



PORTABLE KEROSENE HEATER **OPERATION AND MAINTENANCE INSTRUCTION**



MODEL RCA-36F 

FOR SAFE AND EFFICIENT OPERATION OF YOUR TOYOSTOVE™ PORTABLE HEATER,
PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

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Congratulations, you are ready to begin enjoying the benefits of one of the most popular kerosene heaters ever made. TOYOTOMI, the leader in kerosene heater technology, has tested and refined the RCA-36F to assure you of long term safety and satisfaction. Please study the following instruction, use and care your heater carefully, and it will serve you well for many years.

SPECIFICATIONS

MODEL	RCA-36F
HEAT RATING*	9,600 BTU/hr.
FUEL TANK CAPACITY	1.4 Gallons.
BURNING TIME/TANK	20 – 27 Hours.
SIZE (W x H x D)	25-3/4" x 19-1/8" x 13-3/8"
WEIGHT (EMPTY)	36.4 Pounds.
EXTINGUISHER	Automatic
IGNITER	Automatic, powered by two (2) "D" size batteries
ELECTRICAL RATING	120 Volts; 60 Hz.; 28 Watts.

**Matching Room Size to HEAT RATING .*

- Because the "Heat Load" of an area to be heated is influenced by so many factors, it is impossible to specify a heater output to an exact room size.
- If you use a heater too large for the area to be heated, the temperature you desire will be reached quickly. In such cases, to avoid overheating the area, the heater must be turned off frequently, or doors opened to other areas of the house, or windows to the outside opened to cool the area.
- If you use a heater too small for the area to be heated, it will take much longer to reach the desired temperature, in fact it may not be reached at all depending on the outside weather conditions.
- As a "rule of thumb", the following can be given as a guide:
If you live in an area of the country exposed to severe winter temperatures, multiply the primary area (in square feet) to be heated by 24 BTU/ft²/hr, if you live in a moderate climatic area, multiply the primary area (in square feet) by 12 BTU/ft²/hr.

OUTSTANDING FEATURES AND BENEFITS

- **AUTOMATIC EXTINGUISHER:** Automatically extinguishes the flame if the heater is jarred or tipped.
- **ELECTRIC FAN:** For uniform distribution of heated air. Permanently lubricated; needs no maintenance.
- **FUEL FEED:** Fuel is fed to the flame through the wick. The fuel is not under pressure, therefore, if the flame goes out, the fuel flow stops.
- **LOW CENTER OF GRAVITY:** The heater is designed such, that the weight is concentrated in the base making accidental tipover difficult, if not impossible.
- **HEAVY ZINC COATING OF FUEL TANK:** Prevents corrosion when water is present in the fuel.
- **REMOVABLE FUEL TANK:** Removable tank allows for ease of filling.
- **FUEL ACCEPTANCE FITTING:** Stops flow of fuel when contaminated with water.
- **EASY MAINTENANCE:** No tools are required to change the wick, or perform other maintenance operations.

Remember that your portable kerosene heater is a well engineered and crafted heating appliance. Safety, reliability, and convenience have been engineered into the product but, as with any appliance, a common sense approach to its use will assure its maximum benefit to you.

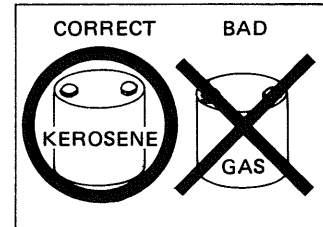
SAFETY TIPS

BEFORE OPERATING YOUR HEATER, PLEASE review these safety tips:

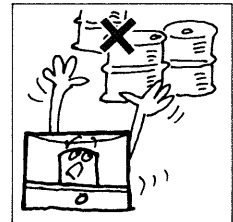
—WARNING—

RISK OF EXPLOSION

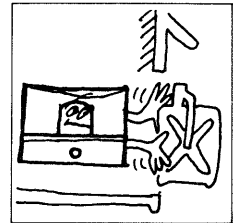
1. Never use any fuel other than pure kerosene (ASTM 1K or equivalent).
Never use gasoline.



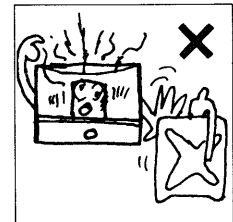
2. Never use heater in areas where flammable vapors or gases may be present.



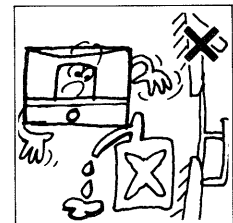
3. Never store kerosene in any container other than an approved safety can or store kerosene in living space.



4. Never refill heater fuel tank when heater is operating or still hot.



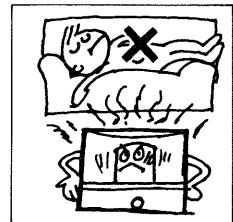
5. Never fill heater fuel tank in living space.
Fill heater tank outdoors. Never overfill your heater. Always replace heater tank cap securely after refueling.



