

INSTRUCTION MANUAL WITH PARTS LIST

MODEL B-80 AND B-80C PORTABLE HEATERS

WARRANTY

The Company warrants its equipment to be free from defects in material or workmanship, under normal and proper use in accordance with instructions of The Company for a period of ninety days from date of delivery to the buyer, but the liability on such warranty shall be limited to the repair or replacement by The Company (f. o. b. Dayton, Ohio) of any of its equipment which may be returned by the buyer to Dayton, Ohio, transportation charges and handling fees prepaid, within said ninety day period and which is found by The Company to have been thus defective in material or workmanship. The foregoing is the full extent of the responsibility of The Company. There are no other warranties, express or implied, and in no event shall The Company be liable for delay caused by defects, for consequential damages, or for any charges or expense of any nature incurred without its written consent. This warranty will not apply to any product which has been repaired or altered outside of our Dayton factory, in any respect which, in our judgment, affects its condition or operation.

MASTER VIBRATOR COMPANY, DAYTON 1, OHIO

OPERATING INSTRUCTIONS

SECTION I INTRODUCTION

GENERAL

This manual covers operation instructions for the Model B-80 portable heaters. A repair parts list is also included in the rear of this manual. The Model

B-80 portable heaters are for use anywhere temporary portable heating is required and adequate ventilation is available. The unit is designed for many hours of trouble-free operation under rugged conditions. The heater has been tested and fired at the factory before shipment.

SPECIFICATIONS

Rating	75,000 BTU
Heater air output (cubic feet per minute)	345
Fuel	Kerosene or No. 1 fuel oil
Motor (totally enclosed)	3400 RPM, 115 V, 60 cycle, single phase
Fan	10", Four-blade, 8 inch diameter
Pump	Air pump, dry, four-vane
Amperage	4 amps (during normal run)
Duct	Not recommended
Weight	53 lbs.
Fuel tank capacity	5 gal.

SECTION II OPERATION

To Start

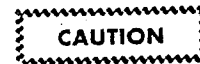
To start the portable heater, all that is required is the plugging of the unit into a 115-volt, 60 cycle power outlet. The heater will ignite immediately and provide instant heat.

Applying Adapter to Service Cord

If the heater is equipped with a three prong extension, an adapter must be used to connect into a standard receptacle that receives only two prongs. These adapters can be purchased from local hardware and electrical supply stores. The adapter is equipped with a green lead, with or without a terminal, and must be attached to a ground source. In most instances the receptacle box is grounded, as electrical codes require, and can be used for this purpose. By loosening one of the metal screws that holds the receptacle in the box, the green lead can be inserted between the box and the metal arm of the receptacle and tightened. This procedure grounds the frame of the unit.

To Stop

To stop the portable heater, unplug the electrical cord from the power supply. The heater will stop immediately and with no harmful effects.



Heater must be used in a well ventilated (partly open door or window near heater level) area only, and must be at least four (4) feet from any combustible materials.

If plugged into current other than that specified on heater instruction plate, motor and transformer will burn up.

Extension Cord Wire Sizes

Length of Extension Cord	Wire Size (AWG)
100 feet	14
200 feet	12
300 feet	10
400 feet	8
500 feet	6

SECTION III MAINTENANCE PROCEDURES

CLEANING

Fuel Tank

Drain and flush after every 150 hours of operation with clean fuel oil.

Filters

Clean the air and fuel filters twice a season, or as needed (every 500 hours of operation).

a. Air intake filter (figure 3, item 47). Remove "snap on" cover of Ozonaire filter housing, lift out filter element (85), wash in kerosene, dry thoroughly and replace. Be sure cover is on tight.

b. Output air line filter (49). Remove housing (50) by loosening two Allen head screws (54). With wrench back out filter stem (51) and remove the two felt filters (52). Wash thoroughly with kerosene and dry. Replace on filter stem and screw securely in place. Replace housing. Do not attempt to adjust pressure relief valve, as it is capped and preset at factory.

c. Fuel intake filter (5). Remove fuel line (29) from filter, and with wrench back out (counterclockwise) filter. Immerse in clean fuel and rinse several times. Blow out through fitting end. Replace securely and connect fuel line.

