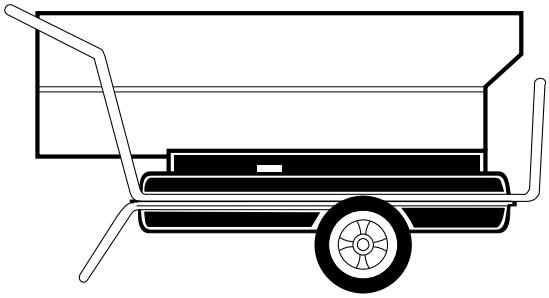
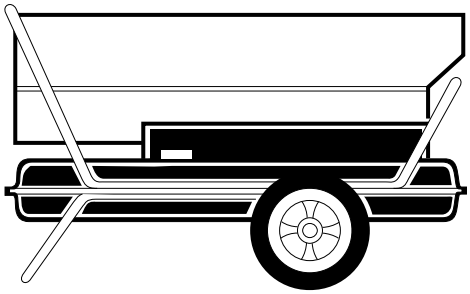
TRADESMAN K350 and K600

KEROSENE HIGH PRESSURE PORTABLE FORCED AIR HEATERS

OWNER'S MANUAL





With Thermostat
Heater Sizes: 350,000 and 600,000 Btu/Hr
Models: CP350AK and CP600AK

IMPORTANT: Read and understand this manual before assembling, starting, or servicing heater. Improper use of heater can cause serious injury. Keep this manual for future reference.

TABLE OF CONTENTS

Fill In For Your Records

Model No. _____
(Located on side panel)

Serial No. _____
(Located on fuel tank)

Date of Purchase: _____

L.B.WHITE®

ARL®

SAFETY INFORMATION

⚠ WARNINGS

⚠ WARNING: This product contains and/or generates chemicals known to the State of California to cause cancer or birth defects, or other reproductive harm.

IMPORTANT: Read this owner's manual carefully and completely before trying to assemble, operate, or service this heater. Improper use of this heater can cause serious injury or death from burns, fire, explosion, electrical shock, and carbon monoxide poisoning.

⚠ DANGER: Carbon monoxide poisoning may lead to death!

Carbon Monoxide Poisoning: Early signs of carbon monoxide poisoning resemble the flu, with headaches, dizziness, and/or nausea. If you have these signs, the heater may not be working properly. **Get fresh air at once!** Have heater serviced. Some people are more affected by carbon monoxide than others. These include pregnant women, persons with heart or lung disease or anemia, those under the influence of alcohol, and those at high altitudes.

Make certain you read and understand all warnings. Keep this manual for reference. It is your guide to safe and proper operation of this heater.

- Use only kerosene or No. 1 fuel oil to avoid risk of fire or explosion. Never use gasoline, naphtha, paint thinners, alcohol, or other highly flammable fuels.
- Fueling
  a) Personnel involved with fueling shall be qualified and thoroughly familiar with the manufacturer's instructions and applicable federal, state, and local regulations regarding the safe fueling of heating units.
  b) Only the type of fuel specified on the heater's data plate shall be used.
  c) All flame, including the pilot light, if any, shall be extinguished and the heater allowed to cool, prior to fueling.
  d) During fueling, all fuel lines and fuel-line connections shall be inspected for leaks. Any leaks shall be repaired prior to returning the heater to service.
  e) At no time shall more than one day's supply of heater fuel be stored inside a building in the vicinity of the heater. Bulk fuel storage shall be outside the structure.
  f) All fuel storage shall be located a minimum of 25 feet from heaters, torches, welding equipment, and similar sources of ignition (exception: the fuel reservoir integral with the heater unit).
  g) Whenever possible, fuel storage shall be confined to areas where floor penetrations do not permit fuel to drip onto or be ignited by a fire at lower elevation.
  h) Fuel storage shall be in accordance with the federal, state, or local authority having jurisdiction.
- Never use heater where gasoline, paint thinner, or other highly flammable vapors are present.
- Follow all local ordinances and codes when using heater.
- Heaters used in the vicinity of tarpaulins, canvas, or similar enclosure materials shall be located a safe distance from such materials. The recommended minimum safe distance is 10 feet. It is further recommended that these enclosure materials be of a fire retardant nature. These enclosure materials shall be securely fastened to prevent them from igniting or from upsetting the heater due to wind action.
- Use only in well vented areas. Before using heater, provide at least a three-square-foot opening of fresh, outside air for each 100,000 Btu/Hr of rating.
- Use only in places free of flammable vapors or high dust content.
- Use only with the electrical voltage and frequency specified on model plate.
- Heater must be grounded. Use only a properly grounded three-wire extension cord. Plug into grounded outlet only.
- Minimum heater clearances from combustibles:
  Outlet: 8 Ft. Sides: 4 Ft. Top: 4 Ft. Rear: 4 Ft.
- Locate heater on a stable and level surface while hot or running or a fire may occur.
- When moving or storing heater, keep heater in a level position or fuel spillage may occur.
- Keep children and animals away from heater.
- Never start heater when combustion chamber is hot or if fuel has accumulated in combustion chamber.
- Unplug heater when not in use.
- This heater has a built-in thermostat. Plugged-in heater may start at anytime.
- Never use heater in living or sleeping areas.
- Never block air inlet (rear) or air outlet (front) of heater.
- Never move, handle, refuel, or service a hot, operating, or plugged-in heater.
- Never attach duct work to front or rear of heater.
- Never use gasoline, crankcase drainings, naphtha, paint thinners, alcohol, or other highly flammable fuels.
- Never leave a heater plugged in without adult supervision if children or animals are likely to be present.
- **Warning to New York City Residents For Use Only At Construction Sites** in accordance with applicable NYC codes under NYCFD certificate of approval #4803, #4899, #4908, #4909, or #4934.

PRODUCT IDENTIFICATION

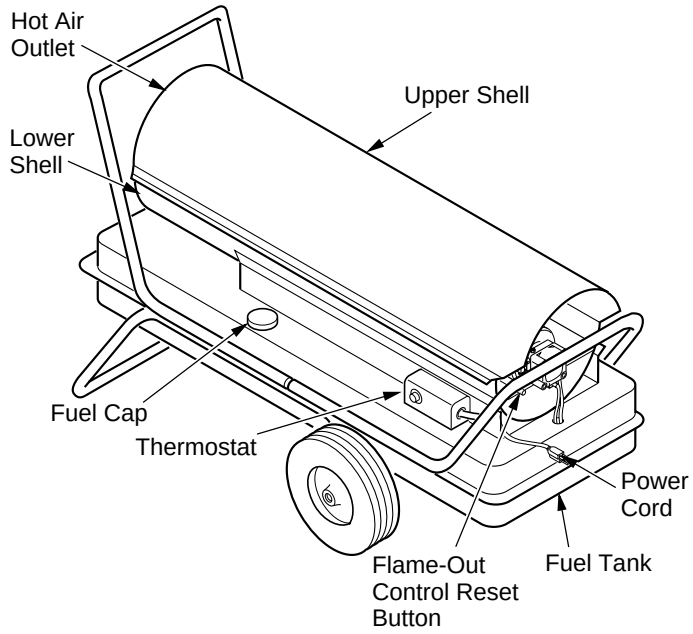


Figure 1 - 350,000 Btu/Hr Model

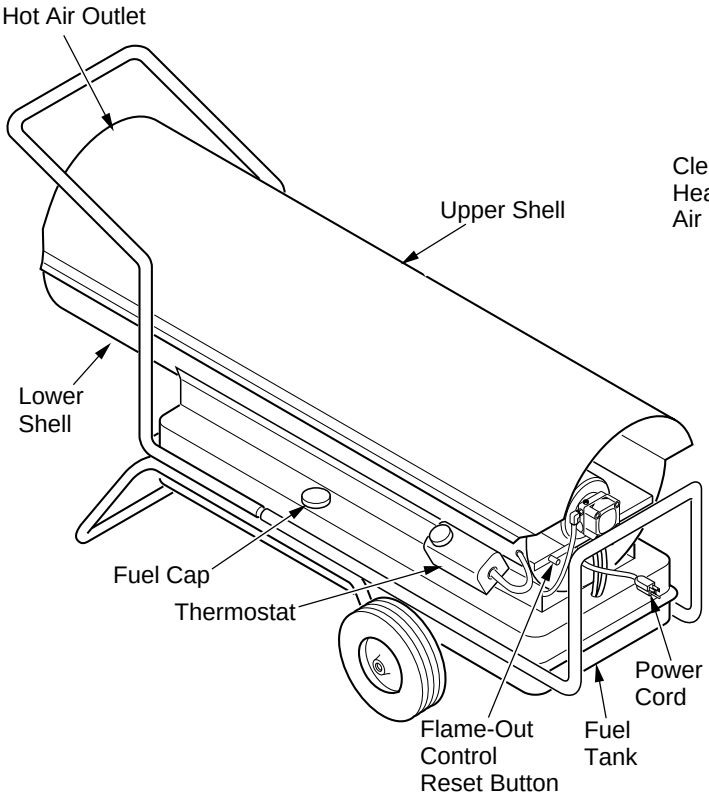


Figure 2 - 600,000 Btu/Hr Model

UNPACKING

1. Remove all protective packing applied to heater for shipment.
2. Remove heater from shipping container.
3. Check heater for any shipping damage. If heater is damaged, promptly inform dealer where you bought heater.

