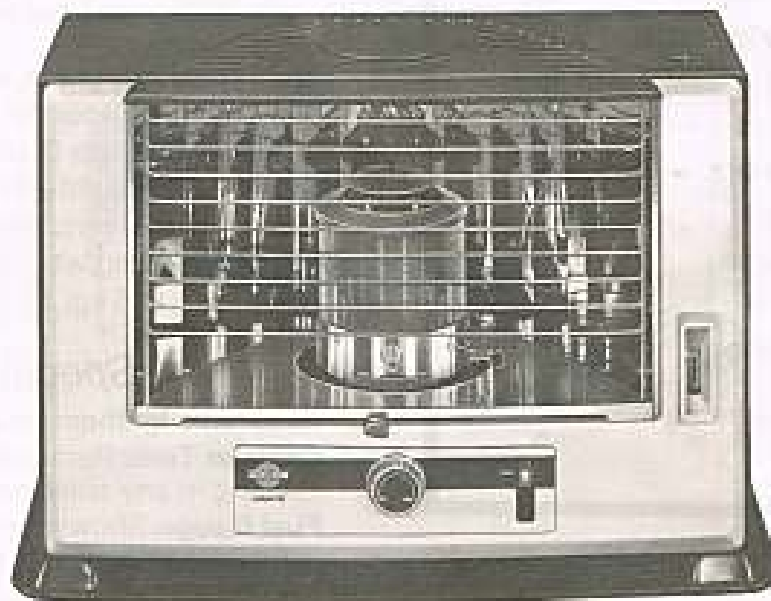


How to Use and Care For Your

Radiant 36™
Kerosene Heater

Owner's Guide



KERO-SUN®



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Specifications

Model: Radiant 36 D

Heater Rating: 9600 BTU/hr.

This rating includes heat produced by the Radiant 36 D, plus heat that would be generated if water of combustion was condensed. Use this rating, and "Heater Output" below, when comparing heaters of different manufacture.

Heater Output: 9000 BTU/hr.

This is the amount of heat generated by the Radiant 36 D and the amount of heat delivered to the room. (The wick-fed KERO-SUN® portable heater is more than 99.9% efficient.

Burning Time: 18-25 hrs.

Burning time is a function of the condition of the wick, the setting of the flame regulator knob, fuel quality and atmospheric conditions.

Typical Room Size: Approximately 325 sq. ft.

This varies according to outside air temperatures, insulation R factors and the square footage of windows. The given room size assumes that the Radiant 36 D is the only source of heat for the room.

Fuel Type: High grade, water white kerosene only.

Fuel Canister Capacity: 1.3 gallons (4.9 L)

Batteries: Two size D cells (included).

Dimensions: Height—17¼ in. (43.8 cm); width—25¼ in. (65.4 cm); depth—12¼ in. (31.1 cm)

Weight: Shipping wt.—30 lbs. (13.6 kg); net wt.—25.3 lbs. (11.5 kg)

Special Features

Automatic Ignition: No matches required.

Canister Tank: Removable tank allows for easy filling in any convenient location.

Fuel Gauge: Shows fuel level at a glance. Avoids unnecessary filling.

Drip Tray: Protects floors and carpets.

Manual Siphon: Provides for spill-free transmission of fuel.

Safety Features

UL Listed

Automatic Extinguisher Assembly: Automatically extinguishes the flame if heater is jarred or tipped.

Fuel Supply: Fuel is not under pressure. If the flame goes out, the fuel flow stops.

Low Center of Gravity: Weight is concentrated in the base, reducing the chance of tip-over.

Rubber Seals: Joints are sealed with oil resistant rubber to prevent leaks if tip-over does occur.

Double-Wall Construction: Stainless steel heat shield keeps sides and back of heater cool.

High-Efficiency Level: 99.9% fuel combustion eliminates odor and smoke during operation.

Chained Fuel Cap: Keeps cap in close reach and prevents the possibility of its loss.

Flame Regulator Knob with "Press to Release" Latch: Insures easy removal of knob to facilitate disassembly.

