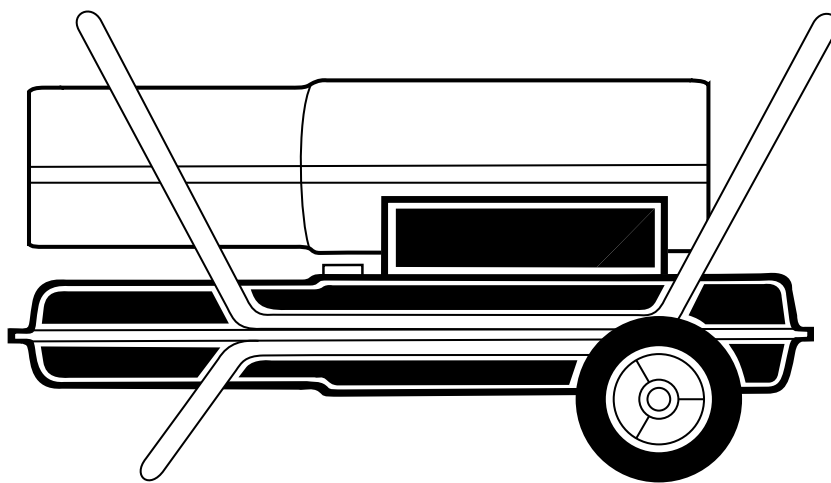


PORTABLE FORCED AIR HEATER

OWNER'S MANUAL



Model BY150ECB 150,000 Btu/Hr 110v/50 Hz

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.



MODEL BY150ECB 150,000 Btu/Hr 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 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 762 cm (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 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.

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.

PRODUCT IDENTIFICATION

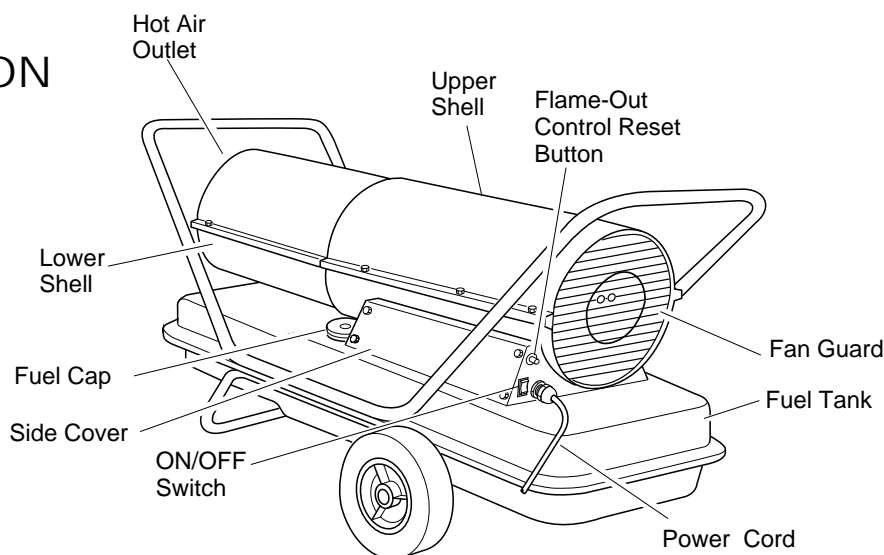


Figure 1 - Model BY150ECB

ASSEMBLY

These models are furnished with wheels and a front handle. Some models are furnished with a rear handle also. Wheels, handle(s), 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 on top of fuel tank flange. Insert screws through handles, 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.