THEORY OF OPERATION

The Fuel System: The motor turns the fuel pump. The fuel pump pulls fuel from the fuel tank. The fuel pump pushes fuel through a filter and a solenoid valve and out the burner head nozzle. A fine mist of fuel is sprayed into the combustion chamber.

The Air System: The motor turns the fan. The fan pushes air into and around the combustion chamber. This air is heated and provides a stream of clean, hot air.

The Ignition System: The electronic ignitor sends voltage to the spark plug. The spark plug ignites the fuel and air mixture.

The Flame-Out Control System: This system causes the heater to shut down if the flame goes out. It also allows the fan to continue running after normal shutdown of heater. This cools the combustion chamber.

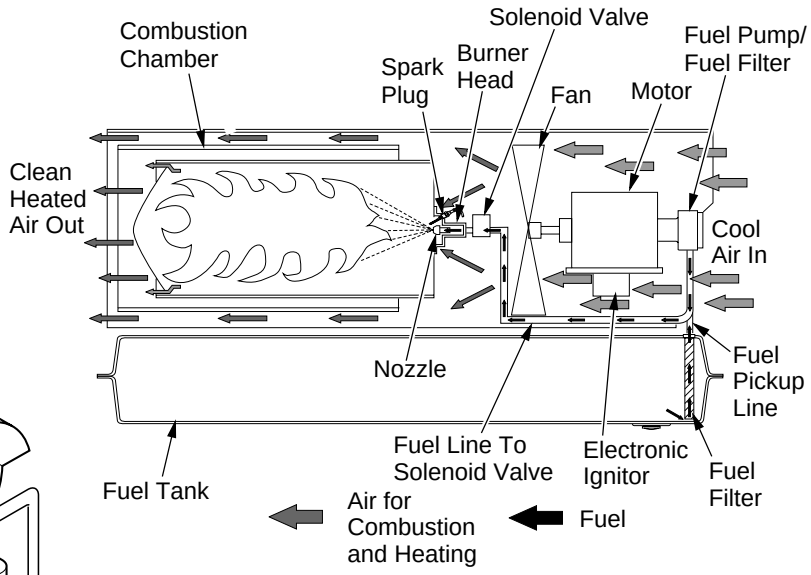


Figure 3 - Cross Section Operational View

FUELS

⚠ WARNING: Use only kerosene or No. 1 fuel oil to avoid risk of fire or explosion. Never use gasoline, naphtha, paint thinners, alcohol, or other highly flammable fuels.

Do not use heavy fuels such as No. 2 fuel oil or No. 2 diesel. Using heavy fuels will result in:

- clogged fuel filter and nozzle
- carbon build-up on spark plug
- the need of non-toxic anti-icer in fuel during very cold weather

IMPORTANT: Use a KEROSENE ONLY storage container. Be sure storage container is clean. Foreign matter such as rust, dirt, or water will cause flame-out control to shut down heater. Foreign matter may also require you to clean fuel system often.

VENTILATION

⚠ WARNING: Follow the minimum fresh, outside air ventilation requirements. If proper fresh, outside air ventilation is not provided, carbon monoxide poisoning can occur. Provide proper fresh, outside air ventilation before running heater.

Fresh Air Opening Requirements

Heater Size	Square Feet Opening
350,000 Btu/Hr	10.5
600,000 Btu/Hr	18.0

Note: If you use more than one heater, provide extra fresh air. Provide a fresh air opening of at least three square feet for each 100,000 Btu/Hr rating.

OPERATION

⚠ WARNING: Review and understand the warnings in the *Safety Information* section, page 2. They are needed to safely operate this heater.

TO START HEATER

1. Follow all ventilation and safety information.
2. Locate heater to provide maximum circulation of the heated air. Follow all location requirements noted in *Safety Information*, page 2.
3. Fill fuel tank with kerosene or No. 1 fuel oil.
4. Attach fuel cap.
5. Set thermostat dial to desired temperature. *Note:* Thermostat setting must be higher than surrounding air temperature.
6. Plug power cord of heater into three-prong, grounded extension cord. Extension cord must be at least six feet long.

⚠ WARNING: Use only a three-prong, grounded extension cord. Use cord with proper wire size to assure 120 volt operation. See *Extension Cord Wire Size Requirements* below.

Extension Cord Wire Size Requirements

6 to 100 feet long, use 14 AWG rated cord

101 to 200 feet long, use 12 AWG rated cord

201 to 300 feet long, use 10 AWG rated cord

301 to 400 feet long, use 8 AWG rated cord

401 to 500 feet long, use 6 AWG rated cord

7. Plug extension cord into standard 120 volt/60 hertz, three-hole, grounded outlet.
8. The motor will start when extension cord is plugged into outlet. The heater should ignite at once. If heater does not ignite, restart heater. To restart heater, wait 60 seconds, then push in flame-out control reset button. Flame-out control reset button is at rear of heater near power cord (see Figure 4).

Note: A cold heater may affect the thermostat setting. This thermostat is a general-heating control. It is not intended for precise temperature control. Adjust thermostat until heater cycles at the desired setting.

Note: If starting heater for first time, you may need to prime the pump. If equipped, slightly open bleeder valve of pump to allow air to escape. Quickly close valve once fuel is seen. Wipe up any excess fuel. If equipped with canister fuel filter, remove the canister bottom and fill with fuel. Reassemble filter. Wipe up any excess fuel. You may also have to do this after taking heater out of storage.

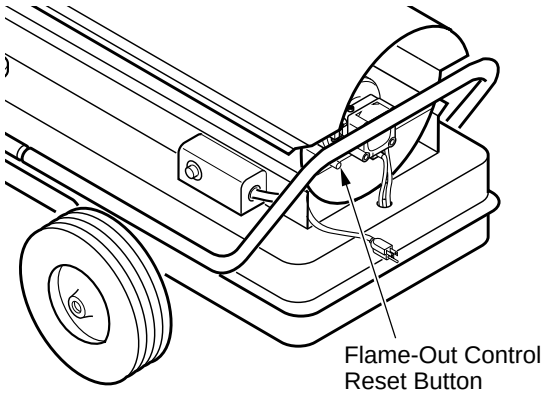


Figure 4 - Flame-Out Control Reset Button

OPERATION
Continued

TO STOP HEATER

⚠ CAUTION: Never unplug heater while heater is running. Heater must go through purge cycle. The purge cycle cools the combustion chamber. Damage to heater can occur if combustion chamber is not cooled. Do not restart heater until purge cycle is complete.

1. Turn thermostat dial to lowest temperature setting. This will cause heater flame to go out. The motor will continue to run during the purge cycle. This allows the fan to cool the combustion chamber. When the purge cycle is finished, the motor will stop. Do not unplug heater until purge cycle is finished.
2. Unplug extension cord from outlet.
3. To temporarily stop heater, set thermostat at a temperature lower than air around heater. Heater will cycle back on if air temperature around heater matches thermostat setting.

TO RESTART HEATER

⚠ CAUTION: Do not restart heater until purge cycle is finished. The purge cycle cools the combustion chamber.

1. Wait until purge cycle is finished after stopping heater.
2. Repeat steps under *To Start Heater,* page 4.

STORING, TRANSPORTING, OR SHIPPING

Note: If shipping transport companies require fuel tanks to be empty.

