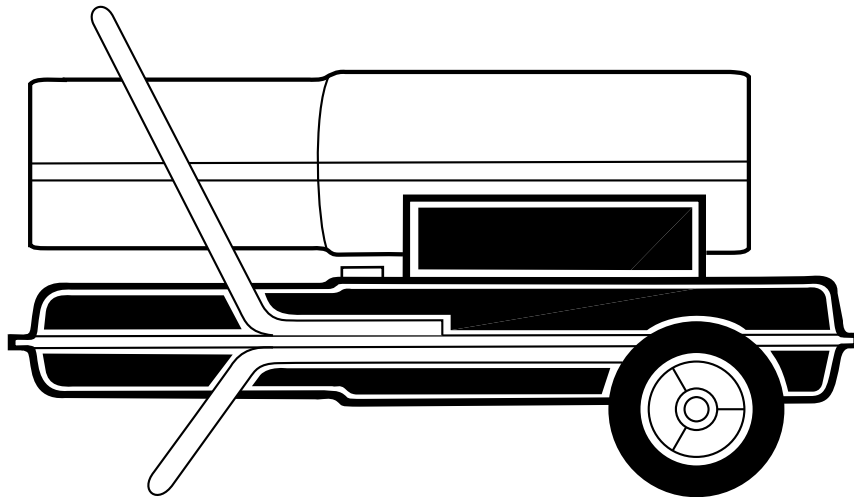


# **PORTABLE FORCED AIR HEATER**

## **OWNER'S MANUAL**



**Heater Size: 165,000 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.**

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## 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, 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.

*Continued*

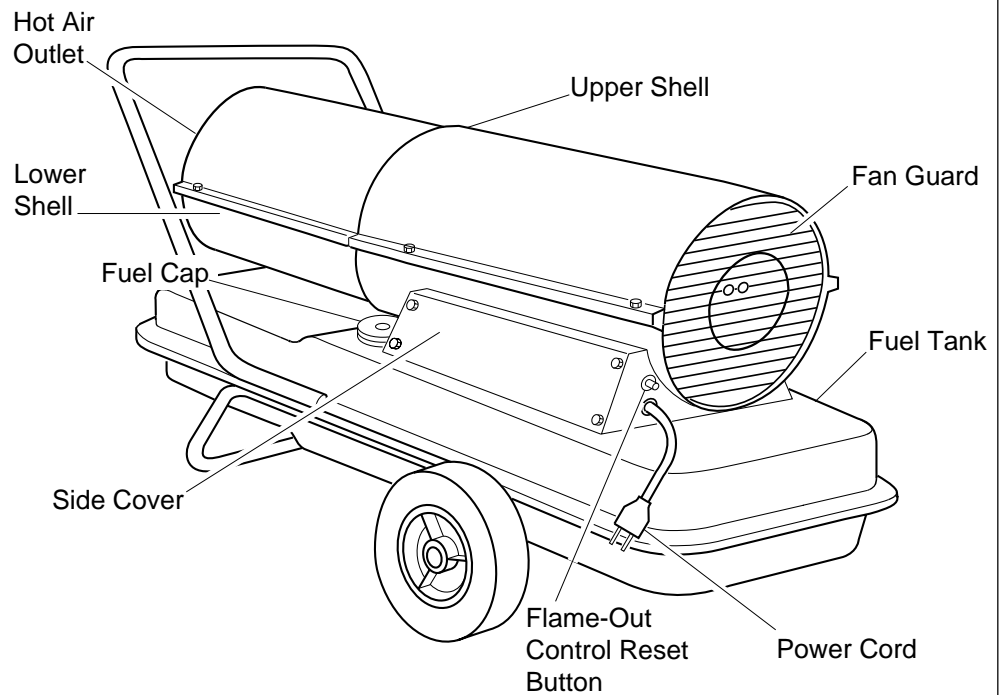
# SAFETY INFORMATION

*Continued*

## **WARNINGS** *(Continued)*

- 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 five-square-foot opening of fresh outside air. This heater produces carbon monoxide, which is listed by the State of California as a reproductive toxin under Proposition 65.
- Use only in places free of flammable vapors or high dust content.
- Use only the electrical voltage and frequency specified on model plate.
- Use only a three-prong, grounded extension cord.
- 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 if heater is 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.
- Unplug heater when not in use.
- When used with thermostat, heater may start 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 - 165,000 Btu/Hr Model**

