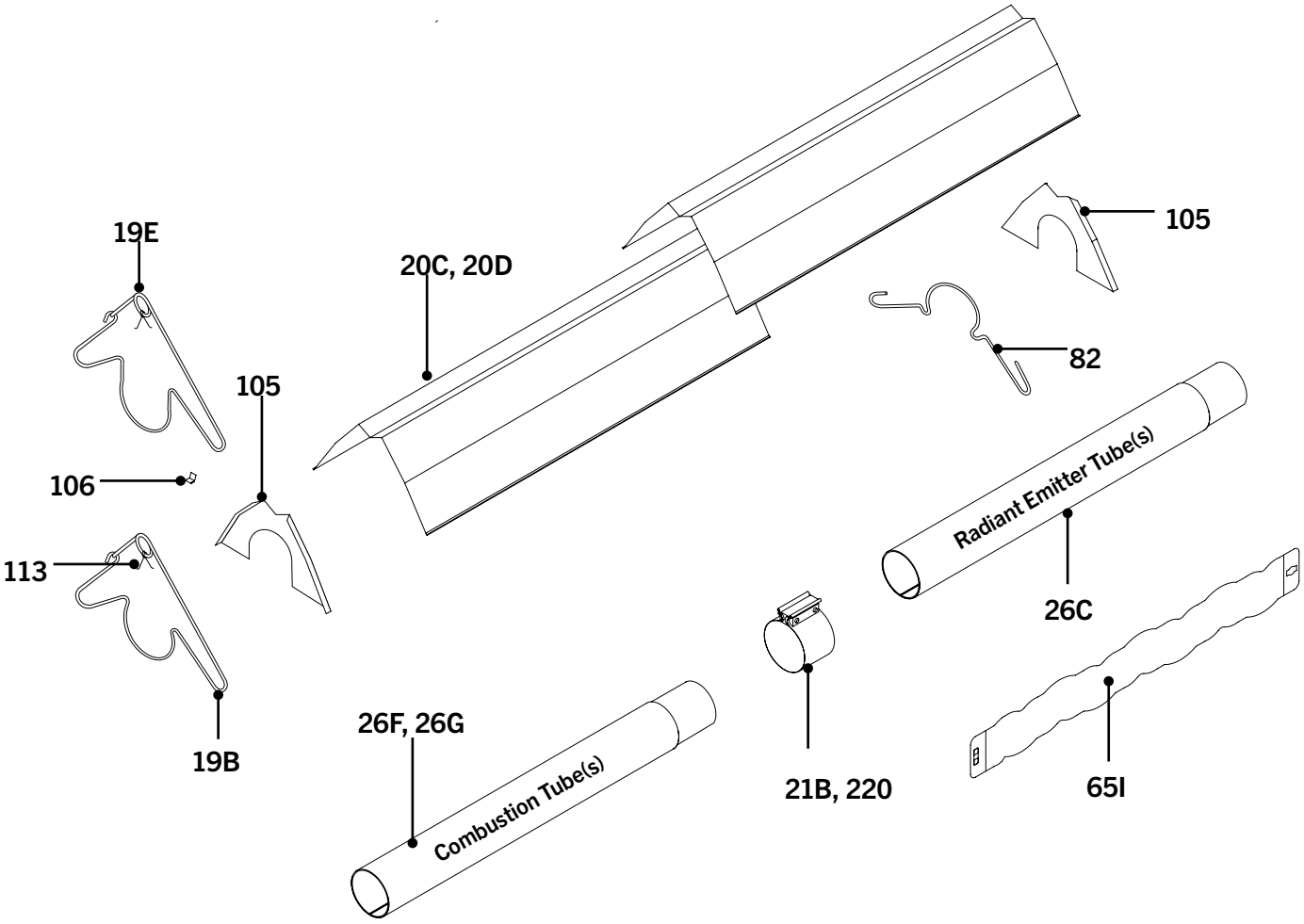


Chart 5.1 • Parts List

Part No.	Description	Part No.	Description
TP-1	Control Box Cover	TP-31B	Control Box Mounting Bracket
TP-5	Flange Gasket	TP-33B	1/2” Shut-Off Ball Valve / Inlet Tap
TP-9	Conduit Coupling	TP-50	Glo-Bar Igniter
TP-10	Conduit 4” x 1/2”	TP-55A	Fan Blower
TP-11	Glo-Bar Igniter Box	TP-65I	36” Interlocking Turbulator Baffle
TP-12	Glo-Bar Igniter Box Cover	TP-68B	Large Strain Relief Bushing with Lock Nut
TP-13	8 x 1/2” Self-Drilling Screw	TP-70**	Control Box Cover Gasket (per foot)
TP-14	Sight Glass Gasket	TP-76	Rubber Grommet
TP-15	Sight Glass	TP-82	Reflector Center Support (RCS)
TP-16	Sight Glass Washer	TP-83	24” Stainless Steel Flexible Gas Connector
TP-17	Sight Glass Kit	TP-83A	24” PVC Coated S.S. Flexible Gas Connector*
TP-19B	4” Wire Hanger with Tension Spring	TP-84	1/2” Female / Male Flare Fitting
TP-19E	Optional 4” Elongated Wire Hanger*	TP-97	1/4” x 1/4” Brass Int./Ext. Atmos. Barb Fitting
TP-20C	120” Aluminum Reflector	TP-105	Aluminum Reflector End Cap
TP-20D	120” Stainless Steel Reflector*	TP-106	Reflector End Cap Clips (8 pcs.)
TP-21B	4” Standard Tube Clamp	TP-113	Reflector Tension Spring
TP-26F	10 ft. Uncoated (ALUM) Combustion Tube	TP-114	Plastic Air Orifice with Screen
TP-26G	10 ft. Uncoated (AL-TI) Combustion Tube	TP-201B	Burner (Tan) - consult factory
TP-26C	10 ft. Hot Rolled Steel (HRT) Radiant Tube	TP-202	16” HSI Burner Tube Flange with Fittings

