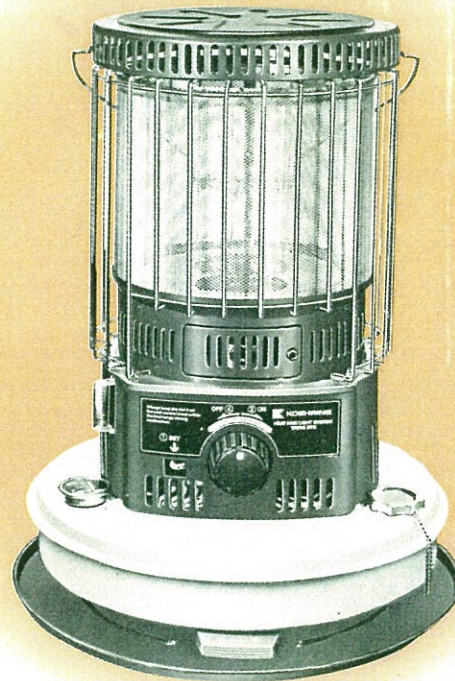


# Operating Instructions

 **KOEHRING**<sup>®</sup>

Kerosene Heater  
**Model KHL120**



 **KOEHRING**<sup>®</sup>  
ATOMASTER DIVISION  
BOWLING GREEN, KENTUCKY 42101

Before operating this unit, please read these instructions completely.

To be used only in accordance with state and/or local regulations, ordinances and codes.

AOT013-012KX

FA1534

Thank you for selecting a KOEHRING Kerosene Heater. You are now the proud owner of a quality heater.  
Please follow these operating instructions for the longest and best possible service from your heater.

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# SAFETY REQUIREMENTS

**IMPORTANT: Read and Understand Operating Instructions Before Starting or Servicing!**

**1. Improper use of this heater can result in serious bodily injury due to hazards of fire, carbon monoxide poisoning and burns.**

**2. Use only clean kerosene.**

- Do not use Fuel Oil or Diesel Fuel.

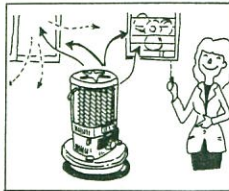
**3. Never use Gasoline, Naphtha, Paint Thinners, Alcohol or other Volatile Fuels.**

**4. Use only in areas free of flammable vapors or high dust content.**

- Never use heater where gasoline, paint thinner, or other flammable vapors are present.

**5. Use only in well ventilated rooms.**

- Provide ventilation of at least 40 square inches for each 10,000 BTU of rating.
- Open door or window.



**6. Keep children away from heater.**



**7. Never leave heater without adult supervision.**

- Turn off heater when leaving the room or sleeping.



**8. Do not modify the heater.**



**9. Check combustion periodically.**



**10. Always fill tanks outside building.**

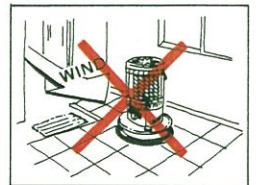
- Do not pour kerosene into the tank during combustion.
- Take precautions to prevent spilling. Always wipe off tank after refueling.
- Close the filler cap tightly to prevent leaking of fumes which can cause an unpleasant odor and fire hazard.



**11. If abnormal combustion or emergency occurs, turn off heater.**



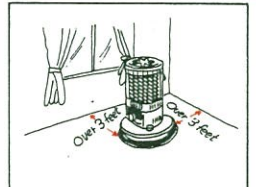
**12. Always operate the heater on a level surface away from wind and drafts.**



**13. Never splash water on the outer cylinder (glass).**



**14. Locate heater at least 3 feet from furniture and other combustible materials. Keep draperies and clothing away from the top of the heater.**