## UNPACKING

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

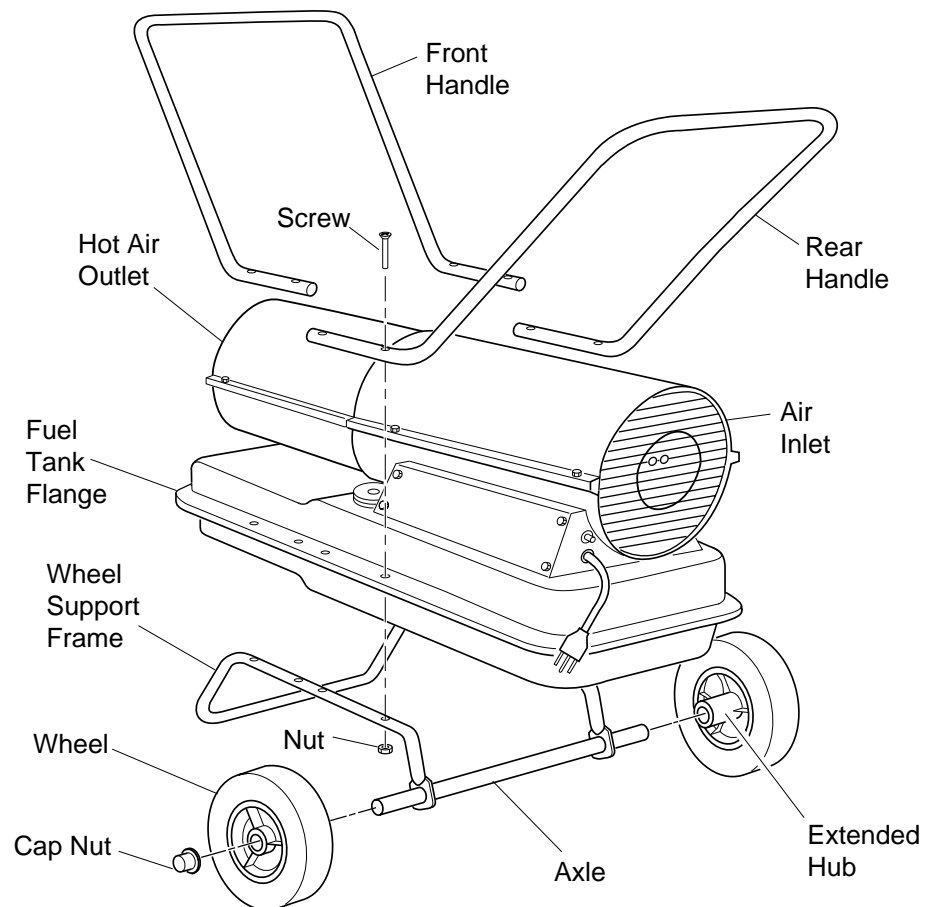
# ASSEMBLY

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

## Tools Needed

- Medium Phillips Screwdriver
- 3/8" Open or Adjustable Wrench
- Hammer

1. Slide axle through wheel support frame. Install wheels on axle.  
*IMPORTANT:* When installing wheels, point extended hub of wheels toward wheel support frame (see Figure 2).
2. Place cap nuts on axle ends. Gently tap with hammer to secure.
3. 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.
4. Place front handle (and rear handle if provided) on top of fuel tank flange. Insert screws through handle(s), fuel tank flange, and wheel support frame. Attach nut finger tight after each screw is inserted.
5. After all screws are inserted, tighten nuts firmly.



**Figure 2 - Wheel and Handle Assembly**

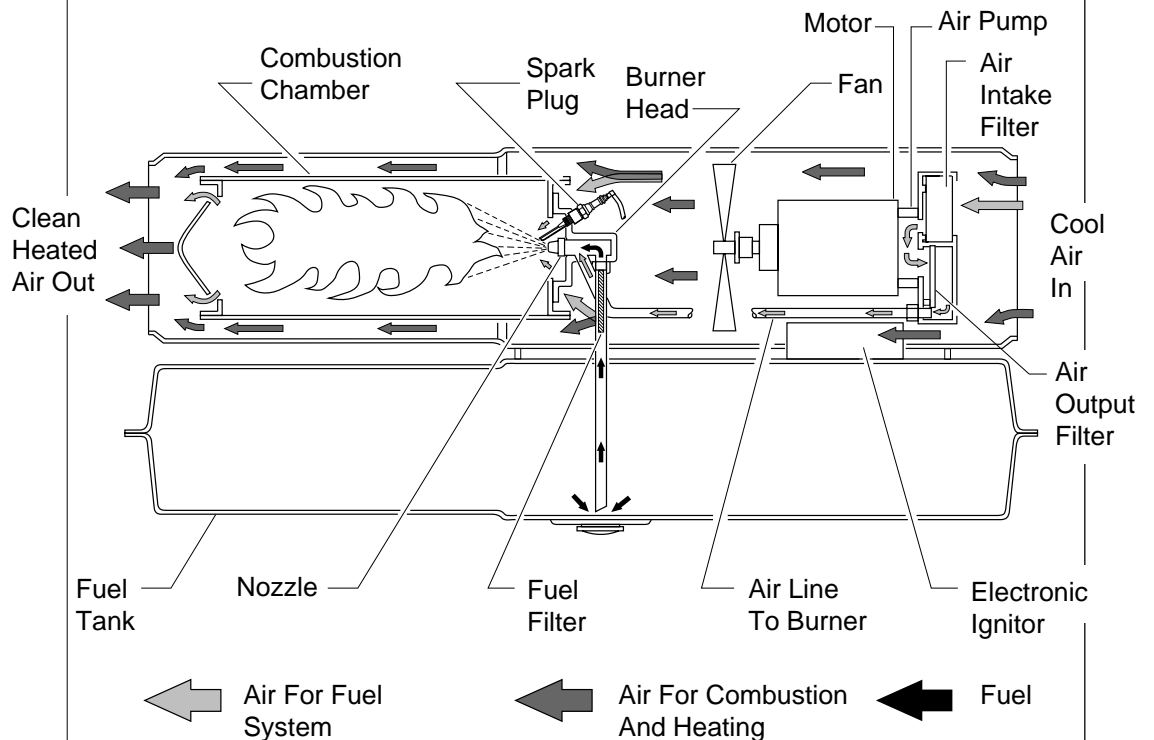
# THEORY OF OPERATION

**The Fuel System:** The air pump forces air through the air line. The air is then pushed through the burner head nozzle. This air causes fuel to lift from the tank. 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.



**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 the 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.**

Provide a fresh air opening of at least five square feet. Provide extra fresh air if more heaters are being used.

*Example:* A 165,000 Btu/Hr heater requires one of the following:

- a two-car garage door raised 6 3/4 inches
- a single-car garage door raised ten inches
- two, thirty-inch windows raised twelve inches

# OPERATION

## WARNING

**Review and understand the warnings in the Safety Information Section. They are needed to safely operate this heater. Follow all local codes when using 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. Plug power cord of heater into three-prong, grounded extension cord. Extension cord must be at least six feet long.

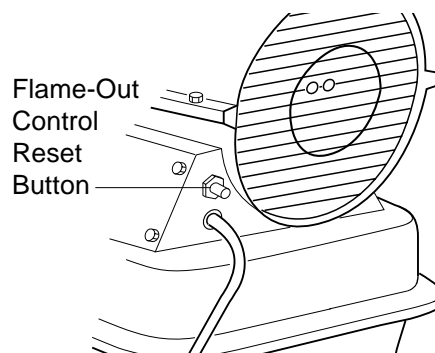
#### **Extension Cord Wire Size Requirements**

6 to 10 feet long, use 18 AWG rated cord

11 to 100 feet long, use 16 AWG rated cord

101 to 200 feet long, use 14 AWG rated cord

5. Plug extension cord into standard 120 volt/60 hertz, three-hole, grounded outlet. Heater will start when extension cord is plugged into outlet. If not, push in flame-out control reset button (see figure 4).



