Owner's Manual and Instructions

"Norseman" Heavy Duty Convection Construction Heaters

MODELS	OUTPUT (Btuh)	FUEL
320	200,000	Propane Vapor Withdrawal

Certification by:

MADE IN THE U.S.A.

CSA CERTIFIED

Congratulations!

You have purchased the finest convection construction heater available.

Your new L.B. White heater incorporates the benefits from the most experienced manufacturer of heating products using state-of-the-art technology.

We, at L.B. White, **thank you** for your confidence in our products and welcome any suggestions or comments you may have...call us, toll-free, at 1-800-345-7200.

ATTENTION ALL USERS

This heater has been tested and evaluated by C.S.A. International in accordance with Standard ANSI Z83.7• CSA 2.14 and is listed and approved as a direct fired vertical convection construction heater for use on combustible floors. This heater is intended for use as a portable, temporary heater for buildings under construction, alteration, or repair. If you are considering using this product for any application other than its intended use, then please contact your fuel gas supplier, or the L.B. White Co., Inc.

L.B.WHITE

Quality heaters you can count on.

W6636 L.B. White Rd., Onalaska, WI 54650 ■ (800) 345-7200 ■ (608) 783-5691 ■ (608) 783-6115, fax ■ info@lbwhite.com

⚠ GENERAL HAZARD WARNING

- Failure to comply with the precautions and instructions provided with this heater, can result in:
  - Death
  - Serious bodily injury or burns
  - Property damage or loss from fire or explosion
  - Asphyxiation due to lack of adequate air supply or carbon monoxide poisoning
  - Electrical shock
- Read this Owner's Manual before installing or using this product.
- Only properly-trained service people should repair or install this heater.
- Save this Owner's Manual for future use and reference.
- Owner's Manuals and replacement labels are available at no charge. For assistance, contact L.B. White at 800-345-7200.

⚠ WARNING

- Proper gas supply pressure must be provided to the inlet of the heater.
- Refer to data plate for proper gas supply pressure.
- Gas pressure in excess of the maximum inlet pressure specified at the heater inlet can cause fires or explosions.
- Fires or explosions can lead to serious injury, death, or building damage.
- Gas pressure below the minimum inlet pressure specified at the heater inlet may cause improper combustion.
- Improper combustion can lead to asphyxiation or carbon monoxide poisoning and therefore serious injury or death.

⚠ WARNING
Fire and Explosion Hazard

- Not for home or recreational vehicle use.
- Installation of this heater in a home or recreational vehicle may result in a fire or explosion.
- Fire or explosions can cause property

FOR YOUR SAFETY

If you smell gas:

1. Open windows.
2. Don't touch electrical switches.
3. Extinguish any open flame.
4. Immediately call your gas supplier.

FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

⚠ WARNING
Fire and Explosion Hazard

- Keep solid combustibles a safe distance away from the heater.
- Solid combustibles include wood or paper products, building materials and dust.
- Do not use the heater in spaces which contain or may contain volatile or airborne combustibles.
- Volatile or airborne combustibles include gasoline, solvents, paint thinner, dust particles or unknown chemicals.
- Failure to follow these instructions may result in a fire or explosion.
- Fire or explosions can lead to property damage, personal injury or loss of life.

Table of Contents

General Information

This Owner's Manual includes all options and accessories commonly used on this heater. However, depending on the configuration purchased, some options and accessories may not be included.

When calling for technical service assistance, or for other specific information, always have model number, configuration number and serial number available. This information is contained on the dataplate.

This manual will instruct you in the operation and care of your unit. Have your qualified installer review this manual with you so that you fully understand the heater and how it functions.

The gas supply line installation, installation of the heater, and repair and servicing of the heater requires continuing expert training and knowledge of gas heaters and should not be attempted by anyone who is not so qualified. See page 6 for definition of the necessary qualifications.

Contact your local L.B. White distributor or the L.B. White Co., Inc. for assistance, or if you have any questions about the use of the equipment or its application.

The L.B. White Co., Inc. has a policy of continuous product improvement. It reserves the right to change specifications and design without notice.

Heater Specifications

SPECIFICATIONS			Model
			320
Fuel Type			**Propane Gas**
Maximum Input (Kw)			58.6
Ventilation Air Required to Support Combustion (m^3/hr)			1456.6
Inlet Gas Supply Pressure Acceptable at the Inlet of the Pilot Safety Control Valve (KPa)		**MAX.**	158
		MIN.	158
Fuel Consumption Per Hour			4.2 Kg
Dimensions (Cm) L x W x H			46 x 33 x 61
Minimum Safe Distances From Nearest Combustible Materials	**TOP TO CEILING**		1.78 m
	SIDES		1.22 m
	FUEL CONTAINER		1.83 m
Minimum Ambient Temperature in Which Heater May Be Used			-29°C
Net Weight (Kg)			13.6
Shipping Weight (Kg)			15.4

Safety Precautions

⚠ WARNING
Asphyxiation Hazard

- Do not use this heater for heating human living quarters.
- Do not use in unventilated areas.
- The flow of combustion and ventilation air must not be obstructed.
- Proper ventilation air must be provided to support the combustion air requirements of the heater being used.
- Refer to the specification section of the heater's Owner's Manual, heater dataplate, or contact the L.B. White Company to determine combustion air ventilation requirements of the heater.
- Lack of proper ventilation air will lead to improper combustion.
- Improper combustion can lead to carbon monoxide poisoning leading to serious injury or death. Symptoms of carbon monoxide poisoning can include headaches, dizziness and difficulty in breathing.