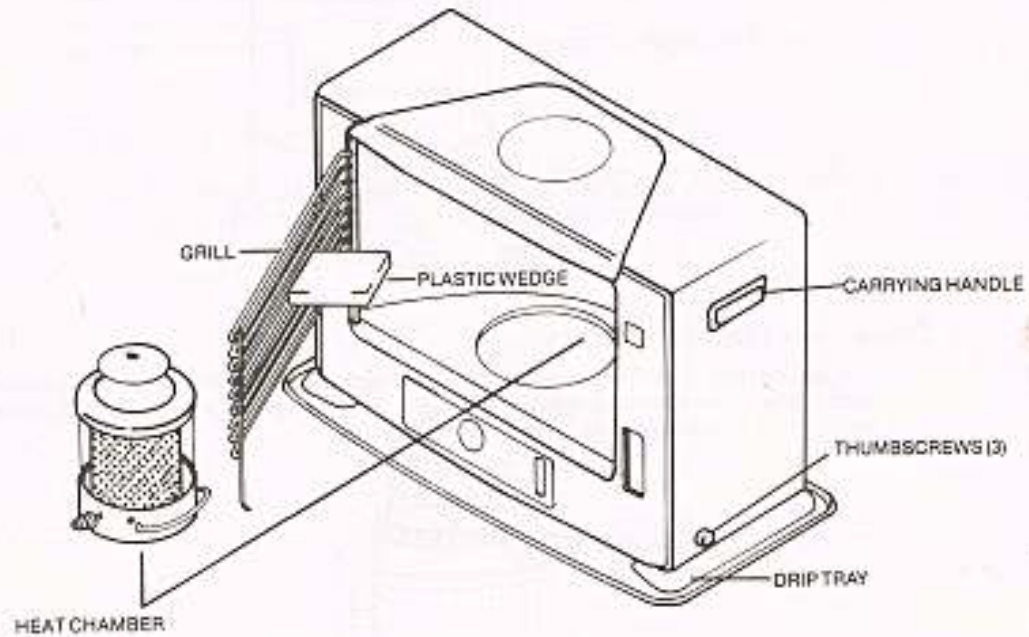
Wick Adjuster with Two-Position Mechanical Stop: Ensures that wick is always in its cleanest and most efficient height range for operation.

Maximum 5mm (0.20 in.) Wick Adjustment Range: Minimizes the possibility of the wick jamming the automatic extinguisher assembly.

Unpacking

Before discarding any packing materials be sure to check the carton for the following items: two batteries, a manual siphon and a caution notice.

Assembly



1. Remove the Heat Chamber

Open the grill by pulling straight out at the friction latch. Pull the styrofoam packing wedge from the cabinet top to release the heat chamber assembly. Lift the chamber, in its protective enclosure, out of the cabinet. Be certain all packing materials have been removed before attempting to light the heater.

2. Tighten Thumbscrews

Check the tightness of the three thumbscrews securing the cabinet to the fuel tank.

3. Level the Heater

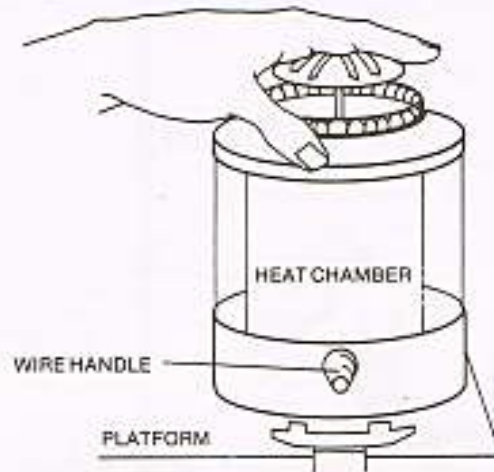
Place the heater on a firm, level surface, preferably the floor. A built-in guide is provided to check if the heater is level. Find the chain and red circle on the bottom left side of the cabinet. The chain will lie approximately in the center of the red circle when the heater is level.

4. Install the Batteries

Install the two batteries in the holder at the rear of the cabinet. The positive (+) side of each battery faces right, as illustrated on the cabinet.

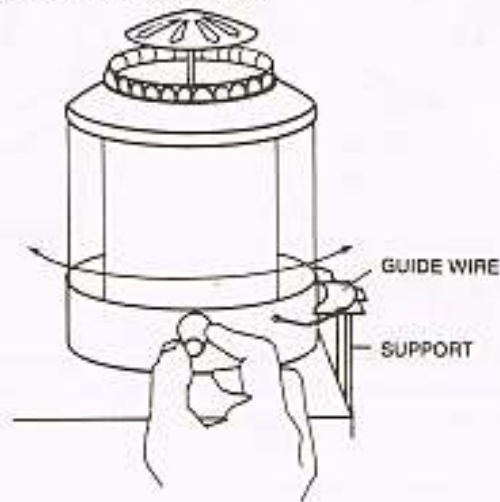
5. Place Heat Chamber on Platform

Separate the heat chamber from its protective styrofoam enclosure and place it on the platform. Be sure the wire handle points toward you.