**Figure 4 - Flame-Out Control Reset Button**

### To Stop Heater

1. Unplug power cord from outlet.

### To Restart Heater

1. Wait 2 minutes after stopping heater.
2. Repeat steps under *To Start Heater*, above.



## STORING, TRANSPORTING, OR SHIPPING

## PREVENTATIVE MAINTENANCE SCHEDULE

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

1. Drain fuel tank.

**Note:** Some models have drain plug on underside of fuel tank. If so, remove drain plug to drain all fuel. If heater does not have drain plug, drain fuel through fuel cap opening. Be sure all fuel is removed.

2. Replace drain plug if provided.
3. 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.
4. Replace fuel cap or drain plug. Properly dispose of old and dirty fuel. Check with local automotive service stations that recycle oil.
5. If storing, store heater in dry place. 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.

### **WARNING**


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

<u>Item</u>	<u>How Often</u>	<u>How To</u>
Fuel tank	Flush every 150-200 hours of operation or as needed.	See <i>Storing, Transporting, or Shipping</i> , above.
Air output and lint filters	Replace every 500 hours of operation or once a year.	See <i>Air Output, Air Intake, and Lint Filters</i> , page 11.
Air intake filter	Wash and dry with soap and water every 500 hours of operation or replace as needed.	See <i>Air Output, Air Intake, and Lint Filters</i> , page 11.
Fuel filter	Clean twice a heating season or replace as needed.	See <i>Fuel Filter</i> , page 12.
Spark plug	Clean and regap every 600 hours operation or replace as needed.	See <i>Spark Plug</i> , pages 12.
Fan blades	Clean each season or as needed.	See <i>Fan</i> , page 11.
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.

OBSERVED FAULT	POSSIBLE CAUSE	REMEDY
Heater ignites, but flame-out control shuts off heater after a short period of time.	Wrong pump pressure	See <i>Pump Pressure Adjustment</i> , page 12.
	Dirty air output, air intake and lint filters	See <i>Air Output, Air Intake and Lint Filters</i> , page 11.
	Dirty fuel filter	See <i>Fuel Filter</i> , page 12.
	Dirt in nozzle	See <i>Nozzle</i> , page 13.
	Dirty photocell lens	Clean photocell lens.
	Bad flame-out control	Replace flame-out control.
Heater will not ignite, but motor runs for a short period of time.	Wrong pump pressure	See <i>Pump Pressure Adjustment</i> , page 12.
	Carbon deposits on spark plug and/or improper gap	See <i>Spark Plug</i> , pages 12.
	Dirty fuel filter	See <i>Fuel Filter</i> , page 12.
	Dirt in nozzle	See <i>Nozzle</i> , page 13.
	Water in fuel tank	Drain and flush fuel tank with clean kerosene. See <i>Storing, Transporting, or Shipping</i> , page 9.
<div>  <b>WARNING: High voltage!</b> </div>		
Motor does not start when heater is plugged in, fan rotates slowly or does not turn.	Electronic ignitor not grounded	Make sure electronic ignitor mounting is tight.
	Bad electronic ignitor	Replace electronic ignitor.
	Flame-out control not reset	Press flame-out control reset button.
	Binding pump rotor	If fan is hard to turn, see <i>Pump Rotor</i> , page 13.

# SERVICE PROCEDURES

## Upper Shell Removal

1. Remove screws along each side of heater using 5/16" nut-driver. These screws attach upper and lower shells together.
2. Lift upper shell off.
3. Remove fan guard.

## Fan

**IMPORTANT:** Remove fan from motor shaft before removing motor from heater. The weight of the motor resting on the fan could damage the fan pitch.

1. Remove upper shell (see above).
2. Use 1/8" Allen wrench to loosen set-screw which holds fan to motor shaft.
3. Slip fan off motor shaft.
4. Clean fan using soft cloth moistened with kerosene or solvent.
5. Dry fan thoroughly.
6. Replace fan on motor shaft. Place fan hub flush with end of motor shaft (see Figure 6).
7. Place setscrew on flat of shaft. Tighten setscrew firmly (40-50 inch-pounds).
8. Replace fan guard and upper shell.

## Air Output, Air Intake, and Lint Filters

1. Remove upper shell (see above).
2. Remove filter end cover screws using 5/16" nut-driver.
3. Remove filter end cover.
4. Replace air output and lint filters.
5. Wash or replace air intake filter (see *Preventative Maintenance Schedule*, page 9).
6. Replace filter end cover.
7. Replace fan guard and upper shell.

