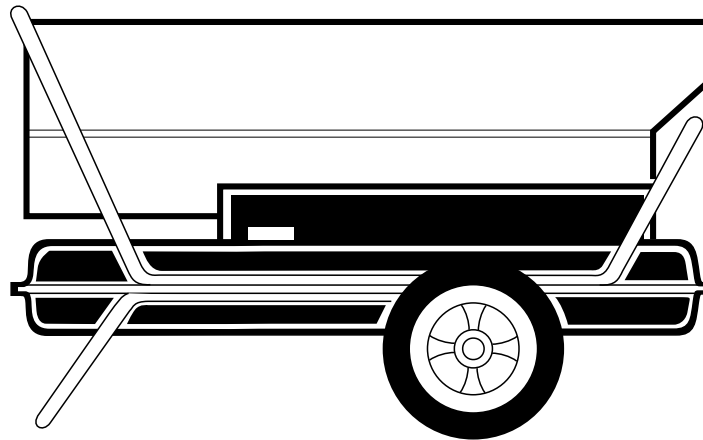


MASTER[®]

HIGH PRESSURE PORTABLE FORCED AIR HEATER

OWNER'S MANUAL



Model B350CE

Heater Size: 340,000 Btu/Hr

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.



CONTENTS

SECTION	PAGE
Safety Information	2
Product Identification	4
Unpacking	4
Assembly	4
Theory of Operation	6
Fuels	7
Ventilation	7
Operation	8
Storing, Transporting, or Shipping	9
Preventative Maintenance Schedule	10
Troubleshooting	11
Service Procedures	14
Upper Shell Removal	14
Fan Blades	14
Spark Plug	15
Nozzle	15
Pump Pressure Adjustment	16
Pump	16
Fuel Lines	16
Fuel Filters	17
Specifications	18
Wiring Diagram	18
Accessory	18
Illustrated Parts Breakdowns and Parts Lists	19
EC Conformity Declaration	22
Warranty and Repair Service	Back Cover

SAFETY INFORMATION



WARNINGS

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, electrocution, 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, 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, people with heart or lung disease or anemia, those under the influence of alcohol, and those at high altitudes.

SAFETY INFORMATION

Continued

WARNINGS *Continued*

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 (762 cm) 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 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.
- Use only in well vented areas. Provide at least three square feet (2800 square cm) 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.
- Use only a three-prong, grounded (earthed) extension cord.
- 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 (304.8 cm). 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.
- Minimum heater clearances from combustibles:
 - Outlet: 8 Ft. (250 cm) Top, Rear, and Sides: 4 Ft. (125 cm)
- Locate heater on a stable and level surface while hot or running or a fire may occur.
- When heater is moved or stored, it must be in a level position or fuel spillage may occur.
- Keep children and animals away from heater.
- 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.

PRODUCT IDENTIFICATION

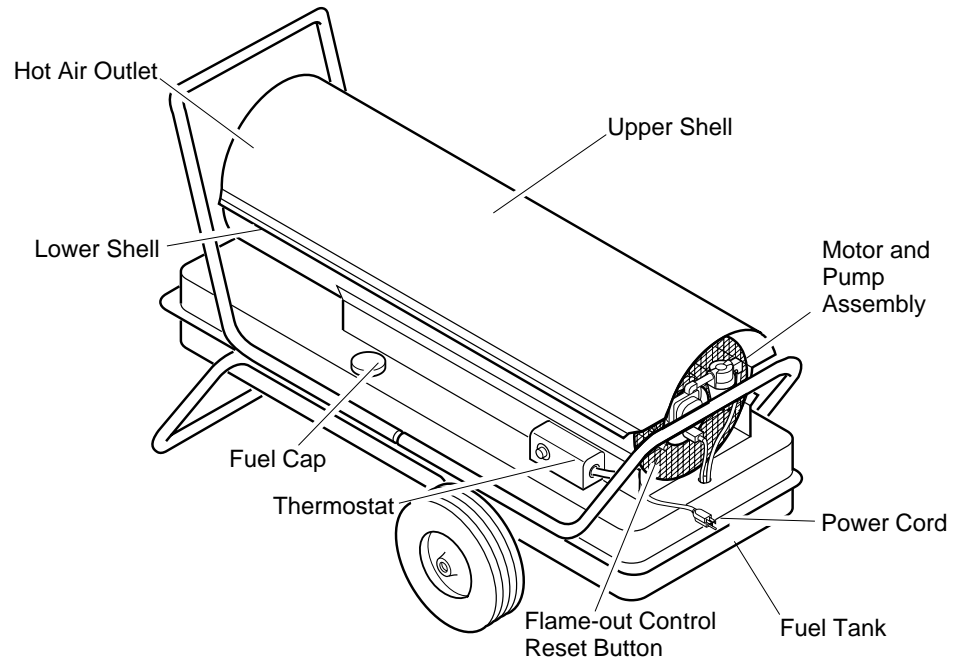


Figure 1 - B350CE Btu/Hr Model

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.

ASSEMBLY

This model is furnished with wheels and front and rear handles. Wheels, handles, and mounting hardware are found in the shipping carton.

TOOLS NEEDED

- Pliers
 - Two - 7/16" Open or Adjustable Wrenches
1. Slide axle through wheel support frame. Install wheel spacer and then one flat washer on each end of axle.
 2. Install wheels on axle.
IMPORTANT: When installing wheels, point extended hub of wheels toward wheel support frame (see Figure 2, page 5).
 3. Slide one flat washer on each axle end in front of wheel.
 4. Install cotter pins through holes at each end of axle. Bend cotter pins with pliers to secure.
 5. Place heater on wheel support frame. Make sure air inlet end (rear) of heater is over wheels. Line up holes on fuel tank flange with holes on wheel support frame.
 6. Place front and rear handles on top of fuel tank flange. Insert screws through handles, fuel tank flange, and wheel support frame. Attach nut finger tight after inserting each screw.
 7. After inserting all screws, tighten nuts firmly.