1. Drain all fuel from fuel lines and pump/filter (see *Fuel Filters*, page 11).
2. Clean and flush fuel filter in fuel pump if equipped (see *Fuel Filters*, page 11).
3. Remove drain plug and drain fuel tank.
4. Replace drain plug.
5. If any debris is noted in old fuel, add 1 or 2 quarts of clean kerosene to tank, stir, and drain again. This will prevent excess debris from clogging filters during future use.
6. Replace fuel cap or drain plug. Properly dispose of old and dirty fuel. Check with local automotive service stations that recycle oil.
7. Add two gallons (350,000 Btu/Hr) or three gallons (600,000 Btu/Hr) of clean kerosene or No. 1 fuel oil to fuel tank.
8. Replace fuel cap.
9. Operate heater for 5 minutes (see *Operation*, page 4).
10. Stop heater and let cool completely.
11. Remove drain plug and drain fuel tank.
12. Replace drain plug.
13. Properly dispose of old and dirty fuel.
14. If storing, store heater in a dry location. Make sure storage place is free of dust and corrosive fumes.

IMPORTANT: Do not store kerosene over summer months for use during next heating season. Using old fuel could damage heater.

OPERATION WITH PORTABLE GENERATOR

⚠ WARNING: Before operating heater or any appliance from a portable generator, verify that generator has been properly connected to earth ground. Improper grounding or failure to ground generator can result in electrocution if a ground fault occurs. Refer to owner's manual supplied by generator manufacturer for proper grounding procedures.

The operating voltage range of the heater is 108 to 132 Volts (120 Volts +/- 10%). Prior to plugging heater into generator the output voltage should be verified (if generator is equipped with the automatic idle feature, the output voltage should be measured with the generator running at full speed). If the voltage does not measure in this range the heater should not be plugged into the generator.

Refer to *Operation*, pages 4 and 5, for starting, stopping, and resetting heater procedures.

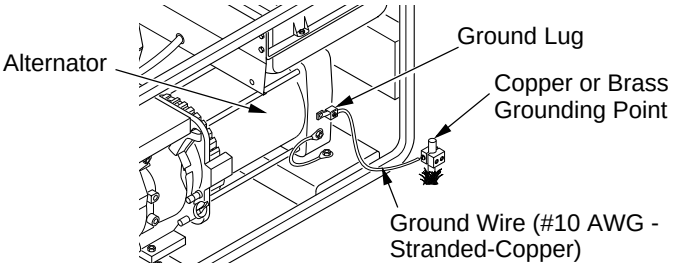


Figure 5 - Typical Generator Grounding Method (Generator construction may vary from that shown)

PREVENTATIVE MAINTENANCE SCHEDULE

⚠ WARNING: Never service heater while it is plugged in, operating, or hot. Severe burns and electrical shock can occur.

Item	How Often	How To
Fuel tank	Flush every 150-200 hours of operation or as needed	See *Storing, Transporting, or Shipping*, page 5
Filler neck screen	Check for particles in fuel when filling fuel tank. Clean when dirty	Lift out of fuel tank and rinse with clean kerosene
Fuel filter assembly (Fuel tank)	Clean twice a heating season or replace as needed	See *Fuel Filters*, page 11
Fuel filter lines	Check and tighten loose connections occasionally	See *Fuel Lines*, Page 10
Fuel filter (In pump or external canister)	Clean fuel filter element every 250 hours	See *Fuel Filters*, page 11
Spark plug	Clean and regap every 300 hours of operation or replace as needed	See *Spark Plug*, page 9
Fan blades and air deflectors	Clean each season or as needed	See *Fan Blades and Air Deflectors*, page 9
Air passages around burner head	Check each season for dirt and debris	Remove debris and trash with a clean, soft cloth
Motor	Not required, permanently lubricated	

TROUBLESHOOTING

Note: For additional help, visit DESA International's Technical Service web site at **www.desatech.com**.

⚠ WARNING: Never service heater while it is plugged in, operating, or hot. Severe burns and electrical shock can occur. Only a qualified service person should service and repair heater.

OBSERVED PROBLEM	POSSIBLE CAUSE	REMEDY
Motor does not start when heater is plugged in and thermostat setting is higher than surrounding air temperature	1. No power or low voltage at heater due to: A) Damaged power cord or extension cord B) Wrong size extension cord C) Heater plugged into outlet with voltage lower than 120 volt	1. A) Check condition of power cord or extension cord. Repair or replace if damaged B) Use extension cord with proper wire size (see *To Start Heater*, page 4) C) Make sure heater is plugged into 120 volt/60 hertz outlet
	2. Loose electrical connections	2. Check connections. Tighten if loose
	3. Motor overload protector tripped due to: A) Dirty fan B) Debris pulled into fan area by fan C) Binding pump D) Low voltage	3. A) See *Fan Blades and Air Deflectors*, page 9 B) Remove debris from fan and fan guard area C) Turn fan by hand. If fan is hard to turn, see *Pump*, page 10 D) See steps B and C under item 1 above *Note:* Be sure to reset motor overload protector by pressing reset button on top of motor
	4. Flame-out control not reset	4. Press and release flame-out control reset button. See Figure 4, page 4 for button location
	5. Damaged flame-out control	5. Replace flame-out control
	6. Damaged power relay	6. Replace power relay
	7. Damaged thermostat	7. Replace thermostat
	8. Binding pump	8. Turn fan by hand. If fan is hard to turn, see *Pump*, page 10

TROUBLESHOOTING
Continued

OBSERVED PROBLEM	POSSIBLE CAUSE	REMEDY
Heater will not ignite, but motor runs for a short period of time.	1. A) Fuel tank empty B) Water in fuel C) Wrong fuel	1. A) Add fuel to tank B) Check fuel tank for bubbles of water in bottom. If found, remove fuel (see *Storing, Transporting, or Shipping*, page 5). Clean tank and fuel filters (see *Fuel Filters*, page 11). Fill with clean fuel C) Remove wrong fuel (see *Storing, Transporting, or Shipping*, page 5). Clean tank and fuel filters (see *Fuel Filters*, page 11). Fill with correct fuel
	2. Dirt in nozzle	2. Replace nozzle (see *Nozzle*, page 9)
	3. Very low temperature may cause fuel to thicken and not flow	3. Move heater to warmer place until fuel flows freely
	4. Dirty fuel filters	4. Clean fuel filters (see *Fuel Filters*, page 11)
	5. Wrong pump pressure	5. Adjust pump pressure (see Pump Pressure Adjustment sections, pages 9 and 10)
	6. Spark plug wire disconnected from plug	6. Connect spark plug wire to spark plug
	7. Spark plug problems due to: A) Wrong gap B) Plug wet with fuel C) Carbon deposits on plug D) Damaged plug	7. A) Adjust electrode gap to .075" (see *Spark Plug*, page 9) B) Clean fuel from spark plug with clean, soft cloth C) Replace plug if heavily coated with carbon (see *Spark Plug*, page 9) D) Inspect plug for worn or eroded electrodes. If found, replace plug (see *Spark Plug*, page 9)
	8. Solenoid valve not opening	8. Check electrical connections and voltage to solenoid. If good, replace solenoid valve
	⚠ WARNING: High Voltage!	
	9. Damaged electronic ignitor	9. Replace electronic ignitor

TROUBLESHOOTING

Continued

OBSERVED PROBLEM	POSSIBLE CAUSE	REMEDY
Heater ignites, but flame-out control shuts off heater after a short period of time	1. Wrong pump pressure	1. Adjust pump pressure (see Pump Pressure Adjustment sections, pages 9 and 10)
	2. Dirty fuel filters	2. Clean fuel filters (see *Fuel Filters*, page 11)
	3. Dirt in nozzle	3. Replace nozzle (see *Nozzle*, page 9)
	4. Dirty photocell lens	4. Clean photocell lens with clean cotton swab
	5. Open or damaged photocell	5. Replace photocell
	6. Bad flame-out control	6. Replace flame-out control
	7. Damaged fan switch	7. Replace fan switch
Heater burns, but puffs of smoke can be seen Heater does not burn steady Heater burns with odor Heater smokes continuously	1. Wrong pump pressure	1. Adjust pump pressure (see Pump Pressure Adjustment sections, pages 9 and 10)
	2. A) Heater almost out of fuel B) Water condensation in fuel tank C) Wrong fuel	2. A) Add fuel to tank B) Check fuel tank for bubbles of water in bottom. If found, remove fuel (see *Storing, Transporting, or Shipping*, page 5). Clean tank and fuel filters (see *Fuel Filters*, page 11). Fill with clean fuel C) Remove wrong fuel (see *Storing, Transporting, or Shipping*, page 5). Clean tank and fuel filters (see *Fuel Filters*, page 11. Fill with correct fuel
	3. Dirty fuel filters	3. Clean fuel filters (see *Fuel Filters*, page 11)
	4. Air leak in suction system	4. Tighten all fuel line connections (see *Fuel Lines*, page 10)
	5. Dirty nozzle	5. Replace nozzle (see *Nozzle*, page 9)
	6. Low voltage causing motor to operate below rated speed	6. Check voltage at heater. Voltage at heater should be not less than 90% of rated voltage (108V minimum for 120V heaters)
	7. Loose fuel line	7. Check and tighten all fuel line connections (see *Fuel Lines*, page 10)

SERVICE PROCEDURES

⚠ WARNING: Never service heater while it is plugged in, operating, or hot. Severe burns and electrical shock can occur. Only a qualified service person should service and repair heater.

