HL3 Series
Insert Manual

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

C US

The HL3 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 HL3 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)

LIOHL3-Rev. 21314
Print: 3M-05/26 (CDS)
Replaces: LIOHL3-3M-10/25 (CDS)

Contents

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.

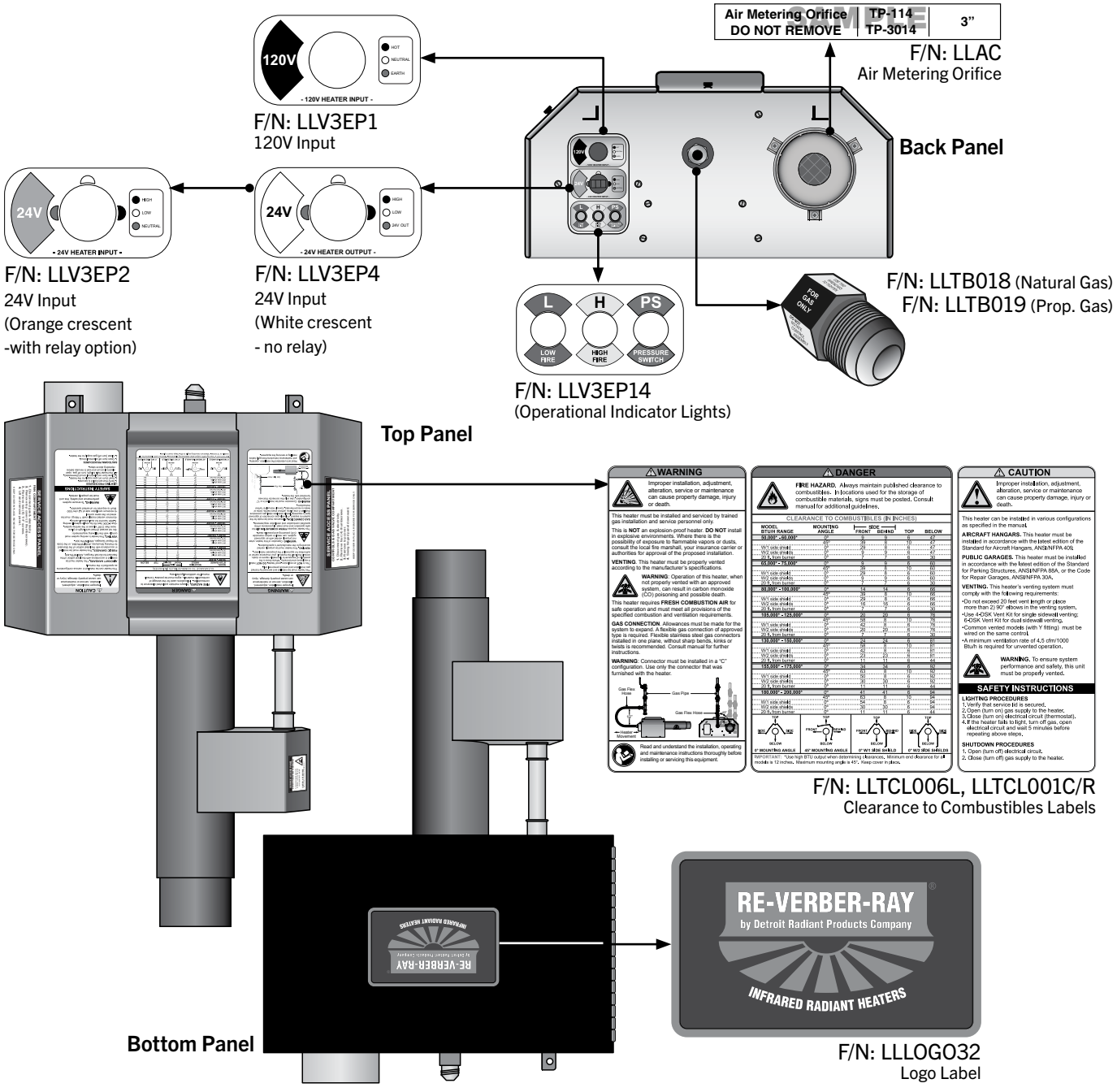
1.0 Safety

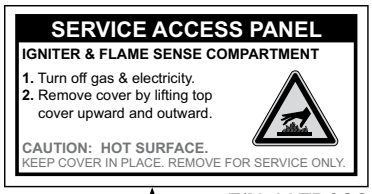
⚠ WARNING

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

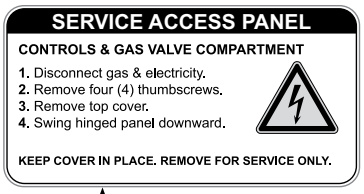
Safety Labels and Their Locations

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.





F/N: LLTB026



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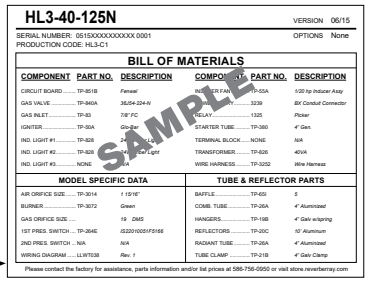
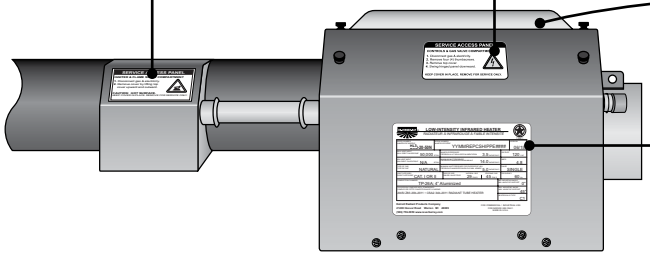
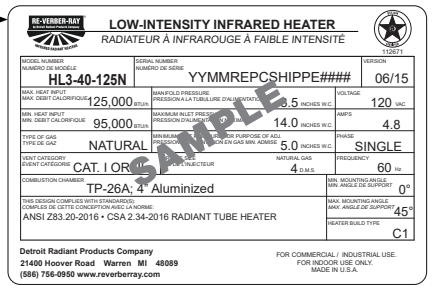


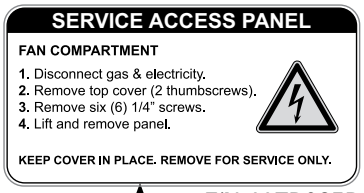
Burner Control Box Component Label
(located inside the center compartment lid)



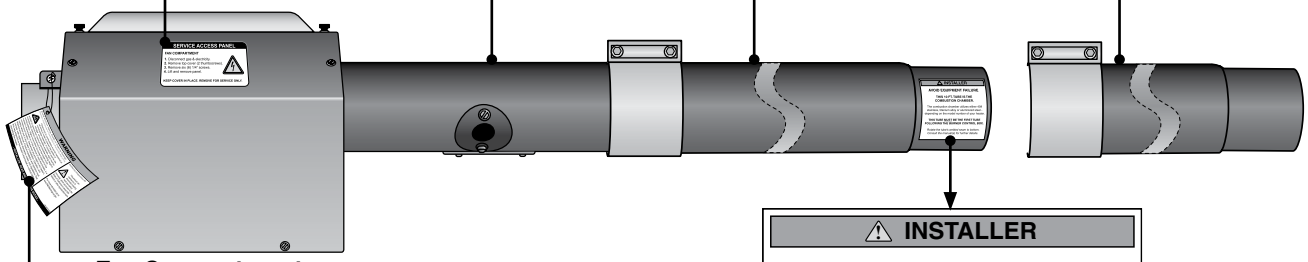
Controls Compartment



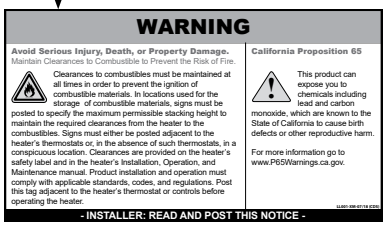
Rating Plate



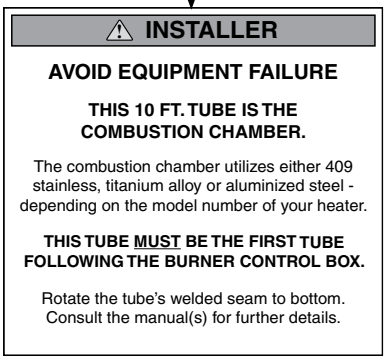
F/N: LLTB025R



Fan Compartment



F/N: LL001 - Clearance Safety Tag
(Affix adjacent to heater's thermostat)



F/N: LLTB004 (orange)
(150,000-200,000 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.

Clearances 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.

