## Sears

## OWNERS MANUAL

MODEL NO. 583:406131

SERIAL NO. \_\_\_\_

CAUTION: Read Rules for Safe Operation and Instructions Carefully

# FILE COPY



# **85,000 BTU**PORTABLE HEATER

Operation and Maintenance Instructions with Parts List

Sears, Roebuck and Co., Chicago, Ill. 60684

### **FULL ONE YEAR WARRANTY**

For one year from the date of purchase, Sears will repair any defect in material or workmanship in this portable heater at no charge.

If the portable heater is used for commercial or rental purposes, this warranty applies for only thirty days from the date of purchase.

Warranty service is available by contacting the nearest Sears store or Service Center throughout the **United States.** 

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

> Sears Roebuck and Co. **Sears Tower** BSC 41-3 Chicago, IL 60684

## **RULES FOR SAFE OPERATION**

## **WARNING**

LOOK FOR THIS SYMBOL TO POINT OUT IMPORTANT SAFETY PRECAUTIONS.

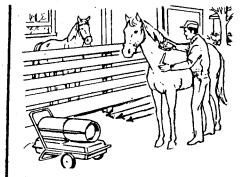
IT MEANS ATTENTION:

BECOME ALERT. YOUR SAFETY IS INVOLVED.

- Read Instruction Manual carefully before starting or servicing. 1.
- NEVER USE VOLATILE FUELS SUCH AS GASOLINE, NAPTHA OR ALCOHOL This heater 2. is designed to operate on kerosene or no. 1 fuel oil.
- 3. This heater must be operated only on the voltage & frequency specified on the model plate.
- 4. Use only with grounded electrical power outlet.
- 5. Never fill fuel tank while heater is plugged in.
- 6. DO NOT USE WHERE FLAMMABLE VAPOR IS PRESENT OR WITHIN 5 FEET OF COMBUSTIBLE MATERIAL.
- 7. NEVER USE HEATER IN SLEEPING AREAS.
- Use only in well ventilated areas. Provide at least (3) three square feet of fresh air supply for each 100,000 BTU of rating.
- 9. DO NOT MOVE, HANDLE OR SERVICE WHILE HOT OR BURNING.
- 10. WHEN USED WITH THERMOSTAT, HEATER MAY START AT ANYTIME. Safety requirements and model plate data comply with American National Standard Institute safety requirements. ANSI A10.10-1970







**Construction Sites** 

**Animal Stables** 

Examples of fresh air ventilation & heater applications.

#### ASSEMBLY PREPARATION

The Heater Body is shipped assembled. Wheels and Handles are packed separately. The following items should be included:

- A) Heater Body
- G) 2 ea. 10 x 24 x 1" Screws
- B) Wheel Support Frame
- H) 10 ea. 10 x 24 Nuts

C) 1 ea. Axle

- J) Rear Handle
- D) 2 ea. Wheels
- K) 8 ea. 10 x 24 x 1 3/4"
- E) 2 ea. Cap Nuts

Screws

- F) Front Handle
- L) 1 ea. Fuel Cap

TOOLS REQUIRED Medium Phillips Screwdriver, 3/8" Open or Adjustable Wrench, Lightweight Hammer.

#### ASSEMBLY INSTRUCTIONS

#### DO NOT TIGHTEN NUTS UNTIL STEP 3

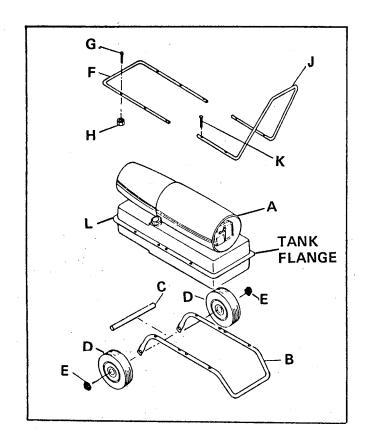
Step 1 — Slide the axle (C) through the wheel support frame (B). Install wheels (D) on axle and secure with cap nuts by gently tapping with hammer.