UPPER SHELL REMOVAL

1. Remove screws along each side and top of heater using 5/16" nut-driver. These screws attach upper and lower shells together (see Figure 6).
2. Lift upper shell off.

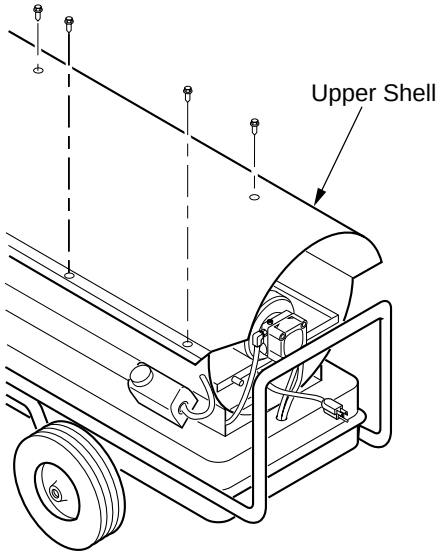


Figure 6 - Upper Shell Removal, 600,000 Btu/Hr Model

SERVICE PROCEDURES
Continued

FAN BLADES AND AIR DEFLECTORS

1. Remove upper shell (see *Upper Shell Removal*, page 8).
2. Clean fan blades and air deflectors with clean, soft cloth moistened with kerosene or solvent (see Figure 7).
3. Dry fan blades and air deflectors thoroughly.
4. Replace upper shell.

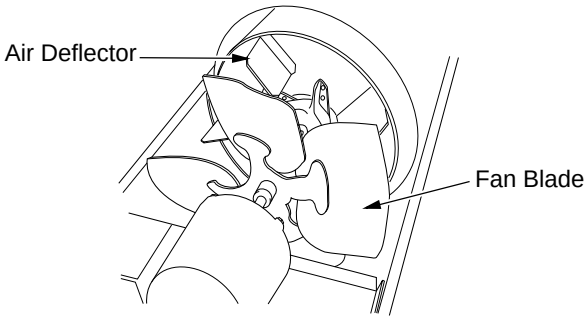


Figure 7 - Fan Blades and Air Deflectors

SPARK PLUG

1. Remove upper shell (see *Upper Shell Removal*, page 8).
2. Remove spark plug wire from spark plug (see Figure 8).
3. Remove spark plug from burner head using 13/16" open-end wrench (see Figure 8).
4. Replace spark plug if damaged or heavily coated with carbon.
5. Clean and regap spark plug electrodes to .075 inch (see Figure 9).
6. Install spark plug in burner head.
7. Attach spark plug wire to spark plug.
8. Replace upper shell.

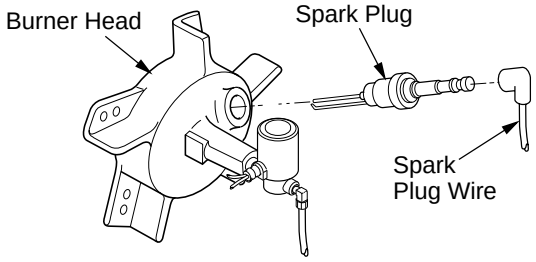


Figure 8 - Spark Plug Removal

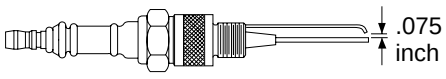


Figure 9 - Spark Plug Gap

NOZZLE

1. Remove upper shell (see *Upper Shell Removal*, page 8).
2. Remove fuel line from solenoid valve using 7/16" wrench.
3. Remove spark plug wire from spark plug.
4. Remove spark plug from burner head using 13/16" open-end wrench.
5. Remove five screws using 5/16" nut-driver and remove burner head from combustion chamber.
6. Place burner head into vise and lightly tighten.
7. Carefully remove nozzle from burner head using 5/8" socket wrench (see Figure 10).
8. Inspect nozzle for damage. If damaged or clogged, replace nozzle.
9. Make sure plug is in place on burner head.
10. Replace nozzle into burner head and tighten firmly (175-200 inch-pounds).
11. Attach burner head to combustion chamber.
12. Install spark plug in burner head.
13. Attach spark plug wire to spark plug.
14. Attach fuel line to solenoid valve. Tighten firmly.
15. Replace upper shell.

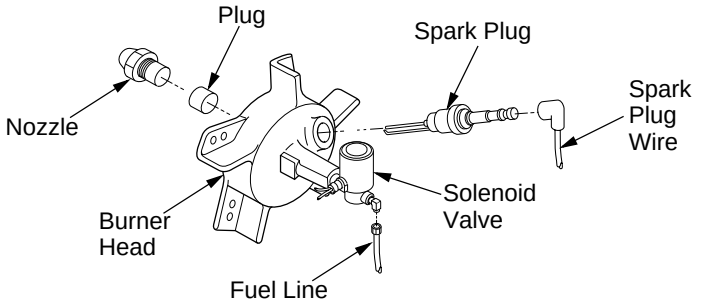


Figure 10 - Replacing Nozzle

PUMP PRESSURE ADJUSTMENT FOR HEATERS WITH FUEL FILTER/CANISTER EXTERNAL TO PUMP

1. Remove pressure gauge plug from fuel pump port marked "GAUGE."
2. Install accessory pressure gauge (part number 110380-01) to fuel pump port marked "GAUGE" (see Figure 11, page 10).
3. Start heater (see *Operation*, page 4). Allow motor to reach full speed.
4. Adjust pressure. Use small flat blade screwdriver to turn slotted screw at fuel pump pressure adjusting port. Turn screw clockwise to increase pressure. Turn screw counterclockwise to decrease pressure. See specifications in Figure 11, page 10, for correct pressure for each model.

SERVICE PROCEDURES
Continued

5. Stop heater (see page 5).
6. Remove pressure gauge. Replace pressure gauge plug in fuel pump port marked “GAUGE.”

Model	Pump Pressure
350,000 Btu/Hr	100 PSI
600,000 Btu/Hr	110 PSI

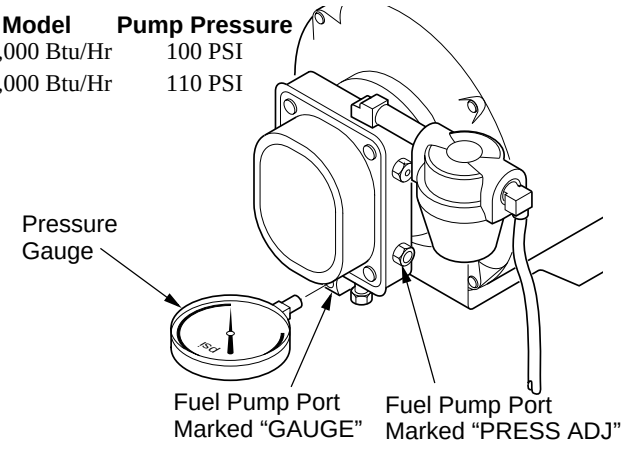


Figure 11 - Adjusting Pump Pressure

PUMP PRESSURE ADJUSTMENT FOR HEATERS WITH FUEL FILTER INTERNAL TO PUMP

1. Remove pressure gauge plug from fuel pump port marked “GAUGE.”
2. Install accessory pressure gauge (part number 130-24132) to fuel pump port marked “GAUGE” (see Figure 12). Do not use bleeder valve port to check the pressure. The bleeder valve port contains pressure higher than operating pressure. Setting pump pressure with gauge in the bleeder valve port results in wrong operating pressure.
3. Start heater (see *Operation*, page 4). Allow motor to reach full speed.