ASSEMBLY

Continued

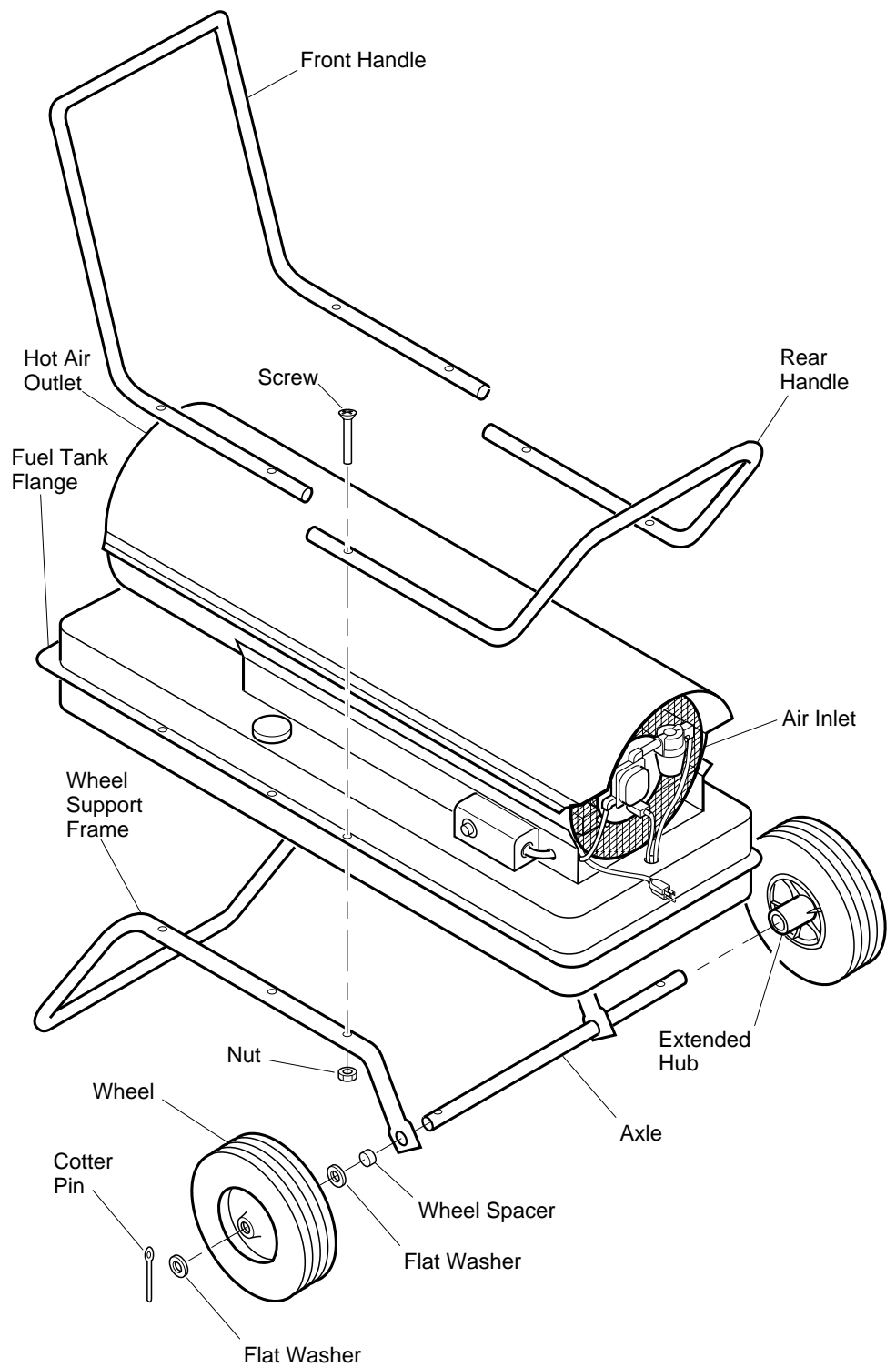


Figure 2 - Wheel and Handle Assembly

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.

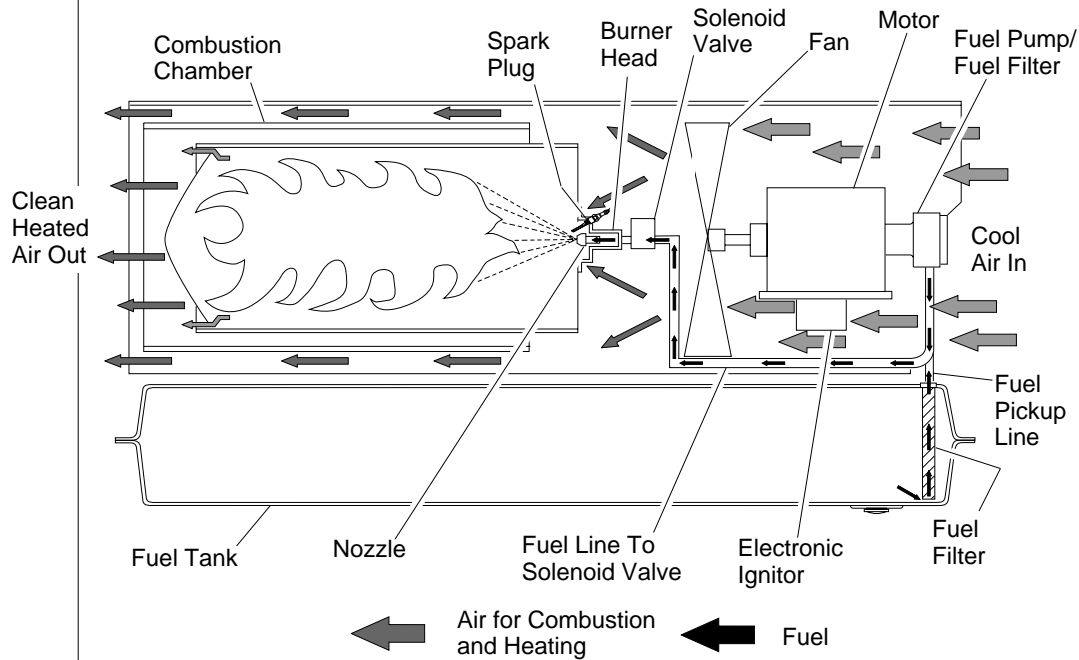


Figure 3 - Cross Section Operational View

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 fuel system to be cleaned frequently.

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	Square Centimeter Opening
340,000 Btu/Hr	10.5	9755

Note: If you use more than one heater, provide extra fresh air. Provide a fresh air opening of at least three square feet (2800 square cm) for each 100,000 Btu/Hr rating.

OPERATION

⚠️ WARNING

Review and understand the warnings in the Safety Information Section. They are needed to safely operate this heater.

To Start Heater

1. Follow all ventilation and safety information.
2. Fill fuel tank with kerosene or No. 1 fuel oil.
3. Attach fuel cap.
4. Set thermostat dial to desired temperature. *Note:* Thermostat setting must be higher than surrounding air temperature.
5. Plug power cord of heater into a standard 220/240 volt, 50 hertz, grounded (earthed) outlet. Use an extension cord if needed. Use only a three-wire, grounded (earthed) extension cord.

Extension Cord Wire Size Requirements

Up to 100 feet (30.5 meters) long, use 16 AWG (1.0 mm²) conductor

101 to 200 feet (30.6 to 61 meters) long, use 14 AWG (1.5 mm²) conductor

201 to 300 feet (61.1 to 91.5 meters) long, use 12 AWG (2 mm²) conductor

6. The motor will start when power 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: If starting heater for first time, you may need to restart heater several times before heater ignites. You may also have to do this after taking heater out of storage.