**15. Do not move, handle, or service while hot or burning.**



**16. Do not use in temperatures above 85° F (30° C).**  
 • It may cause abnormal combustion.



**17. Do not attempt to repair or patch a damaged fuel tank. A damaged fuel tank must be replaced.**

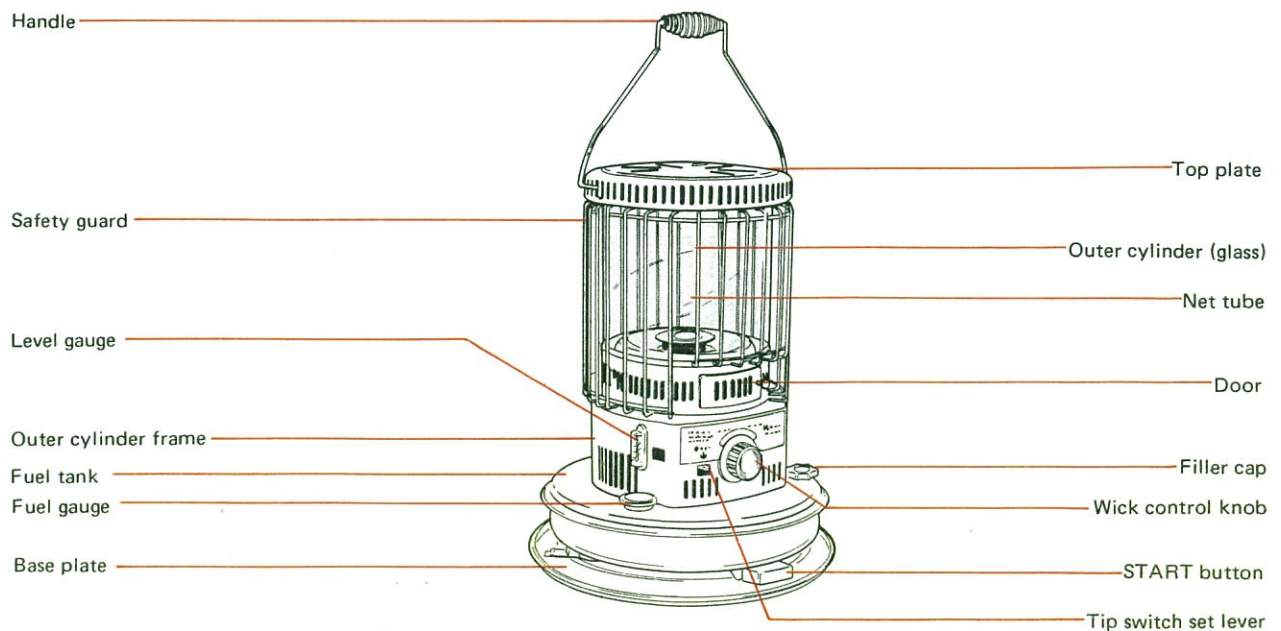
**18. To be used only in accordance with state and/or local regulations, ordinances and codes.**

# SELECTING PROPER FUEL

**NOTE:** All kerosene is not of equal quality. Consult your heater dealer for local sources of good fuel.

- 1. Use of inferior (deteriorated or impure) kerosene will cause tar to accumulate on the wick within 1 to 30 days. As a result, the flame will be low, an unpleasant odor may be produced, and the wick may not lower properly.**
- 2. How to determine if kerosene is deteriorated or impure.**
  - (1) Deterioration**
    - Extremely deteriorated kerosene appears yellow and smells extremely sour. Good kerosene is as clear as tap water.
    - Kerosene which is stored in a polyethylene container for several months will deteriorate. (Even if stored in another type container, the kerosene may be deteriorated. It is best to use fresh kerosene only.)
    - Kerosene which has been subjected to direct sunlight for an extended period (e.g. stored outdoors).
    - Kerosene which has been stored in a container without a lid.
    - Kerosene which has been stored in hot areas for an extended period.
  - (2) Impurities**
    - Kerosene which includes other oils (such as machine or crude oil) even in a very small amount.
    - Kerosene with even a small water or dirt content.
    - Containers which have been used to store other fuels or use of pumps, which have been used for other fuels will contaminate kerosene.
    - Always clean the interior of old containers by rinsing with clean kerosene several times.
  - (3) Storage:**
    - Store kerosene in a clean tightly sealed, metal container. Do not store for more than one season, in direct sunlight, or under heat.
- 3. Corrective action if deteriorated or impure kerosene is used.**
  - Completely drain old kerosene from fuel tank and reservoir. Rinse with clean kerosene 2 or 3 times. (If any of the old kerosene is left in the tank, the trouble may recur).
  - Replace kerosene.
  - Perform maintenance on the wick. (See "CLEANING THE WICK," page 6.)
  - If the wick still does not function properly, replace the wick.

