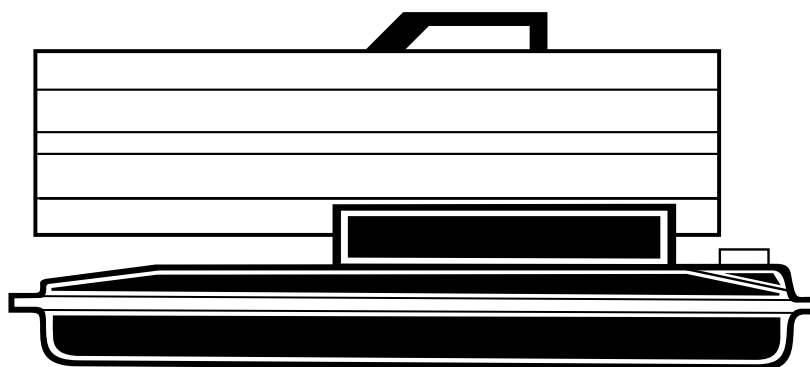


# REDDY Heater<sup>®</sup>

## PORTABLE FORCED AIR HEATER

### OWNER'S MANUAL



Heater Size: 50,000 Btu/Hr

Model: R 15 E

#### **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.**




# REDDY Heater® R 15 E

## PORTABLE FORCED AIR HEATER

### 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!**

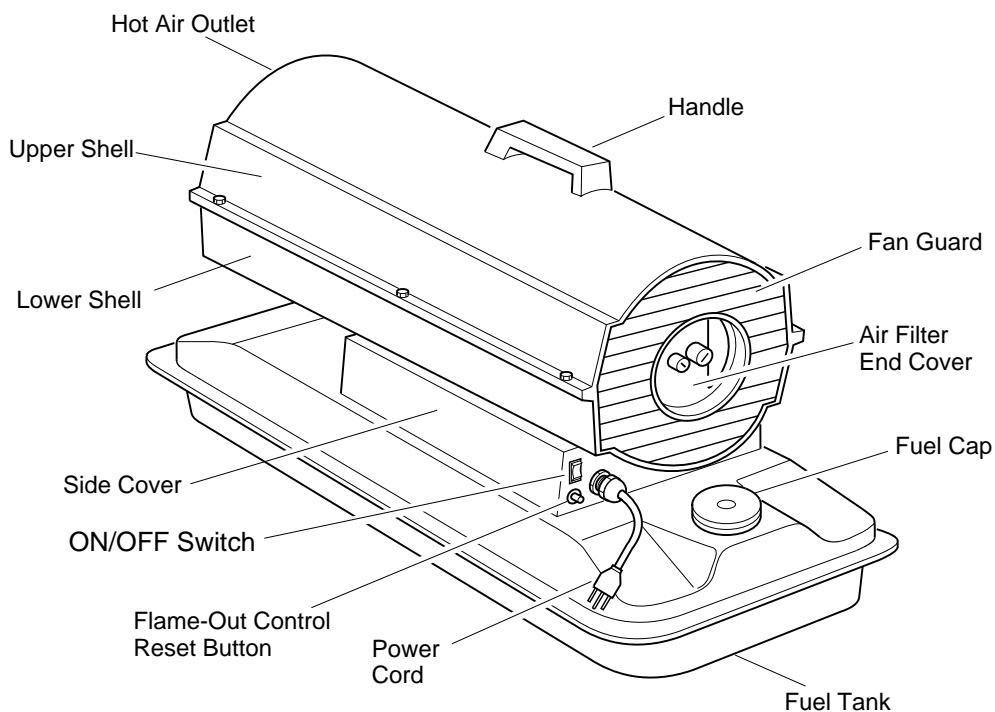
**Carbon Monoxide Poisoning:** Early signs of carbon monoxide poisoning resemble the flu, with headaches, dizziness, and/or nausea. If you have these signs, the heater may not be working properly. **Get fresh air at once!** Have heater serviced. Some people are more affected by carbon monoxide than others. 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.

- 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 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 762cm (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 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 305 cm (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 2800 square cm (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 the electrical voltage and frequency specified on model plate.
- Use only a three-prong, grounded extension cord.
- Minimum heater clearances from combustibles:
  - Outlet: 250 cm (8 Ft.)
  - Sides, Top, and Rear: 125 cm (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.

# OWNER'S MANUAL

## PRODUCT IDENTIFICATION



**Figure 1 - Model R 15 E**

## UNPACKING

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

# REDDY Heater® R 15 E

## PORTABLE FORCED AIR HEATER

### 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
- use of non-toxic anti-icer in fuel during very cold weather

**IMPORTANT:** Use a KEROSENE ONLY 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 2800 square cm (three square feet) for each 100,000 Btu/Hr rating. Provide extra fresh air if more heaters are being used.