**IMPORTANT:** Do not oil filters.

## ⚠ WARNING

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

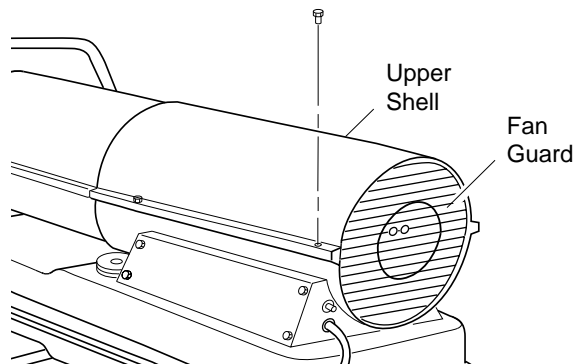


Figure 5 - Upper Shell Removal

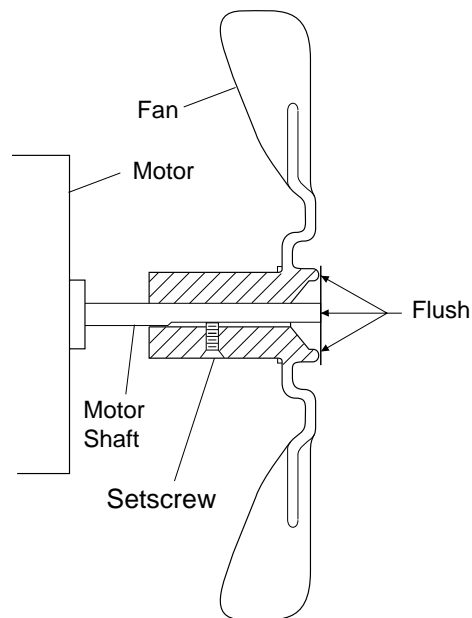


Figure 6 - Fan Cross Section

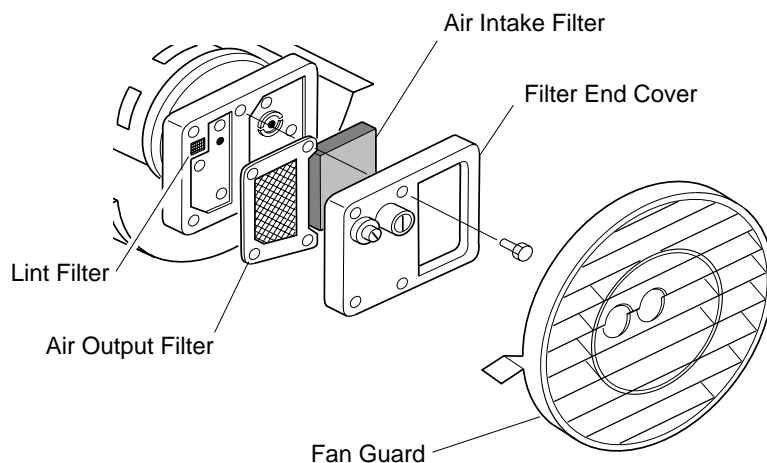


Figure 7 - Air Output, Air Intake, and Lint Filters

## Pump Pressure Adjustment

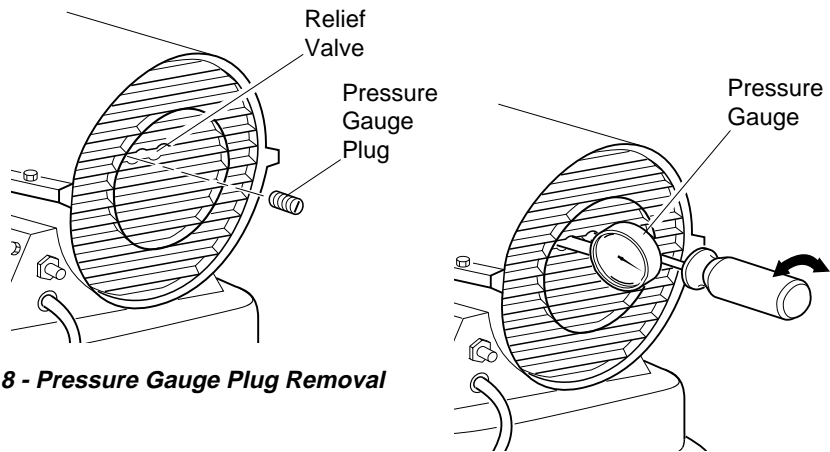
1. Remove pressure gauge plug from filter end cover.
2. Install accessory pressure gauge (part number HA1180).
3. Start heater (see *Operation*, page 8). Allow motor to reach full speed.
4. Adjust pressure. Turn relief valve to right to increase pressure. Turn relief valve to left to decrease pressure. Adjust pump pressure to 5.4 psi.
5. Remove pressure gauge. Replace pressure gauge plug in filter end cover.

## Fuel Filter

1. Remove side cover screws using 5/16" nut-driver.
2. Remove side cover.
3. Pull upper fuel line off fuel filter neck.
4. Carefully pry bushing, fuel filter, and lower fuel line out of fuel tank.
5. Wash fuel filter with clean fuel and replace in tank.
6. Attach upper fuel line to fuel filter neck.
7. Replace side cover.

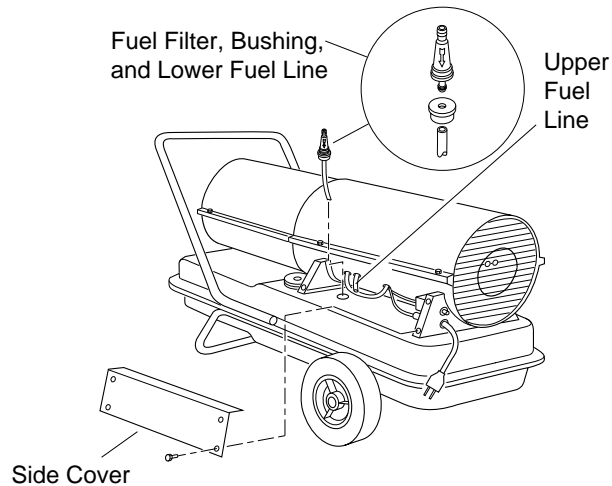
## Spark Plug

1. Remove upper shell (see page 11).
2. Remove fan (see page 11).
3. Remove spark plug wire from spark plug.
4. Remove spark plug from burner head using 13/16" open-end wrench.
5. Clean and regap spark plug electrodes to .075" gap.
6. Install spark plug in burner head.
7. Attach spark plug wire to spark plug.
8. Replace fan (see page 11).
9. Replace fan guard and upper shell.