FUEL GAS ODOR

Propane gas and natural gas have man-made odorants added specifically for detection of fuel gas leaks.
If a gas leak occurs, you should be able to smell the fuel gas.
THAT'S YOUR SIGNAL TO GO INTO IMMEDIATE ACTION!

- Do not take any action that could ignite the fuel gas. Do not operate any electrical switches. Do not pull any power supply or extension cords. Do not light matches or any other source of flame. Do not use your telephone.
- Get everyone out of the building and away from the area immediately.
- Close all propane gas tank or cylinder fuel supply valves, or the main fuel supply valve located at the meter if you use natural gas.
- Propane gas is heavier than air and may settle in low areas. When you have reason to suspect a propane leak, keep out of all low areas.
- Use your neighbor's phone and call your fuel gas supplier and your fire department. Do not re-enter the building or area.
- Stay out of the building and away from the area until declared safe by the firefighters and your fuel gas supplier.
- **FINALLY,** let the fuel gas service person and the firefighters check for escaped gas. Have them air out the building and area before you return. Properly trained service people must repair the leak, check for further leakages, and then relight the appliance for you.

ODOR FADING -- NO ODOR DETECTED

- **Some people cannot smell well. Some people cannot smell the odor of the man-made chemical added to propane or natural gas. You must determine if you can smell the odorant in these fuel gases.**
- Learn to recognize the odor of propane gas and natural gas. Local propane gas dealers will be more than happy to give you a scratch and sniff pamphlet. Use it to become familiar with the fuel gas odor.
- Smoking can decrease your ability to smell. Being around an odor for a period of time can affect your sensitivity to that particular odor.
- **The odorant in propane gas and natural gas is colorless and the intensity of its odor can fade under some circumstances.**
- If there is an underground leak, the movement of gas through the soil can filter the odorant.
- Propane gas odor may differ in intensity at different levels. Since propane gas is heavier than air, there may be more odor at lower levels.
- **Always be sensitive to the slightest gas odor.** If you continue to detect any gas odor, no matter how small, treat it as a serious leak. Immediately go into action as discussed previously.

ATTENTION -- CRITICAL POINTS TO REMEMBER!

- Propane gas has a distinctive odor. Learn to recognize these odors. (Reference Fuel Gas Odor and Odor Fading sections above.
- If you have not been properly trained in repair and service of propane gas and natural gas fueled heaters then do not attempt to light heater, perform service or repairs, or make any adjustments to the heater on the propane gas fuel system.
- Even if you are not properly trained in the service and repair of the heater, ALWAYS be consciously aware of the odors of propane gas and natural gas.
- A periodic sniff test around the heater or at the heater's joints; i.e. hose, connections, etc., is a good safety practice under any conditions. If you smell even a small amount of gas, CONTACT YOUR FUEL GAS SUPPLIER IMMEDIATELY. DO NOT WAIT!

1. Do not attempt to install, repair, or service this heater or the gas supply line unless you have continuing expert training and knowledge of gas heaters.

   Qualifications for service and installation of this equipment are as follows:

   a. To be a qualified gas heater service person, you must have sufficient training and experience to handle all aspects of gas-fired heater installation, service and repair. This includes the task of installation, troubleshooting, replacement of defective parts and testing of the heater. You must be able to place the heater into a continuing safe and normal operating condition. You must completely familiarize yourself with each model heater by reading and complying with the safety instructions, labels, Owner's Manual, etc., that is provided with each heater.

   b. To be a qualified gas installation person, you must have sufficient training and experience to handle all aspects of installing, repairing and altering gas lines, including selecting and installing the proper equipment, and selecting proper pipe and tank size to be used. This must be done in accordance with all local, state and national codes as well as the manufacturer's requirements.

2. All installations and applications of L.B. White heaters must meet all relevant local, state and national codes. Included are propane gas, natural gas, electrical, and safety codes. Your local fuel gas supplier, a local licensed electrician, the local fire department or similar government agencies, or your insurance agent can help you determine code requirements.

   Also refer to:

   -- CSA B149.1, Natural Gas and Propane Installation Code.

3. We cannot anticipate every use which maybe made of our heaters. Check with the local fire safety authority if you have questions about applications.

4. The heater shall be installed so that it is not directly exposed to water spray, rain, or dripping water.

5. Do not locate fuel gas containers or fuel supply hoses anywhere near the heat outlet of the heater.

6. Do not block air intakes or discharge outlets of the heater. Doing so may cause improper combustion or damage to heater components leading to property damage.

7. The hose assembly shall be visually inspected on a daily basis after heater relocation and when the heater is in use. If it is evident there is excessive abrasion or wear, or if the hose is cut, it must be replaced prior to the heater being put into operation. The hose assembly shall be protected from building materials, and contact with hot surfaces during use. The hose assembly shall be that specified by the manufacturer. See parts list.

8. Check for gas leaks and proper function upon heater installation, when relocating, and after servicing. Refer to leak check instructions within installation section of this manual.

9. This heater should be inspected for proper operation by a qualified service person before each use and at least annually.

10. Always turn off the gas supply to the heater if the heater is not going to be used in the heating of the work space.

11. If gas flow is interrupted and flame goes out, do not relight the heater until you are that all gas that may have accummulated has cleared away. In any event, do not relight the heater for at least 5 minutes.