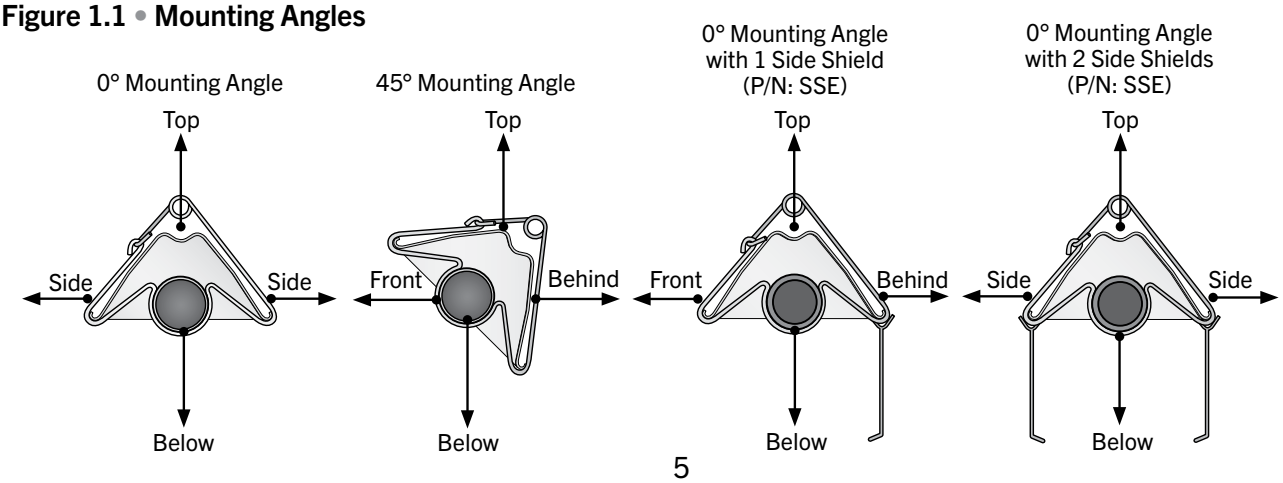
Chart 1.1 • Clearances to Combustibles in Inches (see Figure 1.1 for Mounting Angles)

Model Number	Mounting Angle*	Sides		Top	Below
		Front	Behind		
HL3 (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
HL3 (30, 40) - 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
HL3 (30, 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
HL3 (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
HL3 (40, 50, 60, 70) - 175 [N, P]	0°	34	34	6	92
	45°	63	8	10	92
with 1 side shield	0°	50	8	6	92
with 2 side shields	0°	30	30	6	92
20 ft. from burner	0°	11	11	6	44
HL3 (50, 60, 70) - 200 [N, P]	0°	41	41	6	94
	45°	63	8	10	94
with 1 side shield	0°	54	8	6	94
with 2 side shields	0°	30	30	6	94
20 ft. from burner	0°	11	11	6	44

* 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 assure that 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

Gas Requirements

Type of Gas	Required Manifold Pressure	Minimum Inlet Pressure	Maximum Inlet Pressure
Natural	3.5 Inches. W.C.	5.0 Inches. W.C.	14.0 Inches. W.C.
Propane	10.0 Inches. W.C.	11.0 Inches. W.C.	14.0 Inches. W.C.

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

Electrical Requirements

- 120 VAC - 60 Hz, GND, 3-wire
- 24 VAC thermostat connection
- Starting current 4.8 amps
- Running current 1.1 amps

NOTICE

Connecting the thermostat with a voltage other than 24 V may damage the heater. The HL3 Series requires a 24 VAC connection to the thermostat. This is either supplied by the heater internally (standard) or by an external transformer (with optional isolation relays, P/N: HLRP). See Figure 2.1A-B.

NOTE: A yellow control cord replaces the external terminal plug on stainless steel models and models with water resistant upgrades.

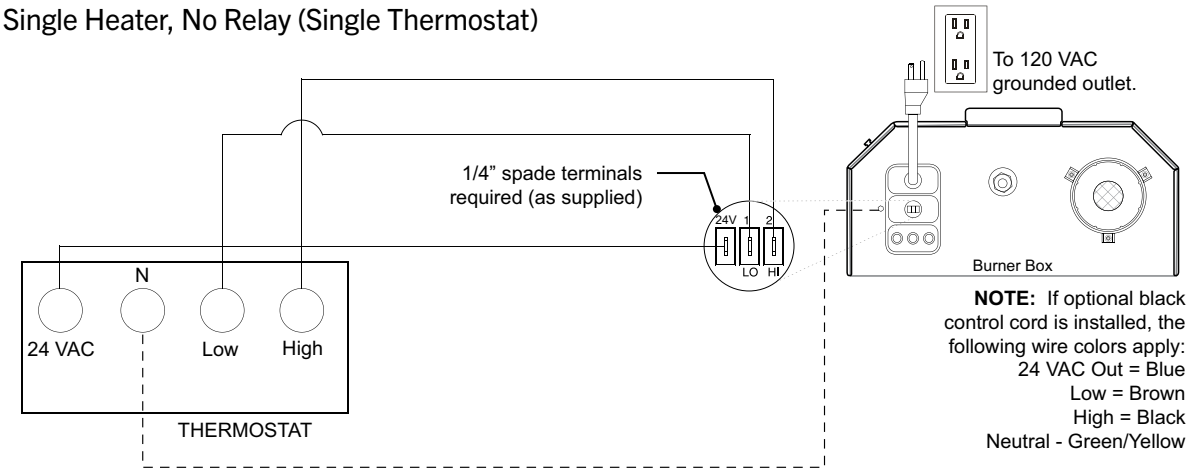
Wiring

⚠ WARNING

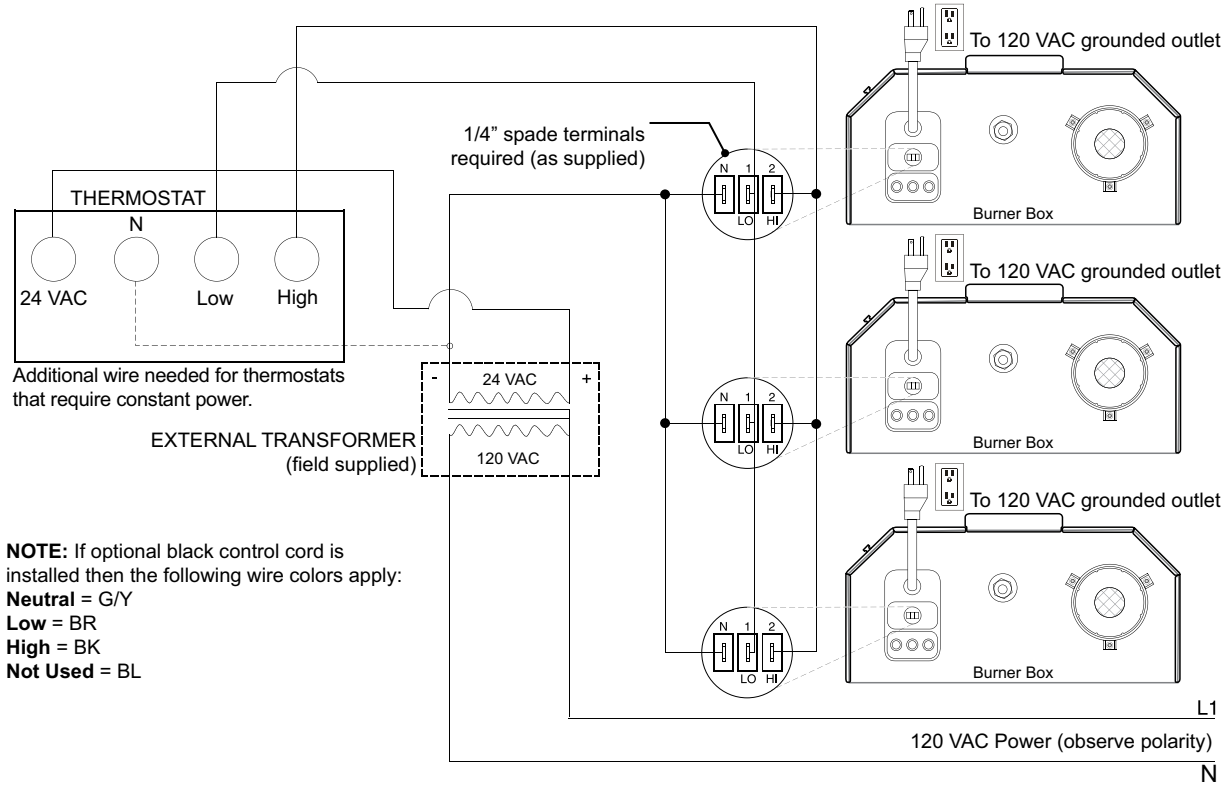
Electric Shock
Field wiring to the tube heater must be connected and grounded in accordance with national, state, provincial, local codes, and to the guidelines in the Tube Heater General Manual and Series Insert Manual. In the United States refer to the most current revisions to the ANSI/NFPA 70 Standard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