**Example:** A 150,000 Btu/Hr heater requires one of the following:

- a two-car garage door raised 15 cm (six inches)
- a single-car garage door raised 23 cm (nine inches)
- two, 76 cm (thirty-inch) windows raised 31 cm (twelve inches)

### 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.

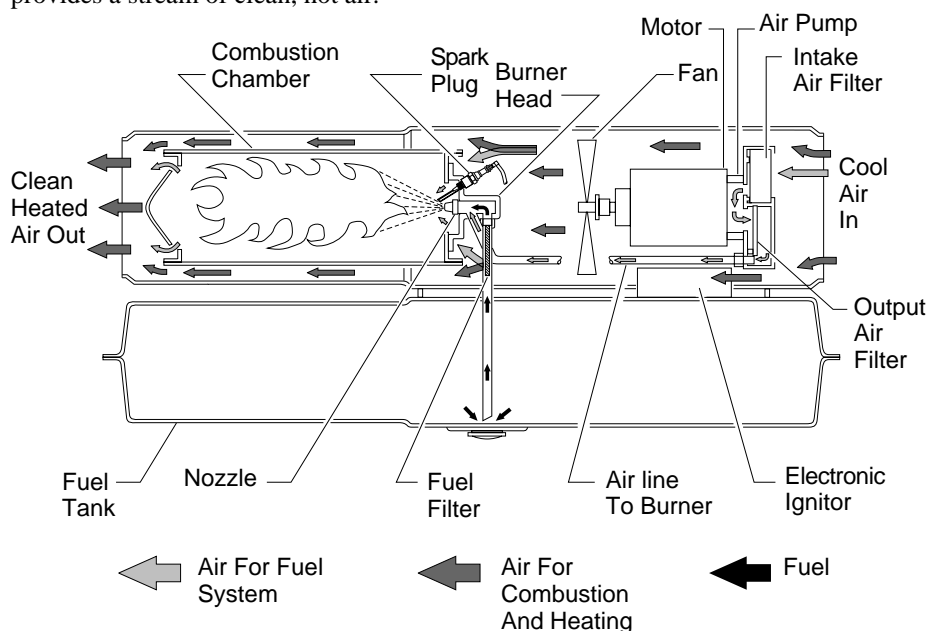


Figure 2 - Cross Section Operational View

# OWNER'S MANUAL

## 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 standard 230 volt/50 hertz, grounded (earthed) outlet. Use an extension cord if needed. Use only a three-prong, grounded (earthed) extension cord.

#### Extension Cord Wire Size Requirements

Up to 30.5 meters (100 feet) long, use 1.0 mm<sup>2</sup> (16 AWG) conductor  
30.6 to 61 meters (101 to 200 feet) long, use 1.5 mm<sup>2</sup> (14 AWG) conductor.

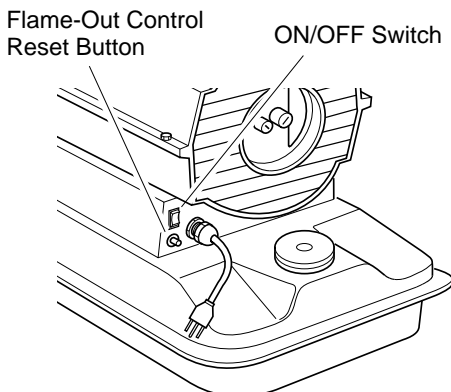
Push ON/OFF switch to ON and heater should start. If heater does not start, press flame-out control reset button (see Figure 3).

### TO STOP HEATER

Push ON/OFF switch to OFF.

### TO RESTART HEATER

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



**Figure 3 - Flame-Out Control Reset Button**

## STORING, TRANSPORTING, OR SHIPPING

*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.