Model	Pump Pressure
350,000 Btu/Hr	100 PSI
600,000 Btu/Hr	110 PSI

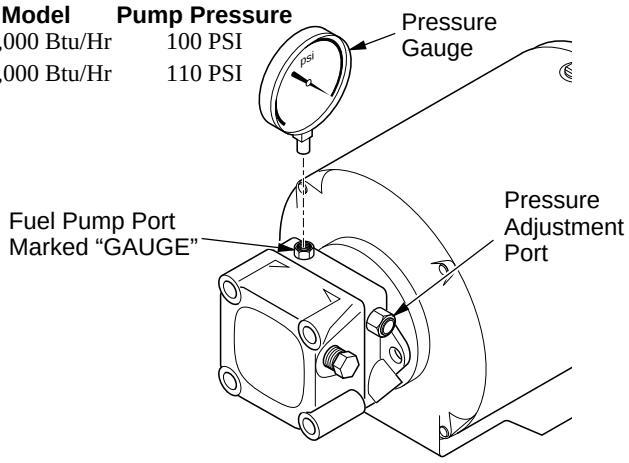


Figure 12 - Adjusting Pump Pressure

4. Adjust pressure. Use small flat blade screwdriver to turn slotted screw at fuel pump port at top right side of pump. Turn screw clockwise to increase pressure. Turn screw counterclockwise to decrease pressure. See specifications in Figure 12 for correct pressure for each model.
5. Stop heater (see page 5).
6. Remove pressure gauge. Replace pressure gauge plug in fuel pump port marked “GAUGE.”

PUMP

(Procedure if Pump is Binding)

1. Remove upper shell (see *Upper Shell Removal*, page 8).
2. Loosen hex screw on flange clamp at rear of motor with 5/16" nut-driver (see Figure 13).
3. Turn fan with hand (see Figure 14).
4. If fan turns freely, tighten screw on flange clamp.
5. If fan does not turn freely, replace pump.
6. Replace upper shell.

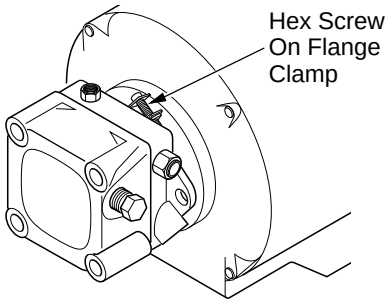


Figure 13 - Location of Screw on Flange Clamp

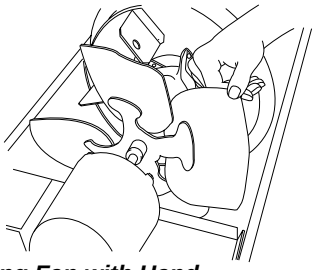


Figure 14 - Turning Fan with Hand

FUEL LINES

(Procedure for tightening fuel lines)

1. Remove upper shell (see *Upper Shell Removal*, page 8).
2. Use an adjustable wrench as a backup on fittings.
3. Use 7/16" wrench and tighten fuel lines at solenoid valve, pump, and fuel filter canister (if equipped) (see Figure 15, page 11).

SERVICE PROCEDURES
Continued

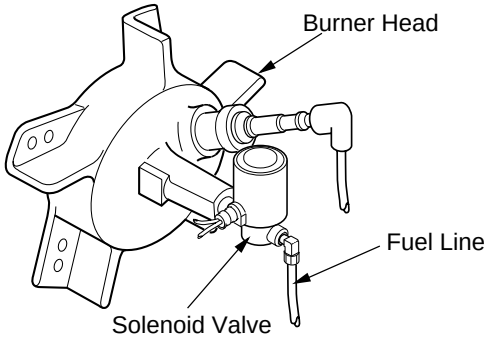


Figure 15 - Fuel Line at Solenoid Valve

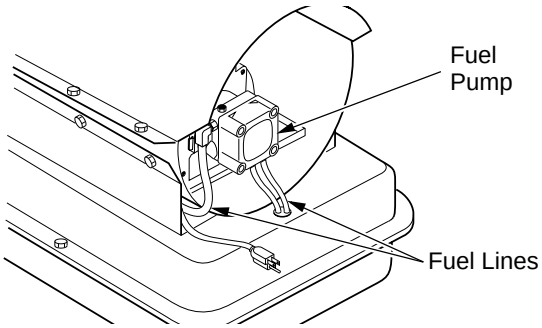


Figure 16 - Fuel Lines at Pump

FUEL FILTERS

A. Tank Fuel Filter

1. Disconnect fuel lines from pump and fuel filter canister (if equipped) with 7/16" wrench (see Figure 17).
2. Carefully pry fuel filter loose from fuel tank with flat end of screwdriver.
3. Inspect fuel filter for water or dirt.
4. Rinse fuel filter and fuel lines with clean kerosene.
5. Replace fuel filter into fuel tank.
6. Connect fuel lines to pump and fuel filter canister (if equipped).

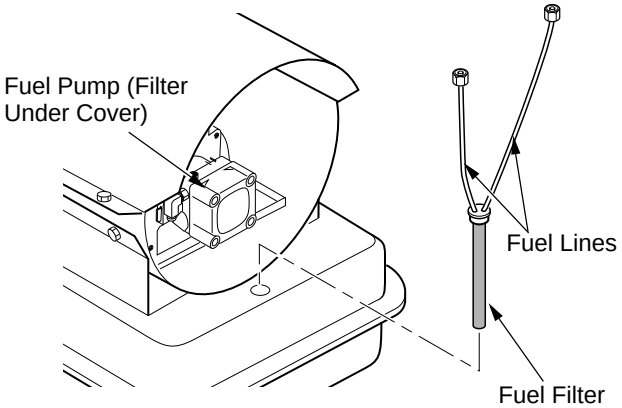


Figure 17 - Removing Tank Fuel Filter

B. For Heaters With Fuel Filter/Canister External To Pump

1. Unscrew canister bottom from canister top with adjustable pliers.
2. Remove fuel filter and gasket from canister bottom (see Figure 18).
3. Inspect canister bottom and fuel filter for water droplets or dirt.
4. Rinse canister bottom in clean kerosene.
5. Wipe inside of canister bottom dry with clean cloth.
6. Rinse fuel filter in clean kerosene.
7. Put clean fuel filter and gasket back in canister bottom.
8. Screw canister bottom into canister top.
9. Tighten securely. Check for leaks.

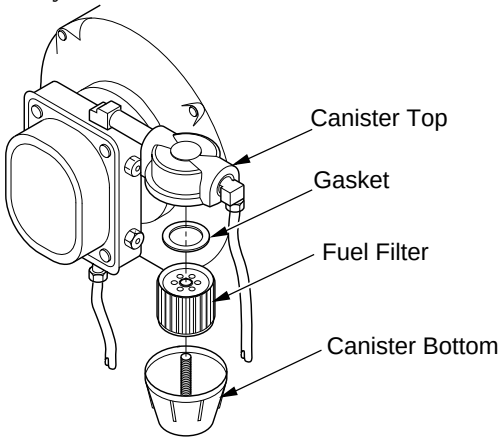


Figure 18 - Fuel Pump Filter and Canister

C. For Heaters With Fuel Filter Internal To Pump

1. Remove pump cover to access filter
2. Rinse and wipe inside of pump cover and dry with clean cloth.
3. Rinse fuel filter in clean kerosene or blow compressed air from inside out.
4. Reassemble. Tighten securely. Check for leaks.