Figure 2.1 • Field Wiring Diagrams

A. Single Heater, No Relay (Single Thermostat)



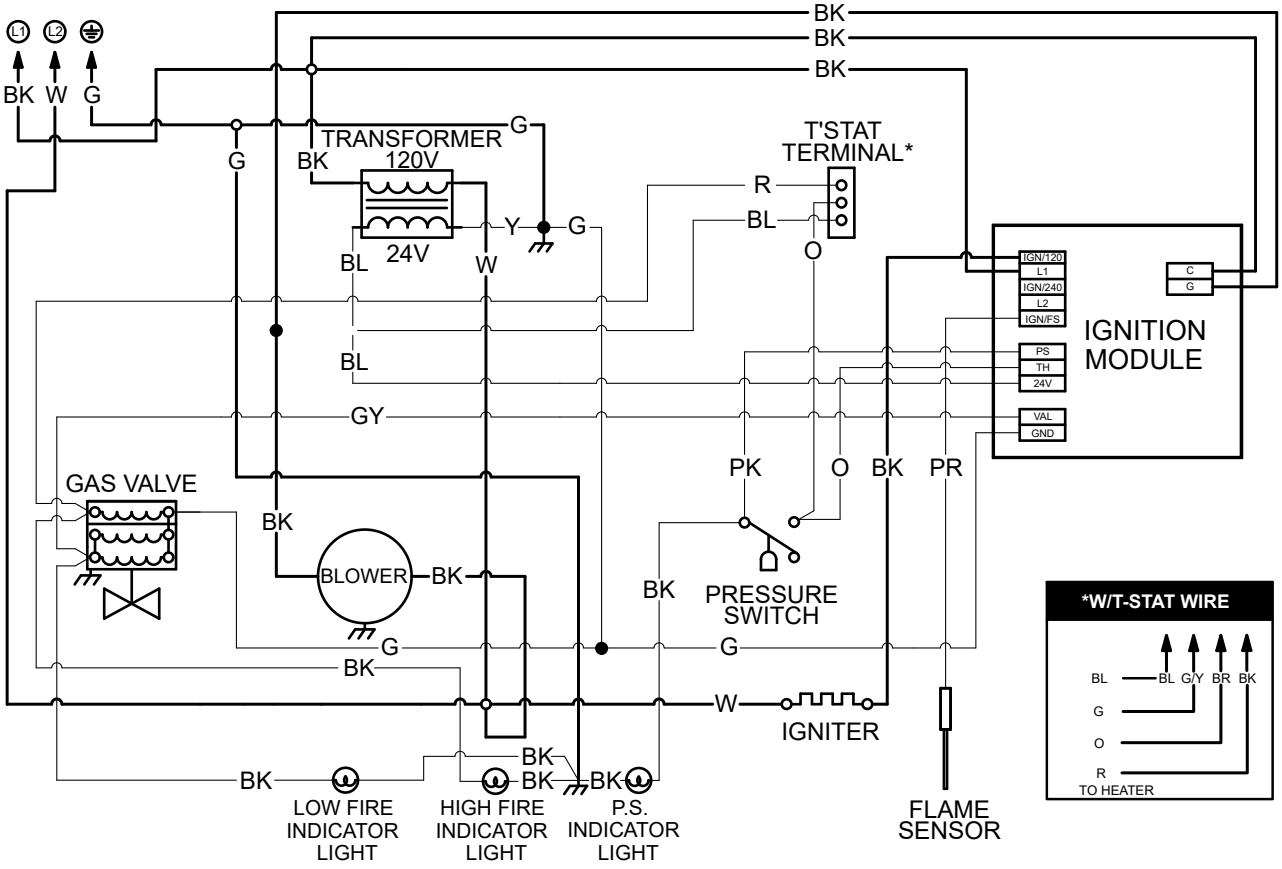
B. Multiple Heaters with Optional Factory Installed Internal Relay (HLRP) (Single Thermostat)
NOTE: For External Relay Kit (ERK) wiring, consult the installation instructions provided with ERK.



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 temperature rating of at least 105° C.

Figure 2.2 • Internal Wiring Diagram



WIRING INFORMATION:

LOW VOLTAGE:

FACTORY STANDARD ————————

FACTORY OPTION ——— - ——— - ———

FIELD INSTALLED — — — — — — —

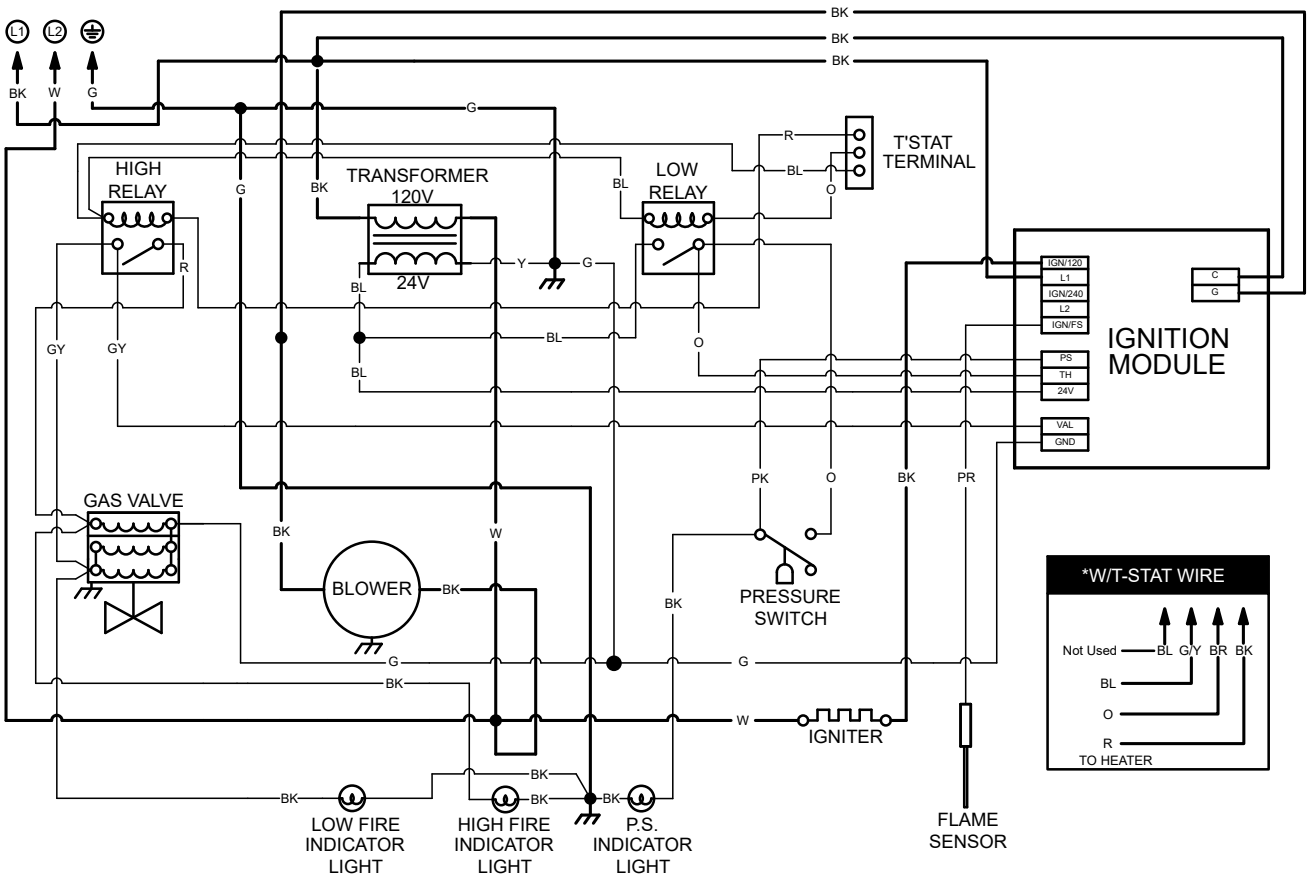
LINE VOLTAGE:

FACTORY STANDARD ————————

FACTORY OPTION ——— - ——— - ———

FIELD INSTALLED — — — — — — —

Figure 2.3 • Internal Wiring Diagram with Optional HLRP Relay



WIRING INFORMATION:

LOW VOLTAGE:

FACTORY STANDARD ——————

FACTORY OPTION —— - —— - ——

FIELD INSTALLED — — — — — — —

LINE VOLTAGE:

FACTORY STANDARD ——————

FACTORY OPTION —— - —— - ——

FIELD INSTALLED — — — — — — —

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.)	Stainless Steel Weight (lbs.)	Recommended Mounting Height^	Combustion Chamber (Black Coated)	Radiant Emitter Tube(s) (Black Coated)	36" Baffle Quantity
HL3-20-65	Nat. or Prop.	65,000	50,000	21'-9"	13'-1"	120	N/A	9' to 14'	Alum	Alum	5
HL3-20-75	Nat. or Prop.	75,000	50,000	21'-9"	13'-1"	120	145	10' to 15'	Alum	Alum	5
HL3-30-65	Nat. or Prop.	65,000	50,000	31'-5"	**17'-9"	160	N/A	10' to 15'	Alum	Alum	4
HL3-30-75	Nat. or Prop.	75,000	50,000	31'-5"	**17'-9"	160	195	11' to 18'	Alum	Alum	5
HL3-30-100	Nat. or Prop.	100,000	65,000	31'-5"	**17'-9"	160	195	12' to 20'	Alum	Alum	5
HL3-30-125	Nat. or Prop.	125,000	82,000	31'-5"	**17'-9"	160	195	13' to 23'	Alum	Alum	6
HL3-40-65	Nat. or Prop.	65,000	50,000	41'-1"	22'-9"	190	N/A	11' to 18'	Alum	Alum	3
HL3-40-75	Nat. or Prop.	75,000	50,000	41'-1"	22'-9"	190	235	11' to 18'	Alum	Alum	4
HL3-40-100	Nat. or Prop.	100,000	65,000	41'-1"	22'-9"	190	235	12' to 20'	Alum	Alum	4
HL3-40-125	Nat. or Prop.	125,000	82,000	41'-1"	22'-9"	190	235	13' to 23'	Alum	Alum	5
HL3-40-150*	Nat. or Prop.	150,000	100,000	41'-1"	22'-9"	190	235	14' to 25'	Titan	Alum	5
HL3-40-175*	Nat. or Prop.	175,000	125,000	41'-1"	22'-9"	190	235	15' to 27'	Titan	Alum	5
HL3-50-125	Nat. or Prop.	125,000	82,000	50'-9"	**27'-5"	235	290	15' to 27'	Alum	Alum	3
HL3-50-150*	Nat. or Prop.	150,000	100,000	50'-9"	**27'-5"	235	290	15' to 27'	Titan	Alum	3
HL3-50-175*	Nat. or Prop.	175,000	125,000	50'-9"	**27'-5"	235	N/A	16' to 30'	Titan	Alum	3
HL3-50-200*	Nat. or Prop.	200,000	145,000	50'-9"	**27'-5"	235	N/A	17' to 35'	Titan	Alum	2
HL3-60-150*	Nat. or Prop.	150,000	100,000	60'-5"	32'-5"	265	330	16' to 30'	Titan	Alum	2
HL3-60-175*	Nat. or Prop.	175,000	125,000	60'-5"	32'-5"	265	N/A	16' to 30'	Titan	Alum	2
HL3-60-200*	Nat. or Prop.	200,000	145,000	60'-5"	32'-5"	265	N/A	17' to 35'	Titan	Alum	2
HL3-70-175*	Nat. or Prop.	175,000	125,000	70'-1"	**37'-3"	300	N/A	19' to 42'	Titan	Alum	2
HL3-70-200*	Nat. or Prop.	200,000	145,000	70'-1"	**37'-3"	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).
^ Factory recommended mounting heights are listed as a guideline.

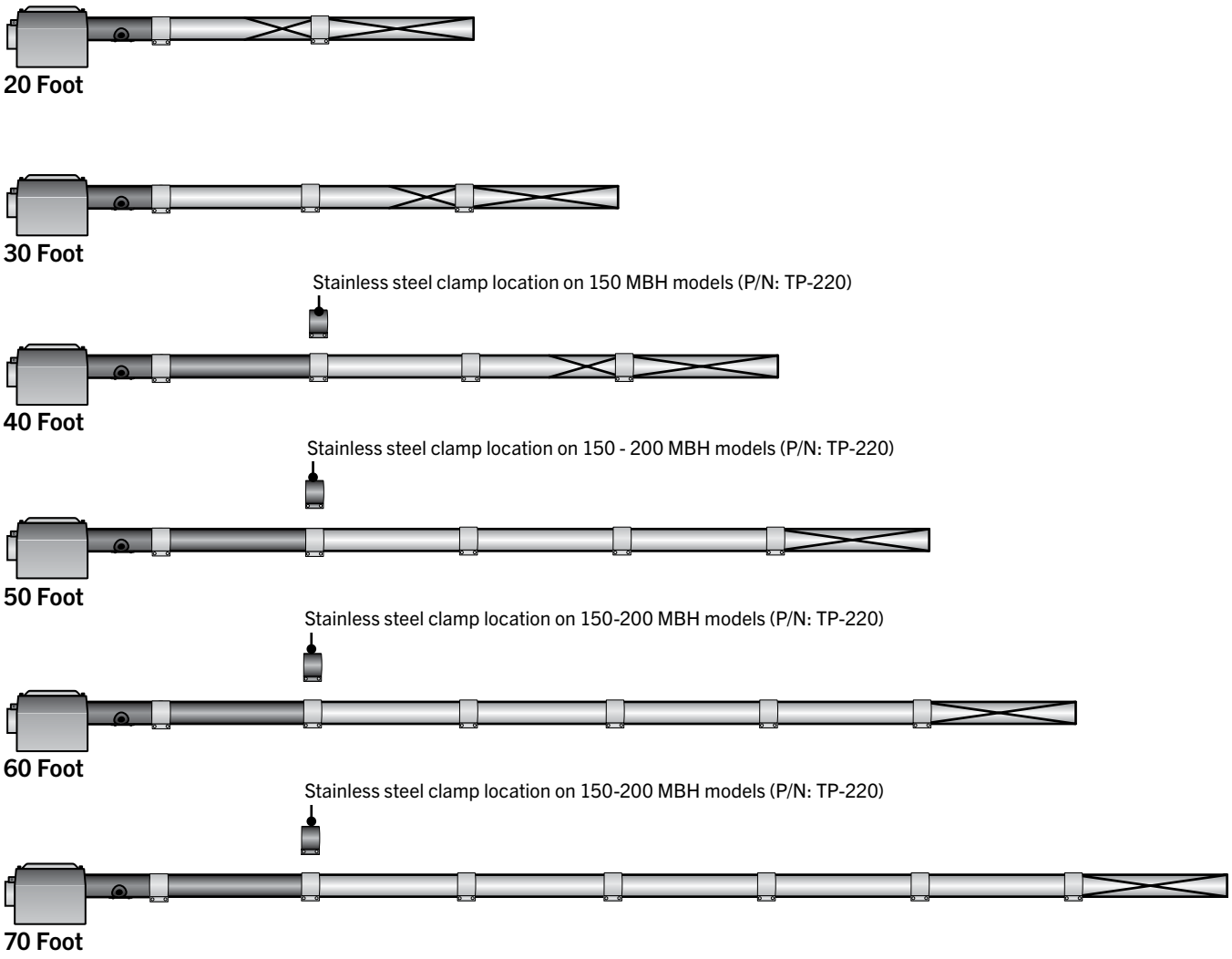
IMPORTANT: Reference box label to determine the number of required baffle sections for each model heater.

Alum = Black coated aluminized treated steel.
Titan = Black coated titanium stabilized aluminized steel.

Tube Installation Sequence

Figure 2.4 • Tube Installation Sequence

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



Key

- Burner Control Box with 16-inch Burner Tube
- Black Coated Combustion Chamber Tube*
- Black Coated Aluminized Combustion Chamber/Radiant Emitter Tube
- Standard Tube Clamp
- Stainless Steel Tube Clamp (P/N: TP-220)
  150-200 MBH models only - Located between 1st and 2nd 10 ft. tube sections.
- Baffle Location

*Aluminized tubes (50,000 to 125,000 BTU/H models); Titan tubes (150,000 to 200,000 BTU/H models).
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.

Single Stage 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.

Two Stage 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. Refer to Soft and Hard Lockout under Diagnostics on page 13.

Thermostat

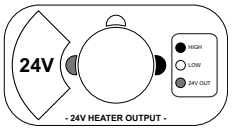
HL3 Series heaters require a 24 VAC, two-stage thermostat to operate. The burner control box is equipped with a round terminal strip that accepts three (3) 1/4" insulated female spade terminals. Do not supply 120 V to the 24 V connection.

The HL3 Series is equipped with or without relays (P/N: HLRP). The optional relays must be factory installed. **NOTE:** Units with a relay installed must have an external transformer (field supplied), see wiring diagram (Figure 2.2B).

Standard Configuration

Without relays (identified with white label around the terminal block):

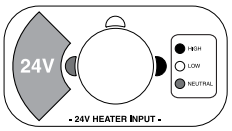
- Single burner control box
- Single thermostat



Optional Configuration

With relays (identified with orange label around the terminal block):

- A single thermostat controls two or more burner control boxes.
- Heaters are common vented
- Must be factory installed



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 attempt to light, (gas pressure, valve, no flame sense etc.), the heater will enter a soft lockout period for 15 minutes and 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 and 3.2 below for a description of LED codes.