Fan

Fan blades must be cleaned twice a season or as needed (every 500 hours of operation). Accumulation of dust and dirt will reduce air supply.

Remove access door (33) and wipe blades with clean cloth. If deposits will not come off readily use kerosene or solvent on tip of cloth. Blades must be dried thoroughly. Replace access door.

Burner

To remove burner assembly (17) for cleaning, lift off access door cover (33) by removing two screws. Disconnect air line (84) and fuel line (29) at both ends of each line and also electrode leads that are attached at back of burner on electrodes. Loosen screw (28) (do not remove) and twist burner clockwise. This will release burner from grooves in fins, and by drawing straight out toward fan, burner can be removed.

Soak complete burner head in naphtha (do not use kerosene or fuel oil) for one hour and blow out through both fittings in rear of head. Do not attempt to remove nozzle or open passage with a steel drill, as you will damage it beyond repair.

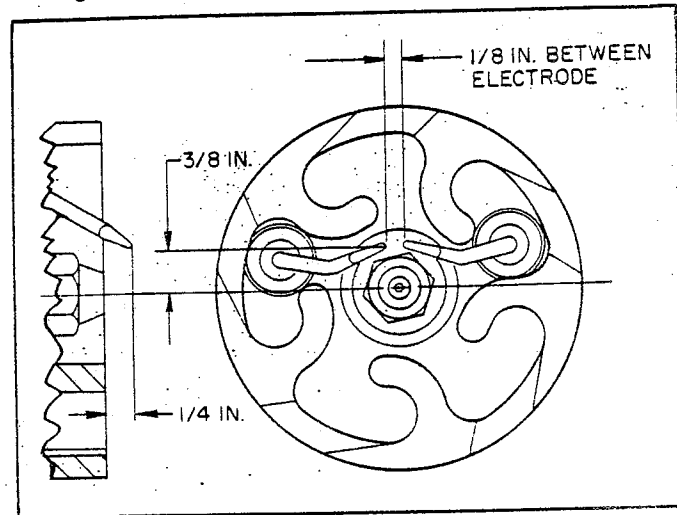


Figure 1. Electrode Settings

Reassemble burner in heater, after checking electrode settings according to manual instructions, Figure 1, making sure burner is snug against combustion chamber backplate. Turn counterclockwise as far as possible and tighten screw (28). Tighten connections on air and fuel lines securely and electrode leads must be inserted until they snap into place. Replace access door.

CAUTION

Figure 3 lists all parts that may be replaced by owner in field. For major overhauls, such as on burner and pump assemblies, it is preferred that heater be returned to vendor for service. Parts and settings could be damaged by wrong procedures in disassembly.

TROUBLE-SHOOTING GUIDE

1 - Heater will not start:

- Check outlet for power supply. Should be same as on instruction plate.
- Check fan to see that it rotates freely. If it does not, return heater to vendor for service.