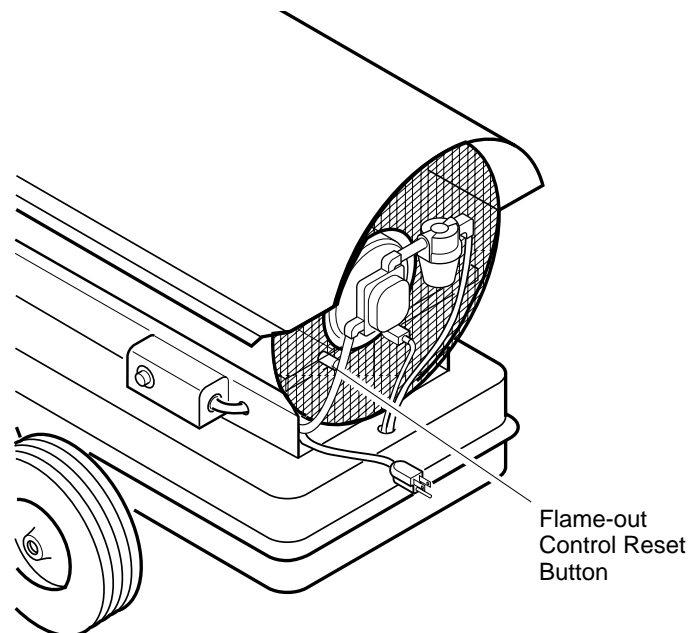


Figure 4 - Flame-out Control Reset Button

OPERATION

Continued

STORING, TRANSPORTING, OR SHIPPING

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 8.

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

1. Drain all fuel from fuel filters, fuel lines, and pump (see *Fuel Filters [Tank Fuel Filter]*, page 17).
2. Clean and flush fuel filter and canister attached to fuel pump (see *Fuel Filters [Pump Fuel Filter]*, page 17).
3. Remove drain plug and drain fuel tank.
4. Replace drain plug.
5. Add one gallon (four liters) of clean kerosene to fuel tank.
6. Attach fuel cap.
7. Move the heater forwards and backwards to stir fuel.
8. Remove drain plug and drain fuel tank.
9. Replace drain plug.
10. Add two gallons (eight liters) of clean kerosene or No. 1 fuel oil to fuel tank.
11. Replace fuel cap.
12. Operate heater for 5 minutes (see *Operation*, page 8).
13. Stop heater and let cool completely.
14. Remove drain plug and drain fuel tank.
15. Replace drain plug.
16. Properly dispose of old and dirty fuel.
17. 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.

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 <i>Storage</i> , page 9.
Filler neck screen	Check for trash 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 <i>Fuel Filters</i> , page 17.
Fuel filter lines	Check and tighten loose connections occasionally.	See <i>Fuel Lines</i> , Page 16.
Fuel filter (Pump)	Clean fuel filter element every 250 hours.	See <i>Fuel Filters</i> , page 17.
Spark plug	Clean and regap every 300 hours of operation or replace as needed.	See <i>Spark Plug</i> , page 15.
Fan blades	Clean each season or as needed.	See <i>Fan Blades</i> , page 14.
Air passages around burner head	Check each season for dirt and trash.	Remove dirt and trash with clean, soft cloth.
Motor	Not required, permanently lubricated.	

TROUBLE-SHOOTING

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.

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> 1. No power or low voltage at heater due to: <ol style="list-style-type: none"> A) Damaged power cord or extension cord B) Wrong size extension cord C) Heater plugged into outlet with voltage lower than 220/240 volts 2. Loose electrical connections 3. Motor overload protector tripped due to: <ol style="list-style-type: none"> A) Dirty fan B) Debris pulled into fan area by fan C) Binding pump D) Low voltage 4. Flame-out control not reset 5. Damaged flame-out control 6. Damaged power relay 7. Damaged thermostat 8. Binding pump | <ol style="list-style-type: none"> 1. A) Check condition of power cord or extension cord. Repair or replace if damaged.
B) Use extension cord with proper wire size (see <i>To Start Heater</i>, page 8).
C) Make sure heater is plugged into 220/240 volt, 50 hertz outlet. 2. Check connections. Tighten if loose. 3. A) See <i>Fan Blades</i>, page 14.
B) Remove debris from fan and fan guard area.
C) Turn fan by hand. If fan is hard to turn, see <i>Pump</i>, page 16.
D) See steps B and C under item 1 above.

<i>Note:</i> Be sure to reset motor overload protector by pressing reset button on top of motor. 4. Press and release flame-out control reset button. See Figure 4, page 8 for button location. 5. Replace flame-out control. 6. Replace power relay. 7. Replace thermostat. 8. Turn fan by hand. If fan is hard to turn, see <i>Pump</i>, page 16. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

TROUBLE-SHOOTING

Continued

OBSERVED PROBLEM	POSSIBLE CAUSE	REMEDY
Heater will not ignite, but motor runs for a short period of time.	<ol style="list-style-type: none"> 1. A) Fuel tank empty B) Water in fuel C) Wrong fuel 2. Dirt in nozzle 3. Very low temperature may cause fuel to thicken and not flow 4. Dirty fuel filters 5. Wrong pump pressure 6. Spark plug wire disconnected from plug 7. Spark plug problems due to: <ol style="list-style-type: none"> A) Wrong gap B) Plug wet with fuel C) Carbon deposits on plug D) Damaged plug 8. Solenoid valve not opening 	<ol style="list-style-type: none"> 1. A) Add fuel to tank. B) Check fuel tank for bubbles of water in bottom. If found, remove fuel (see <i>Storage</i>, page 9). Clean tank and fuel filters (see <i>Fuel Filters</i>, page 17). Fill with clean fuel. C) Remove wrong fuel (see <i>Storage</i>, page 9). Clean tank and fuel filters (see <i>Fuel Filters</i>, page 17). Fill with correct fuel. 2. Replace nozzle (see <i>Nozzle</i>, page 15). 3. Move heater to warmer place until fuel flows freely. 4. Clean fuel filters (see <i>Fuel Filters</i>, page 17). 5. Adjust pump pressure (see <i>Pump Pressure Adjustment</i>, page 16). 6. Connect spark plug wire to spark plug. 7. A) Adjust electrode gap to .055" (1.4 mm) (see <i>Spark Plug</i>, page 15). B) Clean fuel from spark plug with clean, soft cloth. C) Replace plug if heavily coated with carbon (see <i>Spark Plug</i>, page 15). D) Inspect plug for worn or eroded electrodes. If found, replace plug (see <i>Spark Plug</i>, page 15). 8. Check electrical connections and voltage to solenoid. If good, replace solenoid valve.

⚠ WARNING

High Voltage!