Figure 3.1 • Operational Indicator Lights

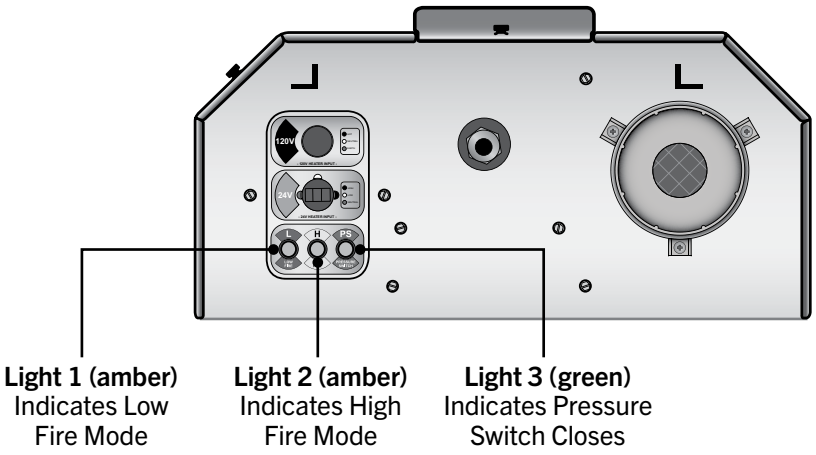


Chart 3.1 • LED Diagnostic Codes - Fenwal Circuit Board

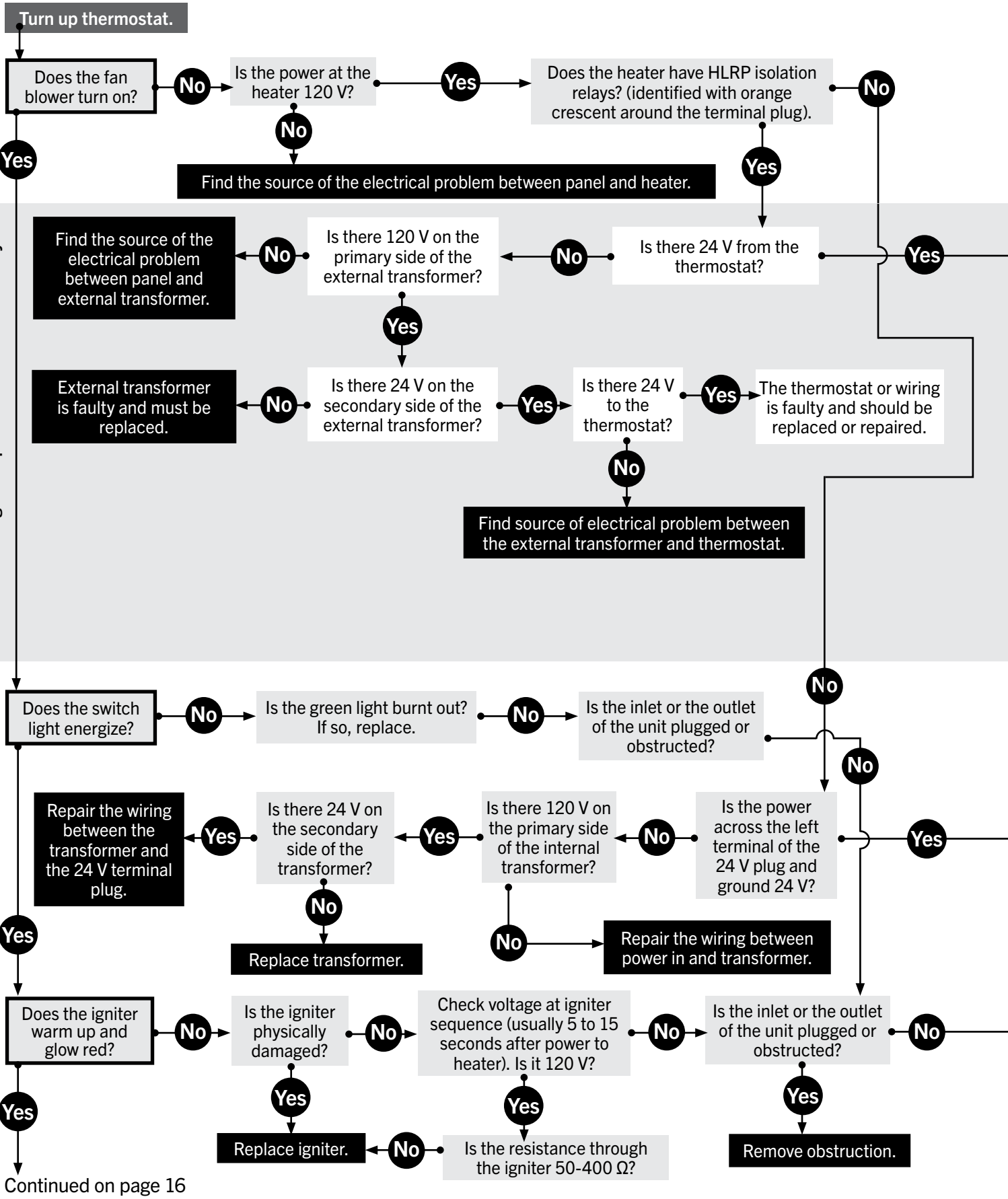
LED Code	Fault Status	Fault Code Delay*
Initial flash on power up, then steady off	No fault, normal operation	No delay
Steady on	Module failure / Internal fault	No delay
1 flash	Ignition failure	3 minutes
2 flashes	APS (Air Proving Switch) (Fan/Intake/Exhaust)	0-30 seconds
3 flashes	Lockout	17 minutes
4 flashes	Solenoid valve fault Leaky valve Flame amplifier fault	No delay
No flash on 117V startup	Transformer fault	No delay

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

Chart 3.2 • LED Diagnostic Codes - Capable Controls Circuit Board

LED Code	Fault Status	Fault Code Delay*
Initial flash (Red) on power up	Normal operation	Immediate
Steady flash (Green) during ignition	Normal operation	Immediate
Steady on (Green) after flame sense	Normal operation	1 minute
1 flash (Red)	Ignition failure	3 minutes
1 flash (Red)	Reverse Polarity	30 Seconds
2 flashes (Red)	Ignition error	12 seconds
3 flashes (Red)	Gas valve error	
4 flashes (Red)	Line voltage frq. error	
5 flashes (Red)	Internal control error	
6 flashes (Red)	Pressure switch error	

4.0 Troubleshooting Guide



Continued on page 16

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.