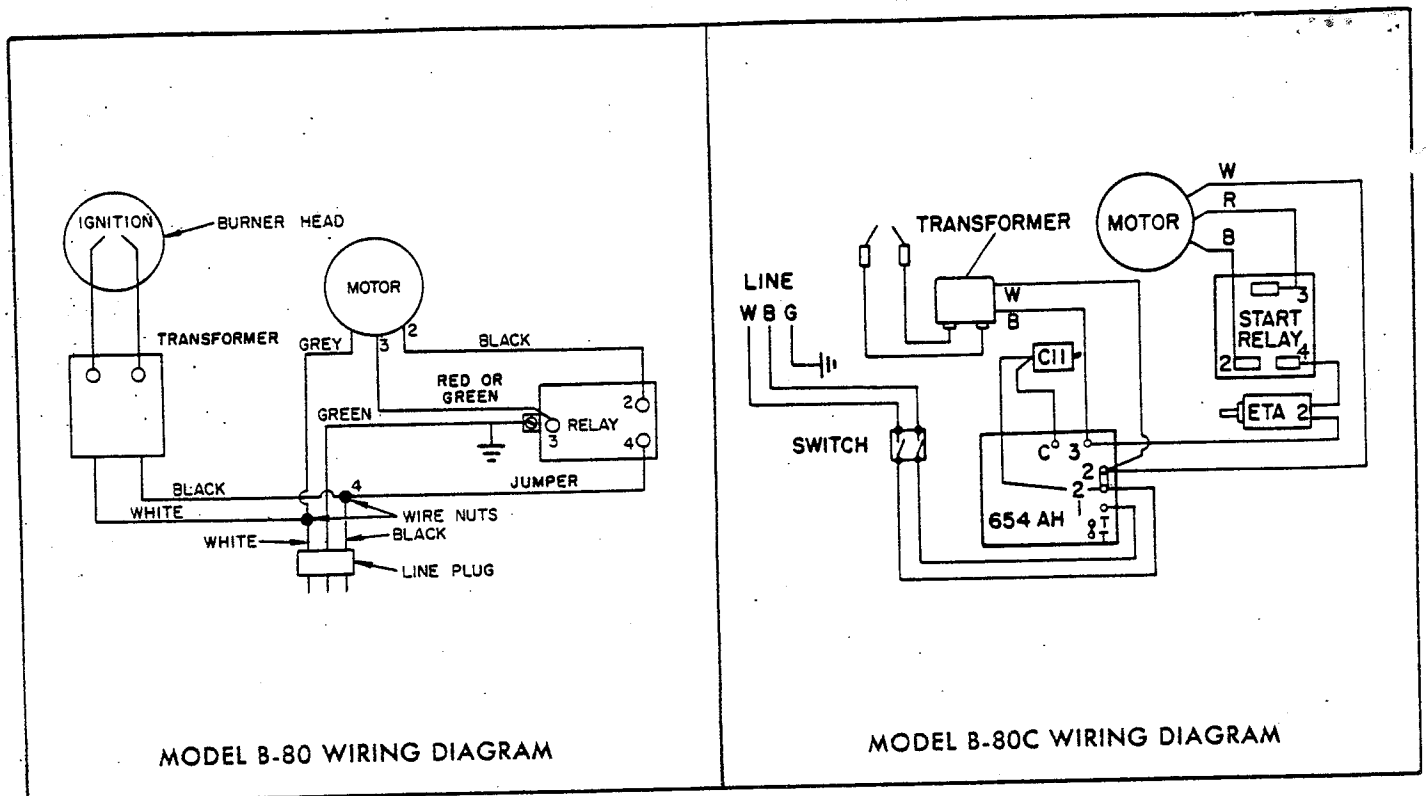


Figure 2. Wiring Diagrams

TRUBLE-SHOOTING GUIDE (Continued)

2 - Heater burns, but gives off fumes:

- a. Check fuel and air lines for tight connections.
- b. Clean all filters (see cleaning instructions).
- c. Clean burner assembly (see cleaning instructions).

3 - Heater burns but licks of flame or puffs of smoke can be seen:

- a. Check fuel line for tight connections.
- b. Water condensation in fuel tank. Drain and flush with clean fuel.
- c. Heater running out of fuel.

4 - Heater smokes continuously:

- a. Check fuel line for tight connections.
- b. Excessive amount of water in fuel tank. Drain and flush with clean fuel.
- c. Check for foreign material around motor and fan.

5 - Heater will not ignite:

- a. Electrodes cracked - see field replacement parts.
- b. Electrodes out of position - see Figure 1.
- c. Transformer burnt out - see field replacement parts.
- d. Transformer electrode leads off - remove back panel on tank and check leads.

Fuel Line (Figure 3, Item 29)

Remove access door (33) and disconnect line at both tank and burner. (Fuel line always connects to fitting on burner nearest fan.)

Replace with new line and be sure fittings are tight. Replace cover.

Air Line (Figure 3, Item 84)

Remove access door (33) and disconnect line at both pump and burner. Replace with new line and be sure fittings are tight. Replace cover.