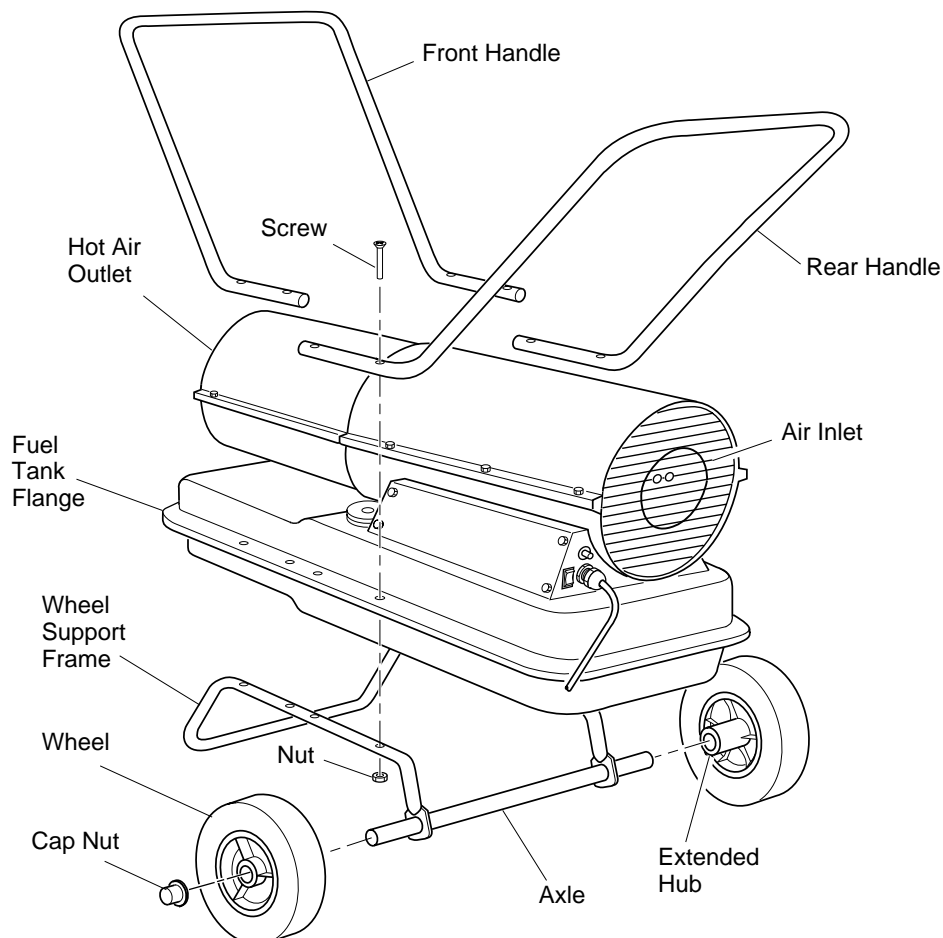


Figure 2 - Wheel and Handle Assembly

MODEL BY150ECB 150,000 Btu/Hr PORTABLE FORCED AIR HEATER

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.

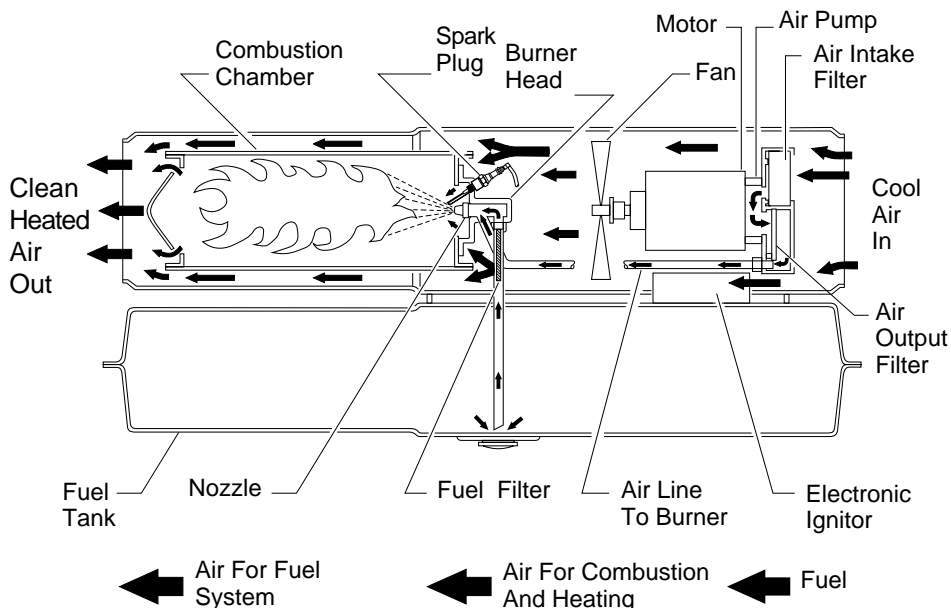


Figure 3 - Cross Section Operational View

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 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)

OPERATION

WARNING: Review and understand the warnings in the Safety Information Section, pages 2 and 3. 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 110 volt/50 hertz, grounded (earthed) outlet. Use an extension cord if needed. Use only a three-prong, grounded (earthed) extension cord.