6. Check Heat Chamber Placement

After the heat chamber is on its platform, check its placement by grasping the wire handle and turning the chamber left and right. If the chamber turns easily, it is properly seated and is squarely over the wick assembly.



Caution: Misaligning the heat chamber could cause smoke or possible damage to the heater.

7. Record Your Serial Number

On the outside of the heater cabinet locate the serial number of your heater. Be sure to record this number. If you ever need replacement parts or service, please refer to this number. If your serial number has been defaced, please contact your dealer for proper identification of your heater.

Fueling

Warning

Do not fuel your heater while it is hot. First extinguish the flame and allow the cabinet to cool. Use only fresh, high grade, water white kerosene. Never use gasoline, white gas, camp fuel or other flammable liquids. Use of such fuels can result in an explosive fire and cause severe injury.



1. Remove the Fuel Canister

Open the hinged lid at the top of the cabinet, remove all protective packing and lift out the fuel canister. Turn the canister upside down and unscrew the chained fuel cap.



2. Fill the Fuel Canister Using the Siphon

To operate the siphon provided with your heater, insert the straight tube into the kerosene container. Insert the siphon's flexible hose into the fuel canister opening. For good siphoning, raise the kerosene container slightly higher than the level of the canister.

Note the knob at the top of the siphon; it controls an air vent. Before siphoning, close the vent by turning the knob clockwise. Squeeze the bulb vigorously six or seven times, pausing to allow the bulb to expand after each squeeze. Once the kerosene flows it is no longer necessary to squeeze the bulb. Fill the canister until the fuel gauge reads full.

To stop the flow, open the air vent by turning the knob counter-clockwise. Remove the siphon slowly to allow excess kerosene to drain back into the container. Tightly replace the chained fuel cap and wipe any spilled kerosene off the fuel canister. Again, turn the canister and reinstall it in the heater with the fuel cap down.

For added convenience, a five gallon fuel container, from KERO-SUN, is available from your dealer. The siphon provided with your heater fits snugly over the opening of this container for easier siphoning.

Ventilation

Before lighting the heater, check for a source of air. It may be a half-inch opening of a door to an adjoining room, or a window opened one-half inch.

Be sure to provide adequate ventilation whenever the heater operates in a tightly confined area, such as a bathroom.

Avoid drafty areas or locations where the opening of a door might create a gust of air.

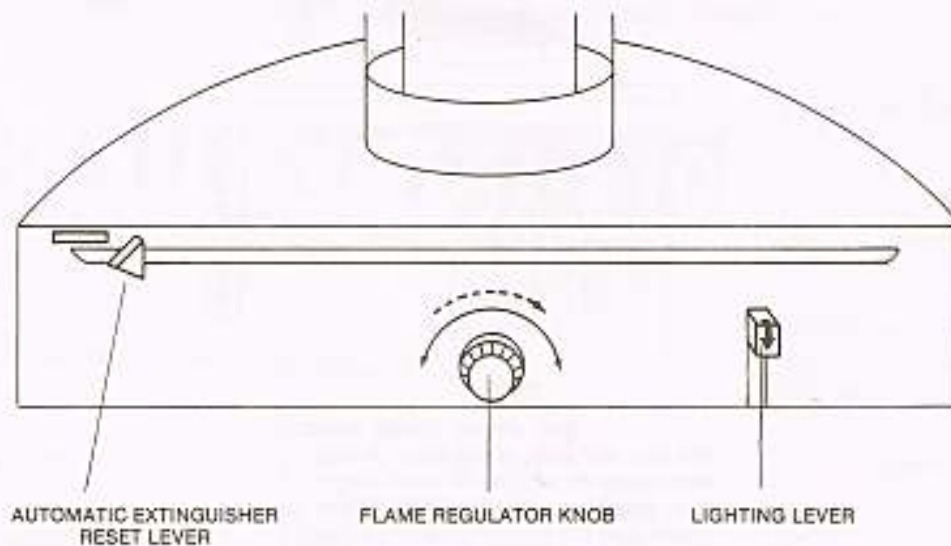
Safety Reminders

Before you light your heater review these safety reminders:

1. BURN ONLY KEROSENE. NEVER USE gasoline, white gas, camp fuel or any other fuel. These fuels are extremely dangerous in kerosene heaters.
2. Use only fresh, high grade, water white kerosene. Yellow or colored kerosene may cause your heater to smoke, smell and burn inefficiently.
3. Store fuel far away from any heat source, in a can clearly marked "KEROSENE". A suitable container, from KERO-SUN, is available from your dealer.
4. Keep heater away from all burnable materials such as clothing, curtains, wood, etc.
5. The heater surface becomes hot; keep children away.
6. Do not move, service or refill the heater while it is burning or hot. Extinguish the flame first and wait for the heater to thoroughly cool.
7. Refill the fuel canister outside, if possible. Use the siphon provided to prevent spillage.
8. Provide adequate ventilation. The heater needs oxygen and this can be ensured by opening the door to an adjacent room or a window, just a half-inch.
9. When turning the heater off, make sure the flame is completely extinguished, using the mechanical two-stop wick adjuster.
10. Keep the heater free of dust or spilled kerosene.
11. Follow wick maintenance instructions for optimum performance.
12. Keep the heater level.
13. Keep the fuel cap tightly secured.
14. Avoid drafts.

Lighting

If the fuel tank has been empty for some time, or if the wick is new, wait about 30 minutes for the wick to saturate before lighting.



1. Engage the Automatic Extinguisher

Locate the automatic extinguisher reset lever at the center of the cabinet and push the lever fully to the left, until it locks into place. This engages the automatic extinguisher and exposes the wick.

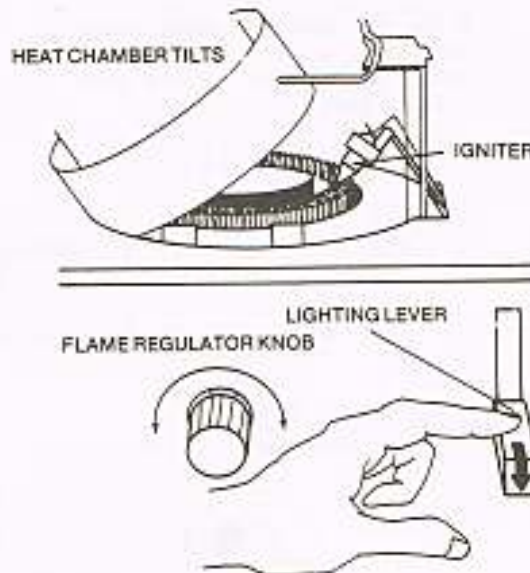
2. Adjust the Wick

Turn the flame regulator knob, located in the center of the cabinet, clockwise until it stops. The wick should move uniformly and smoothly to a maximum height of 5mm (0.20 in.) above the shoulder of the wick adjuster.

Before lighting, use the wire handle to turn the heat chamber left and right to ensure that it is properly seated on the platform. A misaligned heat chamber can cause smoke and damage to the heater.

3. Automatic Lighting

Push down gently on the lighting lever. The igniter coil should glow and touch the top of the wick. After a flame appears above the wick, release the lever.



The igniter coil should brush against the top, not side, of the wick. It may be necessary to adjust the wick height to this position. Check once again to make sure the heat chamber is properly seated.

4. Manual Lighting

You should not have to light the heater with a match but, should it become necessary, touch the match to the top of the wick. When lighting in this manner, do not allow burned parts of the match to fall or remain on the wick.

To restore your heater to automatic lighting, check for worn out batteries or a defective igniter, as described later.

NOTE:

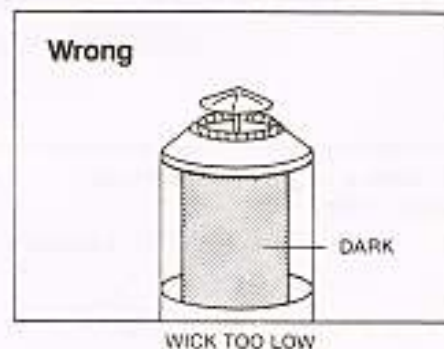
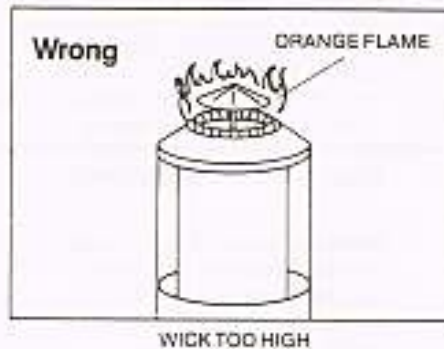
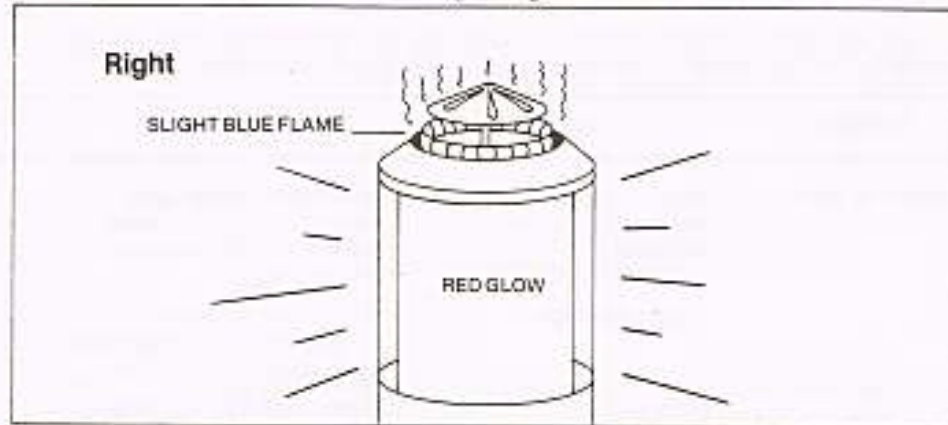
After lighting a new heater, a slight odor and occasionally some smoke is normal and is caused by a preservative oil on the metal parts. The odor and smoke should disappear in a few minutes. Considering this, the first time you light your heater you should do it in a well-ventilated area, such as a porch.