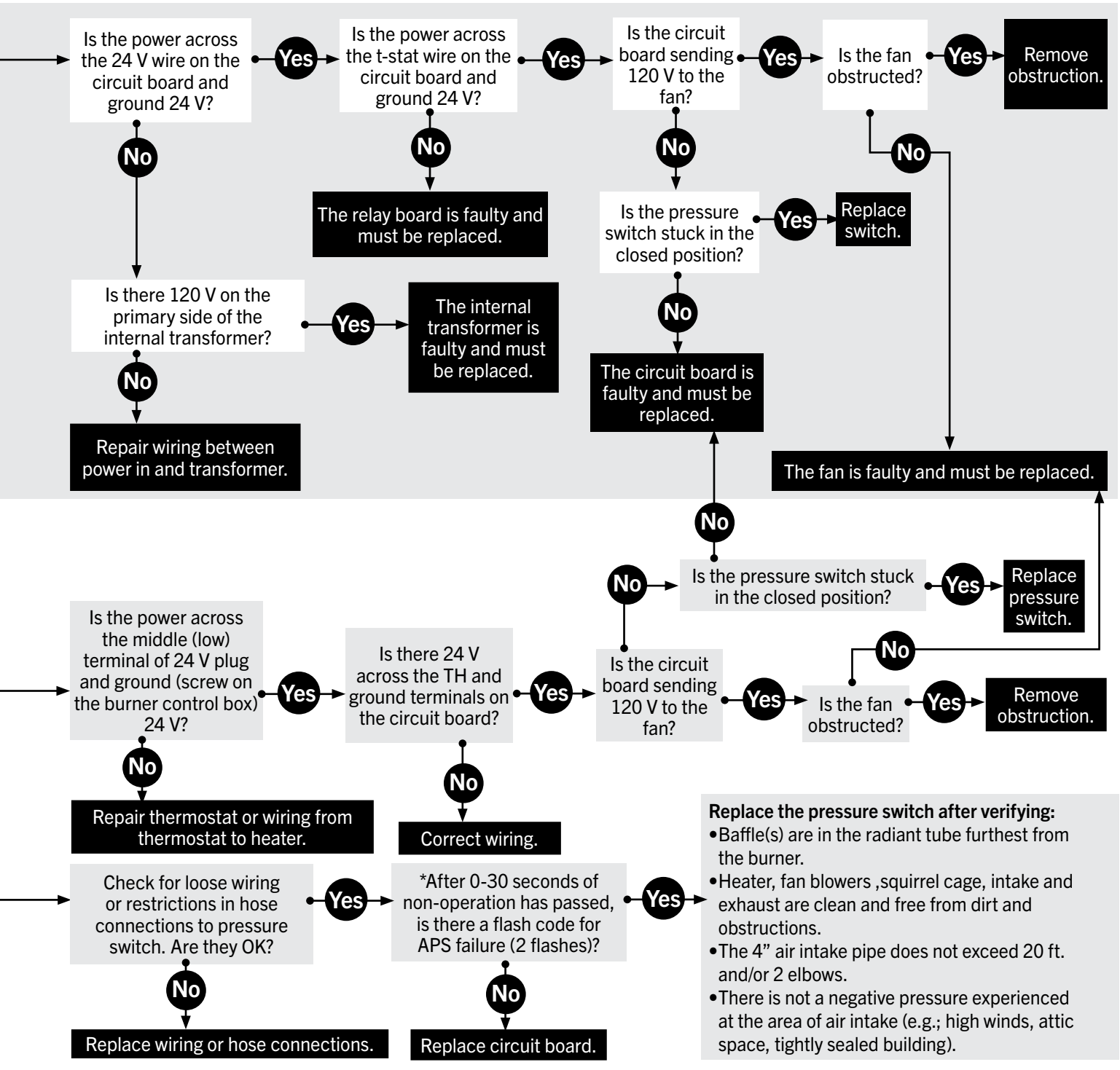
Key

Without HLRP Isolation Relays:

- Start Question
- Process Question
- Corrective Action

With HLRP Isolation Relays:

- Process Question
- Corrective Action

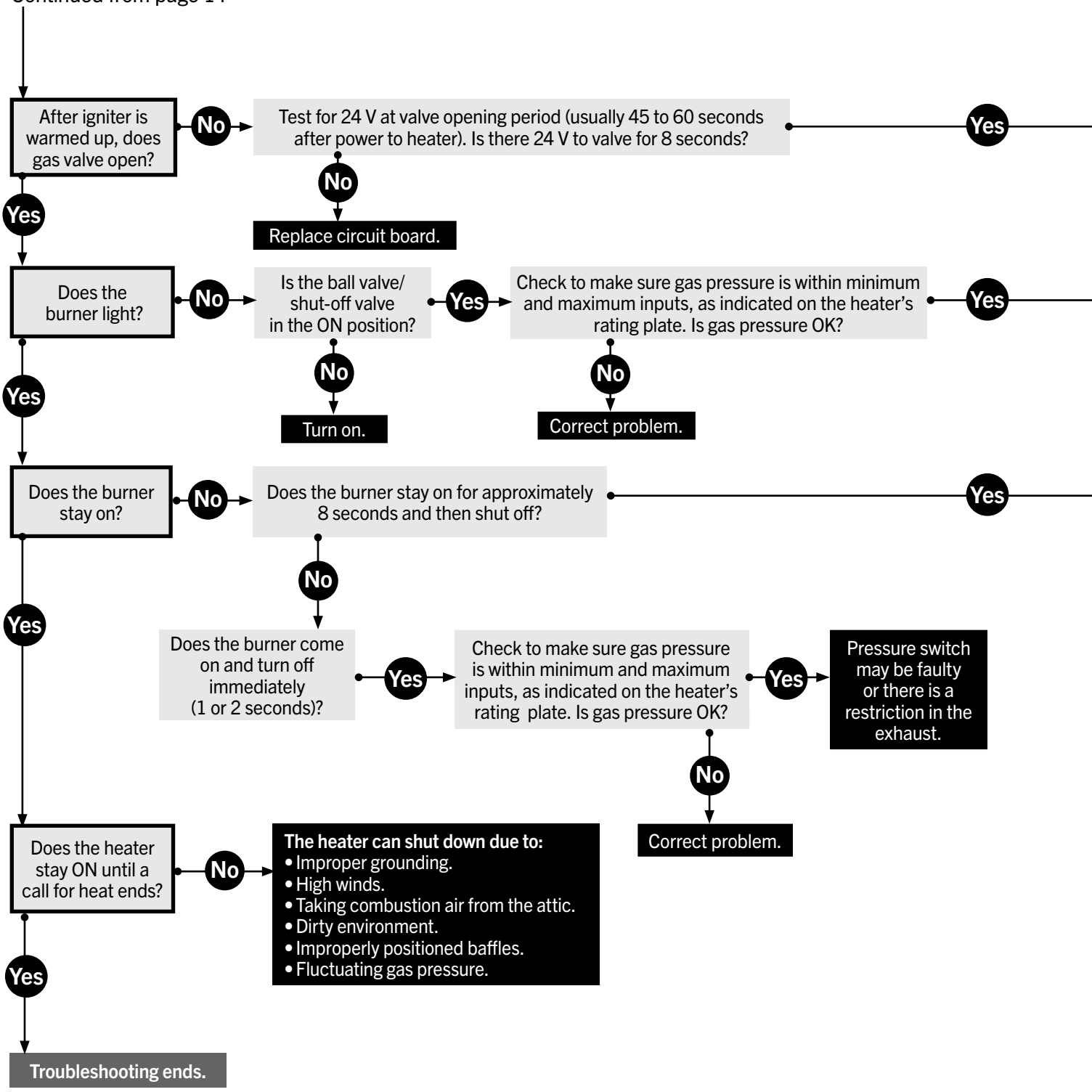


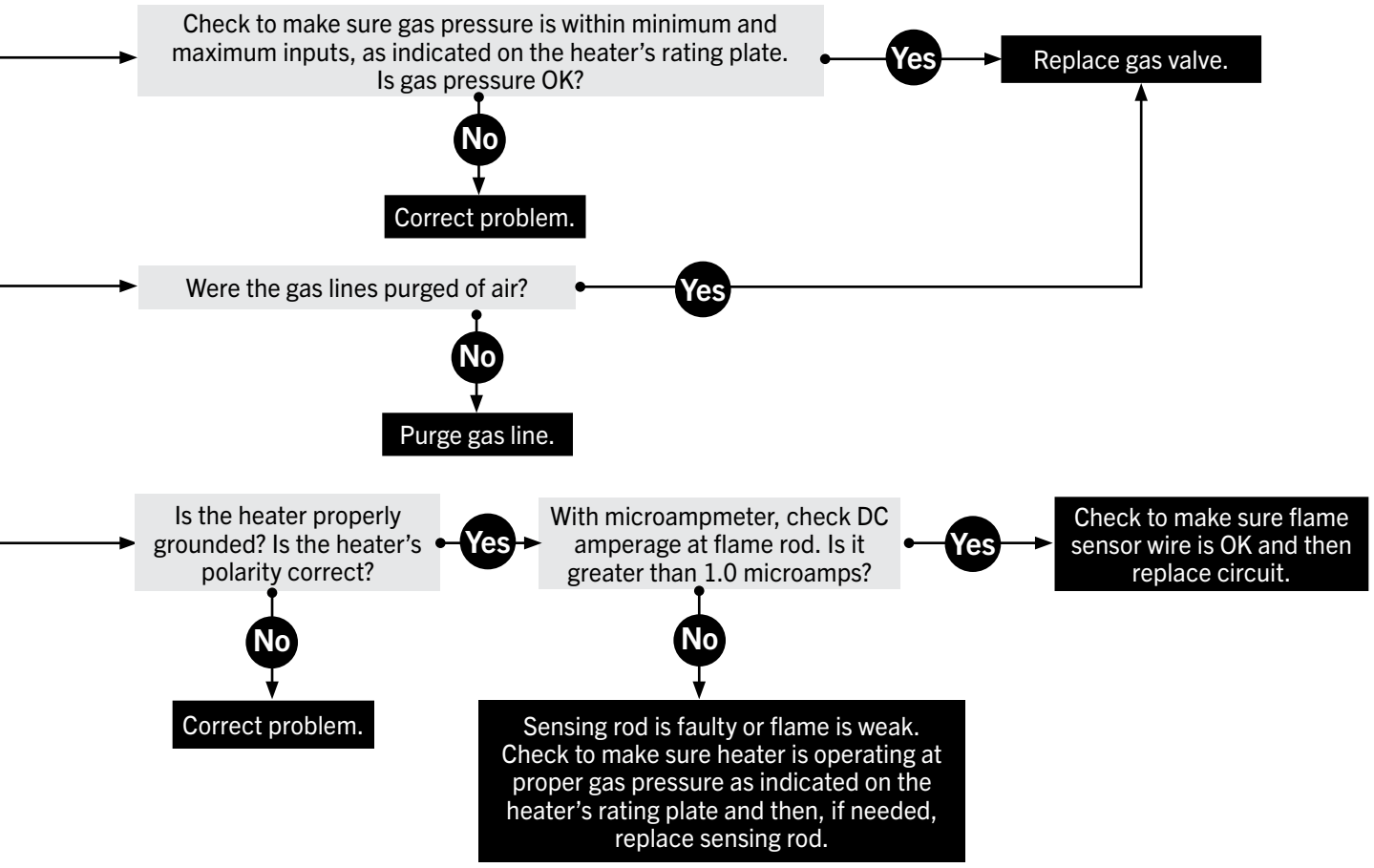
Replace the pressure switch after verifying:

- 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.13.