9. Damaged electronic ignitor 9. Replace electronic ignitor.

TROUBLE-SHOOTING

Continued

OBSERVED PROBLEM	POSSIBLE CAUSE	REMEDY
Heater ignites, but flame-out control shuts off heater after a short period of time.	<ol style="list-style-type: none"> 1. Wrong pump pressure 2. Dirty fuel filters 3. Dirt in nozzle 4. Dirty photocell lens 5. Open or damaged photocell 6. Bad flame-out control 7. Damaged fan switch 	<ol style="list-style-type: none"> 1. Adjust pump pressure (see <i>Pump Pressure Adjustment</i>, page 16). 2. Clean fuel filters (see <i>Fuel Filters</i>, page 17). 3. Replace nozzle (see <i>Nozzle</i>, page 15). 4. Clean photocell lens with clean, soft cloth. 5. Replace photocell. 6. Replace flame-out control. 7. Replace fan switch.
<p>Heater burns, but puffs of smoke can be seen.</p> <p>Heater does not burn steady.</p> <p>Heater burns with odor.</p> <p>Heater smokes continuously.</p>	<ol style="list-style-type: none"> 1. Wrong pump pressure 2. A) Heater almost out of fuel B) Water condensation in fuel tank C) Wrong fuel 3. Dirty fuel filters 4. Air leak in suction system 5. Dirty nozzle 6. Low voltage causing motor to operate below rated speed 7. Loose fuel line 	<ol style="list-style-type: none"> 1. Adjust pump pressure (see <i>Pump Pressure Adjustment</i>, page 16). 2. A) Add fuel to tank. B) Check fuel tank for bubbles of water in bottom. If found, remove fuel (see <i>Storage</i>, page 9). Clean tank and fuel filters (see <i>Fuel Filters</i>, page 17). Fill with clean fuel. C) Remove wrong fuel (see <i>Storage</i>, page 9). Clean tank and fuel filters (see <i>Fuel Filters</i>, page 17). Fill with correct fuel. 3. Clean fuel filters (see <i>Fuel Filters</i>, page 17). 4. Tighten all fuel line connections (see <i>Fuel Lines</i>, page 16). 5. Replace nozzle (see <i>Nozzle</i>, page 15). 6. Check voltage at heater. Voltage at heater should never be less than 198 volts. 7. Check and tighten all fuel line connections (see <i>Fuel Lines</i>, page 16).

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

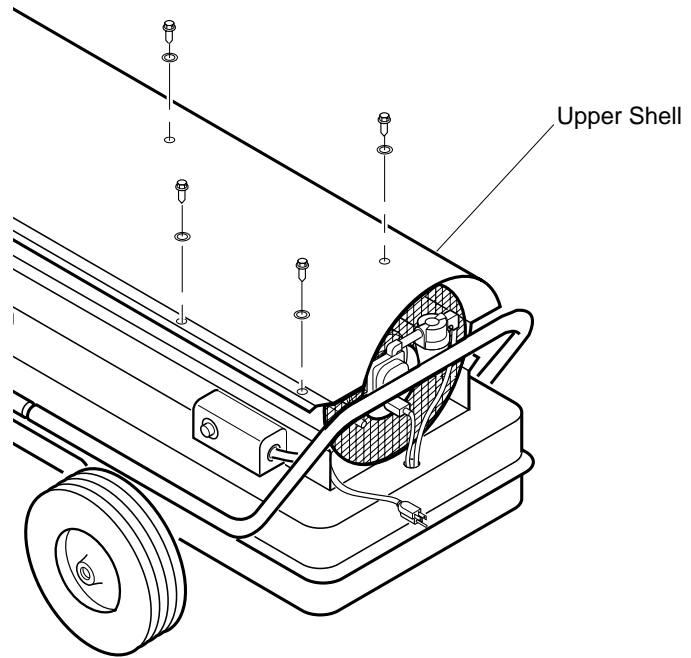


Figure 5 - Upper Shell Removal

Fan Blades

1. Remove upper shell (see above).
2. Clean fan blades with clean, soft cloth moistened with kerosene or solvent (see Figure 6).
3. Dry fan blades thoroughly.
4. Replace upper shell.

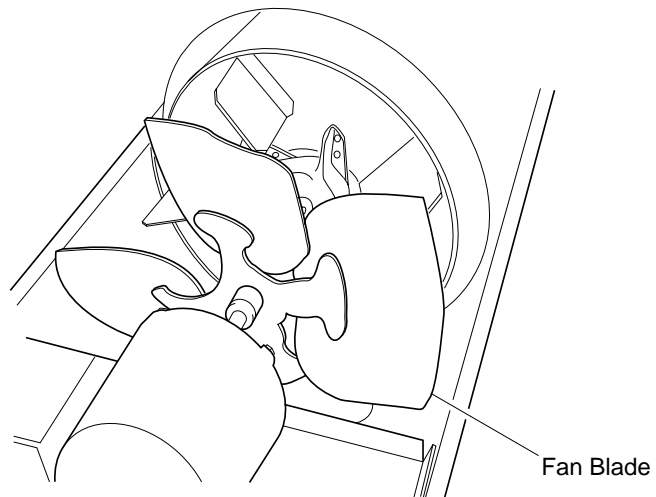


Figure 6 - Fan Blades

Spark Plug

1. Remove upper shell (see page 14).
2. Remove spark plug wire from spark plug (see Figure 7).
3. Remove spark plug from burner head using 13/16" open-end wrench (see Figure 7).
4. Replace spark plug if damaged or heavily coated with carbon.
5. Clean and regap spark plug electrodes to .055 inch (1.4 mm) (see Figure 8).
6. Install spark plug in burner head.
7. Attach spark plug wire to spark plug.
8. Replace upper shell.

Nozzle

1. Remove upper shell (see page 14).
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 9).
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 to 80-110 inch-pounds (9.1 to 12.4 n-m).
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.