# PARTS IDENTIFICATIONS



# CORRECT USE

## 1. ASSEMBLY

Remove inner packing materials from heater.

NOTE: Remove thumb screw from tip switch mechanism. Safety shut-off mechanism will not operate if this screw is not removed. This screw should be saved for securing base plate to heater.

Install the batteries (two dry cells).

- Two dry cell batteries are provided in the styrofoam packing under the heater.
- Put the dry cells (D size) into the battery case at the back bottom of the fuel tank in correct polarity with the minus (–) side first.
- Battery case cover is provided in the carton.

How to install base plate.

1. Insert the three legs into metal clips on the base plate.
2. Tighten the base plate thumb screw (1 pc.).

Setting up the chimney unit.

1. Turn the wick to its lower position.
2. Adjust the chimney unit by turning the chimney handle on the front and setting its vertical position manually.

Attach the top plate and handle.

1. Align top plate and outer cylinder mounting holes.
2. Install handle as shown in illustration.
3. Assure that handle is secure by pulling outward on handle when in upright position.

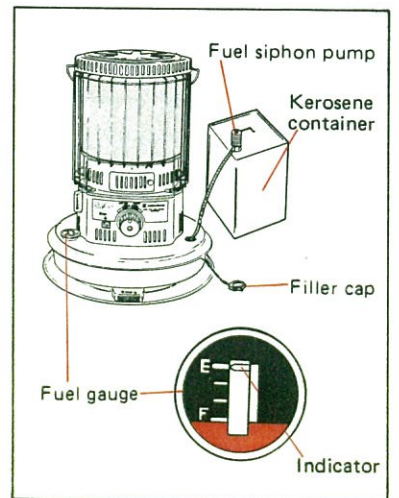
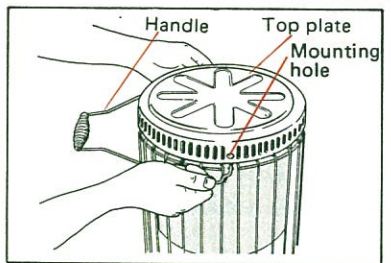
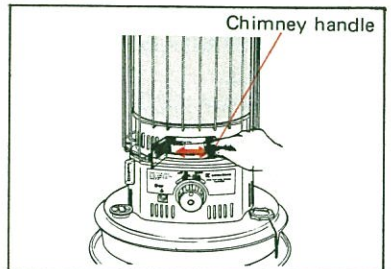
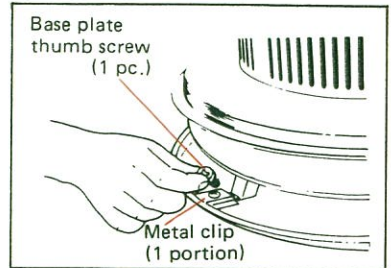
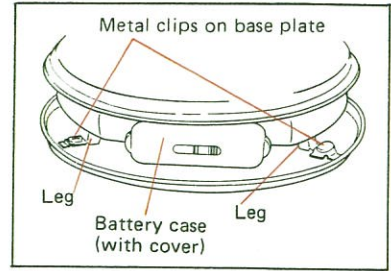
## 2. FILLING

Use correct fuel.

- Be sure to use good-quality pure kerosene for the best results. See "Selecting Proper Fuel".

How to fill the tank.

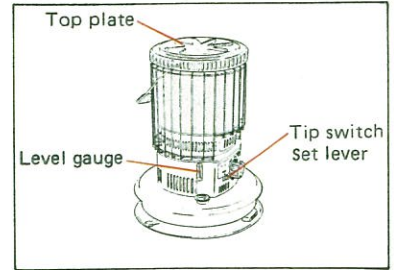
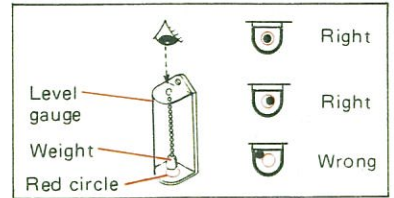
1. Turn off the heater.
2. Remove the filler cap by turning it counterclockwise.
3. Fill the tank (outside) with the kerosene up to the "F" level of the fuel gauge by using a fuel siphon pump.
  - Do not fill the kerosene exceeding the "F" level of fuel gauge.
  - Wipe off all spilt kerosene on the heater while filling.
4. Screw the filler cap on tightly after filling.