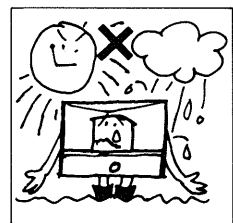
—WARNING—

RISK OF BURNS, OR FIRE

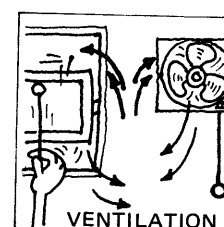
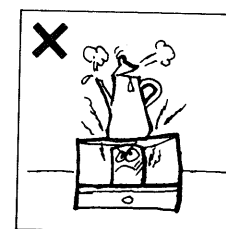
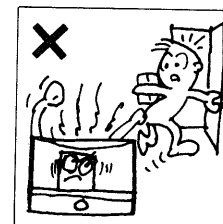
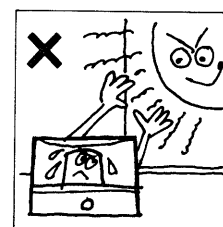
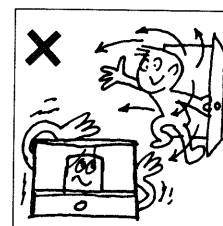
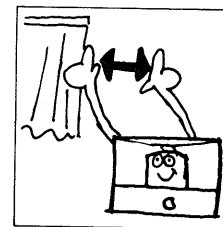
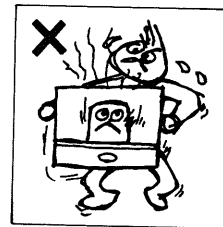
1. Due to high surface temperatures, keep children, furniture and clothing away.



2. Do not operate your heater in areas exposed to strong drafts.



3. Do not move, fuel, or attempt to service your heater while it is burning, or still hot.
4. Do not operate heater less than three (3) feet from walls, draperies, clothing, or furniture.
5. Do not operate your heater in high traffic areas such as doorways or hallways where it may be touched, jarred, or tipped accidentally.
6. Do not operate heater in direct sunlight to avoid overheating, causing abnormal flame behavior.
When room temperature goes above a level comfortable to you, open the door to the rest of the house, or turn heater down. Do not allow room temperature in the room to go above 80° – 85° F.
7. Before going out, or at bedtime, turn the heater off, making sure the wick is in its lowest position (see Extinguishing the Flame on page 9), and flame is completely extinguished.
8. When using your heater, do not place cooking utensils, tea kettles, or other type containers on top of the heater. The heater is designed such that optimum air flow for combustion and temperature removal is achieved. When an object is placed over the top surface it can disrupt the air flow and affect performance.



—WARNING—

RISK OF ASPHYXIATION

USE HEATER ONLY IN WELL VENTILATED AREAS

Never use in small tightly closed areas such as bathrooms and campers.

"In a house of typical construction, that is, one that is not of unusually tight construction due to heavy insulation and tight seals against air infiltration, as adequate supply of air infiltration, an adequate supply of air for combustion and ventilation is provided through infiltration. However, if the heater is used in a small room where less than 200 cubic feet (5.7 m³) of air space is provided for each 1000 Btu per hour of heater rating (considering the maximum burner adjustment), the door(s) to adjacent room(s) should be kept open or the window to the outside should be opened at least 1 inch (25.4 mm) to guard against potential buildup of carbon monoxide. Do not use the heater in a bathroom or any other small room with the door closed."

FUEL GUIDE

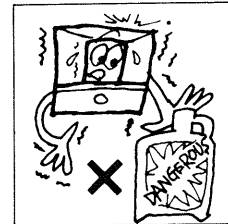
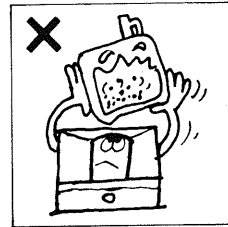
What to Buy . . .

ALWAYS : Crystal clear, colorless, high quality KEROSENE, ASTM 1K or equivalent.

ALWAYS : Kerosene free of contaminants, water or cloudiness.

NEVER : Gasoline, alcohol, white gas, camp stove fuel or additives.

NEVER : Yellow or sour-smelling fuel.

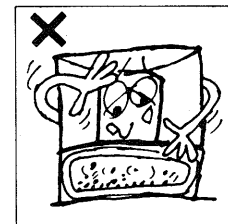
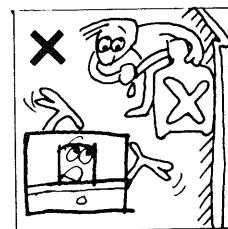


HOW to Use It . . .

ALWAYS : Fill heater away from living quarters when heater is cool; use siphon.

ALWAYS : Check wick frequently for tar build-up. (Rapid, heavy build-up may indicate poor quality or deteriorated fuel.)

ALWAYS : Watch fuel gauge to avoid over-filling heater.



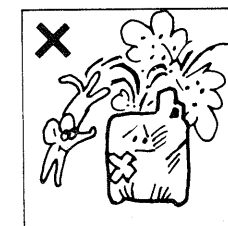
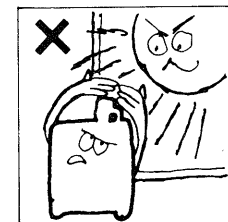
How to Store It . . .

ALWAYS : In a clean container, clearly marked KEROSENE.

ALWAYS : AWAY FROM direct sunlight, heat sources or extreme temperature changes.

NEVER : In glass container, or one that has been used for other fuels.

NEVER : For longer than 6 months. (Begin each heating season with fresh kerosene; discard at the end of the season.)