12. Minimum propane gas supply cylinder size to be used shall be 100 pounds when using a cylinder supply system. The system must be arranged to provide vapor withdrawal from the operating cylinder.

13. When the heater is to be stored indoors, the connection between the propane gas supply cylinder(s) and the heater must be disconnected and the cylinder(s) removed from the heater and stored in accordance with CSA B149.1, Natural Gas and Propane Installation Code.

14. Propane gas supply containers have left handed threads. Always use the appropriate wrench to make a connection to tighten or loosen the P.O.L. fitting at the cylinders' gas supply valve.

Installation Instructions

GENERAL

1. Read all safety precautions and follow L. B. White recommendations when installing this heater. If during the installation or relocating of heater, you suspect that a part is damaged or defective, call a qualified service agency for repair or replacement.

2. Make sure the heater is properly installed before use. Observe and obey all minimum safe distances of the heater to the nearest combustible materials. Safe distances are given on the heater dataplate and on page 4 of this manual.

3. The heater is approved for indoor use only.

4. The heater's gas pressure regulator (with pressure relief valve) must be protected from adverse weather conditions (rain, ice, snow) as well as from building materials (tar, concrete, plaster, etc.) which can affect safe operation and could result in property damage or injury.

5. Heaters used in the vicinity of combustible tarpaulins, canvas, plastics, wind barriers, or similar coverings shall be located at least 10 feet from the coverings. The coverings shall be securely fastened to prevent ignition or upsetting of the heater due to wind action on the covering or other material.

6. A qualified service agency must check for proper operating gas pressure upon installation of the heater.

7. Light according to instructions on heater or within owner's manual.

8. Make sure the heater has the proper gas regulator for the application. A regulator must be connected to the gas supply so that gas pressure at the inlet to the gas valve is regulated within the range specified on the dataplate at all times. Contact your gas supplier, or the L.B. White Co., Inc. if you have any questions.

9. This heater is configured for use for propane gas vapor withdrawal only. Do not use the heater in a propane gas liquid withdrawal system or application. If you are in doubt, contact the L.B. White Co., Inc.

10. Take time to understand how to operate and maintain the heater by using this Owner's Manual. Make sure you know how to shut off the gas supply to the building and also to the individual heater. Contact your fuel gas supplier if you have any questions.

11. Any defects found in performing any of the service or maintenance procedures must be eliminated and defective parts replaced immediately. The heater must be retested by properly qualified service personnel before placing the heater back into use.

12. Check all connections for gas leaks using approved gas leak detectors. Gas leak testing is performed as follows:

⚠ WARNING
Fire and Explosion Hazard

- Do not use open flame (matches, torches, candles, etc.) in checking for gas leaks.
- Use only approved leak detectors.
- Failure to follow this warning can lead to fires or explosions.
- Fires or explosions can lead to property damage, personal injury or loss of life.

-- Check all pipe connections, hose connections, fittings and adapters upstream of the gas control with approved gas leak detectors.

-- In the event a gas leak is detected, check the components involved for cleanliness and proper application of pipe compound before further tightening.

-- Furthermore tighten the gas connections as necessary to stop the leak.

-- After all connections are checked and any leaks are stopped, turn on the main burner.

-- Stand clear while the main burner ignites to prevent injury caused from hidden leaks that could cause flashback.

-- With the main burner in operation, check all connections, hose connections, fittings and joints as well as the gas control valve inlet and outlet connections with approved gas leak detectors.

-- If a leak is detected, check the components involved for cleanliness in the thread areas and proper application of pipe compound before further tightening.

-- Tighten the gas connection as necessary to stop the leak.

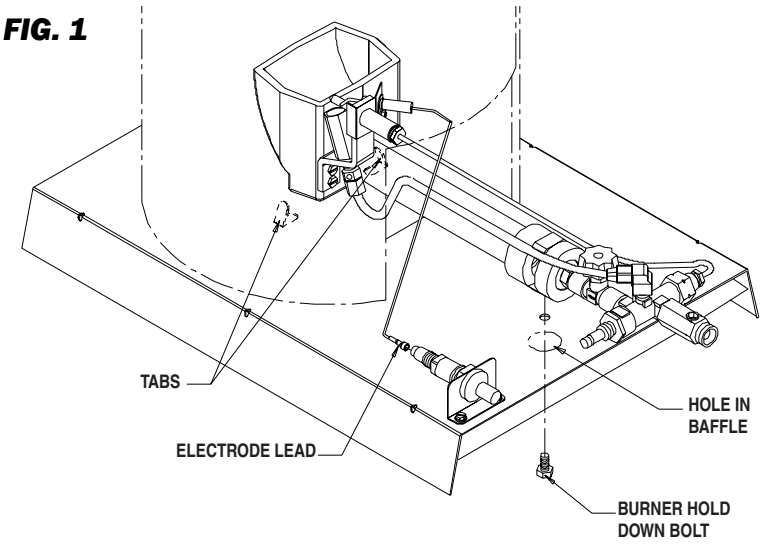
-- If necessary, replace the parts or components involved if the leak cannot be stopped.

-- Ensure all gas leaks have been identified and repaired before proceeding.

BURNER AND IGNITER ASSEMBLY

1. Remove hex bolt from underside of burner.
2. Position pre-assembled burner and gas control into case assembly of heater:
   a. Locate burner head between tabs in base.
   b. Align burner mounting holes in base and baffle with tapped hole in burner casting.
3. Fasten burner to base using bolt removed in Step 1. Tighten securely.
4. Connect electrode lead to igniter terminal.