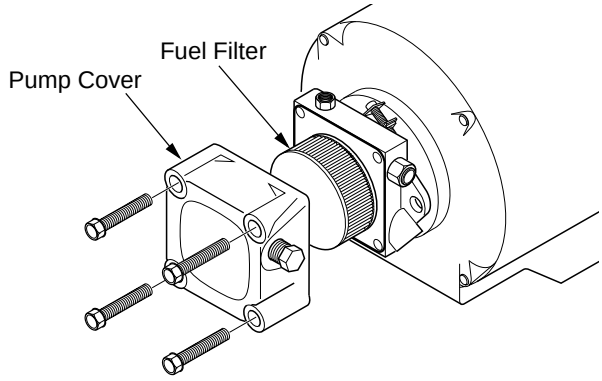
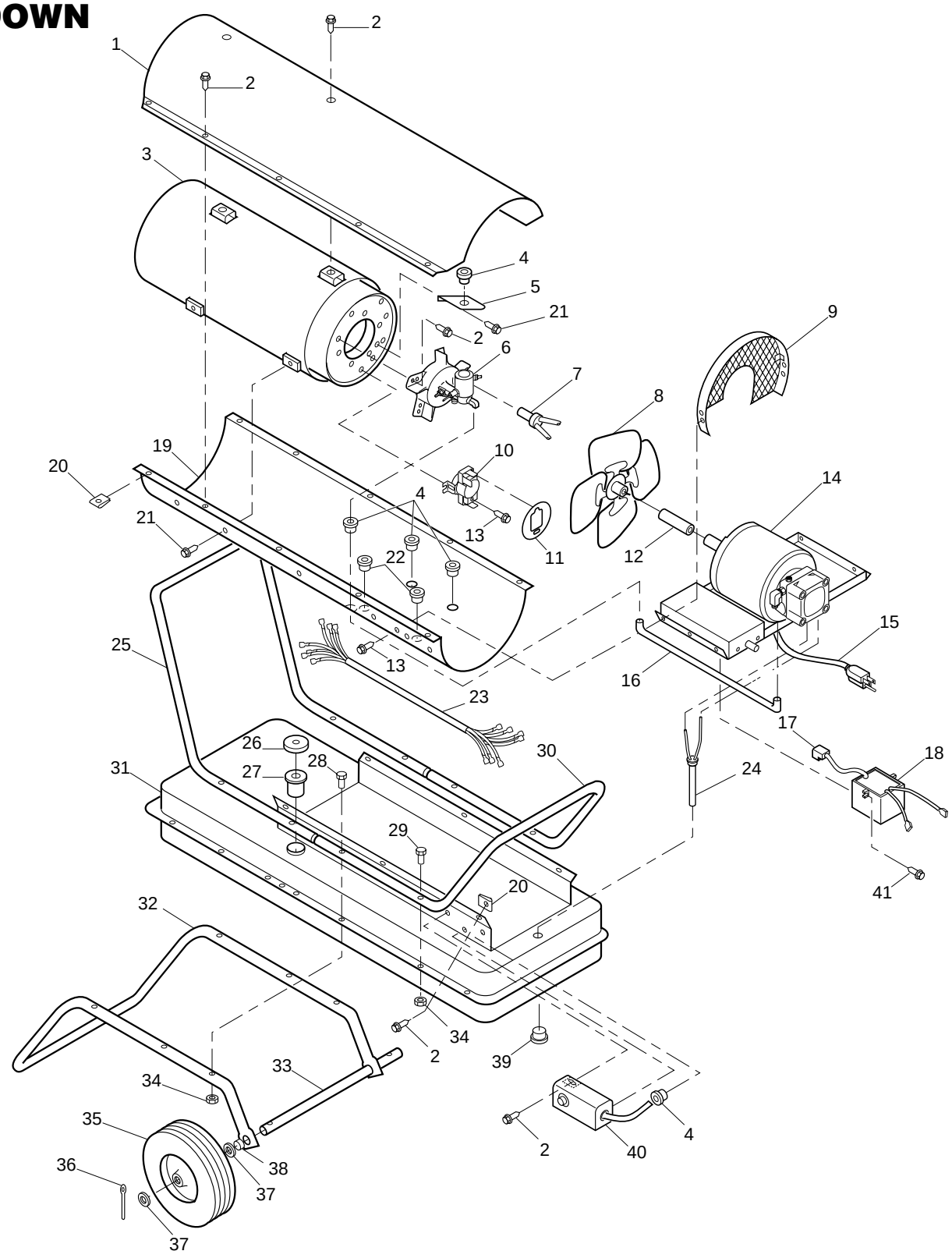


Figure 19 - Fuel Pump and Filter

ILLUSTRATED PARTS BREAKDOWN

350,000 BTU



PARTS LIST

350,000 BTU

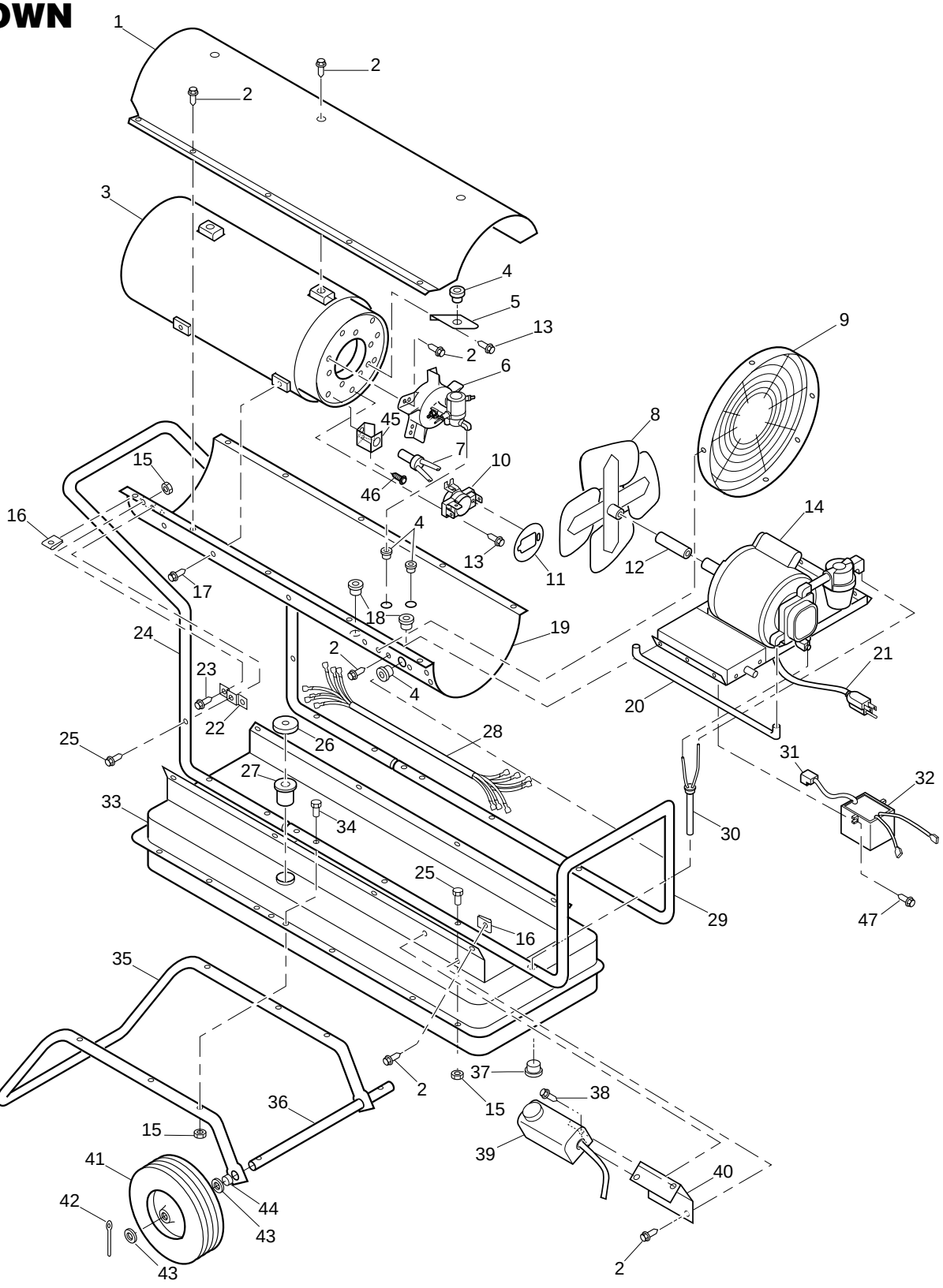
This list contains replaceable parts used in your heater. When ordering parts, follow the instructions listed under Repair Service on the back page of this manual.