## 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>Storing, Transporting, or Shipping</i>
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 7
Air intake filter	Wash and dry with soap and water every 500 hours of operation or as needed	See <i>Air Output, Air Intake, and Lint Filters</i> , page 7
Fuel filter	Clean twice a heating season or as needed.	See <i>Fuel Filter</i> , page 8
Spark plug	Clean and regap every 600 hours operation or replace as needed.	See <i>Spark Plug</i> , page 8
Fan blades	Clean every season or as needed.	See <i>Fan</i> , page 7
Motor	Not required/permanently lubricated	

# REDDY Heater® R 15 E

## PORTABLE FORCED AIR HEATER

### TROUBLESHOOTING

**⚠ 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	<ol style="list-style-type: none"> <li>1. Wrong pump pressure</li> <li>2. Dirty air output, air intake, and lint filters</li> <li>3. Dirty fuel filter</li> <li>4. Dirt in nozzle</li> <li>5. Dirty photocell lens</li> <li>6. Bad flame-out control</li> </ol>	<ol style="list-style-type: none"> <li>1. See <i>Pump Pressure Adjustment</i>, page 8</li> <li>2. See <i>Air Output, Air Intake and Lint Filters</i>, page 7</li> <li>3. See <i>Fuel Filter</i>, page 8</li> <li>4. See <i>Nozzle</i>, page 9</li> <li>5. Clean photocell lens</li> <li>6. Replace flame-out control</li> </ol>
Heater will not ignite, but motor runs for a short period of time	<ol style="list-style-type: none"> <li>1. Wrong pump pressure</li> <li>2. Carbon deposits on spark plug and/or improper gap</li> <li>3. Dirty fuel filter</li> <li>4. Dirt in nozzle</li> <li>5. Water in fuel tank</li> </ol>	<ol style="list-style-type: none"> <li>1. See <i>Pump Pressure Adjustment</i>, page 8</li> <li>2. See <i>Spark Plug</i>, pages 8</li> <li>3. See <i>Fuel Filter</i>, page 8</li> <li>4. See <i>Nozzle</i>, pages 9</li> <li>5. Drain and flush fuel tank with clean kerosene. See <i>Storing, Transporting, or Shipping</i>, page 5</li> </ol>
<div> <b>⚠ WARNING: High voltage!</b> </div>		
	<ol style="list-style-type: none"> <li>6. Electronic ignitor not grounded (earthed)</li> <li>7. Bad electronic ignitor</li> </ol>	<ol style="list-style-type: none"> <li>6. Make sure electronic ignitor mounting is tight.</li> <li>7. Replace electronic ignitor</li> </ol>
Motor does not start when heater is plugged in, fan rotates slowly or does not turn	<ol style="list-style-type: none"> <li>1. Flame-out control not reset</li> <li>2. Binding pump rotor</li> </ol>	<ol style="list-style-type: none"> <li>1. Reset flame-out control button, see Figure 3, page 5</li> <li>2. If fan is hard to turn, see <i>Pump Rotor</i>, page 9</li> </ol>

## SERVICE PROCEDURES

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

### UPPER SHELL REMOVAL

1. Remove screws and lock washers 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.

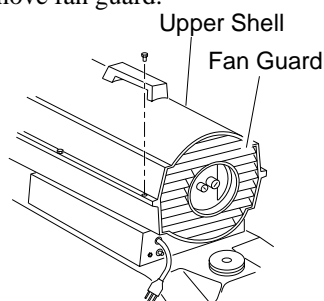


Figure 4 - Upper Shell Removal

### 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 column 1).
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 a 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/ 4.5-5.6 n-m).
8. Replace fan guard and upper shell.

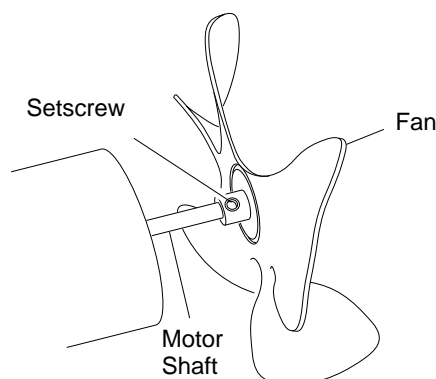


Figure 5 - Fan, Motor Shaft, and Setscrew Location

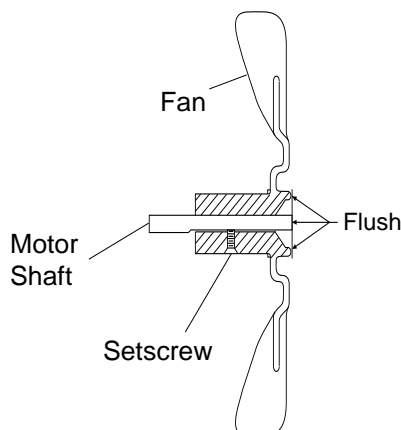


Figure 6 - Fan Cross Section

### AIR OUTPUT, AIR INTAKE, AND LINT FILTERS

1. Remove upper shell, column 1.
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 5).
6. Replace filter end cover.
7. Replace fan guard and upper shell.