### 3. CHECKS BEFORE LIGHTING

If the wick control knob does not stop at selected position when using the heater.

- Check to see if the weight in the level gauge is within the red circle, to assure the heater is level.
- Push the tip switch set lever down.



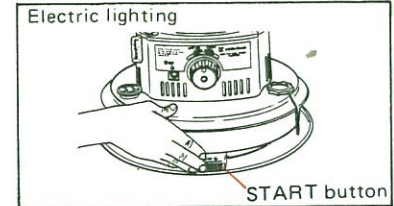
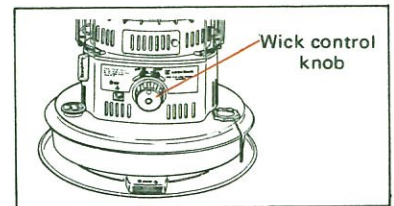
### 4. LIGHTING AND FLAME ADJUSTMENT

When lighting the heater for the first time or cleaning the wick or replacing the wick, allow 30 minutes after filling the tank before lighting.

#### Electric Lighting

1. Turn the wick control knob fully clockwise until it stops.
2. Push the START button slowly and make sure the heater has been properly ignited.
3. Slowly release the START button.

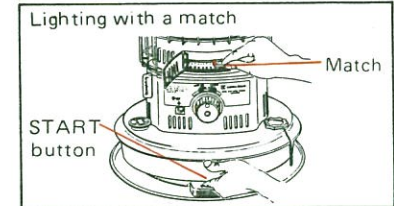
NOTE: If the wick will not ignite, push the START button several times.



#### Lighting with a match

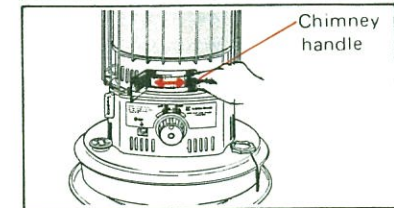
1. Turn the wick control knob fully clockwise until it stops.
2. Tilt the chimney unit up by pushing the START button and ignite the wick with a match.
3. Slowly release the START button.

NOTE: Do not drop match inside the burner.



#### Check after lighting

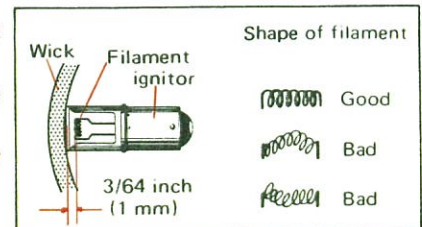
- Make sure the chimney unit is correctly in place by joggng 2 or 3 times by holding the chimney handle.



#### Clearance between Wick and Ignitor

The optimum clearance between the wick and the filament of ignitor is about 3/64 inch or 1 mm.

- Insufficient clearance causes white smoke to be created, excessive clearance causes difficult ignition.
- When adjusting the clearance, remove the outer cylinder and the chimney unit and slightly adjust the filament position.