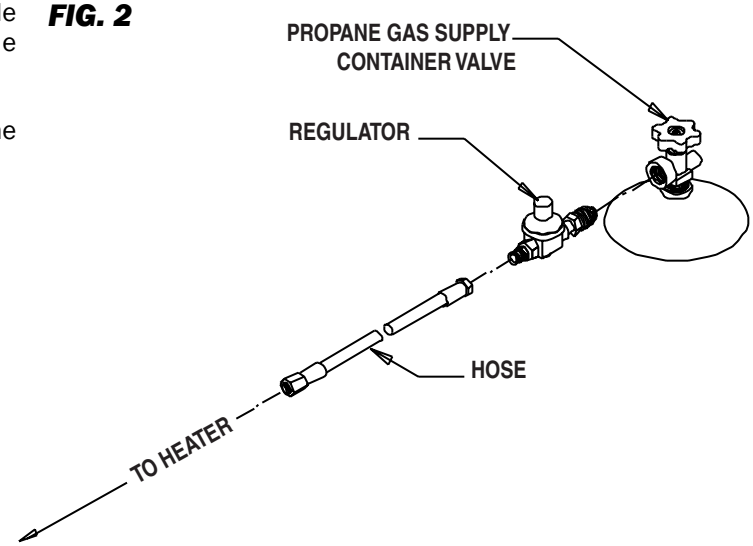
FIG. 1



HOSE AND REGULATOR ASSEMBLY

1. Always use approved pipe thread compound suitable for use with propane gas or natural gas on the threaded connections.
2. Assemble the components together according to the figure and tighten all connections securely.

FIG. 2



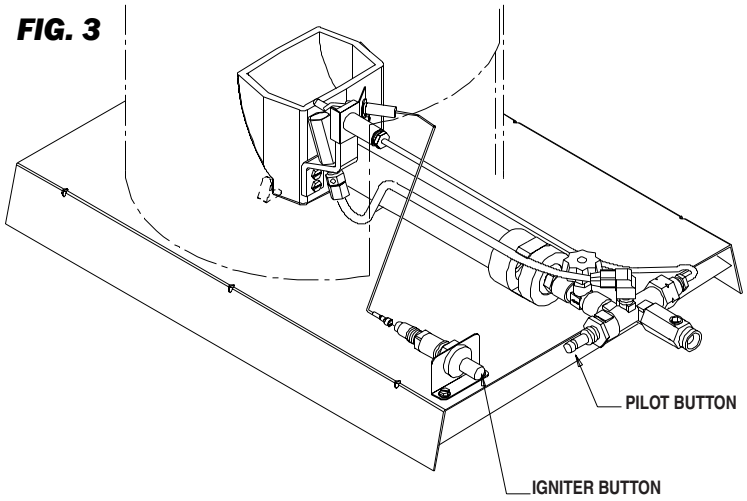
Start-Up Instructions

⚠ WARNING
Fire or Explosion Hazard

- Use only your hand to depress the gas control button. Never use any tools.
- If the button will not depress by normal hand pressure, the control should be replaced by a qualified service person.
- Force or attempted repair may result in a fire or explosion causing property damage, severe injury, or death.

1. Close manual main burner valve on heater.
2. Slowly open the propane gas supply container valve.
3. Fully depress the button on the pilot safety control valve while pushing the igniter button.
4. Keep the pilot button depressed for about 30 seconds to allow the thermocouple to warm up.
5. Open the manual main burner valve located between the pilot safety control and burner.

FIG. 3



ATTENTION

- On new installations it will take a short time for gas to purge out any air in the pilot line and hose before the pilot may be lit.

Shut-Down Instructions

A. To properly shut heater down after normal use, or when further use is anticipated:

-- Close manual main burner valve on heater.

B. To properly shut heater down for storage, or when further use is not anticipated:

1. Close propane gas supply container valve. Allow heater to burn off remaining gas in its hose.
2. Close manual main burner valve on heater.
3. Disconnect the heater from its gas supply.

Cleaning Instructions

⚠ WARNING
Fire, Burn, and Explosion Hazard

- This heater contains components used in the gas management, and safety systems.
- Such components may become inoperative or fail due to dust, dirt, wear and aging.
- Periodic cleaning and inspection as well as proper maintenance are essential to avoid serious injury or property damage.

1. Before cleaning, close all gas supply valves.
2. The heater should have dirt or dust removed periodically:
   a. Before each use give the heater a general cleaning using compressed air, a soft brush, or dry rag, on its case and internal components.
   b. At least once a year, give the heater a thorough cleaning. At this time, remove the burner assembly and brush and/or blow off the burner and related components.

⚠ WARNING

Do not use a pressure washer, water, or liquid cleaning solution on any gas controls. Use of a pressure washer, water, or liquid cleaning solution on the control components can cause severe personal injury or property damage due to water and/or liquids:

* On gas control valves causing corrosion which can result in gas leaks and fire or explosion from the leak.

Clean all components of the heater with pressurized air, a dry brush or a dry cloth.

Maintenance Instructions

1. The area surrounding the heater shall be kept clear and free from combustible materials, gasoline, and other flammable vapors and liquids.