**IMPORTANT:** Do not oil filters

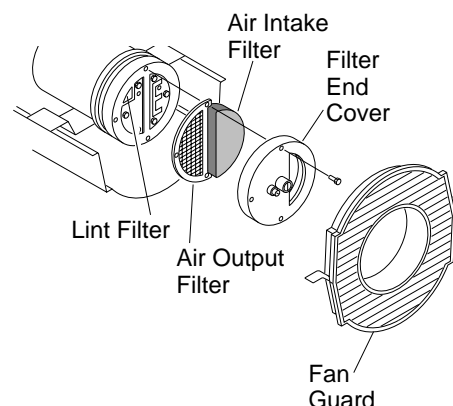


Figure 7 - Air Output, Air Intake, and Lint Filters

# REDDY Heater® R 15 E

## PORTABLE FORCED AIR HEATER

### SERVICE PROCEDURES

**Continued**

#### 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 5). 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. See specifications below for correct pressure for each model.
5. Remove pressure gauge. Replace pressure gauge plug in filter end cover.

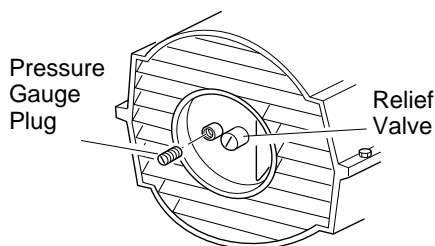


Figure 8 - Pressure Gauge Plug Removal

<u>Model</u>	<u>Pump Pressure (PSI/Bar)</u>
50,000 Btu/Hr	4.9/0.338

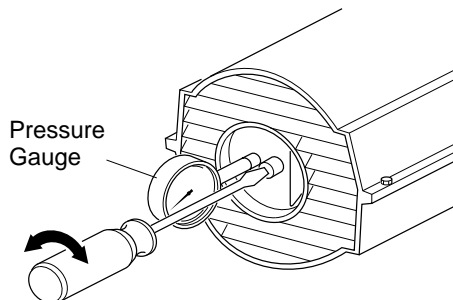


Figure 9 - Adjusting Pump Pressure

#### FUEL FILTER

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

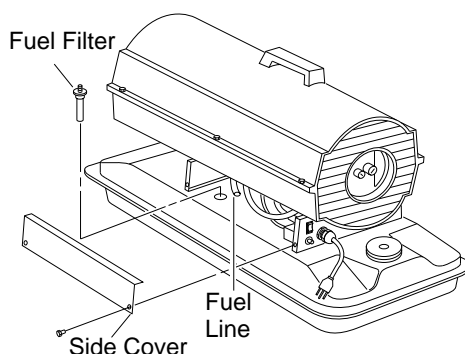


Figure 10 - Fuel Filter Removal

#### SPARK PLUG

1. Remove upper shell, page 7.
2. Remove fan (see page 7).
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 as follows: 1.9 mm (.075") gap
6. Install spark plug in burner head.
7. Attach spark plug wire to spark plug.
8. Replace fan (see page 7).
9. Replace fan guard and upper shell.

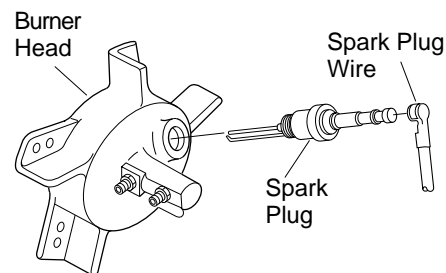


Figure 11 - Spark Plug Removal

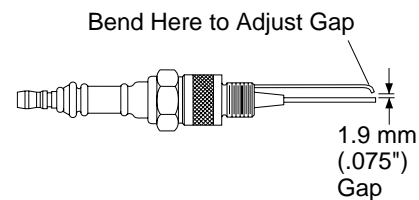


Figure 12 - Spark Plug Gap

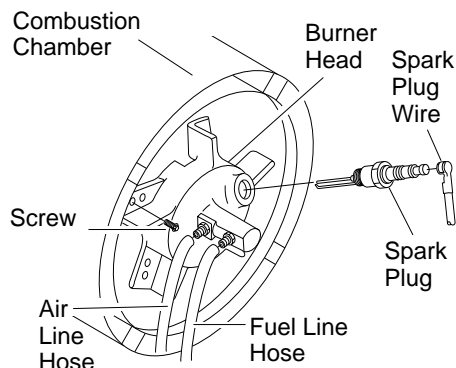


## SERVICE PROCEDURES

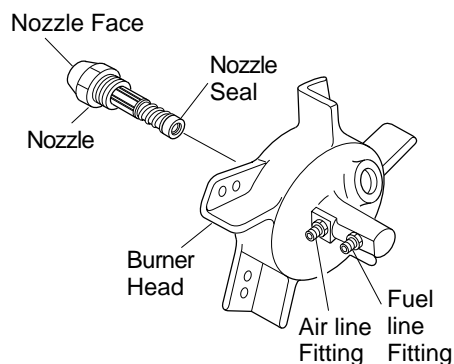
### Continued

### NOZZLE

1. Remove upper shell (see page 7).
2. Remove fan (see page 7).
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 (9.1-12.4 n-m/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 7).
17. Replace fan guard and upper shell.