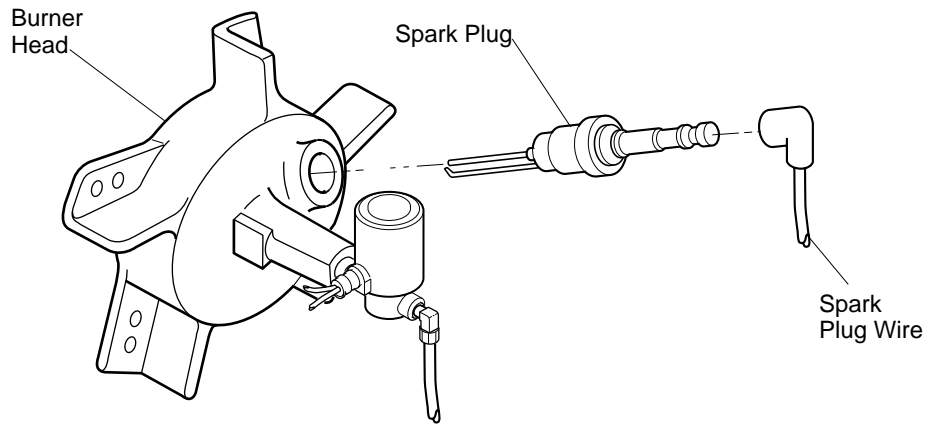


Figure 7 - Spark Plug Removal

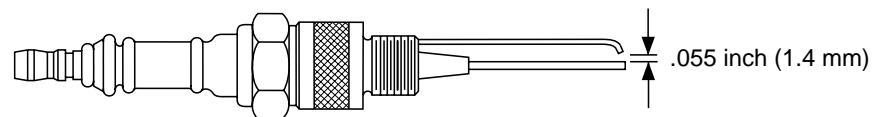


Figure 8 - Spark Plug Gap

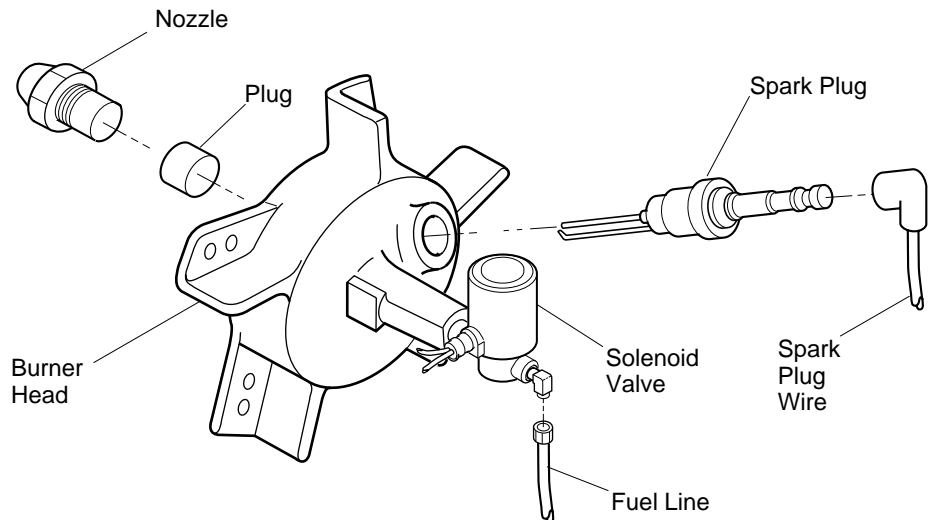


Figure 9 - Replacing Nozzle

Pump Pressure Adjustment

1. Remove pressure gage plug from fuel pump port marked "GAGE."
2. Install accessory pressure gage (part number M4574) to fuel pump port marked "GAGE" (see Figure 10).
3. Start heater (see *Operation*, page 8). Allow motor to reach full speed.
4. Adjust pressure to 100 psi. Use small flat blade screwdriver to turn slotted screw at fuel pump port marked "PRESS ADJ." Turn screw clockwise to increase pressure. Turn screw counterclockwise to decrease pressure.
5. Remove pressure gage. Replace pressure gage plug in fuel pump port marked "GAGE."

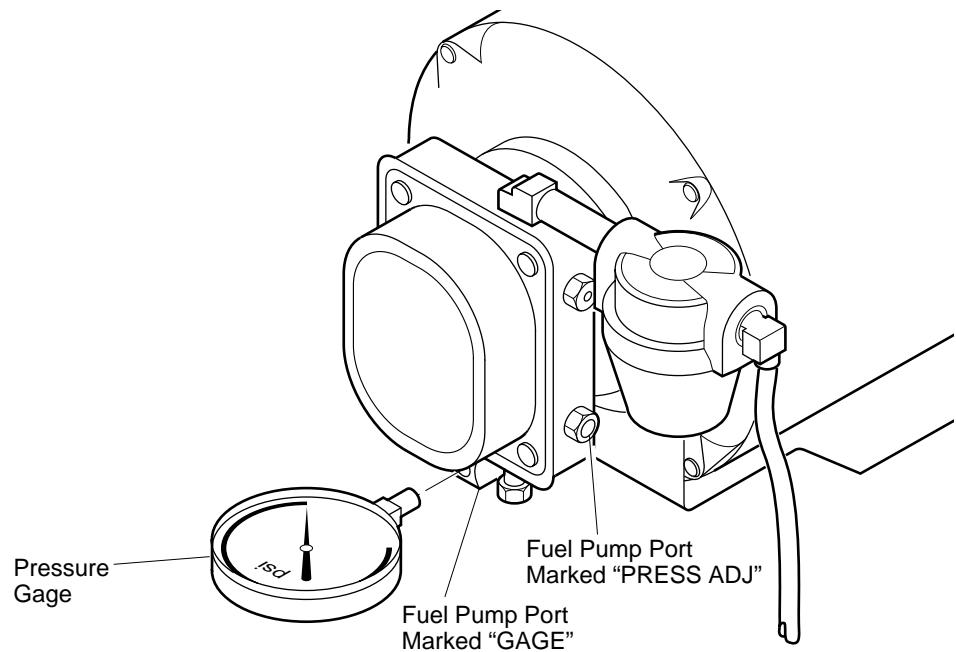


Figure 10 - Adjusting Pump Pressure

Pump

(Procedure if pump is binding)

1. Remove upper shell (see page 14).
2. Loosen hex screw on flange clamp at rear of motor with 5/16" nut-driver (see Figure 11).
3. Turn fan with hand (see Figure 12).
4. If fan turns freely, tighten screw on flange clamp.
5. If fan does not turn freely, replace pump.
6. Replace upper shell.

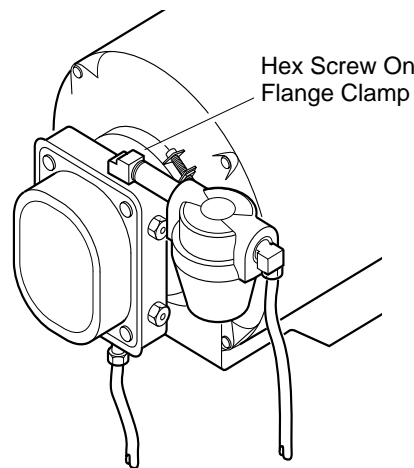


Figure 11 - Location of Screw on Flange Clamp

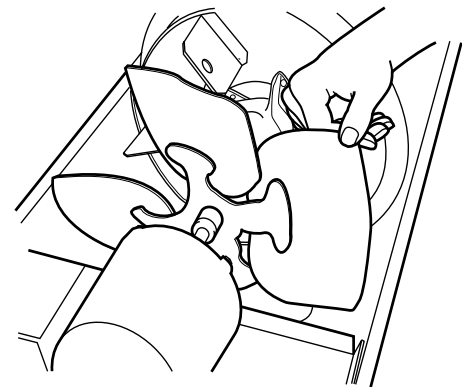


Figure 12 - Turning Fan with Hand

Fuel Lines

(Procedure for tightening fuel lines)

1. Remove upper shell (see page 14).
2. Use 7/16" wrench and tighten fuel lines at solenoid valve (see Figure 13), pump, and pump fuel filter assembly (see Figure 14).

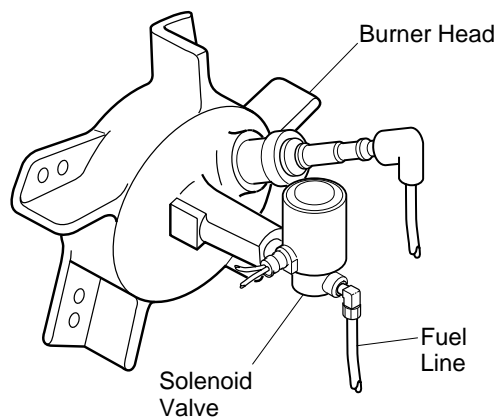


Figure 13 - Fuel Line at Solenoid Valve

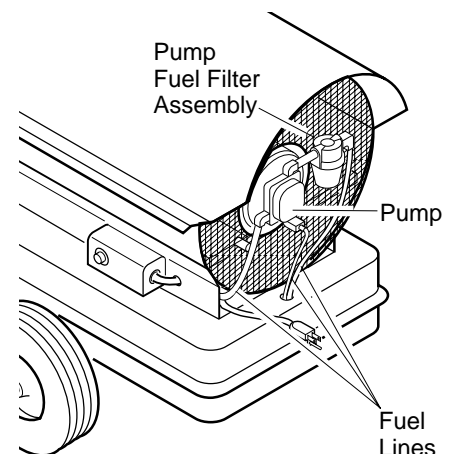


Figure 14 - Fuel Lines at Pump and Pump Fuel Filter Assembly

Fuel Filters

A. Tank Fuel Filter

1. Disconnect fuel lines from pump and pump fuel filter assembly with 7/16" wrench (see Figure 15).
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 pump fuel filter assembly.