OPERATION CONTINUED

Extension Cord Wire Size Requirements

Up to 30.5 meters (100 feet) long, use 1.0 mm² (16 AWG) conductor
30.6 to 61 meters (101 to 200 feet) long, use 1.5 mm² (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 4).

TO STOP HEATER

1. Push ON/OFF switch to OFF.

TO RESTART HEATER

1. Wait two minutes after stopping heater.
2. Repeat steps under *To Start Heater*, page 4.

STORING, TRANSPORTING, OR SHIPPING

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

1. Drain 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.

Flame-Out Control Reset Button

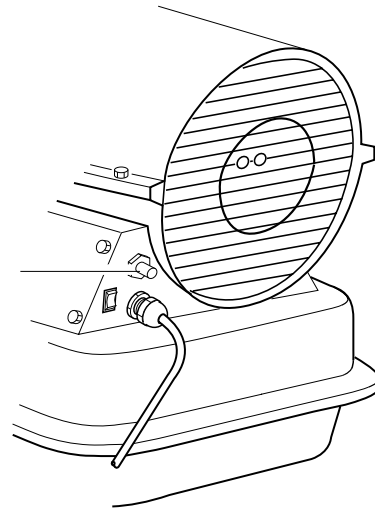


Figure 4 - Flame-Out Control Reset Button

PREVENTATIVE MAINTENANCE SCHEDULE

⚠ 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> , left.
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 replace as needed.	See <i>Air Output, Air Intake, and Lint Filters</i> , page 7.
Fuel filter	Clean twice a heating season or replace 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 each season or as needed.	See <i>Fan</i> , page 7.
Motor	Not required/permanently lubricated	

MODEL BY150ECB 150,000 Btu/Hr 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.	Wrong pump pressure	See <i>Pump Pressure Adjustment</i> , page 7.
	Dirty air output, air intake and/or lint filters	See <i>Air Output, Air Intake and Lint Filters</i> , page 7.
	Dirty fuel filter	See <i>Fuel Filter</i> , page 8.
	Dirt in nozzle	See <i>Nozzle</i> , page 8.
	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 7.
	Carbon deposits on spark plug and/or improper gap	See <i>Spark Plug</i> , page 8.
	Dirty fuel filter	See <i>Fuel Filter</i> , page 8.
	Dirt in nozzle	See <i>Nozzle</i> , page 8.
	Water in fuel tank	Drain and flush fuel tank with clean kerosene. See <i>Storing, Transporting, or Shipping</i> , page 5.
	⚠ WARNING: High voltage!	
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.
	ON/OFF switch not on	Press ON/OFF switch to on
	Flame-out control not reset	Press flame-out control reset button.
	Solid state relay not allowed to reset	Wait two minutes before trying to restart heater.
	Binding pump rotor	If fan is hard to turn, see <i>Pump Rotor</i> , page 9.

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 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.

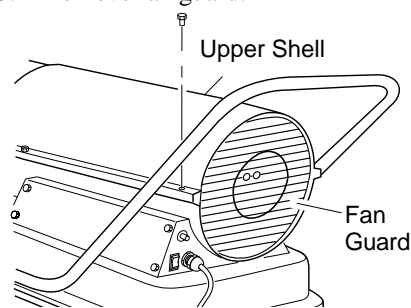


Figure 5 - Upper Shell Removal

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 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 (4.5-5.6 n-m/40-50 inch-pounds).
8. Replace fan guard and upper shell.