Continued from page 14

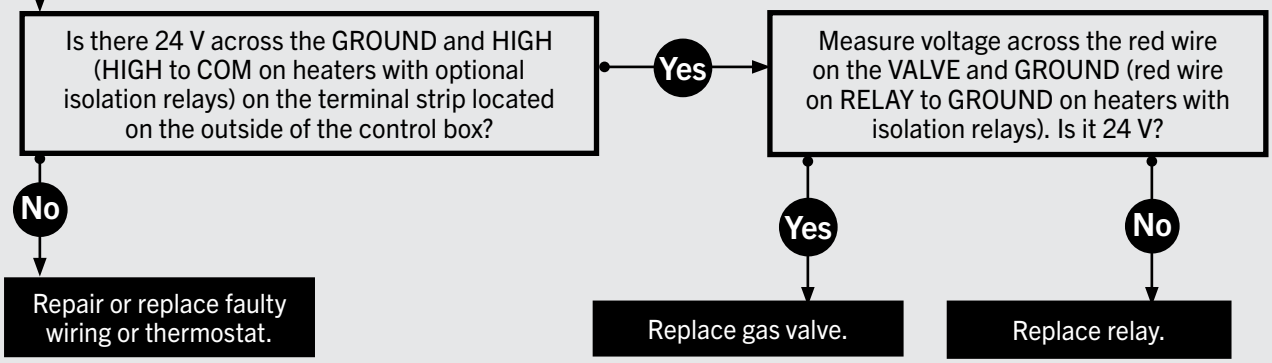




If heater does not go into high fire mode:

NOTE: To confirm that the heater is not in high fire mode, check manifold pressure. If manifold pressure is 3.3" to 3.5" for natural gas or 9" to 10" for propane, the light is faulty and should be replaced.

When the heater is in low fire mode, manifold pressure is approximately 2.0" to 2.5" for natural gas or 5.0" to 6.5" for propane. If this is the case, the following troubleshooting steps should be followed:



5.0 Parts

Figure 5.1 • Burner Assembly Components

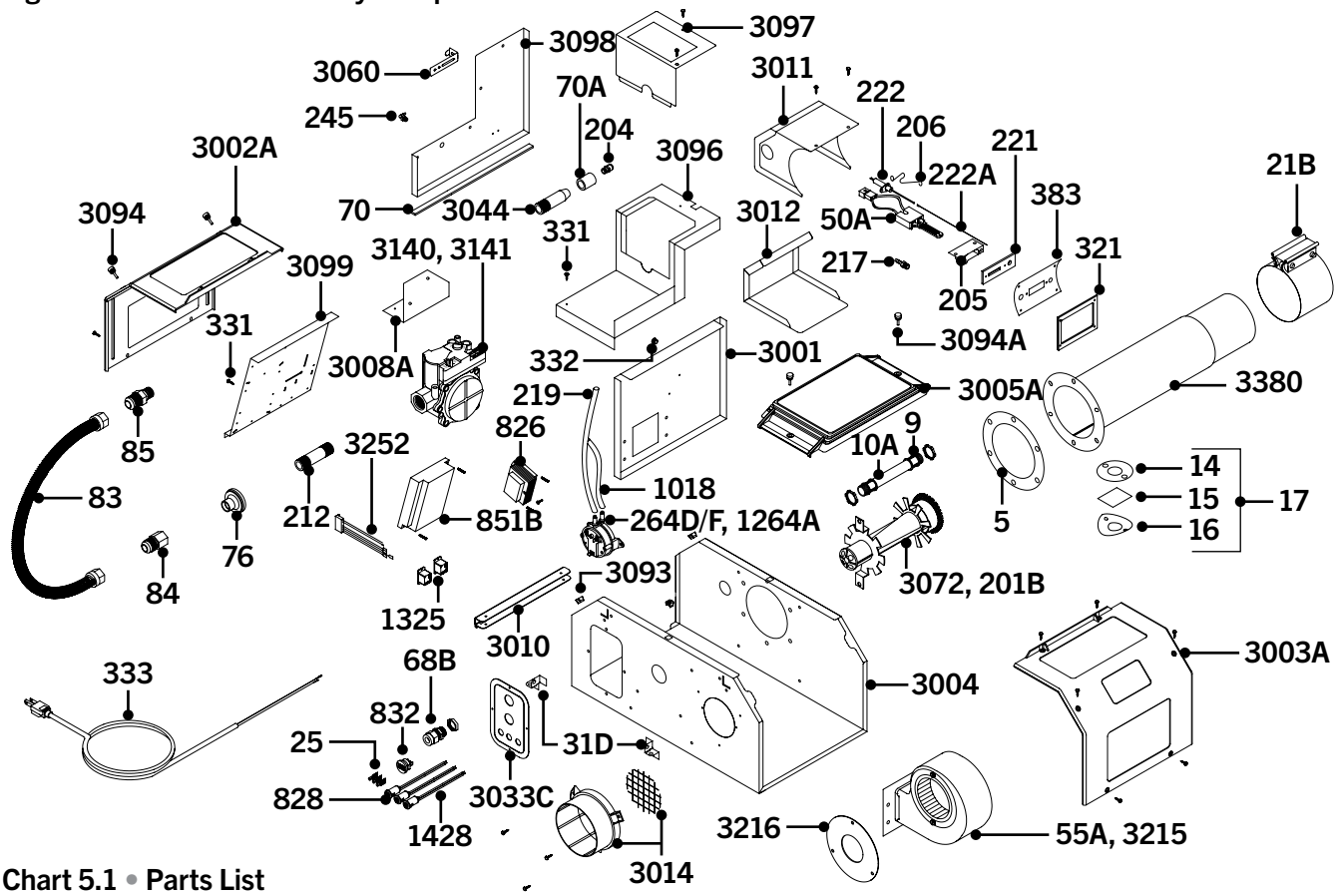


Chart 5.1 • Parts List

Part #	Description	Part #	Description
TP-5	Flange Gasket	TP-70	1/2 in. Control Box Gasket (10.3 inches)
TP-9	Conduit Coupling	TP-70A	1 in. Control Box Gasket (6 inches)
TP-10A	Conduit 4” x 3/4”	TP-76	Rubber Grommet
TP-14	Sight Glass Gasket	TP-82	Reflector Center Support (RCS)
TP-15	Sight Glass	TP-83	24 in. Stainless Steel Flexible Gas Connector
TP-16	Sight Glass Washer	TP-84	1/2 in. Female / Male Flare Fitting
TP-17	Sight Glass Kit	TP-85	1/2 in. Male / Male Flare Fitting
TP-19B	4 in. Wire Hanger with Tension Spring	TP-105	Aluminum Reflector End Cap
TP-20C	120 in. Aluminum Reflector	TP-106	Reflector End Cap Clips (8 pcs.)
TP-20D*	120 in. Stainless Steel Reflector	TP-113	Reflector Tension Spring
TP-21B	4 in. Standard Tube Clamp	TP-201B	V.3 Mid-High Burner (Color Code - TAN)
TP-25	1/4 in. Female Spade Terminal (Qty. 3)	TP-204	Gas Orifice (consult factory)
TP-26A	10 ft. Aluminized Radiant / Combustion Tube	TP-205	Glo-Bar™ Holder
TP-26B	10 ft. Titanium Coated Combustion Tube	TP-206	Glo-Bar™ Holder Spring Clip
TP-26D*	10 ft. 304 Stainless Steel Radiant Tube	TP-212	1/2” x 3” Pipe Nipple
TP-26E*	10 ft. 409 Stainless Steel Combustion Tube	TP-217	Brass Pressure Switch Barb Fitting
TP-31D	Interlocking Mounting Bracket (Qty. 2)	TP-219	Differential Vinyl Sensing Tube (burner)
TP-50A	Glo-Bar™ Igniter	TP-220	Stainless Steel Tube Clamp (150 & 200 MBH)
TP-55A	1/20 hp Inducer Assembly (50-150 MBH)	TP-221	Glo-Bar™ Holder Gasket
TP-65I	36 in. Interlocking Turbulator Baffle	TP-222	Flame Rod
TP-68B	Large Strain Relief Bushing	TP-222A	Flame Rod Wire

* Optional upgrade or add-on item.