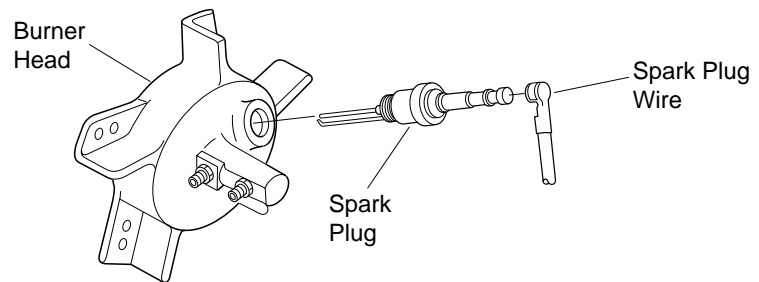


**Figure 8 - Pressure Gauge Plug Removal**

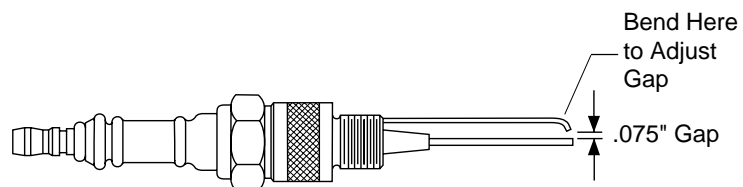
**Figure 9 - Adjusting Pump Pressure**



**Figure 10 - Fuel Filter Removal**



**Figure 11 - Spark Plug Removal**



**Figure 12 - Spark Plug Gap**

## Nozzle

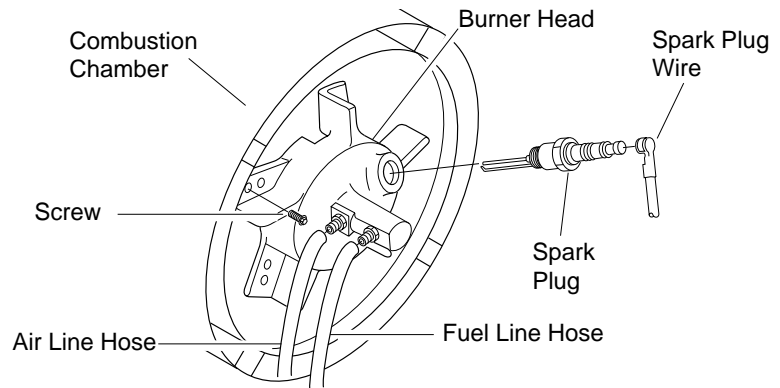
1. Remove upper shell (see page 11).
2. Remove fan (see page 11).
3. Remove fuel and air line hoses from burner head.
4. Remove spark plug wire from spark plug.
5. Remove spark plug from burner head using 13/16" open-end wrench.
6. Remove three screws using 5/16" nut-driver and remove burner head from combustion chamber.
7. Place burner head into vise and lightly tighten.
8. Carefully remove nozzle from burner head using 5/8" socket wrench (see Figure 14).
9. Blow compressed air thru face of nozzle. This will free any dirt in nozzle area.
10. Inspect nozzle seal for damage.
11. Replace nozzle into burner head and tighten firmly (80-110 inch-pounds).
12. Attach burner head to combustion chamber.
13. Install spark plug in burner head.
14. Attach spark plug wire to spark plug.
15. Attach fuel and airline hoses to burner head.
16. Replace fan (see page 11).
17. Replace fan guard and upper shell.

## Pump Rotor

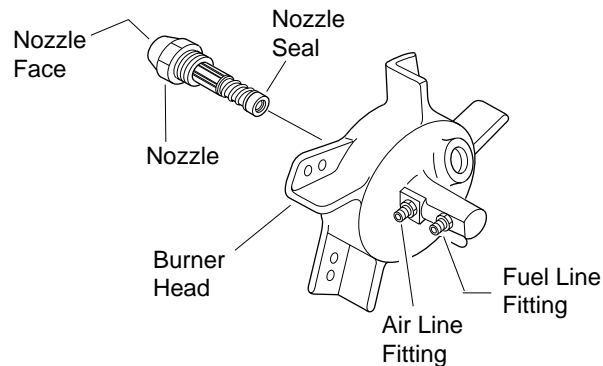
### (Procedure if rotor is binding)

1. Remove upper shell (see page 11).
2. Remove filter end cover screws using 5/16" nut-driver.
3. Remove filter end cover and air filters.
4. Remove pump plate screws using 5/16" nut-driver.
5. Remove pump plate.
6. Remove rotor, insert, and blades.

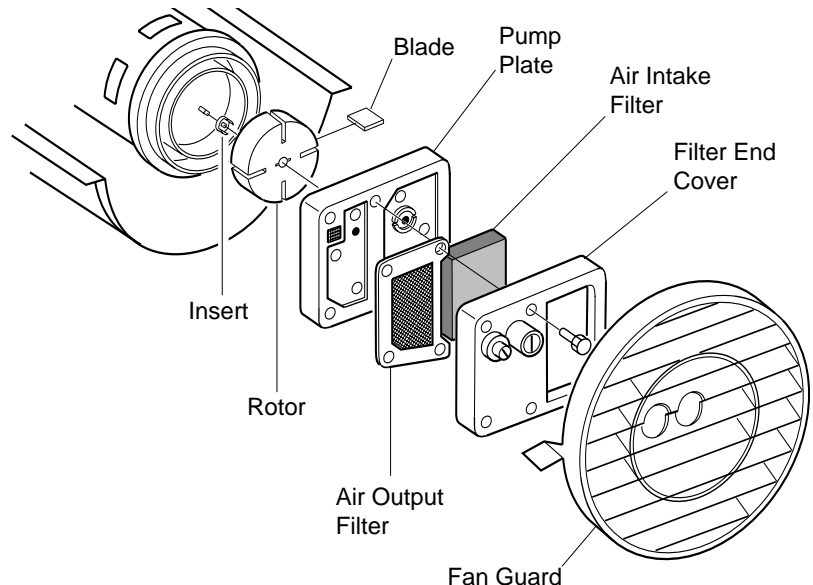
*Continued*



**Figure 13 - Removing Burner Head**



**Figure 14 - Removing Nozzle**



**Figure 15 - Rotor Location**

7. Check for debris in pump. If debris is found, blow out with compressed air.
8. Install insert and rotor.
9. Check gap on rotor. Adjust to .003"/.004" if needed (see Figure 16).

**Note:** Rotate rotor one full turn to insure the gap is .003"/.004" at tightest position. Adjust if needed.

#### (Pump Rotor, continued)

10. Install blades, pump plate, air filters, and filter end cover.
11. Replace fan guard and upper shell.
12. Adjust pump pressure (see page 12).

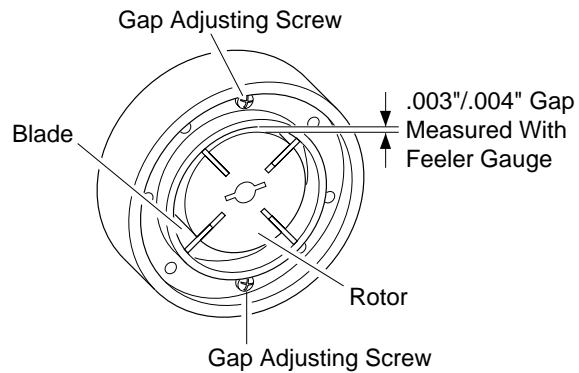
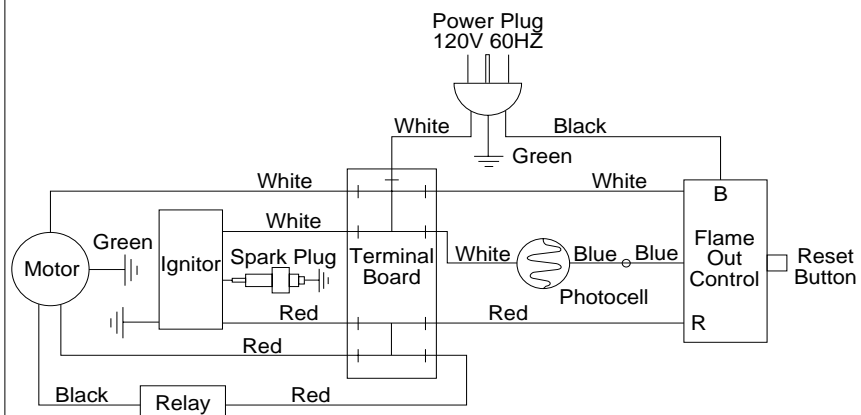
**Note:** If rotor is still binding, proceed as follows.