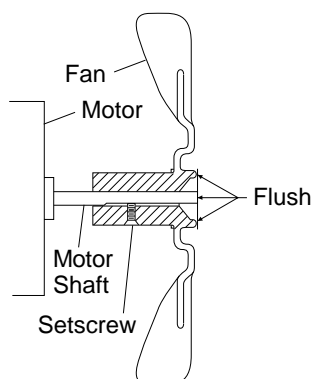


Figure 6 - Fan Cross Section

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 5).
6. Replace filter end cover.
7. Replace fan guard and upper shell.

IMPORTANT: Do not oil filters.

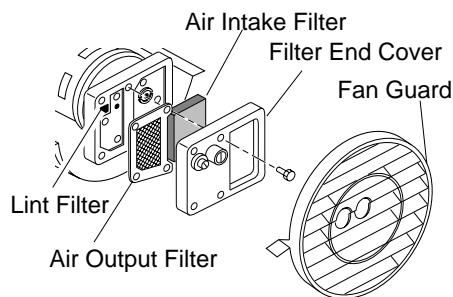


Figure 7 - Air Output, Air Intake, and Lint Filters

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 4). 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 at right for correct pressure for each model.
5. Remove pressure gauge. Replace pressure gauge plug in filter end cover.

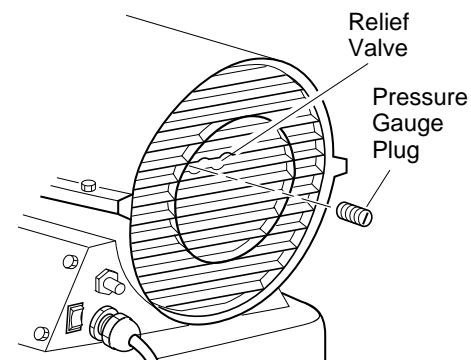


Figure 8 - Pressure Gauge Plug Removal

Model	Pump Pressure
150,000 Btu/Hr	4.8 PSI (.331 bar)

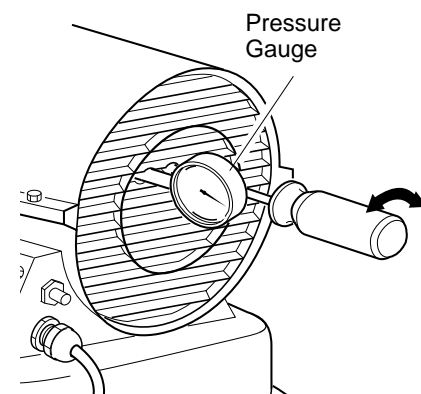


Figure 9 - Adjusting Pump Pressure

MODEL BY150ECB 150,000 Btu/Hr PORTABLE FORCED AIR HEATER

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.

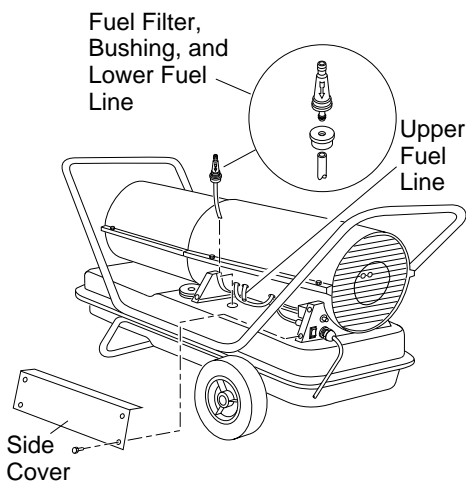


Figure 10 - Fuel Filter Removal

SPARK PLUG

1. Remove upper shell (see page 7).
2. Remove fan (see page 7).
3. Remove spark plug wire from spark plug.
4. Remove spark plug and wave spring washer from burner head using 13/16" open-end wrench.
5. Clean and regap spark plug electrodes to .110" (2.8 mm) gap.
6. Install spark plug and wave spring washer in burner head. Torque 40 to 60 inch-pounds. Adjust (if necessary) to bring side electrode into the acceptable range (see figure 13).
7. Attach spark plug wire to spark plug.
8. Replace fan (see page 7).
9. Replace fan guard and upper shell.