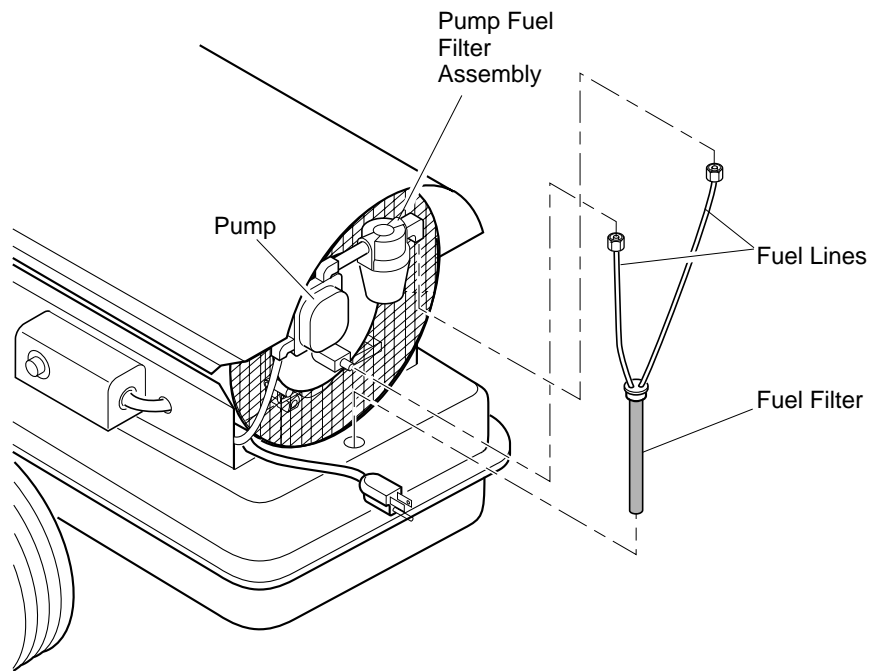


Figure 15 - Removing Tank Fuel Filter

B. Pump Fuel Filter

1. Unscrew canister bottom from canister top with Channellock pliers.
2. Remove fuel filter and gasket from canister bottom (see Figure 16).
3. Inspect canister bottom and fuel filter for water 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.

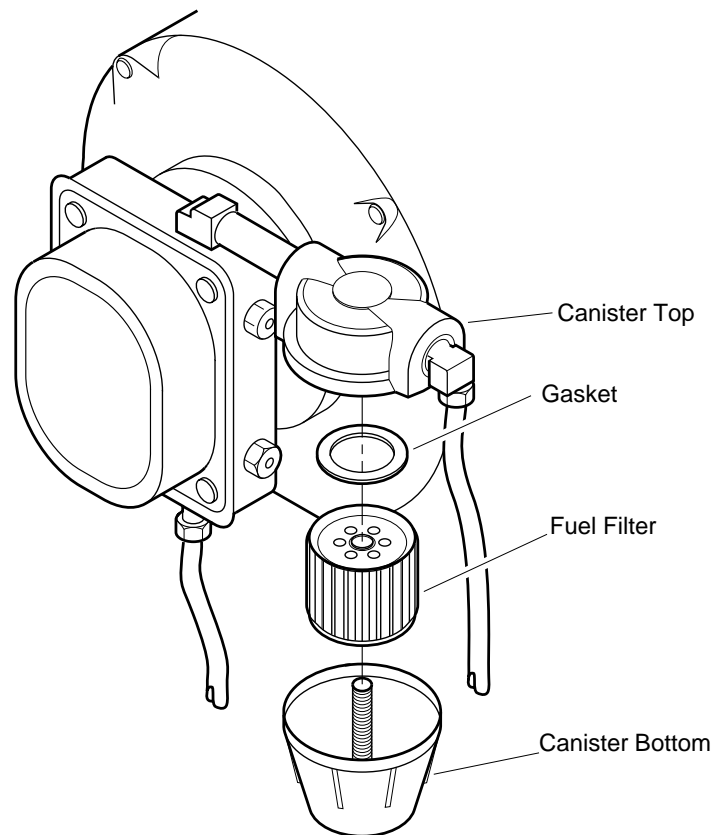
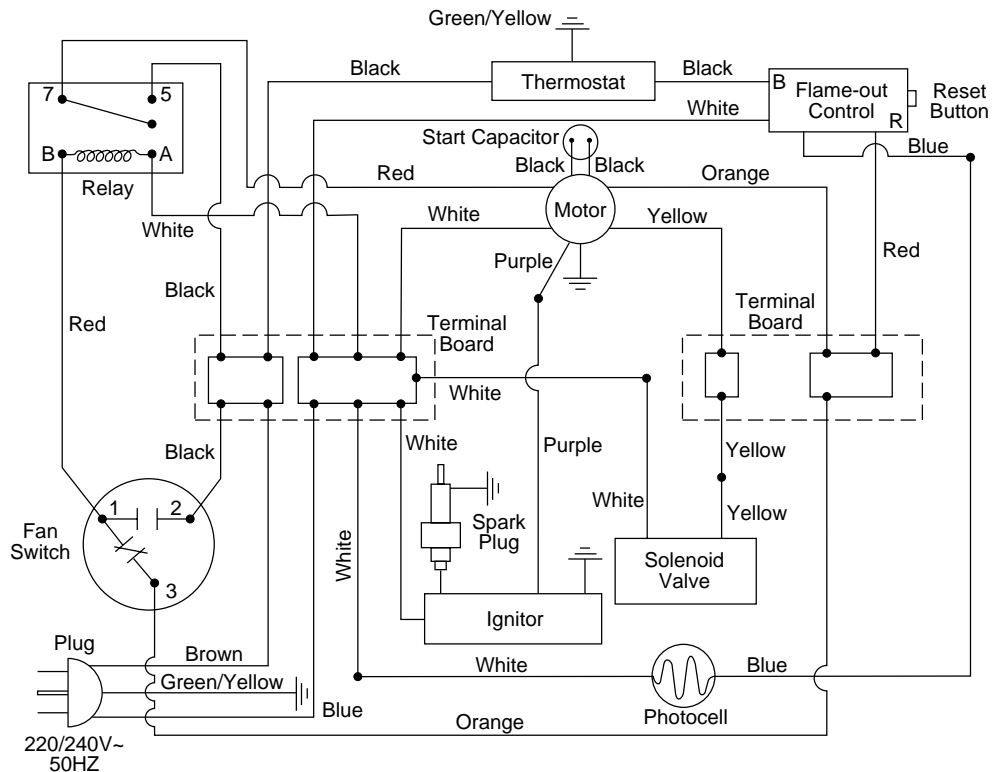


Figure 16 - Fuel Pump Filter and Canister

SPECIFICATIONS

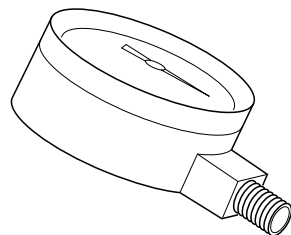
Output Rating (Btu/Hr)	340,000
Fuel	Use Only Kerosene or No. 1 Fuel Oil
Fuel Tank Capacity (U.S. Gal./Liters)	30/113.6
Fuel Consumption (Gal. Per Hr/Liter Per Hr)	2.5/9.5
Electric Requirements	220/240V, 50 Hz
Amperage (Normal Run)	5
Motor RPM	2850
Fuel Pump Pressure (PSI)	100
Spark Plug Gap	.055" (1.4 mm)
Weight (approx. lbs./kilograms) Dry (net)	180/82
With Full Fuel Tank	390/177

WIRING DIAGRAM



ACCESSORY

Purchase this heater accessory from you local dealer.