Adjusting the Flame

1. Wait for the Heat Chamber to Reach Operating Temperature

Several minutes after lighting, heat will spread through the heat chamber.

In another two or three minutes the circular coil at the top will glow. After five minutes, the entire chamber should be glowing red.



2. Wick Height Adjustment

If the flame from the wick reaches more than an inch above the top of the heat chamber, turn the flame regulator knob counter-clockwise. This will lower the wick and hence lessen the flame.

The best wick setting causes the entire chamber to glow red, with a slight blue flame at the top.

Raise or lower the wick to produce this ideal condition.

Extinguishing the Flame

1. Turn the flame regulator knob counter-clockwise until it stops; this requires about a half turn. At this point the heater is at its lowest setting, *but the flame has not been extinguished.*
2. Next, gently pull the flame regulator knob and continue turning counter-clockwise until it stops; this takes about two-and-a-half (2½) turns. At this point the flame is completely extinguished and the heater is off.

DO NOT use the automatic extinguisher assembly to extinguish the flame. Automatic extinguishing should only occur when the heater is jarred or tipped.

Troubleshooting

Here are some common, minor problems that can temporarily impair the efficient operation of your heater. Most can be easily and quickly corrected.

Problem	Cause	Solution	Page
Smoke or odor.	Heat chamber tilted and not seated properly on platform.	Move wire handle until heat chamber is properly seated and turns smoothly left and right.	3
	Flame too high.	Reduce wick height by turning the flame regulator knob counter-clockwise.	8
	Dirty wick.	Clean wick by "burning-dry".	10
	Drafts.	Relocate heater.	5
	Contaminated fuel.	Remove and empty canister, siphon fuel from sub-tank and install new wick. Refill with fresh, clean kerosene.	
Flickering or dying flame.	Dirty wick.	Clean wick by "burning-dry".	10
	Water in kerosene.	Remove and empty canister, siphon fuel from sub-tank, and remove, dry and re-install wick. Refill with fresh, clean kerosene.	
Wick won't ignite.	Out of fuel.	Check fuel gauge, add fuel if necessary.	4
	Igniter won't glow.	Replace batteries. Replace igniter coil.	13
	Igniter coil touches side of wick.	Lower wick by turning flame regulator knob until igniter coil touches top of wick.	7
	Water in kerosene.	Remove and empty canister, siphon fuel from sub-tank, and remove, dry and reinstall wick. Refill with fresh, clean kerosene.	
Flame regulator knob jams.	Dirty wick.	Clean wick by "burning-dry".	10
	Water in kerosene.	Remove and empty canister, siphon fuel from sub-tank, and remove, dry and re-install wick. Refill with fresh, clean kerosene.	
Flame too high and cannot be adjusted using proper procedure.	Fuel contaminated with gasoline, paint thinner, denatured alcohol or other volatile substance.	IMMEDIATELY shut off heater. Remove and empty canister, siphon fuel from sub-tank and install new wick. REFILL WITH FRESH, CLEAN KEROSENE.	

Cleaning the Wick

1. Wick Life

With proper attention the wick should last at least one heating season. Maximum wick life occurs if you allow the wick to "burn dry" after every three or four tanks of kerosene, as described below.

2. Wick Contamination

The following signs indicate that the wick needs attention.