2. Have your gas supplier check all gas piping annually for leaks or restrictions in gas lines.

3. Regulators must be periodically inspected to make sure the regulator vents are not blocked. Debris, insects, insect nests, snow, or ice on a regulator can block vents and cause excess pressure at the appliance.

4. Regulators can wear out and function improperly. Have your gas supplier check the date codes on all regulators installed and check delivery pressures to the heater to make sure that the regulator is reliable.

5. Review all heater markings (warnings, start-up, shut-down, etc.) at the time of maintenance for legibility. Make sure none are cut, torn, or otherwise damaged. Any damaged markings must be replaced immediately by contacting the L.B. White Co., Inc. Dataplates, start-up and shut-down instructions and warnings are available at no cost.

Service Instructions

A. General

⚠ WARNING
Burn Hazard

- Heater surfaces are hot for a period of time after shutdown.
- Allow heater to cool before servicing.
- Failure to follow this warning can result in burns.

⚠ WARNING
Fire and Explosion Hazard

- Do not disassemble or attempt to repair any heater component, including gas hose and regulators.
- All components must be replaced if defects are found.
- Failure to follow this warning will result in fire or explosions leading to property damage, serious injury, or death.

1. Close fuel supply valves to heater and allow heater to burn off remaining fuel in its hose before servicing, unless it is necessary to have the valves open for the service procedure.

2. Clean the heater's orifices with compressed air or a soft rag. Do not use files, drills, broaches, etc. to clean the orifice hole. Doing so will enlarge the hole, causing ignition or combustion problems. Replace the orifice if it cannot be cleaned properly.

3. Reverse the respective service procedure to reassemble. Ensure gas connections are tightened securely.

4. After repair, light the heater. Check for proper operation and for gas leaks.

B. Initial Preparation

1. Remove burner retaining bolt from heater base.

2. Disconnect electrode lead from igniter if necessary.

3. Pull burner assembly from case.

C. Burner Orifice Removal

1. Disconnect compression nut from brass elbow and thermocouple from pilot control valve. See Fig. 4.

2. Carefully reposition pilot line and thermocouple away from safety control valve.

3. Disassemble the following: See Fig. 5.

   -- Pilot control with manual valve from burner orifice

   -- Burner orifice from burner casting

4. Clean the burner orifice.

FIG. 4

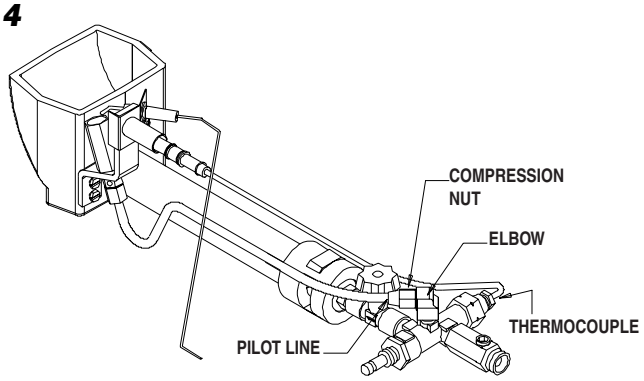
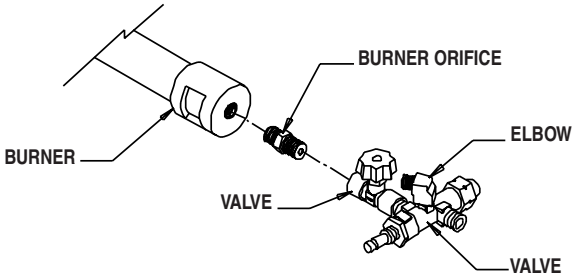


FIG. 5



D. Pilot Orifice

1. Loosen compression nut at pilot orifice and carefully reposition pilot tube away from the orifice. See Fig. 6.
2. Remove pilot orifice from pilot head and screen from orifice inlet.
3. Ensure orifice hole is not plugged.

E. Thermocouple

1. Loosen attachment nut at pilot assembly and connector nut at safety control valve. Remove thermocouple. See Fig. 6.
2. At reassembly, avoid sharp bends or kinks in thermocouple to prevent damage.

F. Electrode

1. Remove electrode lead from igniter terminal.
2. Remove mounting screw from electrode mounting bracket and pull electrode from bracket. See Fig. 6.
3. At reassembly, ensure electrode gap is 1/16 in. See Fig. 7.

FIG. 6

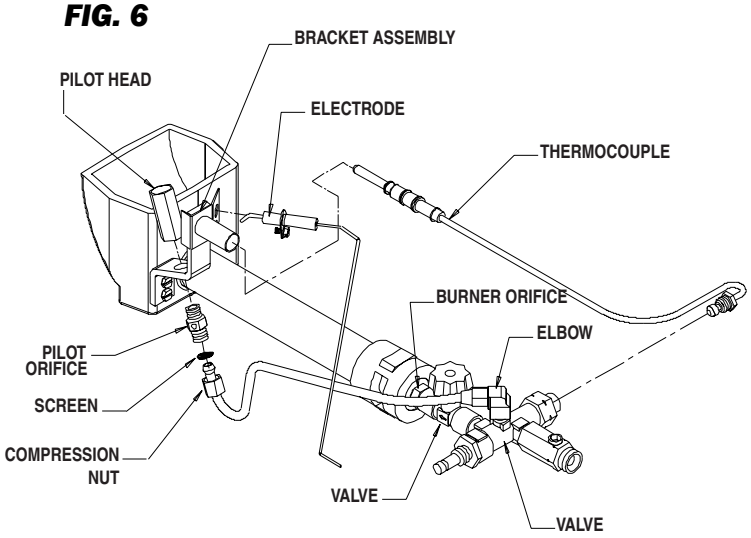
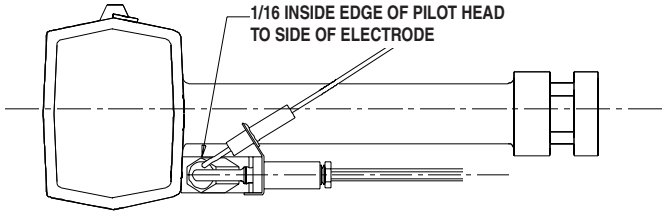