**Figure 13 - Removing Burner Head**



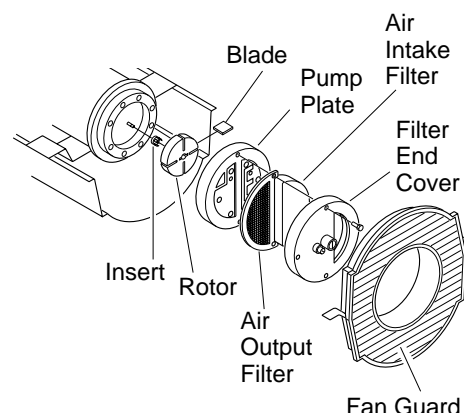
**Figure 14 - Removing Nozzle**

### PUMP ROTOR (Procedure if rotor is binding)

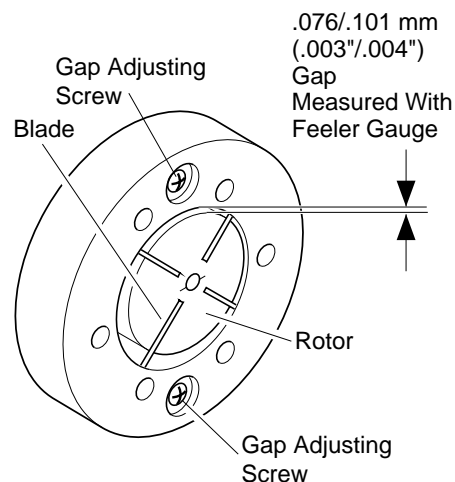
1. Remove upper shell (see page 7).
2. Remove filter end cover screws using 5/16" nut-driver.
3. Remove filter end cover and air filters.
4. Remove pump plate screws using 5/16" nut-driver.
5. Remove pump plate.
6. Remove rotor, insert, and blades.
7. Check for debris in pump. If debris is found, blow out with compressed air.
8. Install insert and rotor.
9. Check gap on rotor. Adjust to .076/.101 mm (.003"/.004") if needed (see Figure 16).
10. Install blades, pump plate, air filters, and filter end cover.
11. Replace fan guard and upper shell.
12. Adjust pump pressure (see page 8).
13. Perform steps 1 through 6 above.
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 through 12 above.

**Note:** Rotate rotor one full turn to insure the gap is .076/.101 mm (.003"/.004") at tightest position. Adjust if needed.

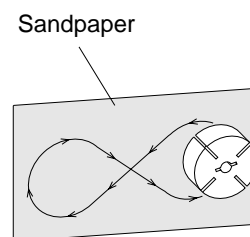
**Note:** If rotor is still binding, proceed as follows.