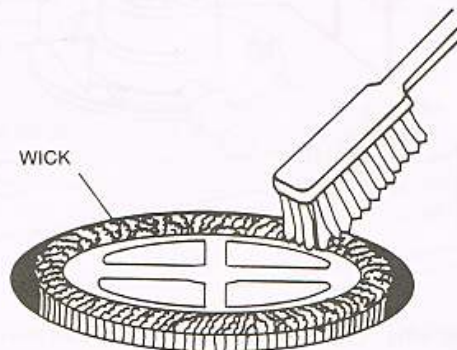
- accumulation of tar on the wick's top edge
- difficulty or inability to turn the flame regulator knob
- a flickering or dying flame

3. "Burning Dry"

When the fuel gauge indicates empty, raise the wick to its maximum height and allow the flame to consume the fuel remaining in the tank. This burns the tar off the wick's edge and restores the wick to efficient operating condition. To avoid odor, the heater should be allowed to "burn dry" in a well ventilated area or outdoors. "Burning dry" does not harm the wick material.

4. Remove Ash, Cinders, Soot

After the wick cools, remove any residue with a small nylon or plastic bristled brush. Cinders or soot around the wick area should be vacuumed clean.



REPLACING THE WICK

*Before disassembling the heater
allow it to cool completely.*

1. Release the Automatic Extinguisher

To release the automatic extinguisher, jar the heater cabinet by grasping the left corner of the drip tray and pulling it quickly toward you. After one or two quick pulls the automatic extinguisher will snap closed.

2. Remove the Heat Chamber

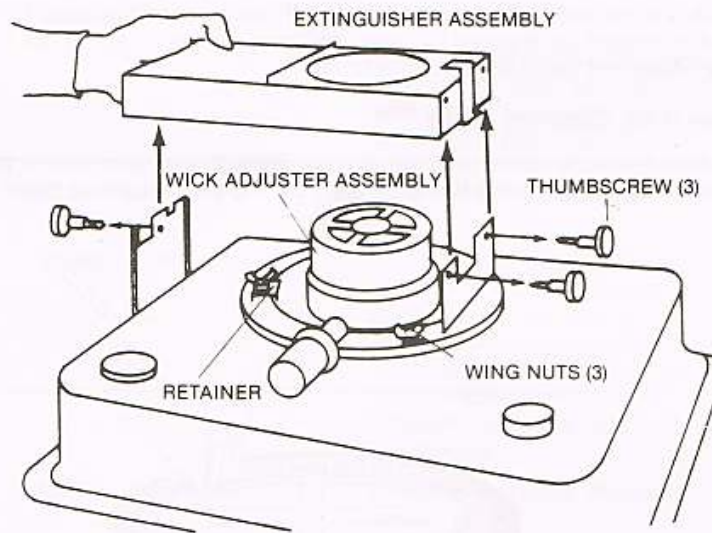
Open the front grill by pulling straight out at the friction latch. Make sure the heat chamber has thoroughly cooled, then lift it off the platform and remove it from the heater.

3. Remove the Cabinet

Grasp the automatic extinguisher lever and pull it toward you. A quick release allows the lever to snap out. Remove the flame regulator knob by pushing on its latch and pulling it straight off the wick adjuster shaft. Remove the fuel canister and set it aside. Remove the three large thumbscrews at the sides and rear of the cabinet.

Finally, lift off the cabinet while bringing it slightly forward to clear the lighting lever. Also, at this point disconnect the two electrical leads (red and white) attached to the battery holder.

4. Remove the Automatic Extinguisher Assembly



Loosen the three small thumbscrews on the sides of the extinguisher assembly, and lift it off the heater.

5. Remove the Wick Adjuster Assembly

Remove the three wingnuts and retainers around the wick adjuster assembly. Lift the assembly off the heater while moving it slightly back and forth.

6. Remove the Old Wick

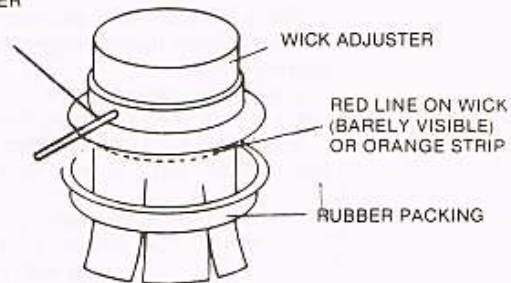
Slide the rubber packing off the wick. Fold the wick to free it from the small "teeth" within the wick adjuster. Remove the wick.