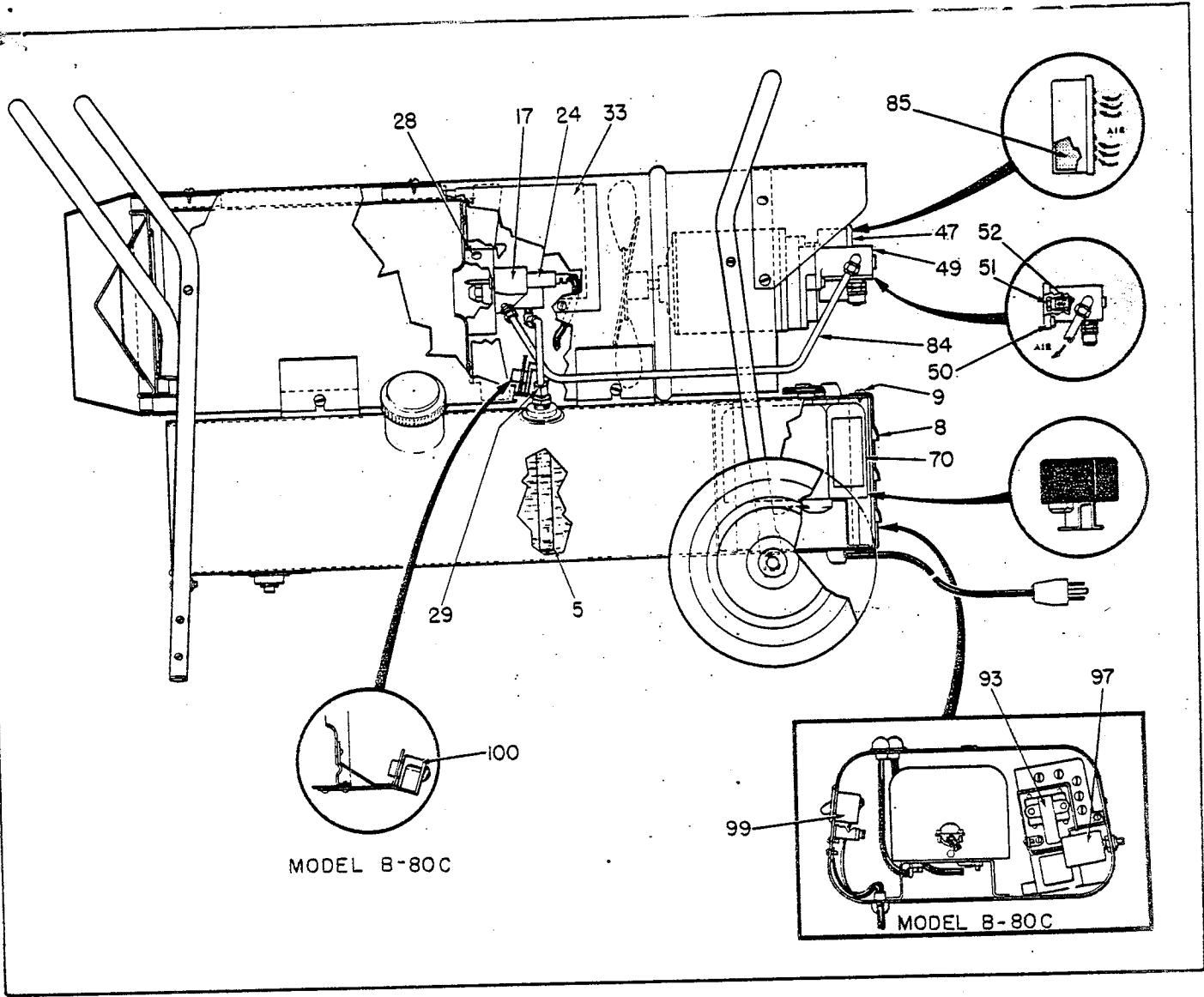


Figure 3. Portable Heater - Side View

Figure & Index No.	Part Number	Part Name	Model B-80	Model B-80C
3-5	M8796	Fuel Filter	1	1
3-8	M8635	Cover	1	1
3-9	ST-2-3B	Screw	4	4
3-17	M8789	Burner Assembly	1	1
3-24	M8990	Electrode, LH	1	1
3-24	M8989	Electrode, RH	1	1
3-28	RF3-3C	Round Head Screw	3	3
3-29	M8685	Fuel Line	1	1
3-33	M8633	Access Door	1	1
3-47	M8769	Air Cleaner	1	1
3-49	M8674	Air Output Filter	1	1
3-50	M8651	Block (Housing)	1	1
3-51	M8652	Filter Stem	1	1
3-52	M8653	Felt Filter	2	2
3-70	M3259-4	Transformer	1	1
3-84	M8681	Air Line	1	1
3-85	M8849	Filter Element	1	1
3-93	M9210	Relay, Line Voltage		1
3-97	M9232	Protector, Motor		1
3-99	M3480	Switch		1
3-100	M9211	Cell, Safety Control		1