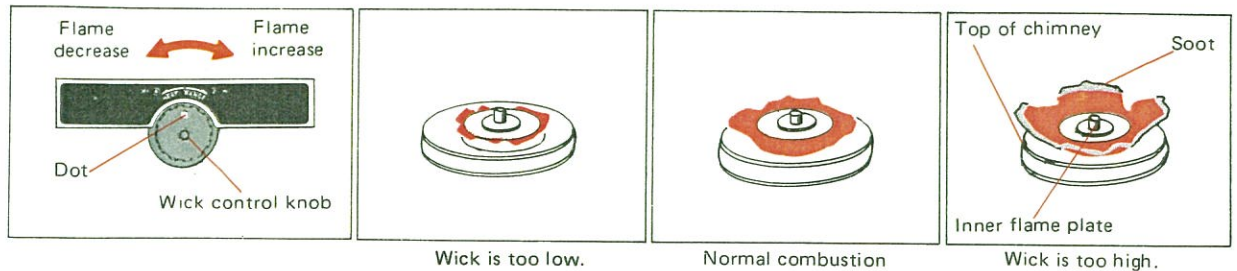


### Flame adjustment

1. A large flame is obtained by turning the wick control knob to the clockwise, and a smaller flame by turning it to the counterclockwise.
2. 15 to 20 minutes after lighting, the flame become stable. Too high a flame will produce soot. Adjust the flame by joggng the chimney handle to the right and left. If the flame is too high, turn the wick control knob counterclockwise until normal combustion is achieved.
  - Flame conditions are affected by the room dimensions, temperature, clogging in the chimney unit or the radiation plate caused by soot or dust.
  - If the wick is burned at too low a position, tar accumulates in the wick, resulting in unsmooth rotation of the wick control knob, soot and unpleasant odor.

**Always keep the dot (●) on the wick control knob within the HEAT RANGE during combustion.**

  - If the wick control knob is turned rapidly to the clockwise after burning the wick has been set low, soot will be produced. Always turn the knob slowly while watching flame condition.



## 5. TURNING OFF

1. Slowly turn the wick control knob fully counterclockwise until it stops.
  - If the wick control knob is turned rapidly, soot will be produced.
  - Flame is extinguished after 2 to 5 minutes. Make sure it is completely extinguished.

## CLEANING THE WICK

**NOTE:** A severely contaminated wick will not respond to cleaning as outlined here and must be replaced.

1. Wick should be cleaned when:
  - 1) The wick control knob is hard to turn.
  - 2) Normal combustion cannot be obtained even though the wick is raised as high as possible.
  - 3) The wick will not light completely or is hard to light.
  - 4) Unpleasant odor is produced during use.
2. How to clean the wick
  - 1) Completely burn the fuel in the tank. Continue using the heater without adding fuel.
  - 2) When the flame is reduced, turn the wick control knob clockwise as far as it goes to raise the wick as high as possible.
  - 3) Continue operation until the flame goes out naturally (about 90 minutes after the flame is reduced.)
  - 4) Lower the wick, fill the tank with the kerosene and let it stand for 30 minutes to moisten the wick before lighting the heater.

# PARTS AND SERVICE

1. Contact your Dealer or Service Center for parts and service.
2. Replace the wick or the ignitor following the instructions found with the replacement part.

# STORAGE

1. Completely drain the kerosene from the fuel tank.
2. Clean the wick as shown on page 6.
3. Remove the batteries in order to prevent corrosion.
4. Lower the wick.
5. Store the heater in a dry place.

# SPECIFICATIONS

Model	KHL120
Type	Convection, Wick type
Fuel	Good quality pure kerosene
Thermal output	12,000 BTU/h
Fuel capacity	Approx. 1.7 gal.
Duration	Approx. 17 hours

Dimensions	20 $\frac{1}{2}$ " (H) x 16 $\frac{1}{8}$ " (Dia.)	
Weight	22.4 lbs	
Wick	Type	One piece wick
	Size	75mm (dia.) x 3.0 mm (thick)
Safety device	Tip switch	
Ignition device	Battery ignition system	
Batteries	2 "D" size cells	