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	130-20768	Upper shell	1
2	130-20805	Screw, #10-16 x 1/2"	15
3	130-20776	Combustion chamber & shield	1
4	130-20931	Bushing	7
5	130-20942	Air deflector	5
6	400-20829	Burner head assembly	1
7	130-20828	Photocell assembly	1
8	130-20845	Fan	1
9	130-20937	Fan guard	1
10	120-20938	Fan switch	1
11	130-20939	Fan switch cover	1
12	130-20941	Sleeve	1
13	130-20806	Screw, #10-16 x 3/8"	13
14	†	Motor & pump assembly	1
15	120-20892	Power cord	1
16	130-20940	Fuel line	1
17	120-20891	Ignition boot	1
18	120-20890	Electronic Ignitor	1
19	130-20769	Lower shell	1
20	130-20936	Clip nut	16
21	130-20815	Screw, #12-14 x 1/2"	14
22	130-20932	Bushing	2
23	120-20897	Wire harness	1
24	130-20943	Fuel line assembly	1
25	130-20780	Front handle	1
26	130-20944	Fuel cap	1
27	130-20946	Filler neck screen	1
28	130-20817	Screw, 1/4-20 x 2 1/4"	6
29	130-20816	Screw, 1/4-20 x 1 1/2"	2
30	130-20781	Rear handle	1
31	130-20779	Fuel tank	1
32	130-20846	Wheel support frame	1
33	130-20848	Axle	1
34	130-20818	Hex lock nut, 1/4-20	8
35	130-20847	Wheel	2
36	130-20824	Cotter pin, 5/32 x 1 1/4"	2
37	130-20823	Flatwasher, 5/8"	4
38	130-20849	Wheel spacer	2
39	130-20945	Drain plug	1
40	120-20898	Thermostat	1
41	130-20807	Screw, #10-16 x 3/4"	2

†Not available as complete assembly. See page 18.

ILLUSTRATED PARTS BREAKDOWN

600,000 BTU



PARTS LIST

600,000 BTU

This list contains replaceable parts used in your heater. When ordering parts, follow the instructions listed under Repair Service on the back page of this manual.

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	130-21889	Upper Shell	1
2	130-20805	Screw, #10-16 x 1/2"	28
3	130-21890	Combustion chamber & shield	1
4	130-20931	Bushing	5
5	130-21891	Air deflector	5
6	†	Burner head assembly	1
7	130-21892	Photocell assembly	1
8	130-21893	Fan	1
9	130-21894	Fan guard	1
10	120-20938	Fan switch	1
11	120-20939	Fan switch cover	1
12	130-20941	Sleeve	1
13	130-20806	Screw, #10-16 x 3/8"	15
14	†	Motor & pump assembly	1
15	130-20818	Hex nut, 1/4-20	18
16	130-20936	Clip nut	18
17	130-20815	Screw, #12-14 x 1/2"	4
18	130-20932	Bushing	2
19	130-21895	Lower shell	1
20	130-21896	Fuel line	1
21	120-20892	Power cord	1
22	130-21897	Support bracket	2
23	130-21898	Screw, 1/4-20 x 3/8"	4
24	130-21899	Front handle	1
25	130-20816	Screw, 1/4-20 x 1 1/2"	6
26	130-20944	Fuel cap	1
27	130-20946	Filler neck screen	1
28	130-21900	Wire harness	1
29	130-21901	Rear handle	1
30	400-21902	Fuel line assembly	1
31	120-20891	Ignition boot	1
32	120-20890	Electronic Ignitor	1
33	130-21903	Fuel tank	1
34	130-21904	Screw, 1/4-20 x 2 3/4"	8
35	130-21905	Wheel support frame	1
36	130-20848	Axle	1
37	130-20945	Drain plug	1
38	130-21906	Screw, #6-32 x 3/8"	2
39	120-20898	Thermostat	1
40	130-21907	Thermostat bracket (Black)	1
41	130-20847	Wheel	2
42	130-20824	Cotter pin, 5/32 x 1 1/4"	2
43	130-20823	Flatwasher, 5/8"	4
44	130-20849	Wheel spacer	2
45	130-21908	Photocell Bracket	1
46	130-21909	Screw, #6-32 x 3/8"	2
47	130-20807	Screw, #10-16 x 3/4"	2
	**	Internal lockwasher No. 6	2
	130-21910	Nut, 6-32	2

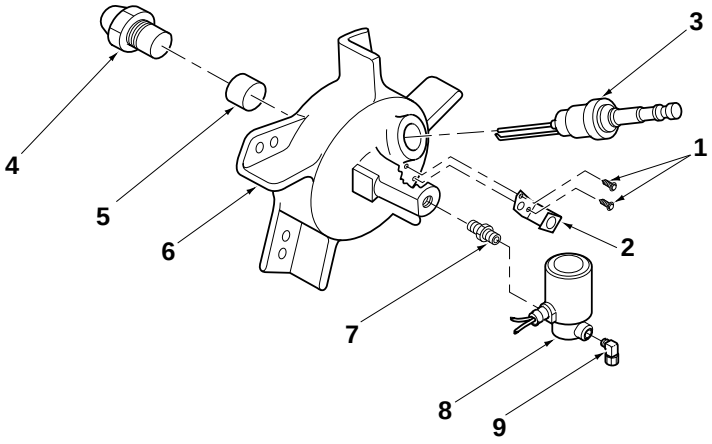
† Not available as complete assembly. See page 18. Not shown.

**Standard hardware item

PART LIST

Burner Head Assembly 350,000 and 600,000 Btu/Hr

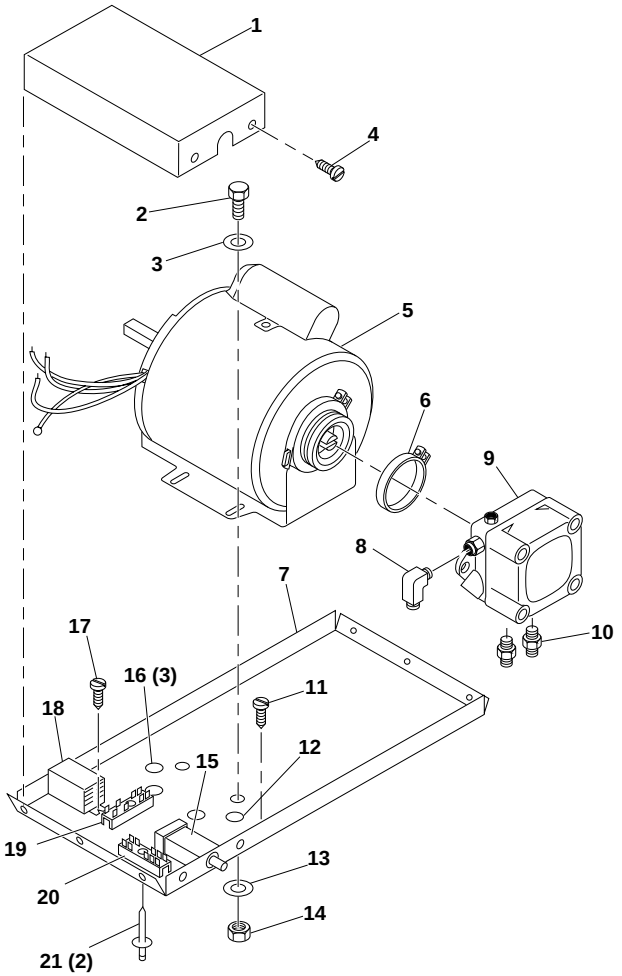
REF NO.	PART NO.	DESCRIPTION	QTY.
1	130-20808	Screw, #6-32 x 3/8"	2
2	130-20826	Photocell bracket	1
3	130-20830	Spark plug	1
4	130-20767	Nozzle (350,000 Btu/Hr)	1
	130-21911	Nozzle (600,000 Btu/Hr)	1
5	130-20839	Plug	1
6	130-20836	Burner head body	1
7	130-20841	Straight nipple	1
8	120-20840	Solenoid valve	1
9	130-20842	Compression elbow	1



Motor and Pump Assembly 350,000 and 600,000 Btu/Hr Heaters With Fuel Filter Internal To Pump

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	130-20868	Wiring cover	1
2	130-20819	Screw, 5/16-24 x 5/16"	4
3	130-20820	External lockwasher, 5/16"	4
4	130-20806	Screw, #10-16 x 3/8"	3
5	130-20870	Motor (350,000 Btu/Hr)	1
	130-21912	Motor (600,000 Btu/Hr)	1
6	130-20866	Flange clamp (holds pump to motor)	1
7	130-20865	Motor support (350,000 Btu/Hr)	1
	130-21913	Motor support (600,000 Btu/Hr)	1
8	130-20842	Compression elbow	1
9	130-20867	Fuel pump	1
10	130-20925	Straight fitting	2
11	130-20811	Screw, #8-32 x 3/8"	1
12	130-22132	Strain relief bushing	1
13	**	Lockwasher, 5/16"	4
14	130-20821	Hex nut, 5/16-24"	4
15	130-20875	Flame-out control	1
16	130-20926	Snap bushing	3
17	130-20808	Screw, #6-32 x 3/8"	2
18	130-20896	Power relay	1
19	130-20895	Terminal board	1
20	130-20887	Terminal board	1
21	130-20927	Rivet	2