**Figure 15 - Rotor Location**



**Figure 16 - Gap Adjusting Screw Locations**



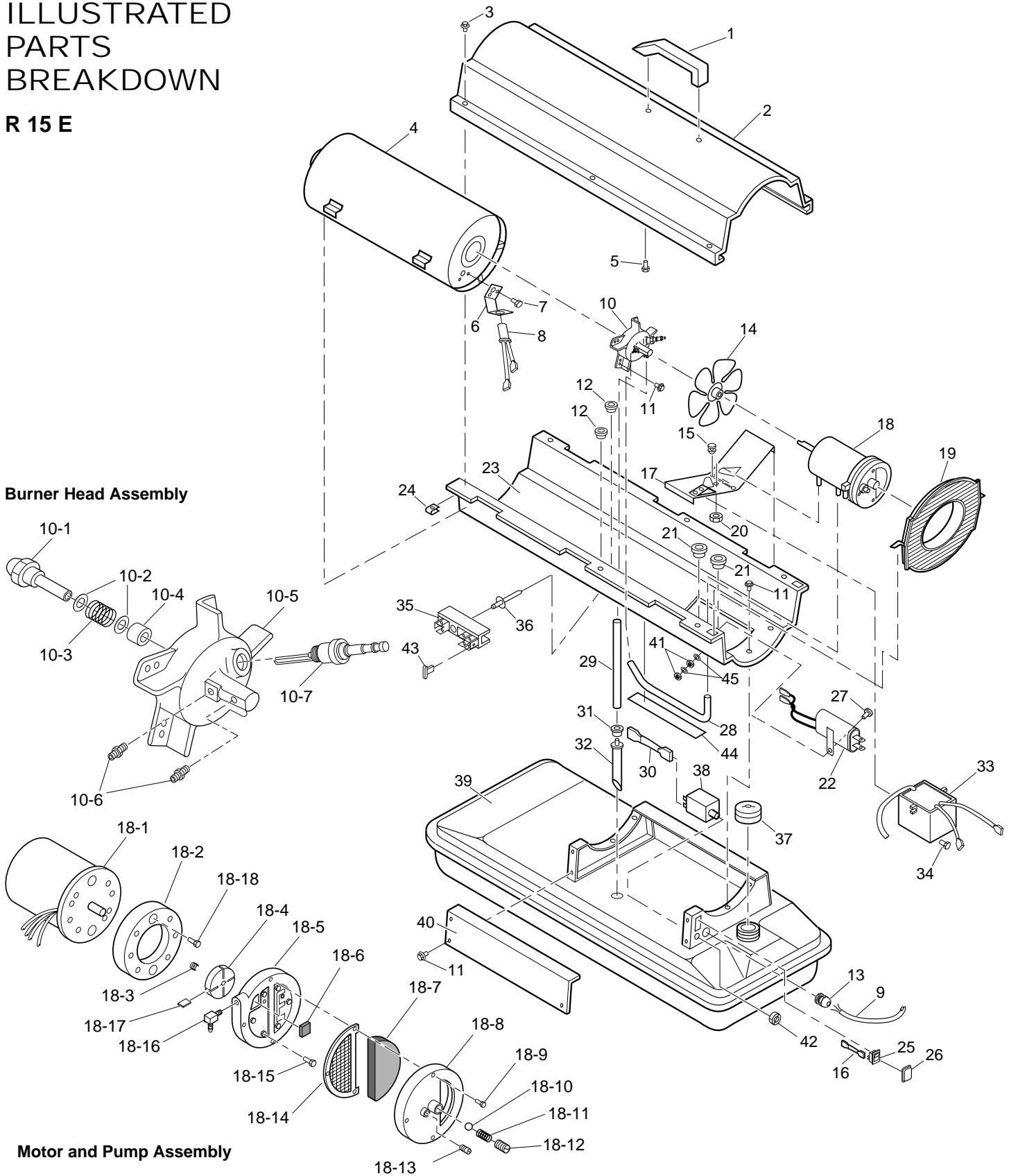
**Figure 17 - Sanding Rotor**

# REDDY Heater® R 15 E

## PORTABLE FORCED AIR HEATER

### ILLUSTRATED PARTS BREAKDOWN

R 15 E



# OWNER'S MANUAL

## PARTS LIST

### R 15 E

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	PART DESCRIPTION	QTY.	KEY NO.	PART NUMBER	PART DESCRIPTION	QTY.
1	M51104-01	Handle	1	18-16	M50016	Elbow, 90° (Barb Fitting)	1
2	098511-36	Upper Shell	1	18-17	M8643	Blade	4
3	102432-01	Screw/Lockwasher, 1/2"	6	18-18	FHPF3-5C	Screw, #10-32 x 5/8"	2
4	098512-55	Combustion Chamber	1	19	M51105-01	Fan Guard	1
5	M11084-29	Screw, #10-16 x 3/4"	2	20	NTC-4C	Hex locknut	2
6	M16660	Photocell Bracket	1	21	M50104-02	Bushing (wires)	2
7	M10908-2	Screw, #6-32 x 3/8"	2	22	102801-01	Power Line RFI Filter	1
8	HA3019	Photocell Assembly	1	23	098511-200	Lower Shell	1
9	079673-06	Power Cord	1	24	M11271-8	Clip Nut	6
10	**	Burner Head Assembly	1	25	097462-01	ON/OFF Switch	1
10-1	100735-16	Nozzle	1	26	079919-01	Switch Cover	1
10-2	M10659-1	Nozzle Seal Washer	2	27	RF3-6B	Screw, #10-32 x 3/4"	1
10-3	M10809-1	Nozzle Seal Spring	1	28	M29652-04	Rubber Airline	1
10-4	M8882	Nozzle Seal Sleeve	1	29	079973-01	Fuel Line	1
10-5	M51098-02	Burner Head Body	1	30	M16841-57	Wire Assembly (red)	1
10-6	M50820-01	Barb Fitting	2	31	M10990-3	Rubber Bushing	1
10-7	104184-01	Spark Plug	1	32	M50876-05	Fuel Filter Assembly (Includes bushing)	1
11	102431-01	Screw/Lockwasher, 1/2"	12	33	102482-02	Electronic Ignitor	1
12	M30865-02	Bushing	2	34	M11084-29	Screw, #10-16 x 3/4"	2
13	M50400	Strain Relief Bushing	1	35	099125-13	Terminal Board	1