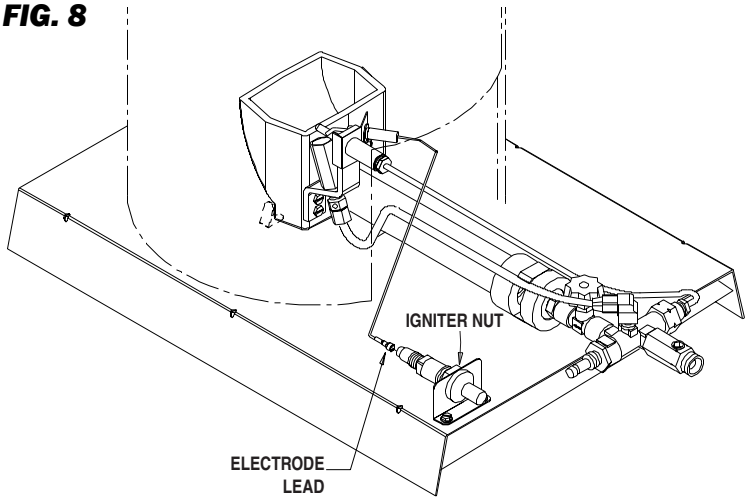
FIG. 7



G. Igniter

1. Remove electrode lead from igniter terminal.
2. Remove igniter mounting nut and pull igniter from its bracket.

FIG. 8



Servicing of the igniter and electrode is needed when a spark at the electrode is not seen. This may happen with hard use over a long period of time, or due to dust and dirt accumulation.

If you do not see a spark being generated at the electrode check the following areas:

Igniter

1. Pull the wire from the push button igniter.
2. Place a metal object, grounded to case, (such as a screwdriver tip) about 1/8 in. from igniter.
3. Push the igniter's button several times. If spark is not seen, replace igniter.

Electrode

1. Ensure the wire between the electrode and the igniter is properly connected.
2. Check the lead for nicks, cuts, or mars. Nicks or cuts will prevent a spark from being generated at the electrode tip. Replace the electrode if necessary. The electrode ships with the lead.
3. Ensure the electrode tip is not out of position and is not corroded. The tip should be located approximately 1/16 in. from inside of pilot head.
4. Verify that the electrode's ceramic body is not cracked and that the electrode tip does not move within its body. If it does, replace the electrode.

ATTENTION

- This procedure is to be done once a year prior to the heating season, anytime the heater is moved from one job location to the next, or after servicing the heater.

MATERIALS REQUIRED

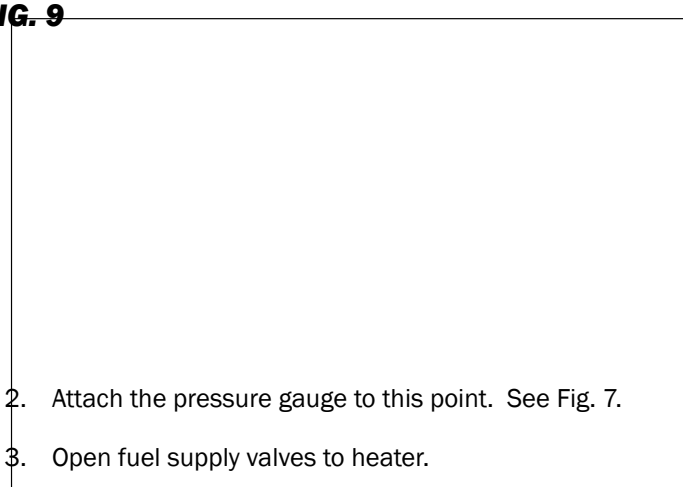
(To be secured through local purchase)

Quantity	Description
1	High Pressure Gas Gauge capable of reading up to 35 PSIG

A. GAUGE INSTALLATION

1. Using a 3/16 in. allen wrench, remove the hex plug from valve inlet. See Fig. 9.

FIG. 9



2. Attach the pressure gauge to this point. See Fig. 7.
3. Open fuel supply valves to heater.

B. READING PRESSURES

1. Light the heater. With the heater operating, the pressure gauge should read the pressure specified on the dataplate or in the specification section of this owner's manual.
2. Does the pressure reading agree with that given on the dataplate? If so, no further checking or adjustment is required. Proceed to section D.
3. If the pressures does not agree with that specified on the dataplate, check the following:

   -- Improper regulator for heater.

   -- Regulator out of adjustment. (Replace if necessary).

   -- Blockage in gas hose.

   -- Insufficient size or quantity of propane gas supply containers.

C. COMPLETION

1. Once the proper pressure has been confirmed, close fuel supply valves.
2. Allow heater to burn off fuel remaining in gas supply line.
3. Remove gauge, hose adapter, nipple and tee.
4. Install hex plug. Tighten securely.