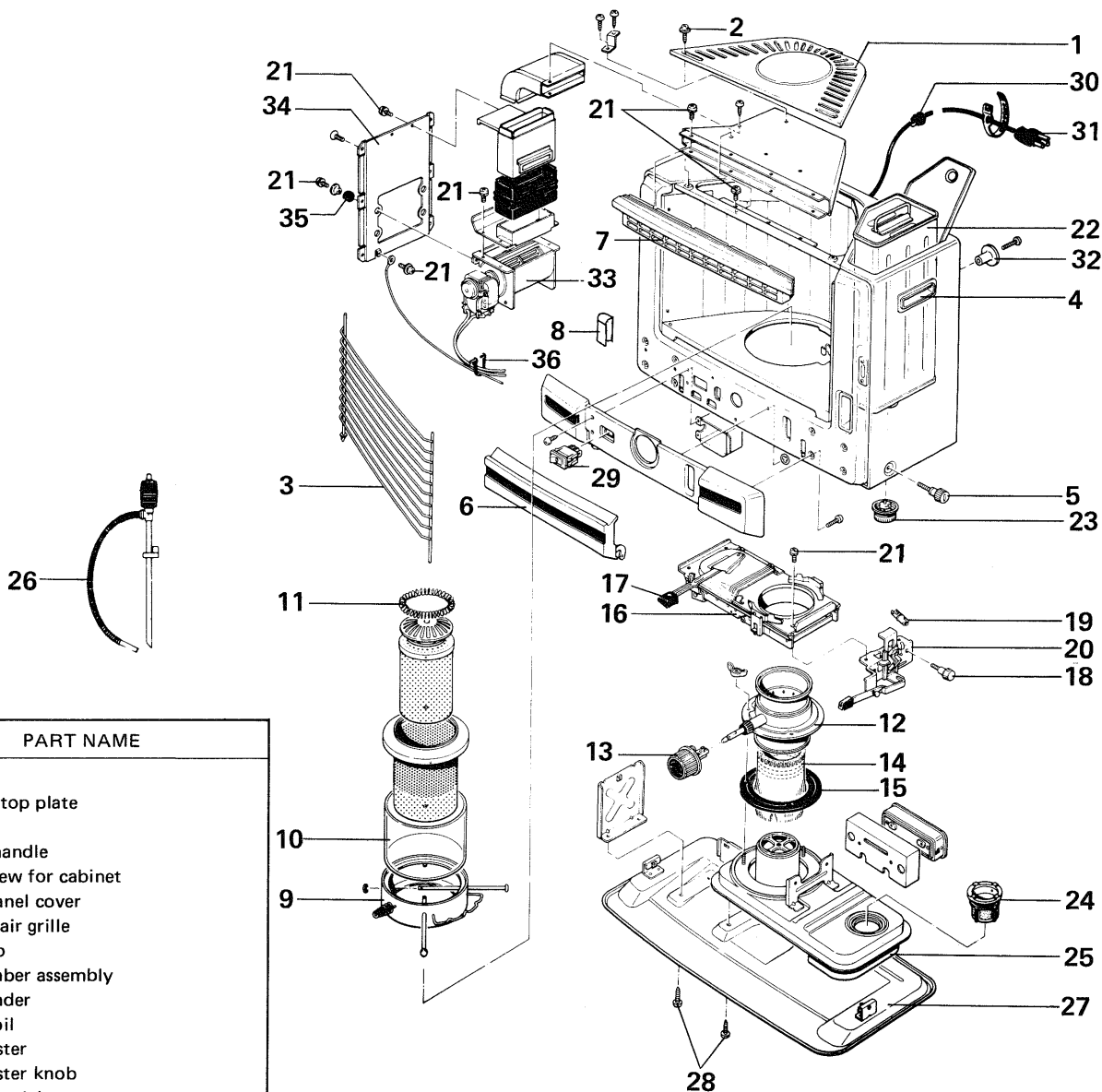


Why is It Important . . .

Pure, clean kerosene is essential for safe, efficient heater operation. Poor quality or contaminated kerosene can cause:

- Excess tar deposits on the wick.
- Reduce wick life.
- Odor, smoke.
- Difficulty in igniting or extinguishing flame.
- Use of a highly volatile flammable fuel such as gasoline can produce uncontrollable flame creating a severe fire hazard.

COMPONENT PARTS



REF #	PART #	PART NAME
1.	20453001	Top plate
2.	20450002	Screw for top plate
3.	20453003	Grille
4.	20451804	Carrying handle
5.	20451805	Thumbscrew for cabinet
6.	20453031	Control panel cover
7.	20453032	Discharge air grille
8.	20450007	Plumb bob
9.	20451608	Heat chamber assembly
10.	20451609	Glass cylinder
11.	20451610	Heating coil
12.	20451811	Wick adjuster
13.	20451812	Wick adjuster knob
14.	20451813	Glass fiber wick
15.	20451815	Rubber packing
16.	20451616	Extinguisher assembly
17.	20451820	Extinguisher reset lever
18.	20451530	Thumbscrew for extinguisher
19.	20451618	Igniter coil
20.	20453019	Igniter unit
21.	20450017	Screw for igniter and blower assembly
22.	20450022	Removable fuel tank
23.	20450024	Fuel tank cap
24.	20450025	Fuel acceptance fitting
25.	20451826	Fuel sub tank
26.	20450028	Manual fuel siphon
27.	20451829	Drip tray
28.	20450030	Screw for tray
29.	20453033	Fan switch
30.	20453034	Strain relief bushing
31.	20453035	Power supply cord
32.	20453036	Power supply cord holder
33.	20453037	Motor assembly
34.	20453038	Blower assembly base
35.	20453039	Grommet
36.	20453040	Cord clamp

You should register heater's serial number. The serial number is located on the outside surface of fuel tank or cabinet. You need replacement parts or service in the future, reference to this number will assure you of obtaining the proper parts quickly.

Your heater's serial number

SERIAL NO.

ASSEMBLY AND OPERATION

INSPECTION AND ASSEMBLY

NOTE: Please save the shipping carton and packing materials for future storage of your heater.

1. REGISTRATION CARD

Take out the registration card from the shipping carton and fill it out and mail it as soon as possible.

2. REMOVE PACKING MATERIALS

Open the grille by pulling straight out at the friction latch on the right.

Remove the styrofoam packing wedge from under the top plate of the cabinet to release the heat chamber assembly. Lift the heat chamber, in its protective packing, out of the cabinet.

3. REPLACE THE HEAT CHAMBER

Remove the styrofoam packing, and replace the heat chamber assembly.