SECTION IV FIELD REPLACEMENT PARTS

Electrodes

Remove burner assembly from heater (see cleaning instructions, section III) and remove electrodes (Figure 3, Item 24) by loosening screws (28). Electrodes must be removed from face side of burner as electrode tips would be damaged if forced out from back. Replace electrodes if old ones are cracked or excessively dirty. The metal bands (one for each electrode) must be positioned directly under screws (28) so porcelain will not be damaged when tightened. Otherwise screws tightened directly on electrodes will crack them and tips will not position correctly. Refer to Figure 1 for electrode settings. Replace burner.

Transformer

Transformer is located in tank extension on rear of heater. Remove cover (Figure 3, Item 8) by backing out four screws (9). Before removing transformer, check across electrode terminals with insulated screwdriver with heater running. If burnt out, no arcing will be seen. Disconnect primary leads from wire nuts (see Figure 2) and electrode leads from terminals on bottom of transformer. Loosen two hex nuts from transformer studs on underside of bracket and slide transformer to left. Bracket is slotted. Remove and replace with new transformer. Tighten hex nuts, connect electrode leads, hook up primary leads and be sure cover is fastened securely.

SECTION V PARTS LIST

The following is a list of all parts used in the model 80 portable heaters. The only parts recommended for replacement by owner are listed in Figure 3. Check the master decal for the correct model number of your heater. Parts required for model B-80 and B-80C are listed in the columns marked by model number.

Figure & Index No.	Part Number	Part Name	Model B-80	Model B-80C
Model 80 Portable Heaters				
4-1	M8634 <i>NA</i>	Fuel Tank	1	-
4-1	M9228 <i>NA</i>	Fuel Tank	-	1
4-2	M3353	Cap, Fuel Tank	1	1
4-3	ST4-4B	Screw, Hexagon Head	4	4
4-4	1000576	Grommet	3	5
4-5	M8796	Fuel Filter	1	1
4-6	STP 3-3	Screw, Self Tapping	1	1
4-7	M8890	Drain Plug	1	1
4-8	M8635	Cover	1	1
4-9	ST-2-3B	Screw, Self Tapping	4	4
4-10	WP4	Washer, Flat	4	4
4-11	M8637	Shell, Outer	1	-
4-11	M9229	Shell, Outer	-	1
4-12	1000576	Grommet	2	2
4-13	M3530	Grommet	1	1
4-14	M9127	Nut, Tinnerman	2	2
4-15	M8626	Combustion Chamber	1	-
4-15	M9241	Combustion Chamber	-	1
4-16	STP 3-3	Screw, Self Tapping	1	1
4-17	M8789	Burner Assembly	1	1
4-18	M8716	. Body, Burner	1	1
4-19	M8667	. Nozzle	1	1