Troubleshooting Information

PROBLEMS	CAUSES	REMEDIES
1. Pilot will not light.	* Fuel supply valves closed.	* Open fuel supply valves.
	* Pilot button not fully depressed.	* Depress pilot button completely.
	* Pilot orifice is plugged.	* Clean or replace pilot orifice.
	* Inlet screen at pilot orifice is plugged.	* Clean or replace screen.
	* Restriction in gas hose or pilot line.	* Remove hose or pilot line from heater and blow out with compressed air or replace if necessary.
	* Air in gas line.	* Depress pilot button (normally 30 seconds is sufficient) on pilot valve to purge air from line (usually necessary at time of installation).
	* Defective pilot safety control valve.	* Replace pilot safety control valve.
	* No spark at electrode.	* See Problem #6.
2. Pilot lights but will not stay lit when pilot button is released.	* Restriction in gas hose or pilot line.	* See remedy for same cause in Problem #1.
	* Insufficient time allowed for pilot light to heat up thermocouple.	* Hold in pilot button for 30 seconds to allow proper warm up.
	* Loose thermocouple.	* Tighten thermocouple at gas control and make sure it is securely pushed into pilot bracket. Tighten finger tight and snug the contact nut with an appropriate wrench.
	* Defective thermocouple.	* Replace thermocouple.
	* Pilot orifice is plugged.	* See remedy for same in Problem #1.
	* Defective pilot safety control valve.	* Replace pilot safety control valve.
	* Improper gas pressure.	* Set pressure according to pressure on dataplate.
3. Main burner will not light	* Fuel supply valves closed on heater and at gas supply.	* Open all valves.
	* Pilot light not lit.	* Light the pilot.
	* Burner orifice plugged.	* Clean the burner orifice.
4. Burner flame lifting off burner.	* Fuel pressure set too high.	* Set pressure according to pressure on dataplate.
	* Blockages in burner orifice or at primary air inlets of burner.	* Clean suspected area with soft brush, dry cloth, or compressed air.
5. Heater not delivering maximum heat output.	* Gas supply valves not fully open.	* Open valves completely.
replace.	* Burner orifice plugged.	* Clean burner orifice with compressed air or
needs	* Low fuel supply pressure.	* Consult propane gas supplier. Cylinder or tank replacement or refill. Regulator needs adjustment. Check for use of proper regulation and fuel gas.
6. Electrode does not provide spark.	* Improper spark gap.	* Set spark gap to
	* Defective electrode or electrode lead.	* Replace electrode.
	* Defective igniter.	* Replace igniter.

Heater Component Function

Burner
Cast iron component used to channel gas and provide an area at which the fuel may ignite.

Burner Orifice
Brass metering device used to feed gas to burner at a specific rate.

Electrode
Ignites gas by spark. Receives spark voltage from piezo igniter.

Gas Hose
Flexible connector used to convey gas to heater.

Piezo Igniter
Generates ignition voltage when igniter button is pushed. This voltage is sent to electrode to provide spark.

Pilot Light Orifice
A metering device used to supply gas for the dual purpose of igniting the main burner and heating the thermocouple.

Pilot Safety Control Valve
A gas control valve which is held open by electrical power supplied by a pilot generator and which closes automatically to shut off the flow of gas to the main burner when the pilot flame is extinguished or becomes too small to light the main burner.