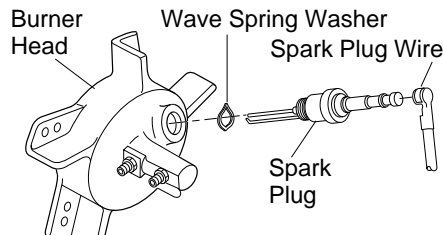


Figure 11 - Spark Plug Removal

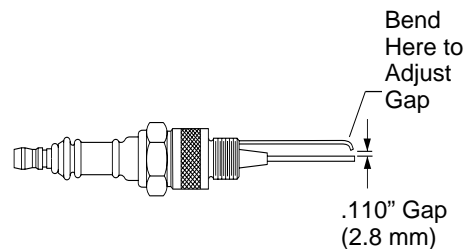


Figure 12 - Spark Plug Gap

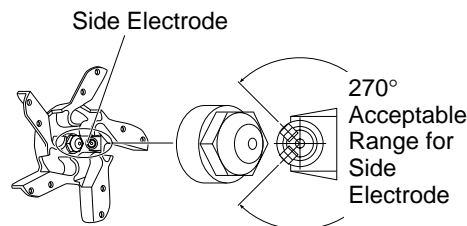


Figure 13 - Acceptable Range For Side Electrode

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 and wave spring washer 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 15).

9. Blow compressed air through 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 and wave spring washer in burner head. Torque 40 to 60 inch-pounds. Adjust (if necessary) to bring side electrode into the acceptable range (see figure 14).
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.

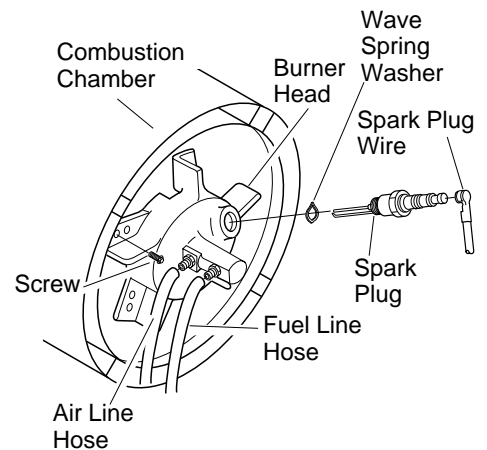


Figure 14 - Removing Burner Head

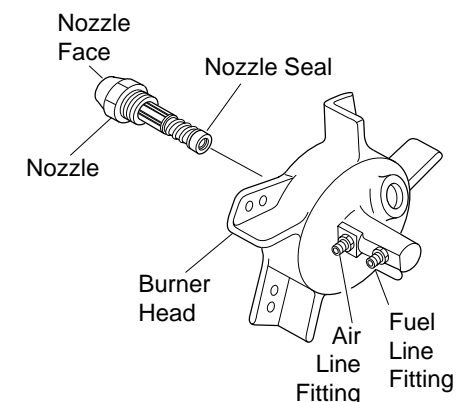


Figure 15 - Removing Nozzle

OWNER'S MANUAL

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 17).

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

10. Install blades, pump plate, air filters, and filter end cover.
11. Replace fan guard and upper shell.
12. Adjust pump pressure (see page 7).

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

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 18).
15. Reinstall insert and rotor.
16. Perform steps 10 through 12 above.