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

Figure 5.2 • Tube and Reflector Components



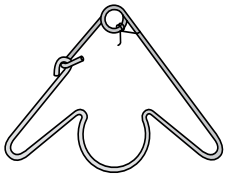
Part No.	Description	Part No.	Description
TP-204	Gas Orifice (consult factory)	TP-304	Burner Control Box Outer Shell
TP-205	Glo-Bar Holder	TP-321	Ignition Plate Gasket
TP-207	Pressure Switch Mounting Bracket	TP-330	Divider Grommet
TP-208A	Gas Valve Mounting Bracket	TP-331	Green Self Tap Ground Screw
TP-212	1/2" x 3" Pipe Nipple	TP-333	36" Black 120 Volt Plug
TP-214	Glo-Bar Wiring Harness	TP-334	6' Black 24 Volt 4-Core Control Wire
TP-217	Pressure Switch Barb	TP-383	Glo-Bar Igniter Plate
TP-218	Differential Switch Vinyl Sensing Tube (exhaust)	TP-826	40VA Transformer
TP-219	Differential Vinyl Sensing Tube (burner)	TP-828	Amber Operational Indicator Light
TP-220	4" Stainless Steel Tube Clamp	TP-840A	36G54-224 Gas Valve - Natural Gas Assembly
TP-221	Glo-Bar Holder Gasket	TP-841A	36G54-226 Gas Valve - Prop. Gas Assembly
TP-222	Flame Rod	TP-851B	Ignition module w/ Diagnostic LED
TP-222A	Flame Rod Wire	TP-1264A	Differential Pressure Switch, 150 MBH
TP-223	Gas Manifold	TP-1325	HLRP Isolation Relay (2 required)
TP-245	90° Plastic Gas Valve Vent	TP-1402	End Panel, Left
TP-264B	Differential Pressure Switch, 65 to 75 MBH	TP-1428	24V Green Operational Indicator Light
TP-264E	Differential Pressure Switch, 100 & 125 MBH	TP-3072	Burner (Green) - consult factory
TP-301	Center Divider Panel	TP-3252	3-Piece Wire Harness Set for Micro 60 Board
TP-303A	End Panel, Right		

Kit Contents Check List

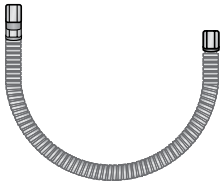
Chart 5.2 • Kit Contents for AG2 Series - Reference the length column for your model.

AG2 Series Kit Contents

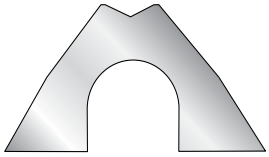
TP-19B 4 in. Hanger with Reflector Tension Spring



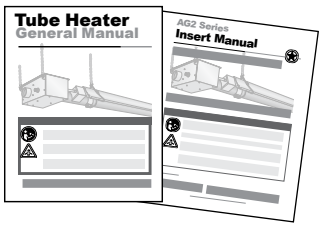
TP-83 24 in. Stainless Steel Flexible Gas Connector



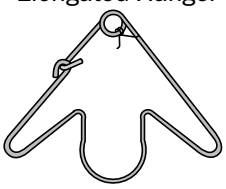
TP-105 Reflector End Cap



Tube Heater General and AG1 Series Insert Manuals **F/N: LIOGTa & LIOAG2**

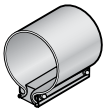


TP-19EAO* Optional 4 in. Elongated Hanger



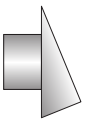
TP-82 4 in. Reflector Center Support (RCS)

TP-21B** 4 in. Tube Clamp



AG-CS 7-Link Chain

WVE-GALV 4 in. Galvanized Steel Vent Cap



TP-33B 1/2 in. Shut-Off Valve/Inlet Tap

TP-82E* 4 in. Elongated Refl. Center Support (RCS)

TP-106 Reflector End Cap Clips

TP-13 Self-Tap Screw

S-Hook

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
LIOAG2	AG2 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 40 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

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