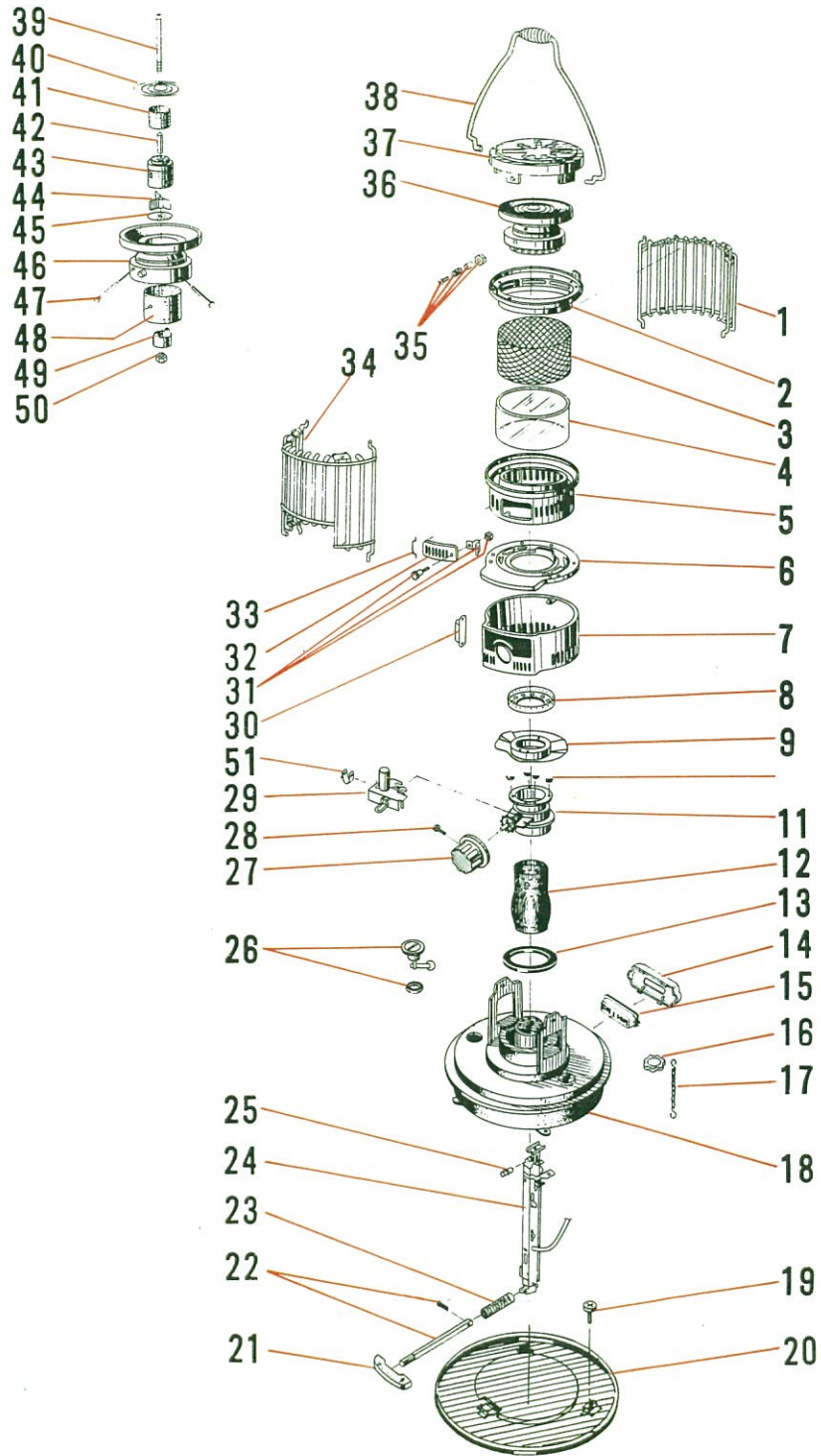
# TROUBLE SHOOTING GUIDE

Symptoms Possible Causes	Wick does not ignite.	Flame is too low.	Flame is producing soot.	Flame is wavering.	Odor.	Hard to extinguish.	Wick control knob is hard to turn.	Wick control knob does not return to off.	Wick cannot be raised or lowered.	Remedies
Ignitor is burned out.	*									Replace ignitor.
Batteries are dead or not installed properly.	*									Replace batteries. Install properly.
Ignition Circuit is defective.	*									Take to Service Center.
Reservoir contains deteriorated or impure kerosene.	*	*	*	*	*	*	*	*	*	Refer to "Selecting proper fuel" (page 3).
Gasoline or Thinner is mixed in the kerosene.			*	*	*	*				Replace with pure kerosene.
Chimney unit is not properly seated.			*	*	*					Jiggle chimney knob to seat it properly.
Wick has not absorbed enough kerosene.	*	*			*					Lower the wick. Leave it set for 30 minutes. Not burning.
Tar deposits on Wick.	*	*		*	*	*	*	*	*	See "Cleaning the wick".
Wick is too high.	*		*		*					Turn wick control knob counterclockwise.
Wick is too low.	*	*			*					Turn wick control knob clockwise.
Insufficient ventilation.		*	*	*	*					Ventilate room once or twice an hour.
Leaking Fuel Tank.					*					Replace Tank. Do not use heater.