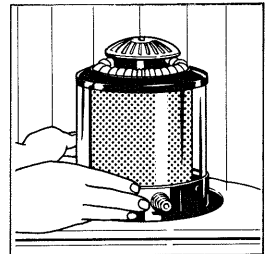
Point the wire handle to the front of the heater.

Close the grille.

4. INSTALL THE BATTERIES

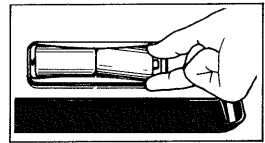
Locate the battery holder on the back of your heater.

- Insert the 2 "D" size batteries according to the plus (+) and minus (−) markings.



5. CHECK THE THUMBSCREWS

Make sure that the three (3) LARGE thumbscrews around the sides and back of the cabinet are tighten.



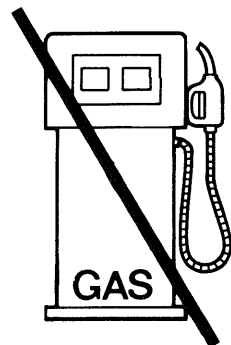
FUELING

WARNING: Use only water clear kerosene, ASTM 1K or equivalent.
Never use gasoline or other flammable liquids.

1. Open the fuel tank lid on the top of the cabinet. Remove any protective packing, and lift out the removable fuel tank.
Turn the removable tank upside down, and remove the fuel tank cap.

2. Insert the straight tube of the manual fuel siphon into the kerosene container.
Insert the siphon's flexible hose into the removable tank opening.

3. Turn the air vent knob on the top of the siphon clockwise to close the air vent.



USE KEROSENE ONLY

4. To start the flow of kerosene, squeeze the bulb of the siphon vigorously six or seven times. Once the flow begins, it is no longer necessary to squeeze the bulb.

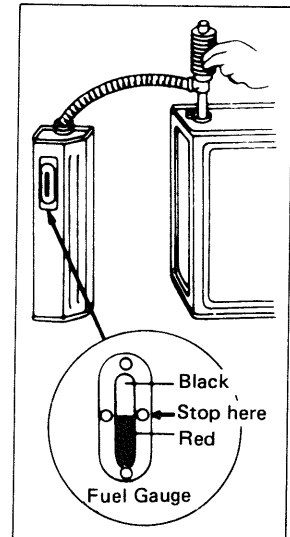
To avoid overfilling the tank, watch the fuel gauge.

When it shows half red, stop the flow by turning the air vent knob counterclockwise.

NOTE: Be especially careful to avoid overfilling the tank with very cold kerosene; otherwise overflow of the fuel might occur when the fuel warms up.

5. Remove the siphon carefully, allowing the excess kerosene to drain from the tube back into container.

Replace the fuel tank cap and tighten it securely. Be sure to wipe away any spilled kerosene from tank or other parts of the heater.



6. WHEN TO REFUEL

In order to determine when refueling is necessary, watch the Fuel Gauge Window on the front of your heater.

When the red begins to disappear, enough fuel remains in the fuel tank for approximately three hours of burn time.

CHECK BEFORE LIGHTING

1. LOCATE YOUR HEATER AWAY FROM WALLS AND AVOID DRAFTS

Allow at least three (3) feet of clearance between the heater and walls, curtains, shelving or other combustible materials.

Do not operate your heater in drafty areas or locations where opening doors may create gusts of air. Drafts or strong air current may make flame unstable and affect heater performance.

For operation of the fan, be sure the heater is within reach of an AC power outlet.

2. PLUG IN THE HEATER

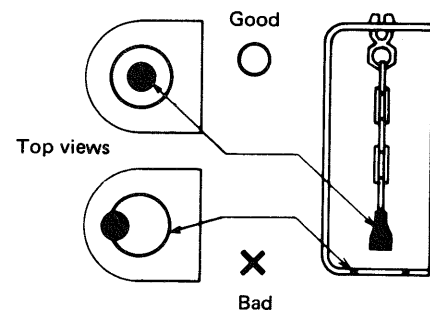
Untie the power cord from the back of the heater, and plug it into the AC outlet.

3. LEVEL THE HEATER

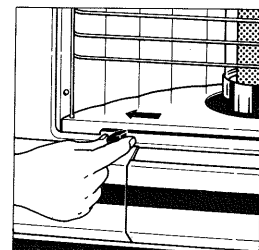
The heater should be operated on a firm, level floor.

A built-in level indicator is located on the left side of the heater. When the heater is level, the end of the chain will lie approximately in the center of the red circle.

NOTE: If your heater is not level, change locations.
Do not prop it with books or other objects.

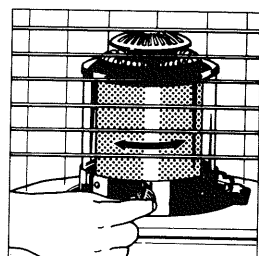


4. Engage the automatic extinguisher by pushing the set lever to the left until it locks.



5. Center the wire handle in the opening.

Be sure that by moving the wire handle left and right, the heat chamber moves easily. This means that the heat chamber is properly seated.

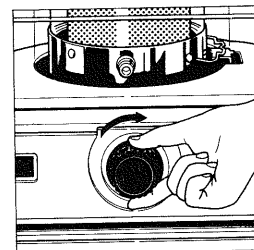


LIGHTING

NOTE: When you first use your new heater, ignite it out of the living area of your house, either in a garage or an area outside protected from strong drafts. Burn it for about 15 minutes to remove all of the protective oil present on the burner parts. If this 15 minutes "burn-in" is done inside, some objectionable odor will be observed. This procedure is necessary **ONLY THE FIRST TIME** you ignite your heater.

NOTE: If you have fueled your heater for the first time, or if you are refueling it after it has been out of fuel for a long time, you will need to wait about thirty (30) minutes for the wick to become fully saturated.