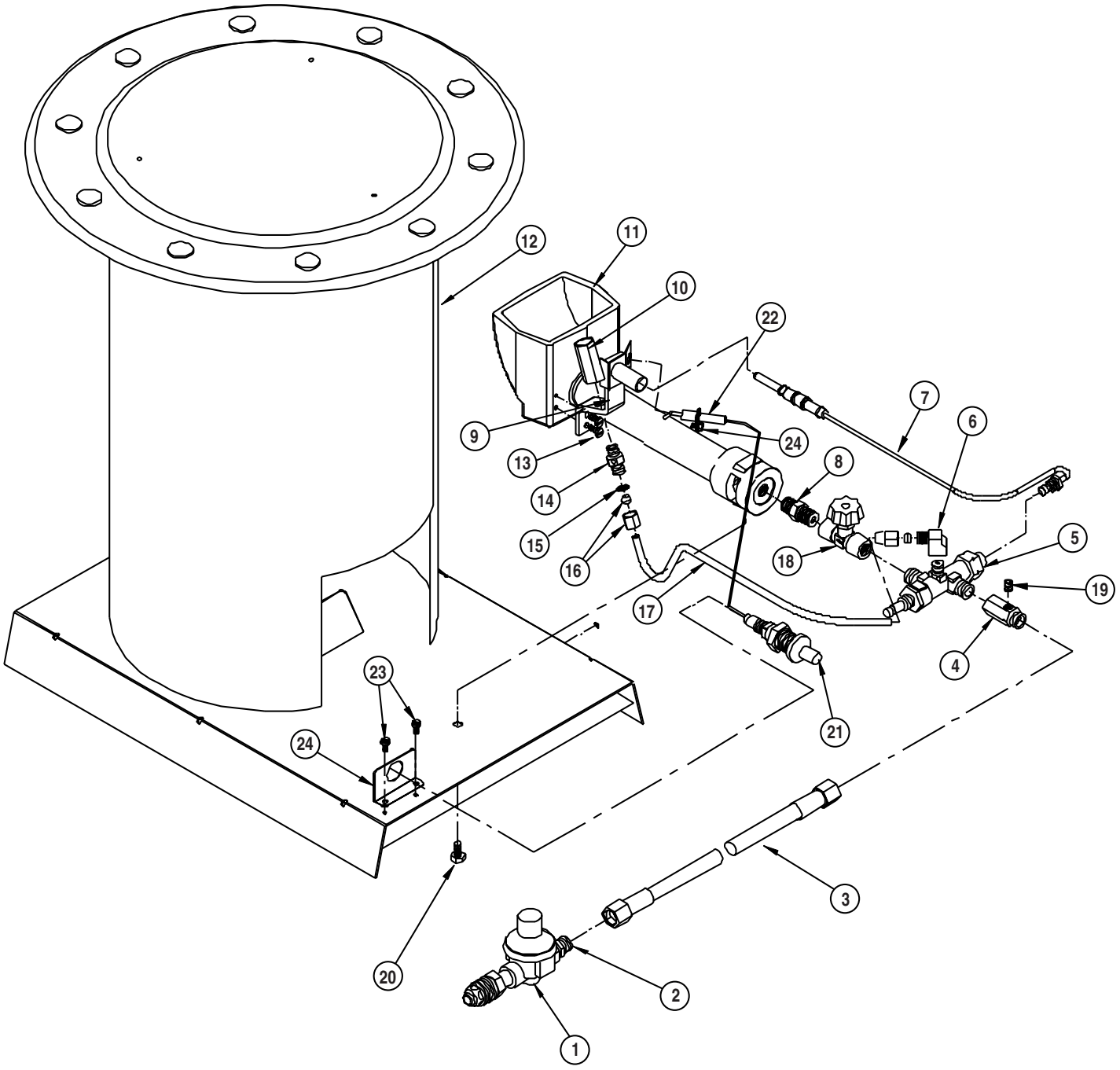
Pilot Tube
Formed copper tube used to convey gas from the safety control valve to the pilot light orifice. The tube is internally "tinned" when natural gas is used to resist the effects of sulphur in the fuel.

Regulator
The heart of any gas supply installation. Used to deliver a working pressure to the appliance under varying conditions in tank pressure.

Thermocouple
A thermoelectric device that converts heat energy directly into electrical energy. Works in conjunction with the electromagnet in the gas control valve thereby providing gas supply for the pilot light.

Parts Identification

PARTS SCHEMATIC



Item	Description	Part Number
1	Regulator, w/ POL and Hose Adapter	21788
2	Adapter, Hose	01098
3	Hose, 1/4 in. x 4.57 m	20500
4	Adapter, Hose, w/ Pressure Tap Plug	23633
5	Valve, Pilot Safety	07966
6	Ell w/nut and Sleeve	07968
7	Thermocouple	01090
8	Orifice Burner	22353
9	Bracket, Pilot, w/ Electrode Bracket and Bushing	23370
10	Head, Pilot	01079
11	Burner, Casting	03989
12	Case, Assembly w/Labels	23623
13	Screw	01213
14	Orifice, Pilot w/ Screen	01230
15	Screen	01722
16	Nut and Sleeve	01168
17	Tube, Pilot w/Nuts & Sleeves	20529
18	Valve, Manual Burner	20229
19	Plug, Pressure Tap	09271
20	Bolt	01151
21	Igniter	20280
22	Electrode, w/ Wire	20184
23	Screw	07288
24	Igniter Bracket	23372

Warranty Policy

EQUIPMENT

L.B. White Co., Inc. warrants that the component parts of its heater are free from defects in material and workmanship, when properly installed, operated, and maintained in accordance with the Owner's Manual safety guides and labels contained with each unit. If, **within 12 months from the date of purchase by the end user**, any component is found to be defective, L.B. White Co., Inc. will at its option, repair or replace the defective part or heater, with a new part or heater, F.O.B., Onalaska, Wisconsin. A warranty card on file at L.B. White will automatically qualify the heater and its component parts for warranty consideration. If a warranty card is not on file, a copy of the bill of sale will be required to establish warranty qualification. If neither is available, the warranty period will be 12 months from date of shipment from L B. White.

PARTS

L.B. White Co., Inc. warrants that replacement parts purchased from the company and used on the appropriate L. B. White heater are free from defects both in material and workmanship for **12 months from the date of purchase by the end user**. Warranty is automatic if a component is found defective within 12 months of the date code marked on the part. If the defect occurs more than 12 months later than the date code but within 12 months from the date of purchase by the end user, a copy of a bill of sale will be required to establish warranty qualification.

The warranty set forth above is the exclusive warranty provided by L.B. White, and all other warranties, including any implied warranties or merchantability or fitness for a particular purpose, are expressly disclaimed. In the event any implied warranty is not hereby effectively disclaimed due to operation of law, such implied warranty is limited in duration to the duration of the applicable warranty stated above. The remedies set forth above are the sole and exclusive remedies available hereunder. L.B. White will not be liable for any incidental or consequential damages directly or indirectly related to the sale, handling or use of the heater, and in any event L.B. White's liability in connection with the heater, including for claims based on negligence or strict liability, is limited to the purchase price.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Replacement Parts and Service

Contact your local L.B. White dealer for replacement parts and service or call the L.B. White Co., Inc. at 1-800-345-7200 for assistance. Be sure that you have your heater model number and configuration number when calling.