13. Perform steps 1 thru 6 (see page 13).
14. Place fine grade sandpaper (600 grit) on flat surface. Sand rotor lightly in "figure 8" motion four times (see Figure 17).
15. Reinstall insert and rotor.
16. Perform steps 10 thru 12 above.

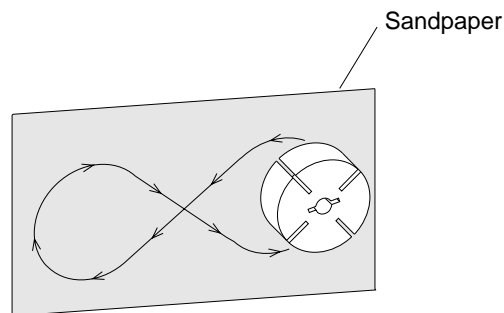
## SPECIFICATIONS

Output Rating (Btu/Hr.)	165,000
Fuel	Use Only Kerosene or No. 1 Fuel Oil
Fuel Tank Capacity (U.S. Gal.)	13.5
Fuel Consumption (Gal. Per Hr.)	1.2
Electric Requirements	120 volt/60 hertz
Amperage (Normal Run)	4.5
Hot Air Output (CFM)	500
Motor RPM	3450

## WIRING DIAGRAM



**Figure 16 - Gap Adjusting Screw Locations**



**Figure 17 - Sanding Rotor**

# TECHNICAL SERVICE

## REPLACEMENT PARTS

You may have further questions about operation or troubleshooting. If so, contact DESA International's Technical Service Dept. at 1-800-323-5190.

*Note:* Use only original replacement parts. This will protect your warranty coverage for parts replaced under warranty.

### Parts Under Warranty

Contact authorized dealers of this product. If they can't supply original replacement part(s), call DESA International's Technical Service Dept. at 1-800-323-5190.

When calling DESA International, have ready

- your name
- your address
- model number of your heater
- how heater was malfunctioning
- purchase date

Usually, we will ask you to return the defective part to the factory.

### Parts Not Under Warranty

Contact authorized dealers of this product. If they can't supply original replacement part(s), call DESA International's Parts Dept. at 1-800-972-7879 for information.

When calling DESA International, have ready

- model number of your heater
- the replacement part number

## MAINTENANCE KITS

KIT	PART NUMBER
Spark Plug Kit	HA3012
Filter Kit	HA3017
Nozzle Kit	HA3023
Rotor/Air Pump Kit	HA3004
Handle Kit	HA2204
Photocell Kit	HA3019
Pump Adjustment Kit	HA3020

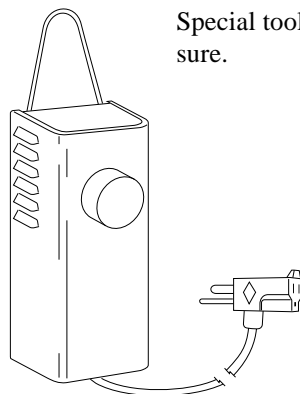
## ACCESSORIES

Purchase accessories and parts from your nearest dealer or service center. If they can not supply these accessories or parts, contact your nearest Parts Central or DESA International for information. Parts Centrals are listed in the Authorized Service Center booklet supplied with heater.

**DESA International**  
P.O. Box 90004  
Bowling Green, KY  
42102-9004  
1-800-972-7879  
Parts Department

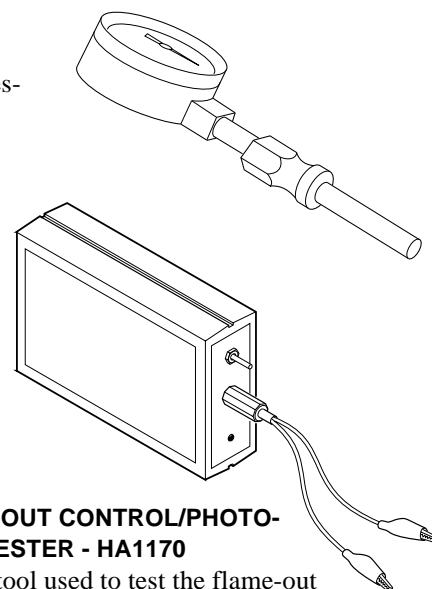
### AIR GAUGE KIT - HA1180

Special tool to check pump pressure.



### THERMOSTAT KIT - HA1210

For all models. Keeps your building at the temperature you select day and night. Helps economize on fuel.