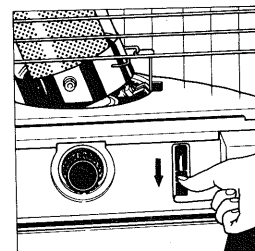
1. Open the control panel cover and turn the wick adjuster knob clockwise until it stops.
This raises the wick to its maximum height.



2. AUTOMATIC LIGHTING

Gently push down the igniter lever, the igniter coil should glow and touch the wick.

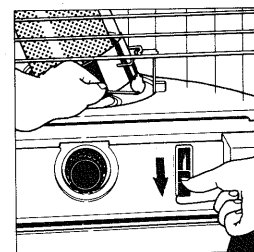
When flame appears, release the igniter lever.



NOTE: If you have difficulty igniting wick, let up on the igniter lever very slightly to remove the igniter coil from direct contact with the wick.

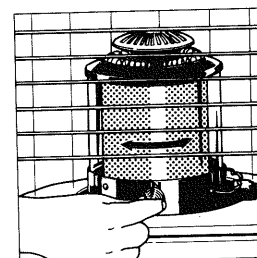
3. LIGHTING WITH A MATCH

You should not have to light the heater with a match, but should it become necessary, open the grille, push down the igniter lever and touch the match to the top of the wick. Do not allow burned parts of the match to fall or remain on the wick.



NOTE: To restore the automatic igniter system to proper operation, replace worn out batteries, or if the igniter coil defective, replace it.

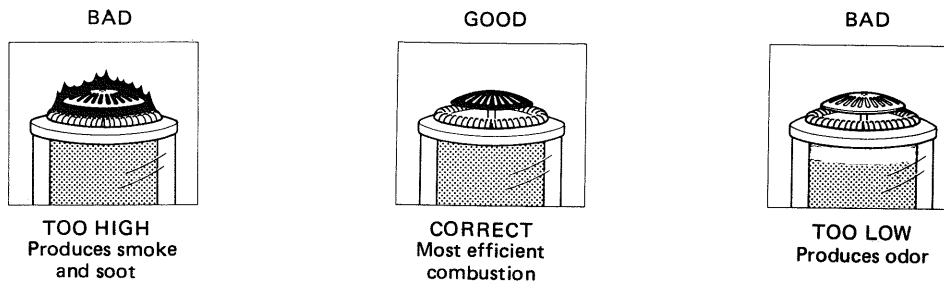
4. Be sure that heat chamber is properly seated by moving the wire handle left and right. If the movement is rough and jerky, it indicates that the heat chamber has not seated properly.



NOTE: An improperly seated heat chamber can cause high flame, smoke, and potential damage to the heater itself. Do not leave the heater until you have determined that the flame is burning normally, which will be described in the following section.

ADJUSTING THE FLAME

1. After lighting wait for the heat chamber to reach operating temperature. This will take several minutes, then the flame will be visible.
2. CHECK THE FLAME HEIGHT
The heating coil at the top of the heat chamber will glow. After five minutes, the entire heat chamber should be glowing red.



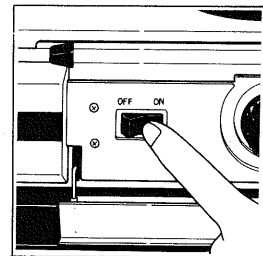
If necessary, raise or lower the wick by turning the wick adjuster knob to produce the proper flame condition.

NOTE: Do not operate your heater with wick set TOO LOW or TOO HIGH. Doing so will decrease combustion efficiency and increase production of unwanted emissions.

NOTE: The wick-stop serves an important purpose. The wick-stop indicates the lowest level at which the wick should be used. Use of the wick below this wick-stop setting will cause less efficient combustion, possible smoke and odor, and should be carefully avoided. Do not operate the heater under any circumstances with the wick adjuster knob turned below the wick-stop position.

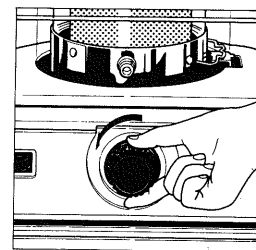
OPERATING THE FAN

1. To avoid distributing any possible start-up odor, do not turn on the fan until the flame has reached full operating height and has been correctly adjusted.
2. Open the control panel cover.
3. Press the fan switch to put it in the "ON" position.



EXTINGUISHING THE FLAME

1. Open the control panel cover.
2. To avoid distributing any possible shut-down odor, press the fan switch to "OFF".
To do this, press the fan switch to put it in the "OFF" position.
3. Turn the wick adjuster knob counterclockwise until it stops (about quarter turn). Pull out on the wick adjuster knob and continue turning counterclockwise until it stops again (about two and three-quarters turns).
At this point the heater is in the off position.



NOTE: DO NOT use the automatic extinguisher to routinely turn off the heater. Automatic extinguishing should occur only when the heater is jarred or tipped.
Using the automatic extinguisher to turn off the heater will cause odor, smoke and soot.

4. Make sure the flame is out completely.
5. Do not try to relight the heater for at least three (3) minutes after extinguishing it off as this may cause smoke and odor.

CARE AND MAINTENANCE

As with any good appliance, preventative as well as corrective maintenance is occasionally required. Please read carefully the following section in order that you may enjoy the greatest benefits from your heater.

INSPECTION OF THE WICK

NOTE: One of the simplest but also the most important components of your heater is the wick. With proper attention, the wick can last at least one heating season and depending on the quality of the fuel used, it can be extended beyond that. It helps to perform routine maintenance operations on the wick.

1. Indications that the wick may need attention are:

- deposits of tars on the top edge of the wick.
- difficulty in turning the wick adjuster knob.
- a flickering, dying or small flame.