# PARTS LIST

## EXPLODED VIEW

Model KHL120



## PARTS LISTING

Key No.	Part No.	Part Name or Description	Q'ty.
1	KOS160AX08AX	Safety Guard	1
2	KOS1104X08AX	Outer Cylinder Metal Fixture	1
3	KOS1603X08AX	Net Tube	1
4	KOS1100X08AX	Outer Cylinder A (glass)	1
5	KOS1101X08AX	Outer Cylinder B	1
6	KOS1301X08AX	Radiation Plate A	1
7	KOS1300X08AX	Outer Cylinder Frame	1
8	KOS4680X06AX	Radiation Plate B	1
9	KOS4681X06AX	Radiation Plate C	1
10	AOS001-212AX	Wing Nut	4
11	KOS460SX06AX	Wick Guide Unit	1
12	AOS420-031PX	Wick	1
13	AOS417-170AX	Burner Gasket	1
14	KOS1900X06AX	Battery Case Cover	1
15	AOS316-023AX	Battery Case	1
16	KOS3070X06AX	Filler Cap	1
17	KOS3074X06AX	Chain	1
18	KGC300AX06AX	Fuel Tank	1
19	AOS110-210BX	Base Plate Thumb Screw	1
20	KOS1000X06AX	Base Plate	1
21	KOS6050X06AX	Start Button	1
22	KOS6010X06AX	Ignition Lever	1
23	KOS6040X06AX	Ignition Spring	1
24	KOS600AX06AX	Ignition Bracket	1
25	AOS720-A22AX	Ignitor	1
26	AOS291-031AX	Fuel Gauge	1
27	KOS4660X06AX	Wick Control Knob	1
28	AOS371-051BX	Wick Control Knob Screw	1
29	KOS220AX06AX	Tip Switch	1
30	AOS158-022AX	Level Gauge	1
31	KOS1106X08AX	Door Clamp	1
32	KOS1105X08AX	Door	1
33	KOS1108X08AX	Door Pin	1
34	KOS160AX08BX	Safety Guard	1
35	KOS4590X06AX	Chimney Knob	1
36	KOS450AX06SX	Chimney Unit	1
37	KOS1200X08AX	Top Plate	1
38	KOS170AX08AX	Handle	1
39	AOS001-031AX	Inside Tube Bolt	1
40	AOS005-031BX	Inside Plate	1
41	KOS4531X06AX	Adjuster Net	1
42	KOS4540X06AX	Chimney Inside Plate	1
43	AOS310-031BX	Inside Tube	1
44	AOS006-031BX	Guide B	1
45	AOS007-031AX	Inside Plate	1
46	KOS450AX06AX	Outside Plate	1
47	AOS319-031AX	Chimney Bolt	2
48	AOS310-031AX	Outside Tube	1
49	KOS4550X06AX	Ignition Support	1
50	AOS001-031BX	Chimney Nut	1
51	KOS2223X06AX	Actuating Plate Spring	1

## PARTS AVAILABLE – NOT SHOWN

	AOT001-001KX	Screws, Repair Packet	1
	AOT013-012KX	Operating Instructions	1
	AOS000-024KX	Siphon Pump	1

Model \_\_\_\_\_

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

Date Purchased \_\_\_\_\_

Fill in above information for your own record.

**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.

**LIMITED WARRANTY  
KOEHRING KEROSENE HEATERS**

Koehring Company warrants this product to be free from defects in materials and workmanship for 90 days from the date of first purchase when operated and maintained in accordance with instructions. This warranty is extended only to the original retail purchaser.

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

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

This warranty does not cover normal wear and tear parts such as, but not limited to, wicks, batteries, ignitor coils and siphon pumps, nor does it cover defects resulting from misuse, accidents, lack of proper maintenance, or the use of improper fuels. Regular routine maintenance is the responsibility of the owner.

Koehring Company assumes no responsibility for indirect, incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental and consequential damages so the above may not apply to you.

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

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

For information write: **Koehring Atomaster Division**  
**P. O. Box 719**  
**Bowling Green, Kentucky 42101**  
**Attention : Customer Service Mgr.**