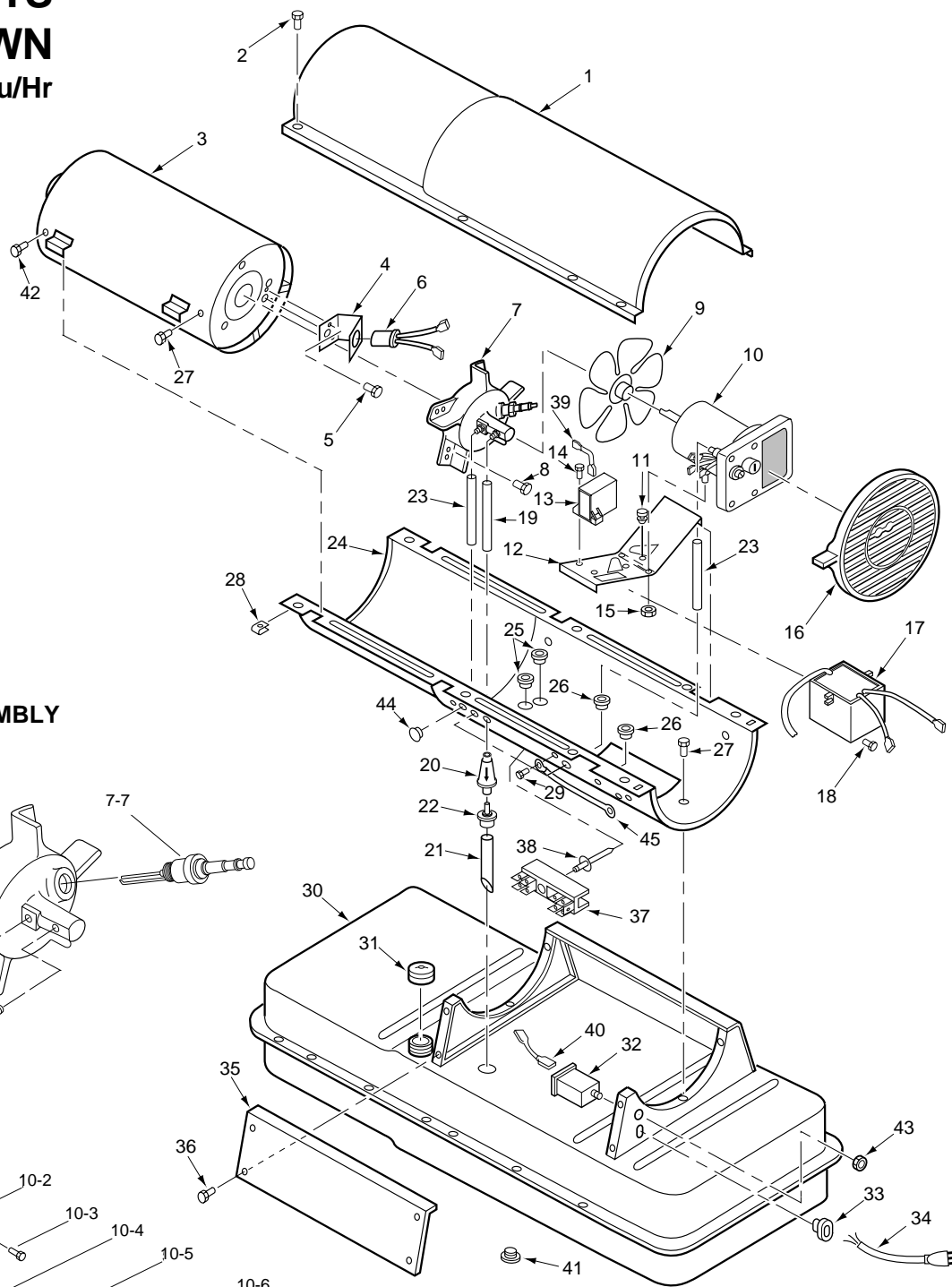


### FLAME-OUT CONTROL/PHOTO-CELL TESTER - HA1170

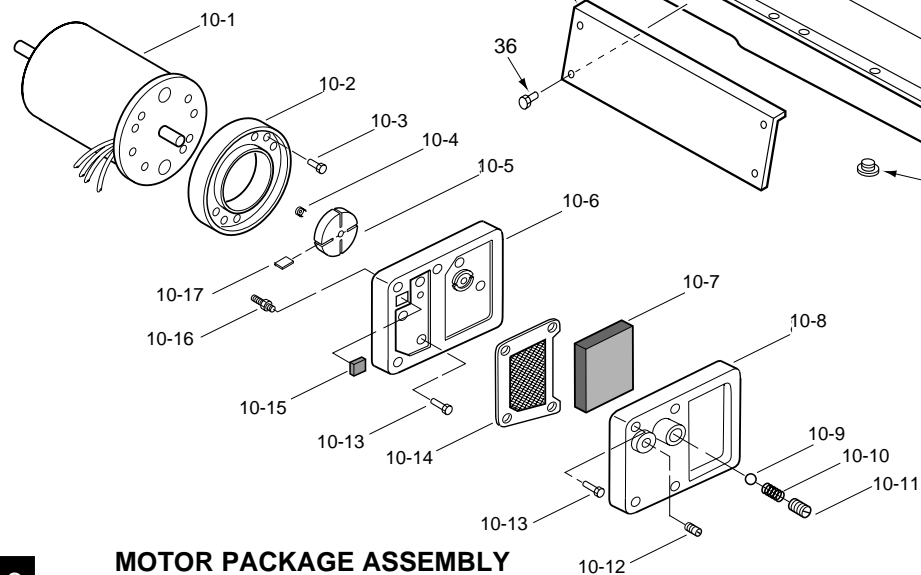
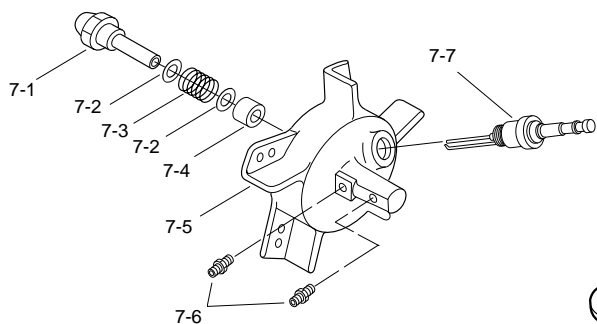
Special tool used to test the flame-out control and photocell.

# ILLUSTRATED PARTS BREAKDOWN

165,000 Btu/Hr



## BURNER HEAD ASSEMBLY



## MOTOR PACKAGE ASSEMBLY



# PARTS LIST

165,000 Btu/Hr

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.