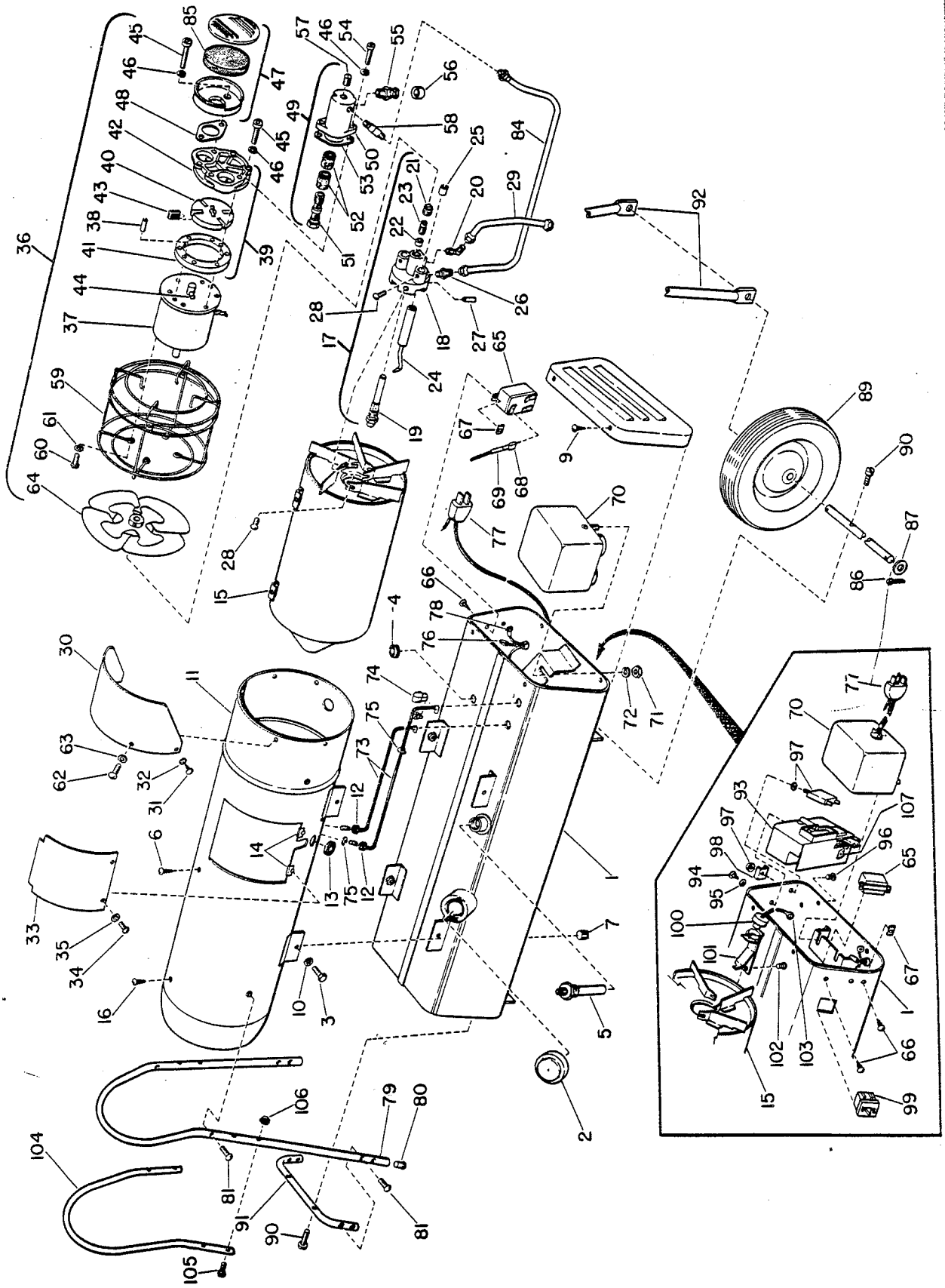


Figure 4. Portable Heater - Exploded View

Figure & Index No.	Part Number	Part Name	Model B-80	Model E-80C
Model 80 Portable Heaters				
4-20	69251	. Elbow, 90°	1	1
4-21	M8994	. Plug, Pipe	1	1
4-22	M8882	. Sleeve	1	1
4-23	M8958	. Nut, Gland	1	1
4-24	M8989	. Electrode, Left Hand	1	1
4-24	M8990	. Electrode, Right Hand	2	2
4-25	M3980	. Bushing	1	1
4-26	69249	. Connector	2	2
4-27	ROP12-8	. Pin, Roll	3	3
4-28	RF3-3C	. Screw, Round Head	1	1
4-29	M8685	Fuel Line Assembly (Filter to Burner)	1	1
4-30	M8628	Cowl	2	2
4-31	ST2-3B	Screw	2	2
4-32	WLI-2	Lock Washer	1	1
4-33	M8633	Door, Access	2	2
4-34	ST-2 3	Screw, Round Head	2	2
4-35	WLI-2	Lock Washer	1	-
4-36	M8641 NA	Motor, Grille, Fan, Pump and Filter Assembly	-	1
4-36	M9237	Motor, Grille, Fan, Pump and Filter Assembly	1	-
4-37	M8610 NA	. Motor	-	1
4-37	M8610-1	. Motor	2	2
4-38	ROP12-8	. Pin, Roll	1	1
4-39	M8658	. Pump Assembly	1	1
4-40	M8644	. . Rotor	1	1
4-41	M8645	. . Body	1	1
4-42	M8646	. . Cover, End	4	4
4-43	M8643	. . Blades, Carbon	1	1
4-44	M8877	. . Pin, Rotor	4	4
4-45	FHPF-3-12	. . Screw, Socket Head	6	6
4-46	M3962	. . Lock Washer	1	1
4-47	M8769	. Cleaner, Air	1	1
4-48	M5292	. Gasket	1	1
4-49	M8764	. Filter, Output	1	1
4-50	M8651	. . Block	1	1
4-51	M8652	. . Stem, Filter	2	2
4-52	M8653	. . Filter (Felt)	1	1
4-53	M8784	. . Gasket	2	2
4-54	FHPF-3-14	. Screw, Socket Head	1	1
4-55	M8943	. Valve, Pressure relief	1	1
4-56	M8992	. Cap, Seal	1	1
4-57	M9131	. Plug	1	1
4-58	M9132	. Elbow, 90°	1	1
4-59	M8948	. Grille	4	4
4-60	RC2-3	. Screw, Round head	4	4
4-61	WLE-2	. Lock Washer	4	4
4-62	RC2-4	. Screw, Round head	4	5
4-63	WLI-2	. Lock Washer	1	1
4-64	M8697	. Fan	1	1
4-65	M8800	Relay	2	2
4-66	STI-3B	Screw, Self Tapping	2	2