Step 2 — Secure front handle (F) to the top of the fuel tank flange with the two short screws (G) and nuts (H) provided. The two short screws will only fit in front.

Step 3 — Position rear handle (J) on top of tank flange. Line up holes and insert screws (K). Position wheel support handle (B) so that these holes line up with previously installed screws (K) protruding thru fuel tank flange and thru handle (J).

Step 4 - Tighten all nuts.

Step 5 - Install fuel tank cap.





#### INTRODUCTION

Congratulations . . . you have just purchased one of the finest oil-fired heaters on the market today. Your Sears portable heater has been designed and engineered to provide you with years of warm comfort. We encourage you to read this manual carefully before using.

#### TABLE OF CONTENTS

Safety Rules	Operation
Assembly Instruction	Maintenance
Table of Contents Pg. 4	Trouble Shooting
Introduction Pg. 4	Repair Parts & Illustrations Pg. 11-16

#### **OPERATION**

#### **ELECTRICAL**

This heater operates on regular household current 120 volts, 60 cycles; unit draws and is rated at 2.35 amps, AC current. Use the 3-prong plug provided with the unit and use ONLY with grounded electrical power outlets.

When using an extension cord, make certain that it is a 3-Wire (grounded) cord of proper wire size.

Cord Length (ft) 10-25 25-50 Wire Size (AWG) # 18 # 16

Cord Length (ft) 50-100 100-200 Wire Size (AWG) # 14 # 12

#### **FUEL**



CAUTION: NEVER USE VOLATILE FUELS SUCH AS GASOLINE, NAPTHA OR ALCOHOL.

NEVER FILL FUEL TANK WHILE HEATER IS PLUGGED IN.

This heater is designed to operate on kerosene or number 1 fuel oil. These fuels can be obtained at your local fuel oil supplier or service station.

Be sure the fuel is clean. Wipe up any spills or overflows.

#### **VENTILATION**



CAUTION: USE ONLY IN WELL VENTILATED AREAS. PROVIDE AT LEAST THREE (3) SQUARE FEET OF FRESH AIR FOR EACH 100,000 BTU RATING. IT IS PREFERRED TO HAVE CROSS VENTILATION OF THE AREA IF POSSIBLE.

DO NOT USE WHERE FLAMMABLE VAPOR IS PRESENT OR WITHIN FIVE (5) FEET OF COMBUSTIBLE MATERIAL.

NEVER USE HEATER IN SLEEPING AREAS.

NEVER LEAVE HEATER RUNNING UNATTENDED WHEN CHILDREN ARE IN THE AREA.

#### OPERATION (continued)

#### TO START HEATER (Without thermostat)

Plug the heater into a grounded power source of proper voltage and cycles capable of handling the load. The heater will normally ignite as soon as it is plugged into the outlet.

TO START HEATER (With Thermostat - optional accessory . . . available at most Sears Stores)

Set the thermostat control to the desired temperature. Plug the thermostat into a grounded power source of proper voltage and cycles. Then plug the heater into the thermostat receptacle as provided. The heater will start immediately provided that the surrounding air is cooler than the setting of the dial. The heater will continue to operate until the temperature of the surrounding air reaches the dial setting. It will then shut down and recycle when the temperature drops.

#### RESET BUTTON.

Should the heater fail to ignite or stops during operation, press the red reset button at the rear of the heater as indicated by arrow. The heater should start immediately.

Should it fail to start within 15-25 seconds, the red reset button will pop out and the safety control will cut off all power to the heater.

Disconnect the heater and check the reason for failure. Refer to the TROUBLE SHOOTING section for determing the possible cause and possible correction.

To restart heater wait 2 to 3 minutes then press the red reset button.

#### **STOPPING**



CAUTION: AIR DISCHARGE END OF HEATER WILL BE HOT. ALLOW TO COOL BEFORE MOVING OR HANDLING.