2. Clean the wick according to the following procedure of burning dry.

- 1) When lifting out the removable tank, but the heater is still burning, raise the wick to its highest position and allow the flame to consume the remaining fuel in the tank.

NOTE: Burning the wick dry can at times create odors. During the burning dry procedure, remove your heater from the living area of your house into a well ventilated area such as a garage or even in a sheltered area outside. If you burn the wick dry outside please be sure that the heater is not exposed to strong wind drafts during the procedure.

- 2) After the heater has cooled completely, unplug the power cord, remove the cabinet as described in Items 1 through 4 of the next section.
- 3) Remove any residue from the wick with a small brush such as an old toothbrush. Cinders or soot in the burner around the wick may be vacuumed away. Be careful when removing such material from the wick with the brush, do so gently and in a way not to tear the top surface of the wick.
- 4) Remove any tar deposits on the top of wick adjuster and primary air tube by a scraper.

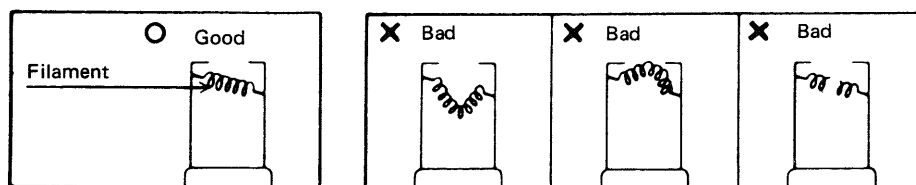
NOTE: When good wick performance is no longer achieved by the burning dry process, it may be necessary to replace the burned wick with a new one.

- 5) Before reassembling the heater, take a few minutes to wipe the parts with a soft cotton cloth or paper towels.
- 6) Reassemble the heater following directions in Items 10 and 11 of the next section.

NOTE: If the flame still remains small after cleaning the wick, the wick may contain some water. It is then necessary to remove the wick to replace or dry while emptying all kerosene from the fuel tank and the fuel sub tank.
Dry the tank thoroughly.

INSPECTION OF THE IGNITER COIL

If the wick does not ignite or it is hard to ignite, check if the igniter filament is broken.



If the igniter coil is found to be defective, replace it as described on page 14.

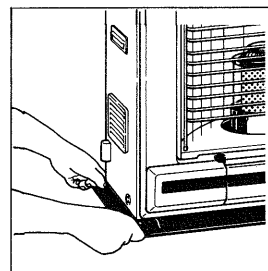
REPLACEMENT OF PARTS

REPLACING THE WICK

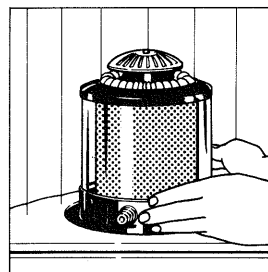
USE ONLY GENUINE TOYOSTOVET™ “RAC-36F” REPLACEMENT WICK. SUBSTITUTE WICKS CAN SEVERELY REDUCE PERFORMANCE.

WARNING: Before disassembling your heater, allow it to cool completely.

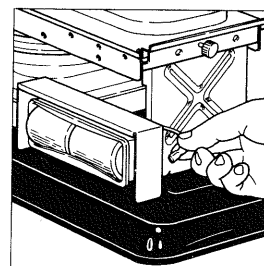
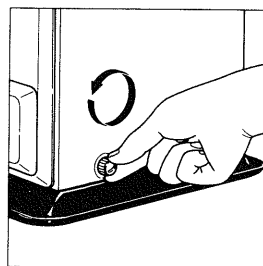
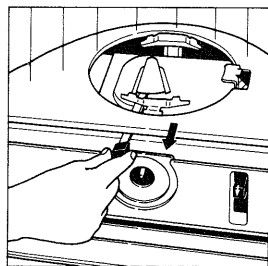
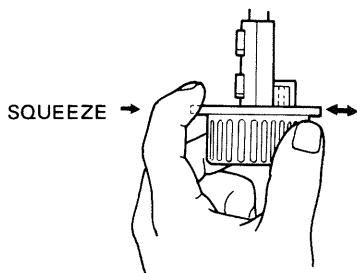
1. Release the automatic extinguisher by jarring the heater. To do so, grasp the drip tray and quickly pull the heater toward you.



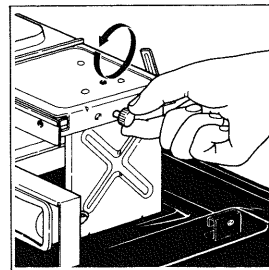
2. Open the grille and remove the heat chamber.
Remove the batteries from the battery holder on the rear of the cabinet.



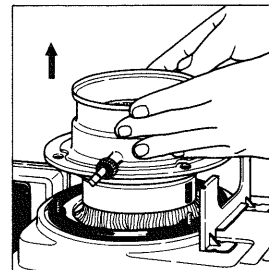
3. Open the control panel cover and remove the wick adjuster knob by pressing in on the latch and pulling the knob straight off the shaft. Grasp the automatic extinguisher reset lever and pull it toward you. A quick release allows the lever to snap out. Lift out the removable tank, and set it aside.
Remove the three (3) LARGE thumbscrews at the sides and the rear of the cabinet. Finally, lift off the cabinet while bringing it slightly forward to clear the wick adjuster shaft and the igniter lever. Then disconnect the two electrical leads (red and white) attached to the battery holder.



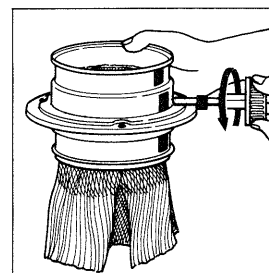
4. Remove the three (3) SMALL thumbscrews holding the extinguisher assembly.
Lift off the extinguisher assembly.