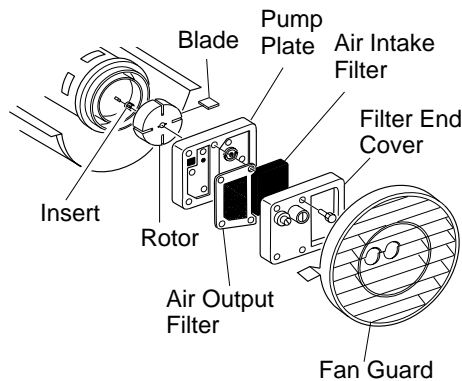


Figure 16 - Rotor Location

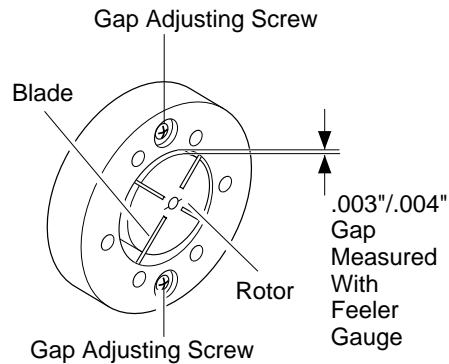


Figure 17 - Gap Adjusting Screw Locations

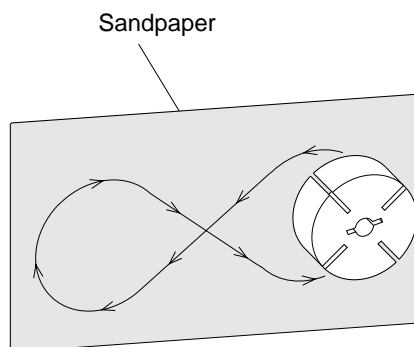


Figure 18 - Sanding Rotor

SPECIFICATIONS

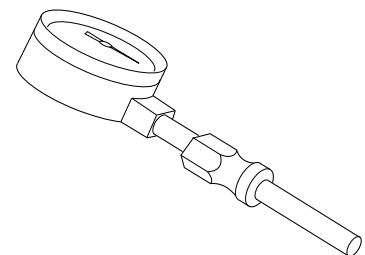
Output Rating (Btu/Hr.)	150,000
Fuel	Use Only Kerosene or No. 1 Fuel Oil
Fuel Tank Capacity (Liters/U.S. Gal.)	51/13.5
Fuel Consumption (Liters/Gal. Per Hr.)	4.1/1.1
Electric Requirements	110V/50Hz
Amperage (Normal Run)	4.4
Hot Air Output (CMM/CFM)	14.2/500
Motor RPM	2850
Motor HP	1/4
Approximate Shipping Weight (KG/Pounds)	31/68
Approximate Heater Weight without Fuel (KG/Pounds)	26/57

REPLACEMENT PARTS AND ACCESSORY

Purchase accessories and parts from your local dealer.

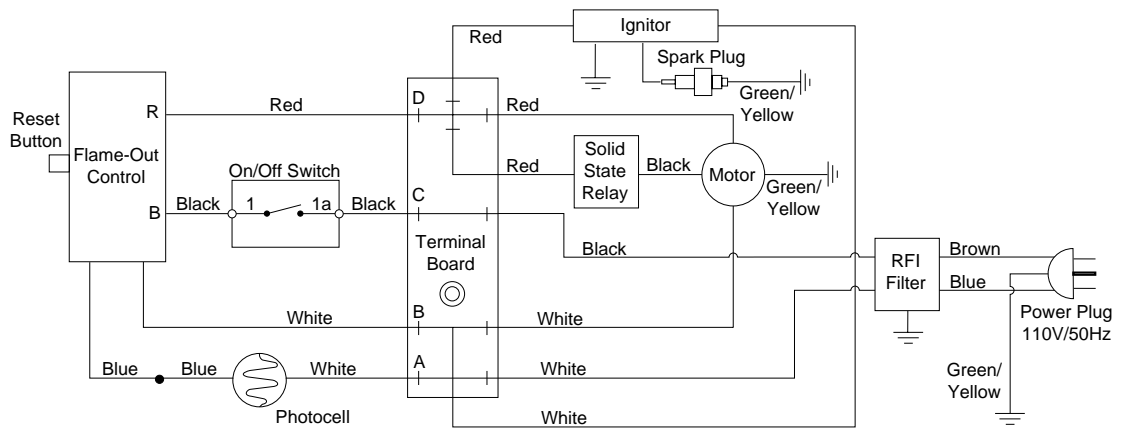
AIR GAUGE KIT - HA1180

Special tool to check pump pressure.