To stop the heater, unplug the power cord from the outlet. For units equipped with thermostats, the dial may be turned to the off or NO HEAT position to stop operation.

When transporting disconnect power and allow the heater to cool.

#### **STORAGE**

Drain fuel tank completely, prior to storing.

Remove and clean; or replace, air filters and spark plug as out lined in maintenance section.

Store in a dry location free of corrosive fumes and dust.

When taking heater out of storage, it is suggested that the maintenance procedures be followed if not done prior to storage.

#### MAINTENANCE

The instructions contained in this section of the manual are provided so that you may keep your heater operating at maximum efficiency.

CAUTION: DO NOT SERVICE HEATER WHEN POWER CORD IS PLUGGED IN. MAKE AN OVERALL INSPECTION OF THE HEATER. MAKE CERTAIN THAT THE UNIT IS CLEAN. CHECK FOR LEAKS. INSPECT THE ELECTRICAL CORD FOR DETERIORATION AND DAMAGE.

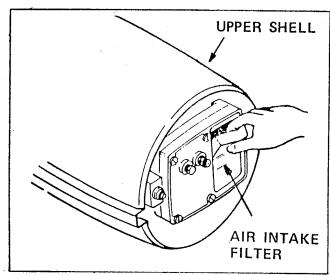


Figure P-1. Removing Intake Air Filter

#### AIR FILTERS

The air filters should be changed at the beginning of each heater season, or after 250 hours of operation. Check and clean the air intake filter whenever a film of dust is visible on its exterior surface. Clean this filter daily if the heater is operated in dusty air. (See figure P-1 and P-2)

Simply pull the filter out of its housing and wash with a mild detergent and hot or cold water. Dry it thoroughly before installing it into end cover. Make sure there are no gaps between filter and housing.

IMPORTANT: DO NOT oil air filter element.

To reach the output and lint filters, remove the three screws attaching filter housing end cover and withdraw end cover and output air filter. Pick out the lint filter. Install a replacement lint filter and output air filter, then reinstall the filter housing end cover and secure with screws and washers.

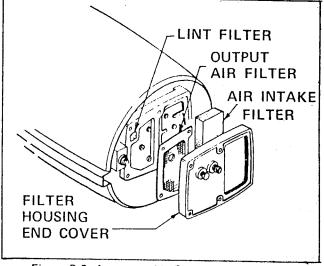


Figure P-2. Access to Air Filter for Maintenance

#### FUEL TANK

CAUTION: NEVER USE VOLATILE FUELS SUCH AS GASOLINE, NAPTHA OR ALCOHOL — THIS HEATER IS DESIGNED TO OPERATE ON KEROSENE OR NO. 1 FUEL OIL.

NEVER FILL FUEL TANK WHILE HEATER IS PLUGGED IN.

Drain the fuel tank after each 150 to 200 hours of operation and prior to storage. The drain is located on the bottom of the tank. Flush it out with clean fuel. Wipe the inside of the fuel cap with a lint free cloth.

Refill with clean fuel if further operation of heater is needed.

NOTE: The following MAINTENANCE instructions require the removal of the upper shell.

#### REMOVING THE UPPER SHELL

(See Figure P-1)

Remove the upper shell by removing the screws on each side and lift off.

To replace, aligh the holes of the upper shell with those of the lower shell and install the screws.

CAUTION: DO NOT SERVICE HEATER WHEN POWER CORD IS PLUGGED IN. MAKE AN OVERALL INSPECTION OF THE HEATER. MAKE CERTAIN THAT THE UNIT IS CLEAN. CHECK FOR LEAKS. INSPECT THE ELECTRICAL CORD FOR DETERIORATION AND DAMAGE.