4-67	M8886	Nut, Tinnerman	1	2
4-68	M5052-34	Lead, Starting relay to line	3	5
4-69	M8208-4	Tubing, Polyform No. 8	1	1
4-70	M3259-4	Transformer	2	2
4-71	NPC-4	Nut, Hexagon	2	2
4-72	WLM-4	Washer, Lock	2	-
4-73	M8977	Lead, Electrode	-	2
4-73	M9239	Lead, Electrode	2	2
4-74	M8949	Strain Relief		

Figure & Index No.	Part Number	Part Name	Model B-80	Model B-80C
Model 80 Portable Heaters				
4-75	M6916	Bushing	3	3
4-76	M3558	Wire Nut	2	2
4-77	M8935	Cord, Extension	1	-
4-77	M8828	Cord, Extension	-	1
4-78	69321-10	Terminal, Ground	1	1
4-79	M8921	Leg, Front	1	1
4-80	M8704	Plug Button	2	2
4-81	RF3-8C	Screw, Round head	8	8
4-82	NLF-3C	Nut, Hexagon	2	2
4-84	M8681	Air Line	1	1
4-85	M8849	Element, Filter	1	1
4-86	C4-8	Pin, Cotter	2	2
4-87	WP-8	Washer	2	2
4-88	M9146	Axle	1	1
4-89	M3976	Wheel	2	2
4-90	ST 3-1/2-7	Screw	4	4
4-91	M8889	Brace Assembly	1	1
4-92	M8922	Leg, Rear	1	1
4-93	M9210	Relay, Line voltage	-	1
4-94	RC-1-2	Screw, Round head	-	1
4-95	WLI-1	Washer, Lock	-	1
4-96	ST-2-4	Screw, Round head	-	1
4-97	M9232	Protector, Motor	-	1
4-98	M9230	Guard, Reset button	-	1
4-99	M3480	Switch	-	1
4-100	M9211	Cell, Safety control	-	1
4-101	M9225	Bracket, Cell mounting	-	4
4-102	ST1-2B	Screw, Round head	-	2
4-103	M9321-10S	Terminal, Cell leads	-	1
4-104	M9234	Guard, Nose cone	-	4
4-105	RF3-10C	Screw, Round head	-	4
4-106	NLF-3	Nut, Hexagon	-	1
4-107	NSC-3	Nut, Tinnerman	-	1
	M8603	Decal, Filter	1	1
	M8987	Decal, Fuel tank drain	1	-
	M8953	Plate, Operating instructions	1	1
	M8986	Decal, Wiring diagram	1	-
	M9007	Nameplate, Master	1	1
	M9015	Decal, Master	1	1
	M9214	Nameplate, Master, Canadian	-	1
	ST1-2	Screw, Round head	-	4
	M4119	Label, Canadian approval	-	1
	M9044	Thermostat Kit (optional equipment)	1	1
	M9213	Plate, Operating instructions	-	1