MODEL BY150ECB 150,000 Btu/Hr PORTABLE FORCED AIR HEATER

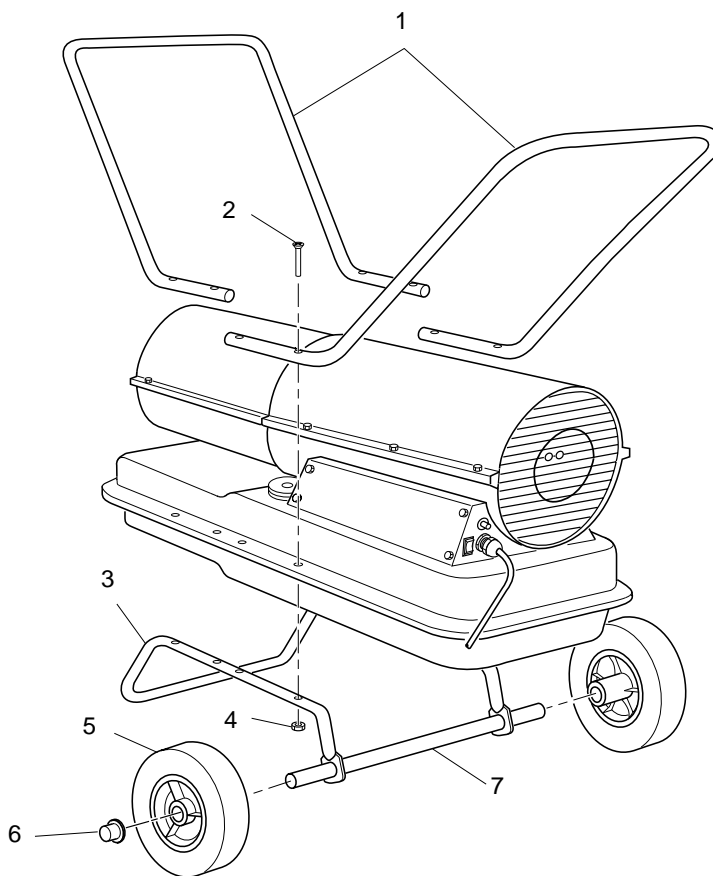
WIRING DIAGRAM



OWNER'S MANUAL

WHEELS AND HANDLE PARTS LIST

KEY NO.	PART NUMBER	PART DESCRIPTION	QTY.
1	HA2204	Handles	2
2	M12345-33	Screw, #10-24 x 1 3/4"	8
3	M12831-3	Wheel Support Frame	1
4	NTC-3C	Hex Nut, #10-24	8
5	097896-03	Wheel	2
6	M28526	Cap Nut	2
7	M16801-2	Axle	1



OWNER'S MANUAL

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.