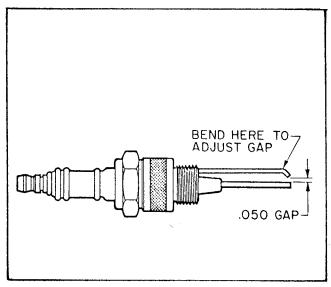


Figure P-4. Spark Plug Gap Setting

#### MOTOR LUBRICATION

Oil Fan end of Motor once each heater season by placing several drops in the Oil Port located on the Motor Housing. See figure P-3.

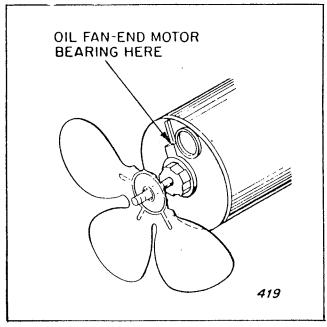


Figure P-3: Lubrication of Motor Bearing

#### **CLEANING THE FAN**

Clean fan blades whenever blades are noticeably dirty. A build-up of dirt will reduce the air supply and alter the combustion characteristics.

Wipe the blades with a cloth moistened with kerosene or solvent. Be careful to prevent bending the blades. Dry blades thoroughly.

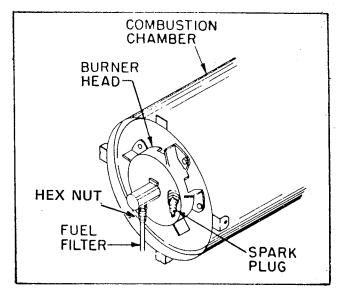


Figure P-5. Burner Head, Spark Plug, and Fuel Filter

#### CLEANING THE FUEL FILTER

The fuel filter is located in the fuel filter tube.

Clean the filter at least twice a season, more often if necessary. Refer to the "TROUBLE SHOOTING" section for the need for filter cleaning.

Clean as follows:

Loosen the hex nut attaching the fuel filter tube to the nozzle adapter. Move tube to side of fitting.

Withdraw the filter element from the tube. Rinse the element thoroughly in clean fuel. Inspect for damage. Replace if necessary.

If the filter has been damaged, or cannot be washed clean, install a new element. Never operate the heater without the element in place.

Install the element into the filter tube. Make sure that it seats properly.

Position the filter tube carefully to seat on the male connector and thread the flared nut onto the connector. Tighten securely.

#### SPARK PLUG

CAUTION: MAKE CERTAIN THE POWER CORD IS NOT PLUGGED IN. THE SPARK PLUG WIRE IS AT HIGH VOLTAGE AND FAILURE TO UNPLUG THE UNIT CAN CAUSE SERIOUS SHOCK.

At the beginning of each heater season and after every 300 hours of operation thereafter, remove the bracket, loosen nut and remove, clean and adjust spark plug electrodes. (See figure P-4)

If electrodes are burned or eroded, replace plug. Install plug in burner head as shown in figure P-5.

#### **ELECTRICAL**

CAUTION: DO NOT SERVICE HEATER WHEN POWER CORD IS PLUGGED IN.

Electrical maintenance consists of inspection of electrical cord, wiring, connections and components for deterioration, damage and looseness.

Refer to wiring diagram located on under side of upper shell.

Repair or replace as required or see your nearest Sears Service Center.

## **Trouble Shooting**

Should the Trouble Or Possible Cause and Remedy not be identified in this section, take the heater to your nearest Sears Store or Service Center throughout the United States.