Figure 5.2 • Tube and Reflector Components

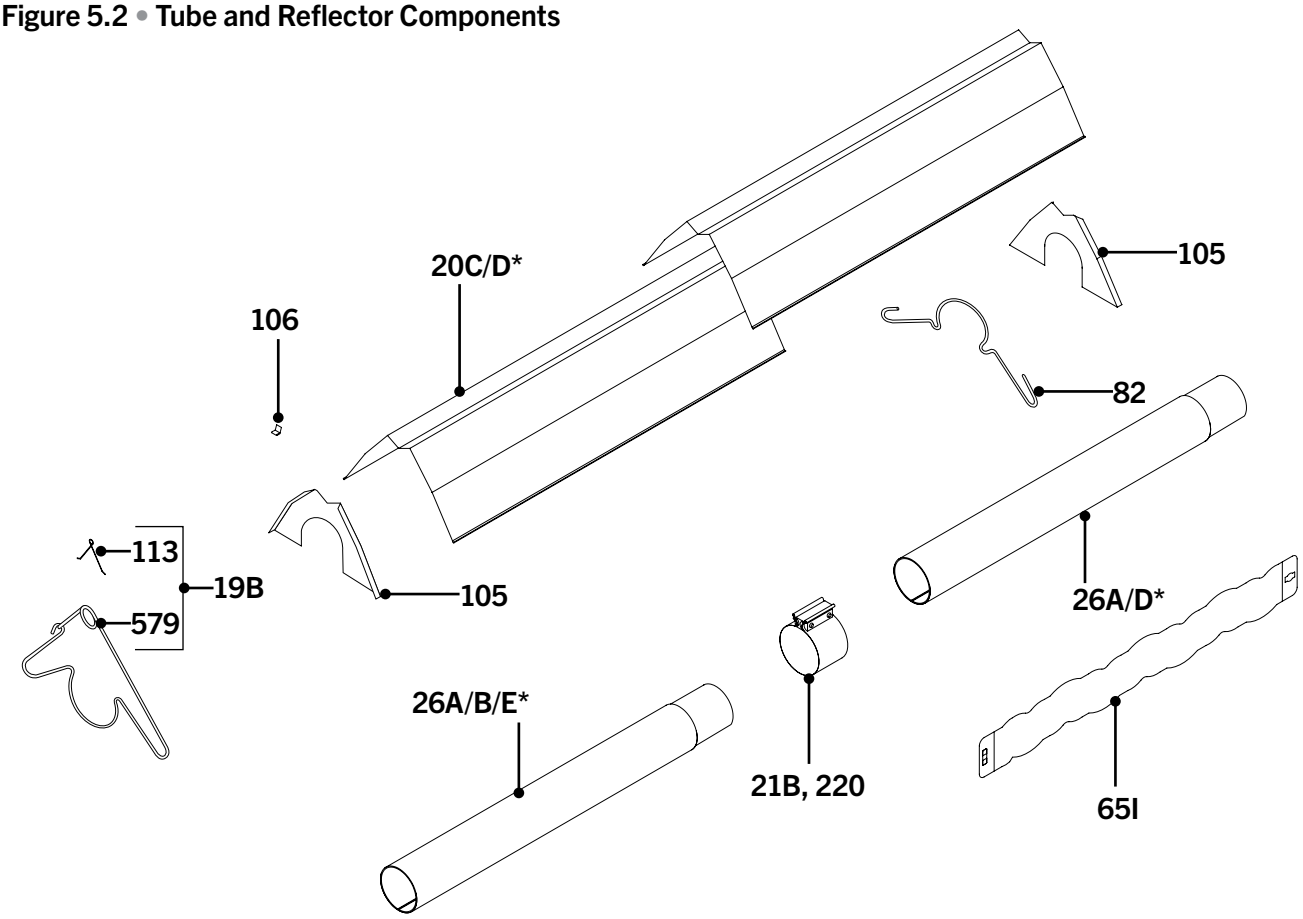


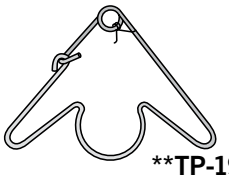
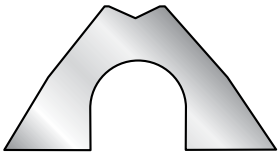
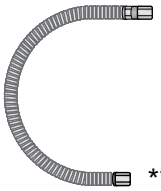
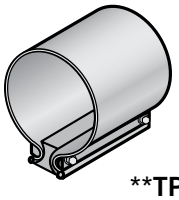
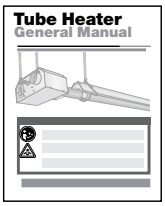
Chart 5.2 • Parts List

Part #	Description	Part #	Description
TP-245	3/16" X 1/8" Plastic Gas Valve 90° Vent	TP-3008A	Gas Valve Mounting Bracket
TP-264D	Differential Pressure Switch, 65 to 75 MBH	TP-3010	Service Panel Hinge
TP-264F	Differential Pressure Switch, 150 to 200 MBH	TP-3011	V.3 Igniter Box
TP-321	Ignition Plate Gasket	TP-3012	V.3 Igniter Box Cover
TP-331	Green Self-Tap Ground Screw (Qty. 2)	TP-3014	Plastic Air Orifice with Screen
TP-332	Divider Grommet	TP-3033C	HL3 Power Entry Plate
TP-333	60 in. Black 120V Power Cord with Ground	TP-3044	Gas Manifold
TP-383	Glo-Bar™ Igniter Plate	TP-3060	V.3 Pressure Switch Mounting Bracket
TP-579	4 in. Wire Hanger w/o Tension Spring	TP-3072	Low BTU Burner (Color Code - GREEN)
TP-826	40VA Transformer	TP-3093	#8-23 Cage Nut (Qty. 4)
TP-828	24V Yellow Operational Indicator Light (Qty. 2)	TP-3094A	#8-32 x ½" Zinc Coated Steel Knurled Thumb Screw (Qty. 4)
TP-832	Thermostat Terminal Strip		
TP-851B	35-66 Diagnostic Circuit Board	TP-3096	Valve Compartment Bottom Panel
TP-1018	Differential Switch Vinyl Sensing Tube (exhaust)	TP-3097	Valve Compartment Top Panel
TP-1264A	Differential Pressure Switch, 100 to 125 MBH	TP-3098	Valve Compartment Side Panel
TP-1325	Optional HLRP Isolation Relay* (Qty. 2)	TP-3099	Controls Mounting Panel
TP-1428	24V Green Operational Indicator Light	TP-3140	36G54-224 Gas Valve - Natural Gas Assembly
TP-3001	Divider Panel	TP-3141	36G54-226 Gas Valve - Prop. Gas Assembly
TP-3002A	Plastic End Panel, Control Compartment	TP-3215	1/15 hp Inducer Assembly (175-200 MBH)
TP-3003A	Plastic End Panel, Fan Compartment	TP-3216	Reducer Plate (175-200 MBH)
TP-3004	V.3 Control Box	TP-3252	4-Piece Wire Harness Set
TP-3005A	Plastic Valve Chamber Lid	TP-3380	V.3 16" HSI Burner Tube w/ Flange and Fittings

* Optional upgrade or add-on item.

Kit Contents Check List

Chart 5.3 • Kit Contents for HL3 Series - Reference the length column for your model.

HL3 Series Kit Contents				
TP-19B 4" Hanger with Reflector Tension Spring  **TP-19C	**TP-82** 4" Reflector Center Support (RCS)  **TP-829	**TP-105** Reflector End Cap  **TP-105A	**TP-106** Reflector End Cap Clips 	**TP-25** 1/4" Female Spade Terminal 
TP-83 24" Stainless Steel Flexible Gas Connector  **TP-83A	**TP-21B** 4" Tube Clamp  **TP-220	**LIOGT3** General Manual 	**LIOHL3** HL3 Series Insert 	

Part No.	Description	20 ft.	30 ft.	40 ft.	50 ft.	60 ft.	70 ft.
TP-19B	4" Hanger w/ Tension Spring	3	4	5	6	7	8
TP-21B	4" Tube Clamp	2	3	4*	5*	6*	7*
TP-25	1/4" Female Spade Terminal	3	3	3	3	3	3
TP-82	4" Reflector Center Support	2	3	4	5	6	7
TP-83	24" S.S. Flexible Gas Connector	1	1	1	1	1	1
TP-105	Reflector End Cap	2	2	2	2	2	2
TP-106	Reflector End Cap Clips	8	8	8	8	8	8
LIOGT3	V3 General Tube Heater Manual	1	1	1	1	1	1
LIOHL3	HL3 Series Insert Manual	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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