KEY NO.	PART NUMBER	DESCRIPTION	QTY.	KEY NO.	PART NUMBER	DESCRIPTION	QTY.
1	098511-138	Upper Shell	1	18	M11084-29	Screw, #10-16 x 3/4"	2
2	102432-01	Screw, #10-16 x 1/2"	8	19	M51345-01	Fuel Line	1
3	098512-36	Combustion Chamber	1	20	M51150-01	Fuel Filter	1
4	099229-01	Photocell Bracket	1	21	M51151-02	Fuel Line Tube	1
5	M10908-2	Screw, #6-32 x 3/8"	2	22	M10990-3	Rubber Bushing	1
6	HA3019	Photocell Assembly	1	23	M50814-03	Airline	1
7	**	Burner Head Assembly	1	24	098511-191	Lower Shell	1
7-1	100735-11	Nozzle	1	25	M50104-03	Bushing	2
7-2	M10659-1	Nozzle Washer	2	26	M50104-01	Bushing	2
7-3	M10809-1	Nozzle Spring	1	27	102431-01	Screw, #10-16 x 1/2"	8
7-4	M8882	Nozzle Sleeve	1	28	M11271-8	Clip Nut	8
7-5	M50924-08	Burner Head Body	1	29	WLE-3	Lockwasher #10	2
7-6	M50820-02	Barb Fitting	2	30	098513-92	Fuel Tank	1
7-7	104184-01	Spark Plug	1	31	097702-01	Fuel Cap (Includes Gasket)	1
7-8	103409-01	Wave Spring Washer	1	32	HA3003	Flame-out Control	1
8	102431-01	Screw, #10-16 x 1/2"	3	33	M50400	Strain Relief Bushing	1
9	102042-01	Fan	1	34	098872-03	Power Cord	1
10	**	Motor and Pump Assembly	1	35	M51077-01AA	Side Cover	1
10-1	102001-06	Motor (Split Phase)	1	36	102431-01	Screw, #10-16 x 1/2"	4
10-2	079975-03	Pump Body	1	37	099125-14	Terminal Board	1
10-3	FHPF3-6C	Screw, #10-32 x 3/4"	2	38	099157-01	Rivet	1
10-4	M22009	Rotor Insert	1	39	079010-20	Wire Assembly (Red, 18")	1
10-5	M22456-2	Pump Rotor	1	40	M16841-57	Wire Assembly (Red, 6")	1
10-6	M50545	Pump End Cover	1	41	M27417	Drain Plug (Includes "O" Ring)	1
10-7	M12179	Intake Filter	1	42	099230-01	Shoulder Screw	2
10-8	M16545	Filter End Cover	1	43	099177-01	Hex Nut, 3/8-27	1
10-9	M8940	Steel Ball, 1/4" diameter	1	44	099213-01	Button Plug	1
10-10	M10993-1	Relief Spring	1	45	097468-01	Edge Liner	1
10-11	M27694	Adjusting Screw	1	46	NPF-3B	Nut, #10-32	3
10-12	M22997	Plug	1	47	079010-34	Wire Assembly (Black)	2
10-13	M12461-31	Screw, #10-32 x 1"	4	48	097462-01	ON/OFF Switch	1
10-14	M12244-1	Output Filter	1	49	079919-01	Switch Cover	1
10-15	M12461-32	Screw, #10-32x 1-1/8"	6	50	102801-01	Power Line RFI Filter	1
10-16	M11637	Lint Filter	1	51	RF3-6B	Screw, #10-32 x 3/4"	1
10-17	M50820-02	Barb Fitting	1	52	097785-04	Vinyl Foam Gasket	2
10-18	M8643-2	Blade	4	PARTS AVAILABLE - NOT SHOWN			
11	M50631	Rubber Bumper	2		HA2210	Filler Neck Screen	1
12	101206-01	Motor Mounting Bracket	1		097650-01	Tradename Decal	1
13	097061-01	Solid State Relay	1		103666-06	Decal Package	1
14	M15823-39	Screw, #8-18 x 1/2"	2		M9900-192	Combustion Chamber	
15	NTC-4C	Hex Lock Nut, 1/4-20	2			Grounding Wire	1
16	M51114-01	Fan Guard	1				
17	102482-01	Electronic Ignitor	1				

** Not available as an assembly.

MODEL BY150ECB 150,000 Btu/Hr PORTABLE FORCED AIR HEATER

EC CONFORMITY DECLARATION

EC CONFORMITY DECLARATION

SGB YOUNGMAN
Stanestreet, Slingfold, Horsham
West Sussex Rh13 7RD
United Kingdom (UK)

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

Kerosene Portable Forced Air Heaters
Model Number: BY150ECB

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

We declare that the model noted is 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>

04/07/97 — Bowling Green, KY

Date and Place

Douglas D. Rohrer

Signature

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SGB YOUNGMAN warrants new Products sold by it to be free from defects in material or workmanship for a period of 360 days after date of delivery to the first user and subject to the following conditions:

SGB YOUNGMAN's obligation and liability under this Warranty is expressly limited to repairing or replacing at SGB YOUNGMAN's option, any parts which appear to SGB YOUNGMAN 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 SGB YOUNGMAN 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. SGB YOUNGMAN MAKES NO OTHER EXPRESS WARRANTY. TO THE EXTENT PERMITTED BY LAW SGB YOUNGMAN MAKES NO IMPLIED WARRANTY AND MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR

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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 SGB YOUNGMAN 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.

SGB YOUNGMAN

Stanestreet, Slingfold, Horsham
West Sussex Rh13 7RD
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