TROUBLE	POSSIBLE CAUSE	POSSIBLE REMEDY	PAGE
Motor does not start.	does not  No power or low  voltage at heater.  Be sure power is reaching heater; check condition of heater cord. Repair or replace as needed.	_	
		Use extension cord with wires heavy enough to carry the electrical load of the heater.	4
		Be sure voltage at outlet is same as shown on heater instruction plate.	<del>-</del>
	Dry bearing on fan-end of motor.	Lubricate motor.	6
	Thermostat (if used) damaged or incorrectly set.	Check setting.	-
	Fan obstructed by mechanical damage	Check for bent outer shell.	<del>-</del> .
	or dirt.	Check for damaged fan.	6
		Check for loose or damaged motor mount.	_
Heater burns, but puffs of smoke can be seen; heater will not burn steady; heater burns with odor; heater smokes	Heater running out of fuel; water condensation in fuel tank; wrong fuel.	Shut heater off; check fuel tank. If you can see droplets of water in the bottom, drain and flush the tank and filter with clean fuel.	4,5
continuously.		Refill with fresh, clean kerosene or No. 1 fuel oil.	4,5
	Dirty air filters causing reduced air flow through nozzle, resulting in low fuel flow.	Remove and clean the intake filter. To service other filters, see figure P-1, P-2.	6
	idel now.	Be sure air intake is not blocked.	6
·	Fuel filter loose, dirty or loose connection.	Remove and wash fuel	6

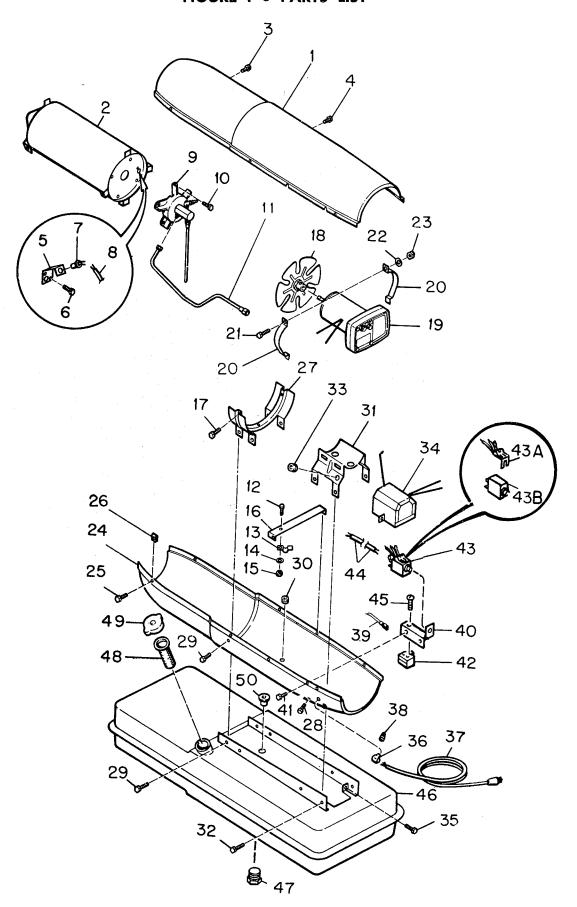
#### TROUBLE SHOOTING

TROUBLE	POSSIBLE CAUSE	POSSIBLE REMEDY	PAGE
Continued - Heater burns, but puffs etc.		Check condition of con- nection between fuel filter and burner head.	<b>7</b>
	•		
Heater cycles	Thermostat (if used)	Set thermostat to a	_
intermittently.	set too low.	higher temperature for	
		more even operation	
	Defective thermostat	Replace a defective	
	(if used).	thermostate attachment.	
		Use extension cord with	4
		proper size wire.	•
	Defective electrical	Be sure extension cord	
•	supply or defective	and heater service cord are in	_
	connections.	good condition, without	
		intermittent open circuits.	
		Check mechanical and	_
		electrical soundness of all	
		wiring connections in the	
		heater and service cord.	
	Motor trouble	Lubricate fan-end	6
	or binding pump.	bearing	, <del>-</del>
	•	Keep motor and fan	6
		area clean.	U
Button on circuit	Resetting was tried	Woit 2 to E	_
breaker won't stay	too soon after the	Wait 3 to 5 minutes and try again.	5
in when pressed.	breaker trips.	and try again.	