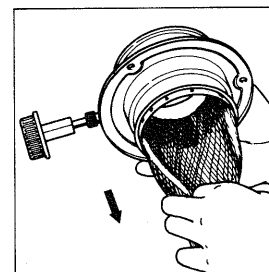
5. Remove the three (3) wing nuts on the wick adjuster assembly. Lift the assembly off the fuel sub tank while moving it slightly back and forth.



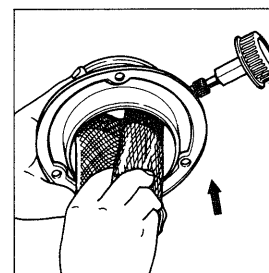
6. Replace the wick adjuster knob on the wick adjuster shaft. Turn the wick adjuster knob counterclockwise until it stops. Then gently pull the knob and continue turning counterclockwise to the lowest wick position.



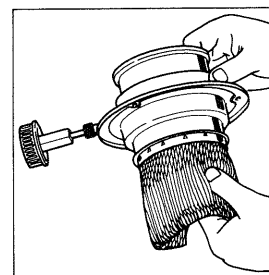
7. Fold the wick in towards the center to free it from the wick adjuster and then remove the old wick.



8. Fold the new wick and insert it into the wick adjuster. Align the red line on the outside of the wick with the bottom METAL edge of the wick adjuster.



Finally, gently press the wick, all along its circumference, against the adjuster to insure that it is firmly in place.



9. Lower the wick adjuster assembly into the fuel sub tank, guiding the tail of the wick so it fits over the primary air tube and evenly into place. Point the wick adjuster shaft to the front of the heater. Insure that the wick adjuster is centered over the studs on the fuel sub tank.

The space between the wick adjuster and the primary air tube should be even all around.

Make certain that the top of the wick adjuster and the top of the primary air tube are the same height.

Tighten the three (3) wing nuts on the wick adjuster assembly.

Operate the wick adjuster knob to be sure the wick moves smoothly up and down.

Wick height should be 5 mm (1/5 in.) when wick adjuster knob is fully clockwise. Be sure to check.

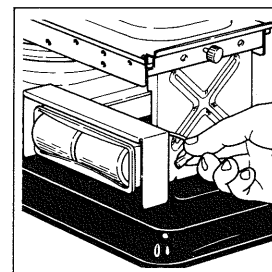
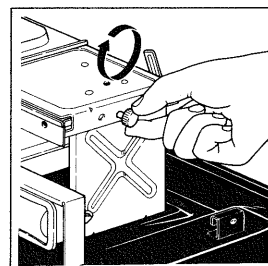
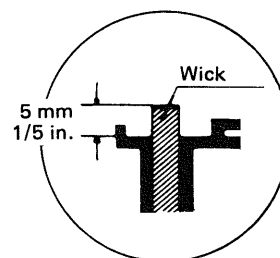
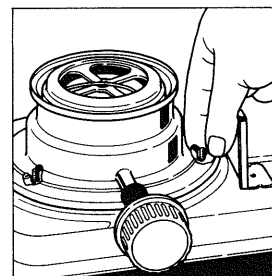
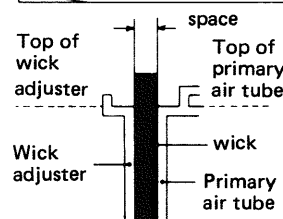
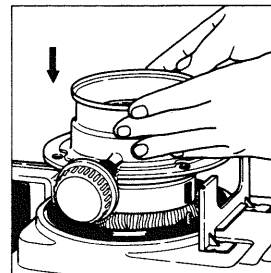
NOTE: If wick does not move smoothly and easily, or wick height is more or less than 5 mm (1/5 in.), disassemble and repeat Items 8 and 9.

NOTE: If any ragged edges appear on the top of the wick, trim them with a scissors carefully.
DO NOT cut the body of the wick.

10. Install the automatic extinguisher assembly using the three (3) SMALL thumbscrews.

11. Reconnect the red and white electrical leads to the battery holder. Check to be sure the wires are not pinched by the extinguisher assembly.

Remove the wick adjuster knob from the wick adjuster shaft once more.



Replace the cabinet by tilting it forward enough clear the igniter lever and the wick adjuster shaft.

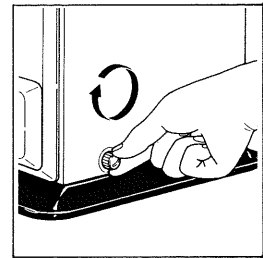
Secure the cabinet with three (3) LARGE thumbscrews.

Replace the wick adjuster knob on the wick adjuster shaft.

Replace the extinguisher reset lever by pushing it into its slot. Be sure that the lever snaps into position.

Engage the automatic extinguisher.

Install the heat chamber. Grasp the wire handle, then turn the heat chamber left and right to insure that it is properly seated.



AFTER REPLACING THE WICK, CHECK THE OPERATION OF THE AUTOMATIC EXTINGUISHER.

NOTE: Before lighting a new wick for the first time, turn the wick to its lowest position, and allow the wick to saturate with kerosene for about thirty (30) minutes.

REPLACING THE IGNITER COIL

WARNING: Before replacing the igniter coil, allow the heater to cool completely.

1. FIRST CHECK THE BATTERIES

When the igniter coil no longer glows sufficiently to light the wick, replace the batteries. If proper glow is not restored, the igniter coil may be defective.

2. CHANGE THE IGNITER COIL

Remove the batteries from the battery holder.

Release the automatic extinguisher, and remove the heat chamber as described in Items 1 and 2 of the preceding section.

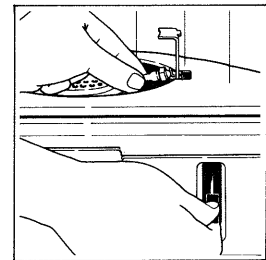
Push down the igniter lever to bring the igniter coil into view.