14	M51107-01	Fan	1	36	099157-01	Rivet	1
15	M50631	Rubber Bumper	2	37	097702-01	Fuel Tank Cap	1
16	079010-33	Wire Assembly (black)	2	38	097630-02	Flame-Out Control	1
17	101205-01	Motor Bracket	1	39	098513-90	Fuel Tank	1
18	**	Motor and Pump Assembly	1	40	097461-05AA	Side Cover	1
18-1	102001-19	Motor (230V/50Hz)	1	41	NPF-3B	Nut, #10-32	3
18-2	079975-02	Pump Body	1	42	099177-01	Hex Nut	1
18-3	M22009	Insert	1	43	078918-01	Terminal Board Tab Cap	2
18-4	M22456-1	Rotor	1	44	097785-01	Vinyl Foam Gasket	1
18-5	M29608	End Pump Cover	1	45	WLE-3	Lock Washer, #10	2
18-6	M29632	Lint Filter	1	<b>PARTS AVAILABLE - NOT SHOWN</b>			
18-7	M29633	Intake Filter	1		HA2210	Filler Neck Screen	1
18-8	M29609	End Filter Cover	1		097232-01	Tradename Decal	2
18-9	M12461-31	Screw, #10-32 x 1"	3		M9900-192	Combustion Chamber Ground Wire	1
18-10	M8940	Steel Ball (1/4" Dia.)	1		103666-05	Decal Package	1
18-11	M10993-1	Pressure Relief Spring	1				
18-12	M27694	Adjusting Screw	1				
18-13	M22997	Plug	1				
18-14	M29612-01	Output Filter	1				
18-15	M12461-31	Screw, #10-32 x 1"	6				

\*\*Not available as an assembly, order parts separately.

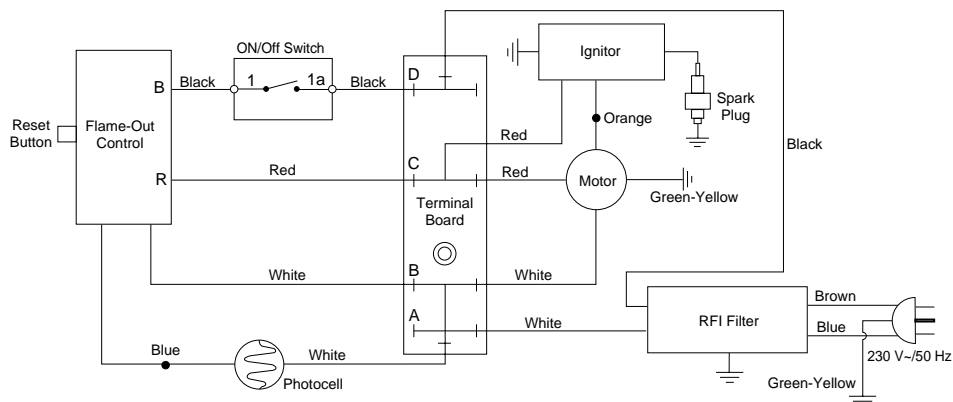
# REDDY Heater® R 15 E

## PORTABLE FORCED AIR HEATER

### SPECIFICATIONS

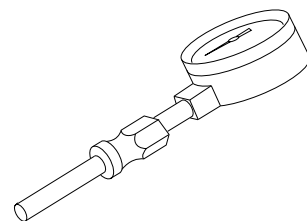
Output Rating (Btu/Hr)	50,000
Fuel	Use Only Kerosene or No. 1 Fuel Oil
Fuel Tank Capacity (Liters/U.S. Gal.)	18.9/5.0
Fuel Consumption (Liters Per Hr./Gal. Per Hr.)	1.40/.37
Electric Requirements	230 V/50 Hz
Amperage (Normal Run)	1.0
Hot Air Output (CMM/CFM)	5.8/205
RPM	2850

### WIRING DIAGRAM



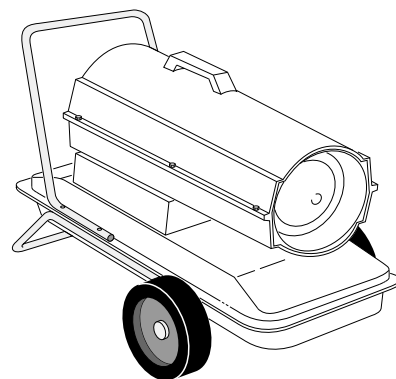
### ACCESSORIES

Purchase accessories from your local dealer.