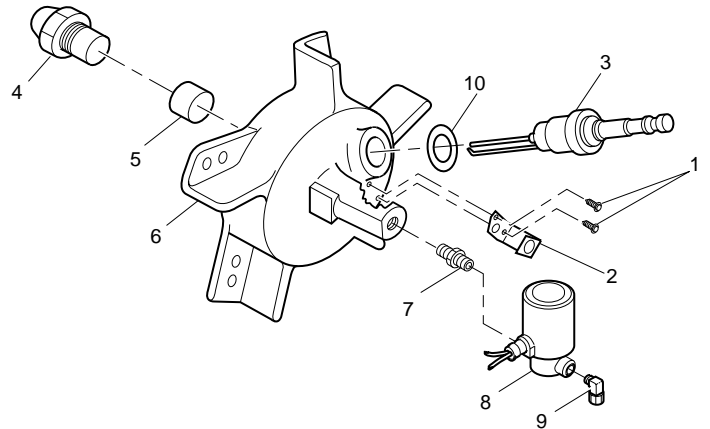
HIGH PRESSURE AIR GAGE - M4574

Special tool to check pump pressure

PARTS LIST

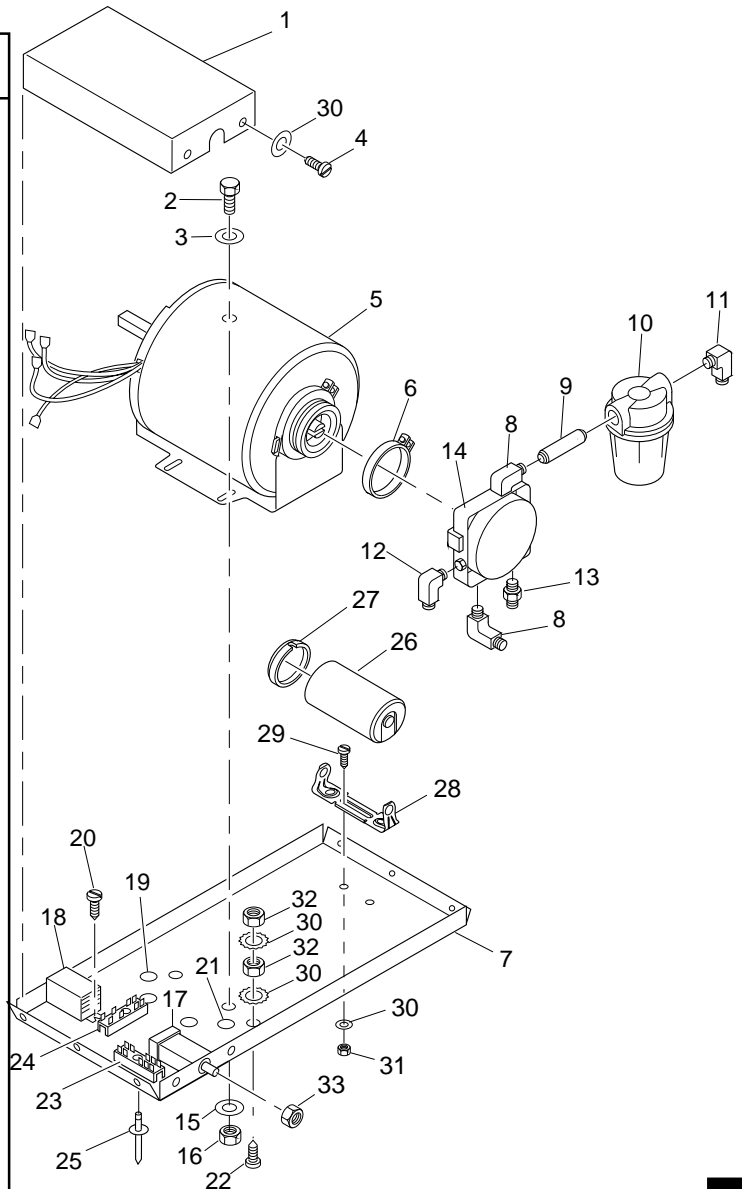
Burner Head Assembly

REF NO.	PART NO.	DESCRIPTION	QTY.
1	M10908-2	Screw, #6-32 x 3/8"	2
2	099229-01	Photocell bracket	1
3	HA3012	Spark plug	1
4	M51070-02	Nozzle	1
5	M51170-01	Plug	1
6	M50924-02	Burner head body	1
7	69246	Straight nipple	1
8	M50077-02	Solenoid valve	1
9	M50297	Compression elbow	1
10	M50429	Spark plug gasket	1