7. Install the New Wick

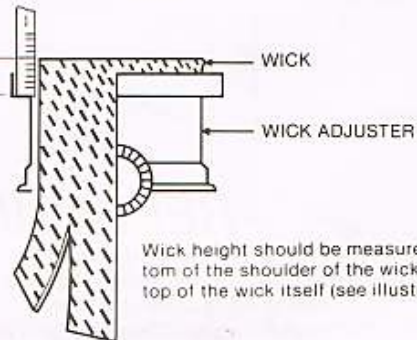
Turn the wick adjuster shaft counterclockwise until the mechanical stop is reached. Now gently pull and turn the wick adjuster shaft counterclockwise again until it stops (at this point the wick will be in its lowest possible position). Fold the new wick in half and insert it into the wick adjuster. Note the red line, or orange strip, on the outside of the wick; this should be used as a rough guide for alignment with the bottom edge of the adjuster.

Now, turn the wick adjuster shaft fully clockwise (so the wick is at its highest possible position) and check that the wick protrudes 5mm* (0.20 in.) above the shoulder of the adjuster. When the wick is in this position, press it uniformly against the small "teeth" within the wick adjuster.

WICK ADJUSTER
SHAFT



WICK HEIGHT
SETTING (mm): SEE
INSTALLATION
INSTRUCTIONS.



Wick placement should be as precise as possible. If the wick is too high it may jam the automatic extinguisher. If it is too low, the heater will not reach its full heat potential and may smoke or produce odors.

Push the rubber packing over the wick, being sure that the four tails of the wick extend downward. Lower the wick adjuster into the fuel tank, guiding the wick so it fits over the air tube and evenly into place. Ensure that all four tails of the wick extend into the tank. Point the wick adjuster shaft to the front of the heater. Make sure that the wick adjuster is centered over the studs on the fuel tank. Check that the new wick moves smoothly up and down by turning the wick adjuster shaft left and right. If any ragged edges are on the top of the wick carefully trim them with a scissor. Replace and tighten the three wingnuts and retainers around the base of the adjuster assembly.

*This 5mm wick height applies to the Radiant 36 D model only. For the Radiant 36 B and 36 C models the wick height should be 6mm. The model identification letter appears as one of the last characters of your heater serial number. If your serial number has been defaced, see your KERO-SUN dealer for proper model identification of your heater.

5. Reassemble the Heater

Place the automatic extinguisher assembly squarely on the heater and fasten it with the three small thumbscrews. Now, reconnect the red and white electrical leads to the battery holder.

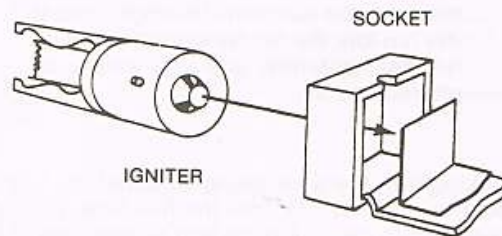
Lower the cabinet back on the unit (watch for the lighting lever) and secure the cabinet with the remaining three large thumbscrews. Replace the fuel canister.

Install the heat chamber squarely on the platform, grasp the wire handle, then turn the chamber left and right to ensure that it is properly seated.

Before lighting the new wick allow 30 minutes for it to become properly saturated with kerosene.

REPLACING THE IGNITER

1. When the igniter no longer glows sufficiently to light the wick, check the batteries. If replacement doesn't restore the glow, then the igniter coil may be burned out and needs replacement. To do this, first release the automatic extinguisher by jarring the heater cabinet. Open the grill and remove the heat chamber. Also, remove the batteries from the battery holder on the back of the heater.