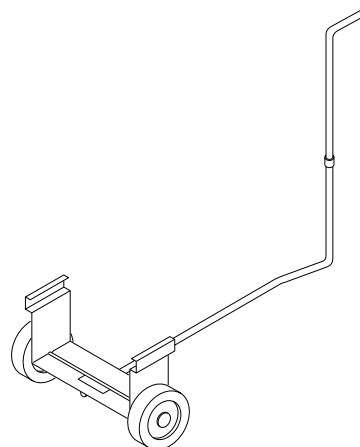
#### AIR GAUGE KIT - HA1180

For all models. Special tool to check pump pressure.



#### HEAVY DUTY WHEELS AND HANDLE KIT - HA1202

For heavy duty applications. Makes your heater even more portable and convenient. .



#### STANDARD WHEELS AND HANDLE KIT - HA1206

Makes heater even more portable and convenient. Easy to assemble.

# OWNER'S MANUAL

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## EC CONFORMITY DECLARATION

### **EC CONFORMITY DECLARATION**

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

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

**Kerosene Portable Forced Air Heaters  
Model Number: R 15 E**

It is declared that these models conform to the Machinery Directive 89/392/EEC, including 91/368/EEC and the Low Voltage Directive 73/23/EEC. It is further declared that these models conform to the EMC Directive 89/336/EEC, amended by 92/31/EEC and including EN50081-1 and EN50082-1.

We declare that the models noted are in conformity.

<u>Company</u>	<u>DESA International, Inc.</u>
<u>Name</u>	<u>Douglas D. Rohrer</u>
<u>Title</u>	<u>Vice President, Specialty Products Engineering</u>

06/15/97 - Bowling Green, KY

Date and Place

  
Signature

# WARRANTY AND REPAIR SERVICE

## CERTIFICATE OF GENERAL EQUIPMENT - LIMITED 1 YEAR WARRANTY

DESA International warrants new Products sold by it to be free from defects in material or workmanship for a period of one year after date of delivery to the first user and subject to the following conditions:

DESA International's obligation and liability under this Warranty is expressly limited to repairing or replacing at DESA International's option, any parts which appear to DESA International upon inspection to have been defective in material or workmanship when shipped from the factory. Such parts shall be provided at no cost to the user, at the business establishment of any factory authorized service center or the factory during regular working hours. The Warranty shall not apply to component parts or accessories of Products not manufactured by DESA International and which carry the warranty of the manufacturer thereof, or to normal maintenance (such as pressure adjustments) or to normal maintenance parts (such as filters and spark plugs). Replacement or repair parts installed in the Product covered by this Warranty are warranted only for the remainder of this Warranty as if such parts were original components of said Product. DESA INTERNATIONAL MAKES NO OTHER EXPRESS WARRANTY. TO THE EXTENT PERMITTED BY LAW DESA INTERNATIONAL MAKES NO IMPLIED WARRANTY AND MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. IN ANY EVENT IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO THE DURATION OF THIS EXPRESS WARRANTY.

Any transportation charges, costs of installation, duty, taxes or any other charges whatsoever must be borne by the user. DESA International's obligation under this limited Warranty shall not include any liability for direct, indirect, incidental, or consequential damage or delay. If requested by DESA International, Products or parts for which a warranty claim is made are to be returned transportation prepaid by user to the factory. Any improper use, including operation after discovery of defective or worn parts, operation beyond capacity, substitution of parts not approved by DESA International, or any alteration or repair by others in such manner as in DESA International's judgement affects the Product materially and adversely, shall void this Warranty.

NO EMPLOYEE OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY UNLESS SUCH CHANGE IS MADE IN WRITING AND SIGNED BY AN OFFICER OF DESA INTERNATIONAL AT ITS HOME OFFICE.

## WARRANTY SERVICE

Always specify model and serial numbers when communicating with the factory.

We reserve the right to amend these specifications at any time without notice. The only Warranty applicable is our standard written Warranty. We make no other Warranty, expressed or implied.

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

**DESA**  
**INTERNATIONAL**

**Corporate Headquarters**

2701 Industrial Drive

P.O. Box 90004

Bowling Green, Kentucky 42102-9004

U.S.A.