#### TROUBLE SHOOTING

TROUBLE	POSSIBLE CAUSE	POSSIBLE REMEDY	PAGE
Heater will not ignite, but motors runs.	Fuel tank empty, water in fuel, wrong fuel.	Check for water in tank; clean tank and fuel filter if water is found. (Water in the tank will form droplets in the bottom, which you can see.)	4,5
		Fill tank with fresh, clean kerosene or No. 1 fuel oil.	4
	Fuel filter clogged.  Very low temperature	Remove and wash in clean fuel. Blow dry and replace.  To prevent this, add a non-	7
	may cause fuel to thicken and not flow.	toxic anti-icer to the fuel (per instruction on container) which is available at most Sears stores.	
	Low air pump pressure.	Clean air intake filter. (See Figure P-1 - P-2.)	6
	Air leak at fuel filter.	Check fuel filter for air leaks and for tightness of fitting where filter is connected to burner head.	7
	Defective spark plug. (Wrong gap, plug wet with fuel or electrodes car-	Measure gap between electrodes (.050 inch) Adjust electrode gap.	7
	boned, or plug damaged.)	Inspect plug for broken porcelain or electrodes. Replace a damaged spark plug.	7
	Spark plug wire disconnected from plug or from terminal of transformer	Disconnect heater cord.  Check at plug and transformer to be sure wire is tight at both ends.	-
Flames come out front of heater.	Dirty fan, or air passageway through heater blocked by dirt or trash.	Clean the fan. Be sure the air passageway through the heater is clean. Keep the heater clean.	6

#### HEATER ASSEMBLY MODEL 583 406131 FIGURE P 6 PARTS LIST



Heater Exploded View

#### HEATER ASSEMBLY MODEL 583 406131 FIGURE P- 6 PARTS LIST

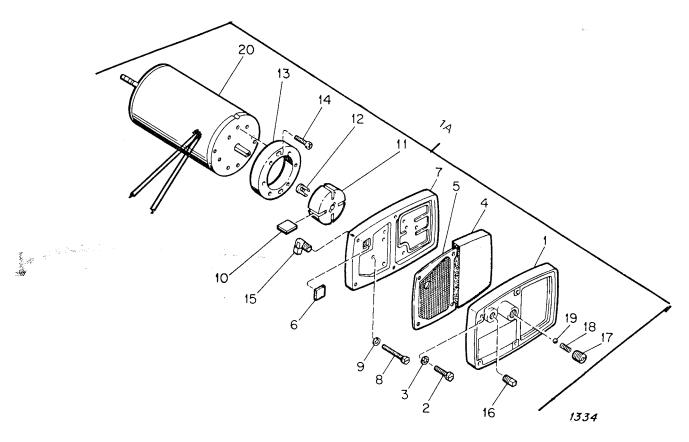
Index No.	Part Number	Part Name or Description	Ωty.
1	M13134-3AY	Shell, Upper	1
2	M16781-4 09851245	Combustion Chamber	1
3	M11084-27	Screw, Self-tapping, hex hd., No. 10-12 x 1/2 in.	2
4	M11084-29	Screw, Self-tapping, hex hd., No. 10-12 x 3/4 in.	2
5	M16660	Bracket, Photo Cell	1
6	STD600602	Screw, 6-32 x 1/4 in.	2
7	M16656-1	Cell and Bushing Assy.	1
8	M16615-1	Wiring Harness Assy.	1
9	M23150-1	Burner Head Assy. (See Page 15 for details)	1
10	M11084-27	Screw, Self-tapping, hex hd., No. 10-12 x 1/2 in.	3
11	M16879	Air Line	1
12	STD511105	Screw, No. 10-32 x 1/2 in.	1
13	M24717	Clamp, Air Line	1
14	STD551110	Lockwasher	1
15	STD541110	Nut, Plain No. 10-32	. 1
16	M15807	Strap, Retainer	] 1
17	M11084-27	Screw, Self-tapping, hex hd., No. 10-12 x 1/2 in.	2
18	M23147	Fan	1
	STD502503	Setscrew, Socket hd., cup pt., 1/4-28 (Furnished with Fan)	2
19	M23149-7	Motor Package Assy. (See Page 14	-
	·	for details)	1
20	M16661	Clamp, Motor	4
21	STD522512	Screw, Hex hd., 1/4-20 x 1-1/4 in.	2
22	STD551125	Lockwasher, 1/4 in.	2
23	STD541025	Nut, Plain Hex, 1/4-20	2
24	M16777AY	Shell, Lower	1
25	M11084-27	Screw, Self-tapping, hex hd., No. 10-12 x 1/2 in.	6
26	M11271-6	Nut, Speed, Tinnerman	6
27	M12330	Bracket, Shell Support	1
28	M11084-27	Screw, Self-tapping, hex hd., No. 10-12 x 1/2 in.	4
29	M11084-29	Screw, Self-tapping, hex hd., No. 10-12 x 3/4 in.	2
30	1000576	Grommet, Rubber	2
31	M16646	Bracket, Motor Support	1
32	M11084-27	Screw, Self-tapping, hex hd., No. 10-12 x 1/2 in.	6
33	1000576	Grommet, Rubber	1
34	M16697	Transformer, 5000V	1
35	M11084-27	Screw, Self-tapping, hex hd., No. 10-12 x 1/2 in.	2
36	M11954	Bushing, Strain Relief	1
37	M10813-63	Service Cord	1