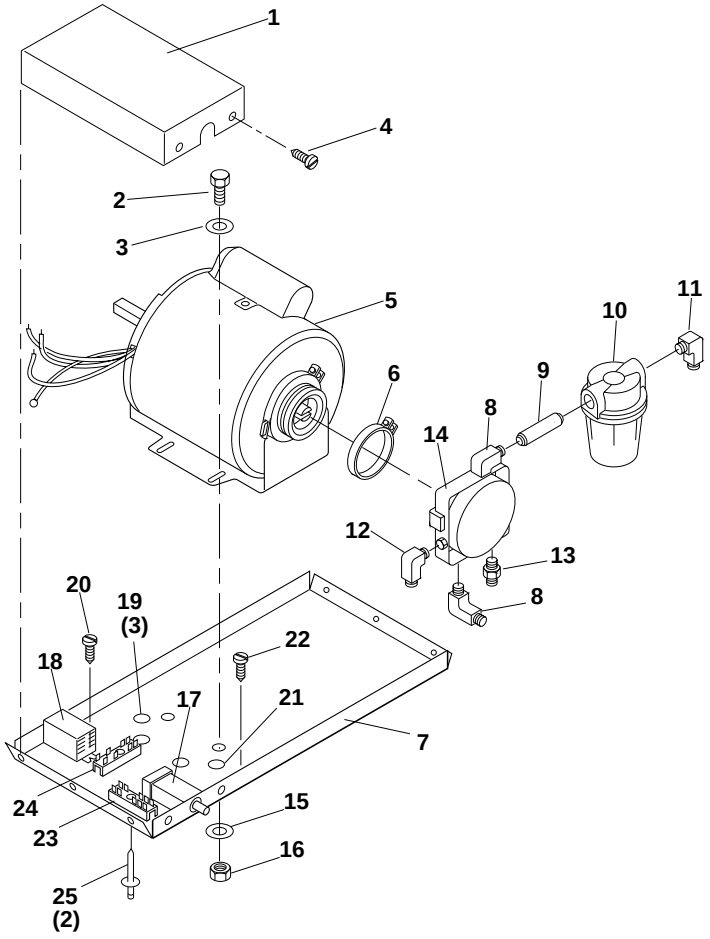
** Standard hardware item



PART LIST

Motor and Pump Assembly 350,000 and 600,000 Btu/Hr
For Heaters With Fuel Filter/Canister External To Pump

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	130-20868	Wiring cover	1
2	130-20819	Screw, 5/16-24 x 5/16"	4
3	130-20820	External lockwasher, 5/16"	4
4	130-20806	Screw, #10-16 x 3/8"	3
5	120-20870	Motor (350,000 Btu/Hr)	1
	130-21912	Motor (600,000 Btu/Hr)	1
6	130-20866	Flange clamp (holds pump to motor)	1
7	130-20865	Motor support (350,000 Btu/Hr)	1
	130-21913	Motor Support (600,000 Btu/Hr)	1
8	130-20871	Street elbow	2
9	130-20872	Pipe nipple	1
10	400-20873	Fuel filter assembly	1
	130-20874	Filter element (inside fuel filter assembly, includes rubber gaskets)	1
11	130-20869	90˚ Male elbow	1
12	130-20842	Compression elbow	1
13	130-20925	Straight fitting	1
14	130-20867	Fuel pump	1
15	130-20820**	Lockwasher, 5/16"	4
16	130-20821	Hex nut, 5/16-24"	4
17	120-20875	Flame-out control	1
18	120-20896	Power relay	1
19	130-20926	Snap bushing	3
20	130-20808	Screw, #6-32 x 3/8"	2
21	130-22132	Strain relief bushing	1
22	130-20811	Screw, #8-32 x 1/4"	1
23	120-20887	Terminal board	1
24	120-20895	Terminal board	1
25	130-20927	Rivet	2

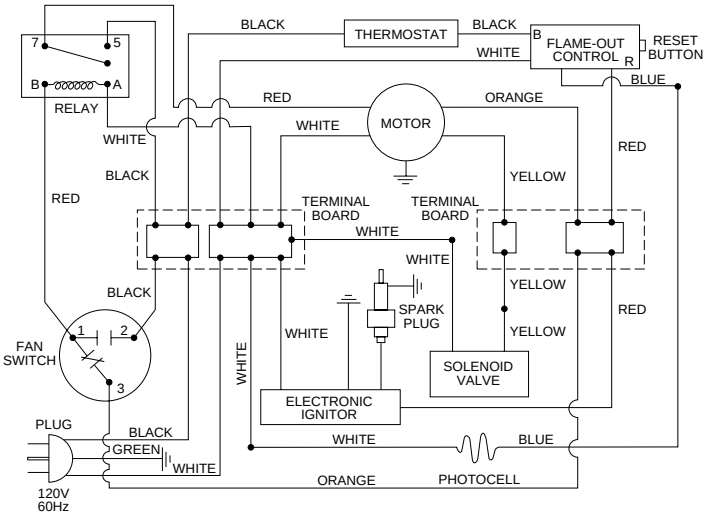


** Standard hardware item

SPECIFICATIONS

	350,000 Btu/Hr	600,000 Btu/Hr
Output Rating (Btu/Hr)	350,000	600,000
Fuel	Use only kerosene or No. 1 fuel oil	
Fuel Tank Capacity (U.S. Gallons)	30	36
Fuel Consumption (Gallons Per Hr)	2.5	4
Electric Requirements	120V/60 Hz	120V/60 Hz
Amperage (Normal Run)	7.1	11
Motor RPM	1725	1725
Fuel Pump Pressure (PSI)	100	110
Spark Plug Gap	.075"	.075"
Weight (approx. lbs.) Dry	180	285
With Full Fuel Tank	390	550

WIRING DIAGRAM



MAINTENANCE KITS

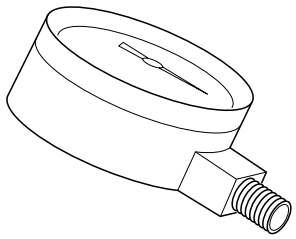
Kit	Part Number
Flame-Out Control	500-20904
Spark Plug	500-20905

ACCESSORY

Purchase this heater accessory from your nearest dealer or service center. If they cannot supply this accessory, contact L. B. White's Part's Department at 1-800-345-7200 for information.

FUEL PRESSURE GAUGE - 130-24132

Special tool to check fuel pump pressure



TECHNICAL SERVICE

You may have further questions about installation, operation, or troubleshooting. If so, contact L. B. White's Technical Service Department at 1-800-345-7200. When calling please have your model and serial numbers of your heater ready.

NOTES

Thank you

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

If you have any suggestions or comments, please call us toll-free at 1-800-345-7200 or write or fax us at:

L.B. White Co., Inc.
W6636 L.B. White Road
Onalaska, Wisconsin 54650
Fax: 608 783-6115

I. WARRANTY

A. Equipment

L.B. White Co., Inc. warrants that the component parts of its equipment are free from defects in material and workmanship, when properly operated and maintained in accordance with the maintenance instructions, 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 equipment with a new part or equipment, F.O.B., Onalaska, WIsconsin.

B. Parts

L. B. White Co., Inc. warrants that replacement parts purchased from the company and used on the appropriate L. B. White equipment 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 puchase by the end user, a copy of a bill of sale will be required to establish warranty qualification.

II. GENERAL INFORMATION

IMPORTANT

This Owner's Manual and all safety-related information as shipped with this unit should be kept by the owner for future reference.

Read this Owner's Manual and any other safety-related information accompanying this product before attempting to use or service it.

Save this manual and all other safety-related information for future reference.

This manual will instruct you in the service and care of your unit. The parts lists within this manual are designed for ease of parts selection. Wherever possible, the parts list allows parts selection without use of the model number. Parts may be selected by referring to applicable illustrations.

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.

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