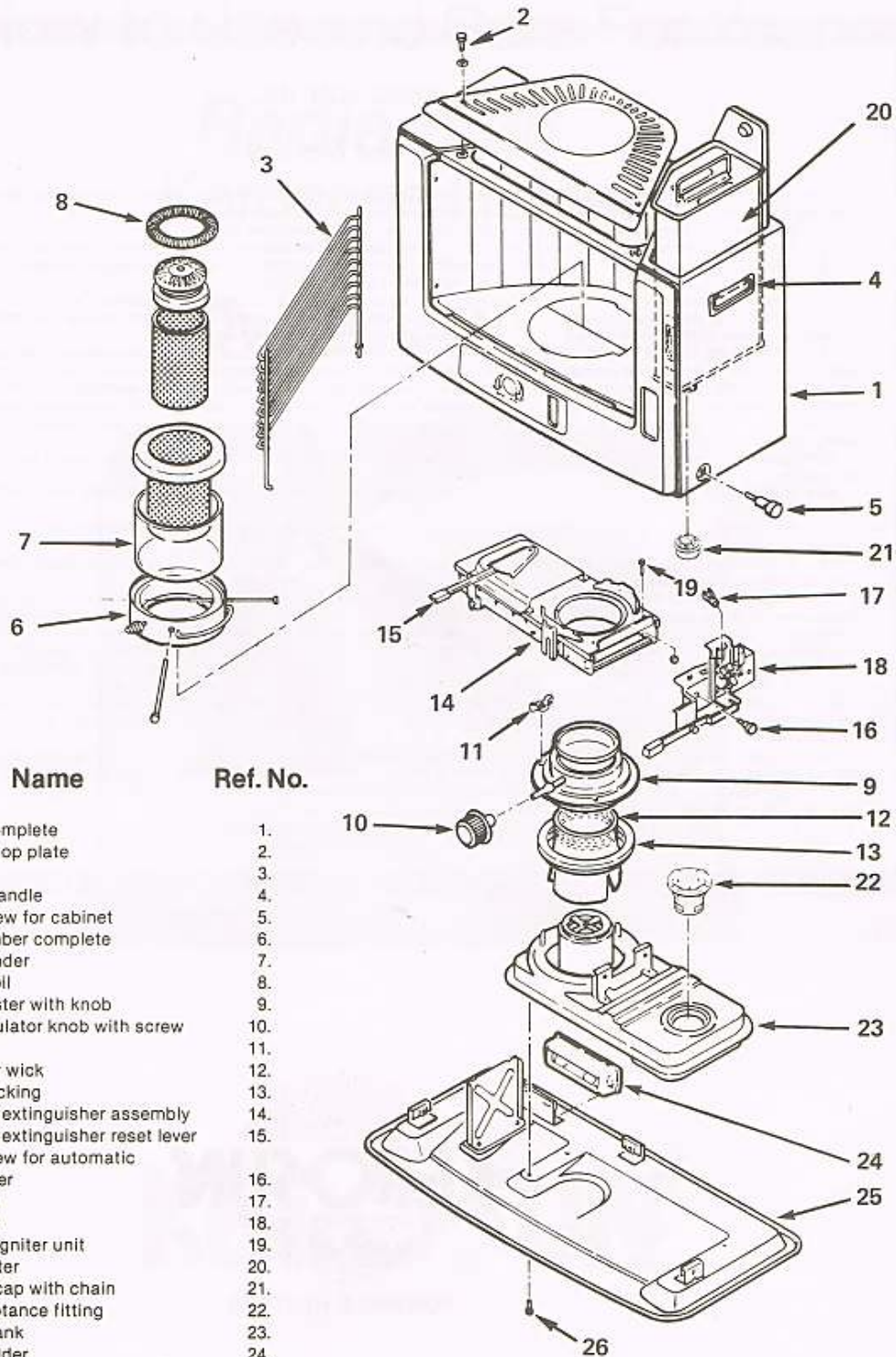
2. Press the lighting lever to bring the igniter into view. Note how the igniter fits into a bayonet socket which resembles a flashlight lamp and holder. To remove the old igniter, push it in and twist in either direction, while simultaneously supporting the socket with your other hand. Install the new igniter by pressing it into the socket and turning. Replace the heat chamber, close the front grill and reinstall the two batteries into the battery holder.

Parts and Service

For parts and service, see your authorized KERO-SUN dealer. If additional assistance is needed, send a brief letter stating the nature of the problem, the name and address of your KERO-SUN dealer and your own address and telephone number to:

Customer Service
KERO-SUN, INC.
Kent, CT 06757

Radiant 36 Parts List & Exploded View



Part No.	Name	Ref. No.
004003	Cabinet complete	1.
001003	Screw for top plate	2.
004004	Grill	3.
000911	Carrying handle	4.
000924	Thumbscrew for cabinet	5.
001008	Heat chamber complete	6.
001013	Glass cylinder	7.
001009	Heating coil	8.
004028	Wick adjuster with knob	9.
004027	Flame regulator knob with screw	10.
000922	Wing nut	11.
004024	Glass fiber wick	12.
004026	Rubber packing	13.
000918	Automatic extinguisher assembly	14.
004020	Automatic extinguisher reset lever	15.
000923	Thumbscrew for automatic extinguisher	16.
000919	Igniter coil	17.
004019	Igniter unit	18.
000920	Screw for igniter unit	19.
004034	Fuel canister	20.
004043	Fuel filler cap with chain	21.
004033	Fuel acceptance fitting	22.
004044	Fuel sub tank	23.
004050	Battery holder	24.
004032	Drip tray	25.
000933	Screw for tray	26.