KEY NO.	PART NUMBER	DESCRIPTION	QTY.	KEY NO.	PART NUMBER	DESCRIPTION	QTY.
1	098511-138	Upper Shell (B165)	1	24	098511-140	Lower Shell (B165)	1
	098511-135	Upper Shell (R165)	1		098511-137	Lower Shell (R165)	1
	098511-66	Upper Shell (REM165)	1		098511-82	Lower Shell (REM165)	1
2	100647-01	Screw, #10-16 x 1/2"	8	25	M50104-03	Bushing	2
3	098512-36	Combustion Chamber	1	26	M50104-01	Bushing	2
4	099229-01	Photocell Bracket	1	27	M11084-27	Screw, #10-16 x 1/2"	8
5	M10908-2	Screw, #6-32 x 3/8"	2	28	M11271-8	Clip Nut	8
6	HA3019	Photocell Assembly	1	29	M10908-14	Screw, #8-32 x 3/8"	1
7	***	Burner Head Assembly	1	30	098513-55	Fuel Tank	1
7-1	HA3023	Nozzle with Sleeve	1	31	097702-01	Fuel Cap (Includes Gasket)	1
7-2	M10659-1	Nozzle Washer	2	32	HA3003	Flame-out Control	1
7-3	M10809-1	Nozzle Spring	1	33	M11143-1	Strain Relief Bushing	1
7-4	M8882	Nozzle Sleeve	1	34	098219-19	Power Cord	1
7-5	M50924-07	Burner Head Body	1	35	M51077-01AA	Side Cover	1
7-6	M50820-02	Barb Fitting	2	36	M11084-27	Screw, #10-16 x 1/2"	4
7-7	HA3012	Spark Plug	1	37	099125-03	Terminal Board	1
8	M11084-27	Screw, #10-16 x 1/2"	3	38	099157-01	Rivet	1
9	101897-01	Fan	1	39	079010-20	Wire Assembly (Red, 18")	1
10	***	Motor and Pump Assembly	1	40	M16841-57	Wire Assembly (Red, 6")	1
10-1	101898-01	Motor (Split Phase)	1	41	M27417	Drain Plug (Includes "O" Ring)	1
10-2	079975-02	Pump Body	1	42	099230-01	Shoulder Screw	2
10-3	FHPF3-5C	Screw, #10-32 x 5/8"	2	43	099177-01	Hex Nut	1
10-4	M22009**	Rotor Insert	1	44	099213-01	Button Plug	1
10-5	M22456-1**	Pump Rotor	1	45	M9900-192	Wire Assembly (Green 16")	1
10-6	M50545	Pump End Cover	1	<b>PARTS AVAILABLE - NOT SHOWN</b>			
10-7	M12179**	Intake Filter	1		097896-04	Wheels	2
10-8	M16545	Filter End Cover	1		M16801-2	Axle	1
10-9	M8940**	Steel Ball, 1/4" diameter	1		M12831-3	Wheel Support Frame	1
10-10	M10993-1**	Relief Spring	1		HA2204	Front Handle	1
10-11	M27694**	Adjusting Screw	1		M12345-33	Screw, #10-24 x 1 3/4"	8
10-12	M22997**	Plug	1		M28526	Nut cap	2
10-13	M12461-31	Screw, #10-32 x 1"	10		NTC-3C	Hex Lock Nut, #10-24	8
10-14	M12244-1**	Output Filter	1		097644-03	Tradename Decal (B165)	
10-15	M11637**	Lint Filter	1		097204-10	Tradename Decal (R165)	
10-16	M50820-02	Barb Fitting	1		097773-04	Tradename Decal (REM165)	
10-17	M8643**	Blade	4		098493-01	General Information Decal	
11	M50631	Rubber Bumper	2	<b>OPTIONAL ACCESSORIES</b>			
12	101206-01	Motor Mounting Bracket	1		HA1210	Hang-up Thermostat	
13	097061-01	Solid State Relay	1		HA1180	Air Gauge Kit	
14	M15823-39	Screw, #8-18 x 1/2"	2		HA2210	Fuel Tank Filter Screen	
15	NTC-4C	Hex Lock Nut, 1/4-20	2		HA3004	Rotor Kit (M22456-1, M22009, M8643)	
16	M51114-01	Fan Guard	1		HA3017	Filter Kit (M11637, M12179, M12244-1, M51150-01)	
17	101901-01	Electronic Ignitor	1		HA3020	Pump Kit (M27694, M10993-1, M22997, M8940)	
18	M11084-29	Screw, #10-16 x 3/4"	2				
19	M51345-01	Fuel Line	1				
20	M51150-01**	Fuel Filter	1				
21	M51151-02	Fuel Line Tube	1				
22	M10990-3	Rubber Bushing	1				
23	M50814-03	Airline	1				

\*\* see OPTIONAL ACCESSORIES

\*\*\* Not available as an assembly.

## NOTES

[illegible]

## This image shows a full page of blank, lined paper. It features approximately 28 evenly spaced horizontal grey lines running across the width of the page, providing a guide for handwriting or typing. The background is a clean, solid white color.

# WARRANTY AND REPAIR SERVICE

## LIMITED WARRANTY

DESA International warrants this product and any parts thereof, to be free from defects in materials and workmanship for six (6) months from the date of first purchase when operated and maintained in accordance with instructions. This warranty is extended only to the original retail purchaser, when proof of purchase is provided.

This warranty covers only the cost of parts and labor required to restore the product to proper operating condition. Transportation and incidental costs associated with warranty repairs are not reimbursable under this warranty.

Warranty service is available only through authorized dealers and service centers.

This warranty does not cover defects resulting from misuse, abuse, negligence, accidents, lack of proper maintenance, normal wear, alteration, modification, tampering, contaminated fuels, repair using improper parts, or repair by anyone other than an authorized dealer or service center. Routine maintenance is the responsibility of the owner.

THIS EXPRESS WARRANTY IS GIVEN IN LIEU OF ANY OTHER WARRANTY EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

DESA International assumes no responsibility for indirect, incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations or exclusions may not apply to you. This Limited Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

## WARRANTY SERVICE

Should your heater require service, return it to your nearest authorized service center. Proof of purchase must be presented with the heater. The heater will be inspected. A defect may be caused by faulty materials or workmanship. If so, DESA International will repair or replace the heater without charge.

## REPAIR SERVICE

Return the heater to your nearest authorized service center. Repairs not covered by the warranty will be billed at standard prices.

Illustrated parts lists can be obtained free of charge. Send a self addressed stamped envelope to the address listed below. List the heater model number and the date located in the lower right corner of this page. A service manual may be purchased from the address listed below. Send a check for \$5.00 payable to DESA International.

When writing for information regarding your heater, be sure to include the model number and serial number as shown on the model plate.

Each Service Center is independently owned and operated.

We reserve the right to amend these specifications at any time without notice.

## KEEP THIS WARRANTY

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

Date of Purchase \_\_\_\_\_

(To be filled in by purchaser)

**DESA**  
**INTERNATIONAL**  
Corporate Headquarters

2701 Industrial Drive  
P.O. Box 90004  
Bowling Green, KY 42102-9004

For information, write: DESA International, P.O. Box 90004,  
Bowling Green, Kentucky 42102-9004 ATTN: Customer Service Department.  
When writing, always include model number and serial number.

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Rev. C  
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