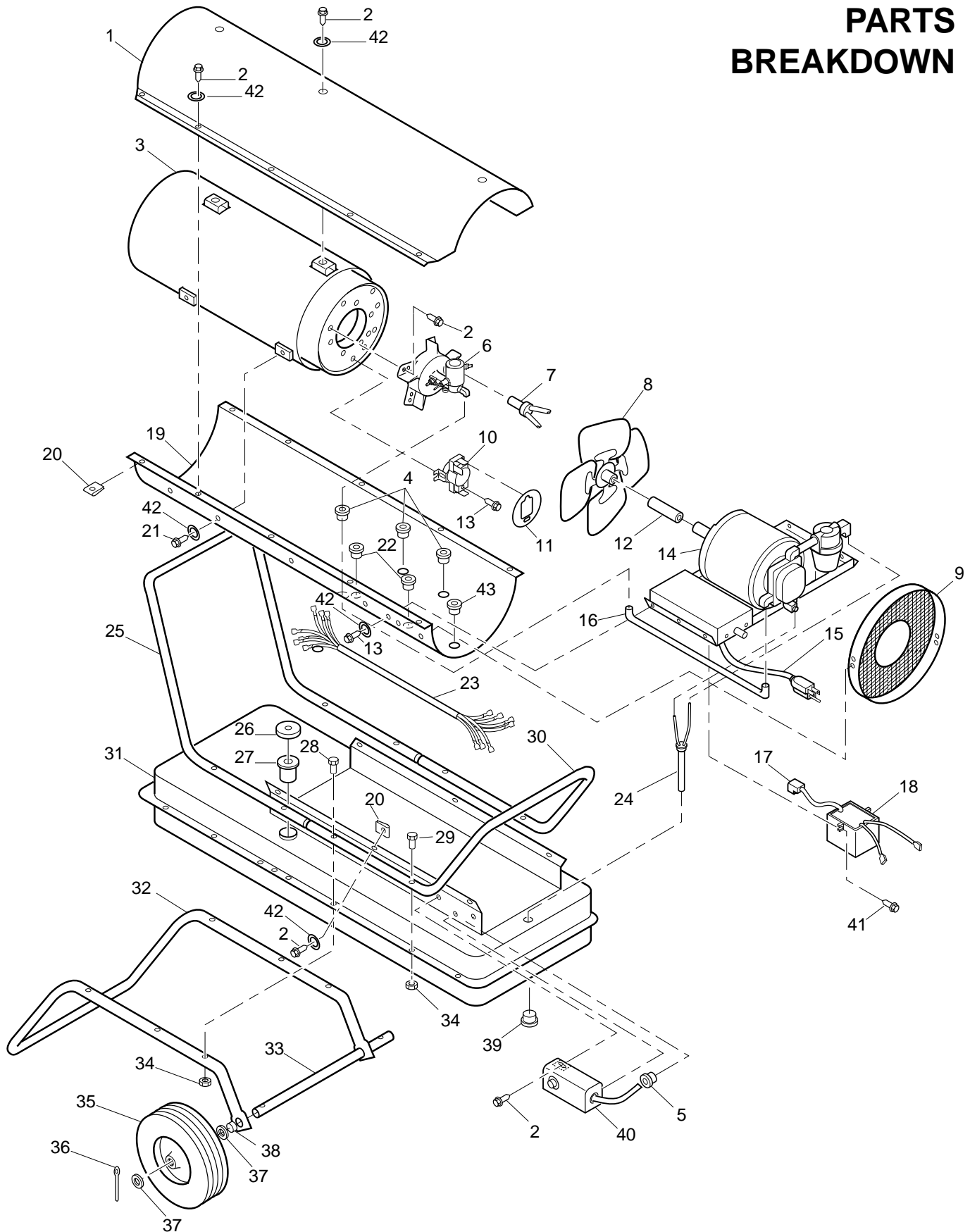


Motor and Pump Assembly

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	097495-02AA	Wiring cover	1
2	HF5-5C	Screw, 5/16-24 x 5/16"	4
3	WLIE-5	Lockwasher, 5/16"	4
4	M11084-26	Screw, #10-16 x 3/8"	3
5	M50064-07	Motor	1
6	M50116	Flange clamp (holds pump to motor)	1
7	099520-04AA	Motor support	1
8	57413	Street elbow	2
9	M17499-2	Pipe nipple	1
10	098102-01	Fuel filter assembly	1
	098103-01	Filter element (inside fuel filter assembly, includes rubber gaskets)	1
11	M50114-02	90° Male elbow	1
12	M50297	Compression elbow	1
13	M50113-02	Straight fitting	1
14	M50065-02	Fuel pump	1
15	WLIE-5	Lockwasher, 5/16"	4
16	NPF-5C	Hex nut, 5/16-24"	4
17	097630-02	Flame-out control	1
18	098894-01	Power relay	1
19	M50104-02	Shorty bushing	3
20	M10908-2	Screw, #6-32 x 3/8"	2
21	M50400	Strain relief bushing	1
22	RF3-5B	Screw, #10-32 x 1/2"	1
23	099125-05	Terminal board	1
24	099125-04	Terminal board	1
25	099157-01	Rivet	2
26	M12650-12	Capacitor	1
27	M51226-01	Capacitor cap	1
28	M51231-01	Capacitor bracket	1
29	FPF3-4C	Screw, #10-32 x 1/2"	2
30	WLE-3	Lockwasher, #10	7
31	NPF-3C	Nut, #10-32	2
32	NPF-3B	Nut, #10-32	2
33	099177-01	Hex nut	1



ILLUSTRATED PARTS BREAKDOWN



PARTS LIST

This list contains replaceable parts used in your heater. When ordering parts, be sure to provide the correct model and serial numbers (from the model plate), then the part number and description of the desired part.

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	M50060-02AB	Upper shell	1
2	M11084-27	Screw, #10-16 x 1/2"	25
3	M50542-01	Combustion chamber & shield	1
4	M30865-02	Bushing	3
5	1000576	Grommett	1
6	†	Burner head assembly	1
7	M16656-18	Photocell assembly	1
8	M50121-02	Fan	1
9	102243-01AA	Fan guard	1
10	M51336-02	Fan switch	1
11	M51160-01	Fan switch cover	1
12	M50278	Sleeve	1
13	M11084-26	Screw, #10-16 x 3/8"	13
14	†	Motor & pump assembly	1
15	079673-03	Power cord	1
16	M50295	Fuel line	1
17	M50050	Ignition boot	1
18	098641-07	Electronic ignitor	1
19	M50061-02AB	Lower shell	1
20	M11271-8	Clip nut	14
21	M11084-3	Screw, #12-14 x 1/2"	4
22	M50104-02	Bushing	2
23	099509-03	Wire harness	1
24	M50115-01	Fuel line assembly	1
25	M50062-03	Front handle	1
26	097702-01	Fuel cap	1
27	HA2210	Filler neck screen	1
28	HC4-18C	Screw, 1/4-20 x 2 1/4"	6
29	M51043-01	Screw, 1/4-20 x 1 1/2"	2
30	M50062	Rear handle	1
31	098513-05	Fuel tank	1
32	M50063	Wheel support frame	1
33	M18774	Axle	1
34	NTC-4C	Hex lock nut, 1/4-20	8
35	M50389	Wheel	2
36	C5-10C	Cotter pin, 5/32 x 1 1/4"	2
37	WP-10C	Flatwasher, 5/8"	4
38	M50296	Wheel spacer	2
39	M27417	Drain plug	1
40	099566-03	Thermostat	1
41	M11084-29	Screw, #10-16 x 3/4"	2
42	WLE-3	Lockwasher, #10	29
43	M50104-03	Bushing	1

† Not available as complete assembly. See page 19.

**EC
CONFORMITY
DECLARATION**

EC CONFORMITY DECLARATION

**DESA Europe B.V.
Innsbruckweg 144, NL-3047 AH
Postbus 11158
NL-3004 ED Rotterdam
Holland**

**Manufacturer:
DESA International, Inc.
2701 Industrial Drive
Bowling Green, KY 42101 U.S.A.**

**Kerosene Portable Forced Air Heater
Model Number: B350CE**

It is declared that these models conform to the Machinery Directive 89/392/EEC, 93/68/EEC including 91/368/EEC.

We declare that the models noted are in conformity.

Company DESA International, Inc.

Name Douglas D. Rohrer

Title Vice President, Specialty Products Engineering

07/04/95 — Bowling Green, KY

Date and Place

Douglas D. Rohrer
Signature

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A Service Manual is available by writing to the Technical Service Department at:

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P.O. Box 90004
Bowling Green, Kentucky 42102-9004
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