Note that the igniter coil fits into a bayonet socket the same way a flash-light bulb fits into its holder.

To remove the igniter coil, push it in and twist it in either direction while holding the sides of the socket with your other hand.

Install the new igniter coil by pressing it into the socket and turning.

Replace the heat chamber, and reinstall the batteries.



STORAGE

At the end of each heating season, or when you do not plan to use your heater for an extended period of time, the following Items are recommended:

1. CLEAN THE WICK AND HEATER

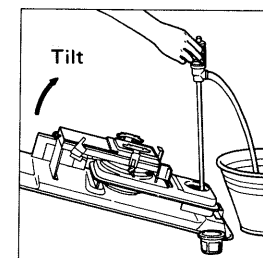
Follow directions in Item 2 under "INSPECITON OF THE WICK".

2. DRAIN THE FUEL TANK

After you have burned your heater dry, a small amount of kerosene will remain in the fuel sub tank. It should be removed in order to avoid contamination when the heater is refueled at a later date.

To do this, disassemble the heater as described Items 1, 2 and 3 under "REPLACING THE WICK". Remove the fuel acceptance fitting from the fuel port.

Tilt the heater toward the port, and remove the remaining kerosene with a siphon or a small syringe. Replace the fuel acceptance fitting, cabinet and heat chamber.



3. REMOVE THE BATTERIES FROM THE BATTERY HOLDER

4. STORE THE HEATER

The original shipping carton is the best place to store your heater. If you do not have the original packing materials, cover the heater with a large plastic bag and store in a place that is low in humidity.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION	PAGE
Wick will not ignite.	Out of fuel.	Check fuel gauge; add fuel if necessary.	7
	Igniter coil will not glow.	Replace batteries. Replace igniter coil, if necessary.	6 14
	Water in Kerosene.	Drain tank. Remove, dry and reinstall wick. Refill with fresh, clean kerosene.	14 7
Smoke or odor.	Heat chamber tilted and not properly seated.	Move wire handle until heat chamber is properly seated and moves smoothly left and right.	8
	Flame too high.	Reduce wick height by turning wick adjuster knob counterclockwise.	9
	Dirty wick.	Clean wick as described under "Care and Maintenance."	10
	Drafts.	Relocate heater.	7
	Contaminated fuel.	Drain tank and rinse it with clean kerosene. Install new wick and refill with fresh, clean kerosene.	14 11 7
Flickering, dying or low flame	Dirty wick.	Clean wick as described under "Care and Maintenance."	10
	Water in kerosene.	Drain tank. Remove dry and reinstall wick. Refill with clean kerosene.	11 7
	Wick installed too low.	Remove wick. Reinstall according to directions under "Replacing the Wick".	11
Wick adjuster knob is hard to turn.	Dirty wick.	Clean wick as described under "Care and Maintenance".	10
	Water in kerosene.	Drain tank. Remove, dry and reinstall wick. Refill with fresh, clean kerosene.	11 7
	Damaged mechanism.	Contact your dealer for service.	
Flame too high and cannot be adjusted using normal procedure.	Fuel contaminated with gasoline, paint thinner, denatured alcohol or other volatile substance.	IMMEDIATELY shut off heater. Drain tank and rinse it with clean kerosene. Install new wick, refill with fresh clean kerosene.	9 11 7
	Wick installed too high.	Remove wick. Reinstall wick according to directions under "Replacing the Wick".	11
Fan does not operate.	Power cord disconnected.	Plug power cord into AC outlet.	7
	Power interruption.	Turn fan switch off until power is restored.	9
	Fan switch is "OFF" position.	Set to "ON" position.	9

LIMITED WARRANTY

TOYOTOMI AMERICA INC. ("TOYOTOMI") warrants each heater (the "Product") and any parts thereof sold by it to be free from defects in materials or workmanship under normal use and service for TWELVE (12) MONTHS from the date of delivery to the original purchaser at retail subject to the following terms and conditions:

WHAT IS COVERED: Product or any parts thereof which are defective in materials or workmanship.

WHAT IS NOT COVERED:

(1) Product which has been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse including improper or contaminated fuels, repair using improper parts, or repair by anyone other than a service facility specified by TOYOTOMI;

(2) Normal wear and tear parts, including wicks, batteries, igniter coils and siphons.

WHO IS COVERED: The original purchaser at retail.

WHAT WE WILL DO: TOYOTOMI will either repair or replace, at its option, all defective parts free of charge that are covered by this limited warranty on a carry-in basis, to your nearest authorized dealer or distributor of TOYOTOMI.

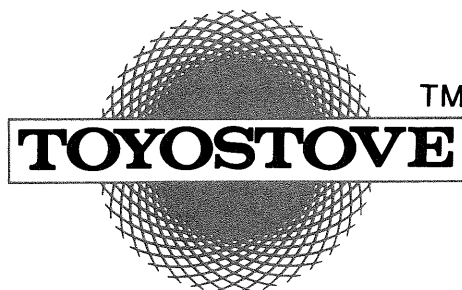
WHAT YOU MUST DO FOR WARRANTY SERVICE: You must return the defective Product or part to any authorized dealer or distributor of TOYOTOMI with this LIMITED WARRANTY CARD and a copy of your bill of sale or credit card charge receipt or other document evidencing the date of the Product's delivery. If service is not available locally, please contact our CUSTOMER RELATIONS DEPARTMENT or call:

TOYOTOMI AMERICA INC.
604 Federal Road
Brookfield, CT 06804
(203) 775-1909

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TOYOTOMI AMERICA INC.
P.O. Box 176, Brookfield, CT. 06804-0176