## FIGURE P-6 PARTS LIST (cont) HEATER ASSEMBLY MODEL 583 406131

Index No.	Part Number	Part Name or Description	Qty.
38	M13942-7	Connector, Wire Nut	1
	M13942-5	Connector, Wire Nut	4
39	M9900-62	Wire Assy., Starting relay	1
40	M25296-1	Bracket Mounting	1
41	M11084-27	Screw, Self-tapping, hex hd., No. 10-12 x 1/2 in.	1
42	M12462-16	Relay, Motor Starting	1
43	M28898-03	Safety Control Assembly (Includes Keys 43A, 43B)	1
43A	M29939-01	. Trigger Assembly	1
43B	M30719	. Circuit Breaker	
44	M9900-80	Wire Assy., Circuit Breaker	1
45	ST2-2AC	Screw, Rd hd., No. 8-15 x 1/4 in. (Grounding)	1
46	M27552-01AA	Fuel Tank	1
47	M27417	Drain Plug	1
48	M18053	Screen, Filler Neck	1
49	M23284	Cap, Fuel Tank	. 1
50	M10990-3	Bushing, Rubber	1

#### FIGURE P / PARTS LIST MOTOR PACKAGE ASSEMBLY MODEL 583.406131

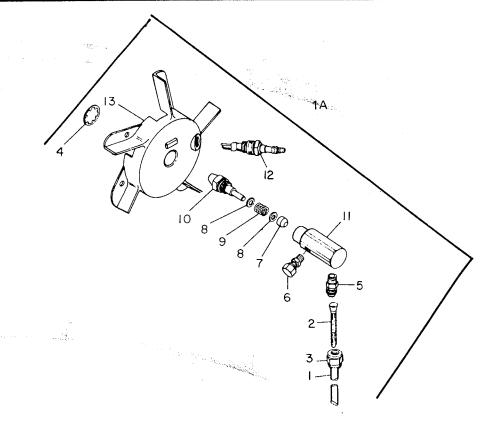
Index No.	Part Number	Part Name or Description	Qty.
1A	M23149-7	Motor Package Assembly	1
	M16886-1	Pump and Filter Parts	
		(Includes Keys 1 thru 19)	1
1	M16545	. End Cover	1
2	STD51110	Screw, 10-32 x 1 in.	4
3	STD5512-10	Lockwasher, No. 10	4
4	M12179	Intake Filter	1
5	M12244-1	Filter Assy.	1
6	M11637	Filter, Lint	1
7	M12233	End Cover, Pump (Port Plate)	1
8	M12461-32	Screw, 10-32 x 1-1/8 in.	6
9	STD551210	Lockwasher, No. 10	6
10	M8643	Blade	4
11	M22456-1	Rotor	. 1
12	M22009	Insert	1
13	M8645	Pump Body	1
14	FHPF3-4C	Screw, Fil. hd., 10-32 x 1/2 in.	2
15	M5976	Connector, Male	1
16	M22997	Pipe Plug	1
17	M27964	Screw, Pressure Adjustment	1
18	M10993-1	Spring, Compression	1
19	M8940	Ball, 1/4 in. dia.	1
20	M30718-01	. Motor	1



Motor Package Assembly

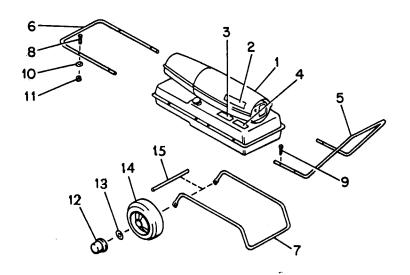
#### FIGURE P-8 PARTS LIST BURNER HEAD ASSEMBLY MODEL 583.406131

Index No.	Part Number	Part Name or Description	Qty.
1A	M23150-1	Burner Head Assembly	Ref
1	M16790-8	. Tube, Filter	1
2	M19630	Filter, Fuel	1
3	M13849	. Nut, Flared	1
4	M16741-18	Ring, Retaining	1
<u> </u>	M16787-4	. Nozzle Adapter Assembly (Includes Item 5-12)	1
5	M16791	Connector, Male	1
6	M5976	Connector, Male	1
7	M8882	Sleeve, Nozzle Seal	<u> </u>
8	M10659-1	Washer, Nozzle Seal	2
9	M10809-1	Spring, Nozzle Seal	1
10	M23103	. Nozzle, Aspirating, 0.61 gph	1
11	M16535	Adapter, Nozzle	1
12	M10962-2	Spark Plug	1
13	M16534	. Body, Burner Head	



#### FIGURE P-9 PARTS LIST HANDLE AND WHEEL GROUP MODEL 583.406131

Index No.	Part Number	Part Name or Description	Qty.
1	M25352	Decal, Wiring (inside Upper Shell)	1
2	M29925	Decal, Trade Name	1
3	M17157	Decal, Sears Label	1
4.	M22898	Decal, Nameplate & Operation Inst.	1
5	M15131-3	Handle, Rear	1
6	M15808-3	Handle, Front	1
7	M12342-3	Frame, Wheel Support .	1
8	M12345-31	Screw, Oval hd., mach,	
		No. 10-24 x 1-1/4 in.	2
9	STD511020	Screw, Oval Hd., mach,	
		No. 10-24 x 2 in.	8
10	STD551010	Washer, Flat, No. 10	2
11	STD541410	Nut, No. 10-24, Torque Lock	10
12	M28526	Nut, Cap	2
13	STD551050	Washer, Flat, 1/2 in.	2
14	M19294	Wheel	2
15	M16801A	Axle	1
		Parts Available - Not Illustrated	
	M30831	Decal, Warranty	1
	M30754	Decal, BTU	2
	M22743	Decal, Warning	1
	M25325	Decal, Reset	1
	M29870-33	Manual - Instruction	1



## Sears

OWNERS MANUAL

**SERVICE** 

MODEL NO. 583.406131

## HOW TO ORDER REPAIR PARTS

## SEARS PORTABLE HEATER

Now that you have purchased your portable heater, should a need ever exist for repair parts or service, simply contact any sears service center. Be sure to provide all pertinent facts when you call or visit.

The model and serial number of your portable heater will be found on a decal located on top of the Heater towards the rear.

## WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION:

- 1. Part Number
- 2. Model Number
- 3. Part Description
- 4. Name of Merchandise

If the parts you need are not stocked locally, your order will be electronically transmitted to a Sears Repair Parts Distribution Center for "expedited handling."