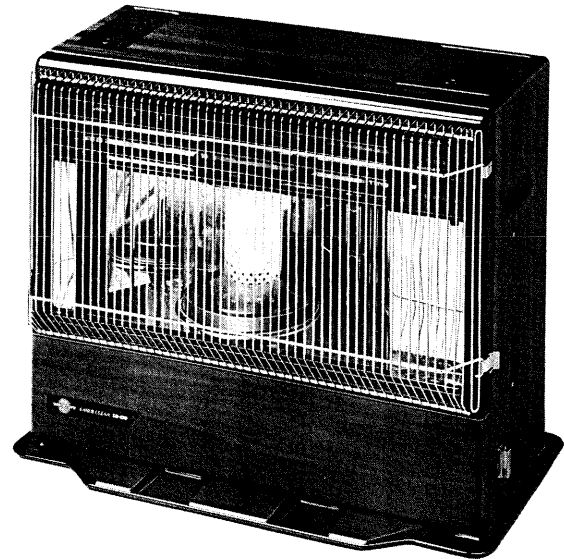




# UNVENTED WICKLESS KEROSENE HEATER OPERATION AND MAINTENANCE INSTRUCTIONS

**LASER CLEAN**



**MODEL LR-450**  
(Type D)

## IMPORTANT

READ AND UNDERSTAND INSTRUCTIONS BEFORE USING HEATER. RETAIN INSTRUCTIONS FOR FUTURE REFERENCE. CHECK STATE AND LOCAL CODES FOR PERMITTED USE.

THIS HEATER IS DESIGNED TO BE USED NO MORE THAN 3,000 FT. ABOVE SEA LEVEL. DO NOT OPERATE AT ALTITUDES HIGHER THAN 3,000 FT. ABOVE SEA LEVEL.

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Congratulations; you are ready to begin enjoying the benefits of one of the most advanced kerosene heaters ever made. TOYOTOMI, the leader in kerosene heater technology, has tested and refined the LR-450 to assure you of long-term safety and satisfaction. Please study the following instructions, use and care for your heater carefully, and it will serve you well for many years.

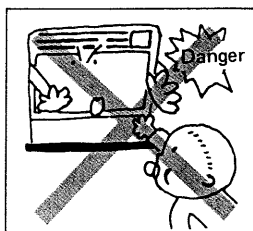
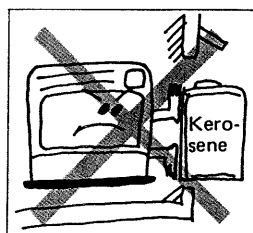
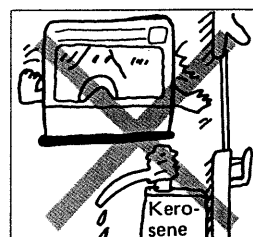
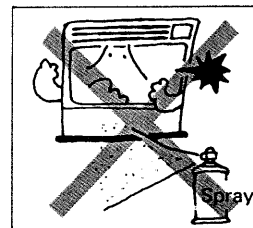
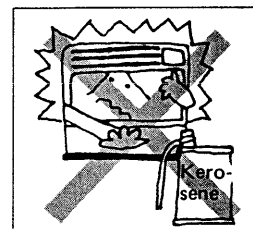
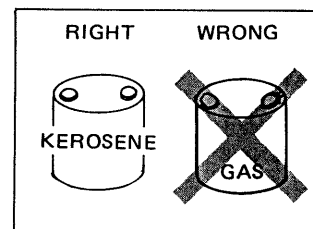
## SAFETY TIPS

Before operating your heater, please review these safety tips:

### — WARNING —

#### RISK OF EXPLOSION

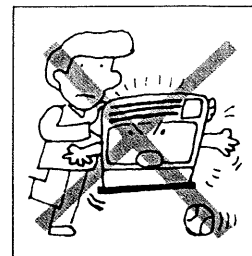
1. Never use any fuel other than water-clear kerosene (ASTM No. 1-K kerosene). NEVER USE GASOLINE. Use of gasoline can lead to uncontrollable flames resulting in destructive fire.
2. Never refill heater fuel tank when heater is operating or still hot. To do so may cause a "flash back" of flame to the fuel container, resulting in injury to yourself and your property.
3. Never use heater in areas where flammable vapors or gases may be present. Such vapors could be ignited by the heater, resulting in fire and/or explosion.
4. Never fill heater fuel tank in living space. Fill heater tank outdoors. Never overfill your heater. Always replace fuel tank cap securely after refueling.
5. Never store or transport kerosene in other than a metal or plastic container that is (1) acceptable for kerosene, (2) non-red in color, and (3) clearly marked, "KEROSENE". Never store kerosene in the living space.



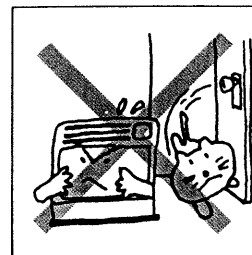
#### RISK OF BURNS OR FIRE

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

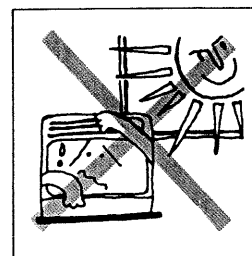
2. To avoid possible burns or fire, do not move, refuel or attempt to service your heater while it is burning or still hot.



3. To avoid unstable burning, do not operate your heater in areas exposed to strong drafts. Do not operate your heater in high traffic areas such as doorways or hallways where it may be touched, jarred or tipped accidentally.



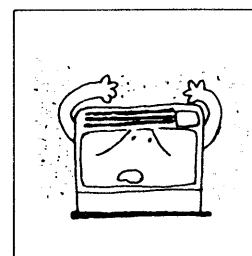
4. Do not operate heater in direct sunlight to avoid overheating, which may cause abnormal flame behavior. Do not allow room temperature to go above 80° – 85° F.



5. Before going out and at bedtime, turn heater off, making sure "POWER" lamp goes out and flame is completely extinguished.



6. Do not operate heater in dusty areas. Dust can clog up air filter and cause improper combustion.

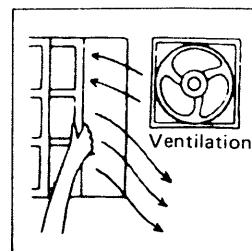


## — WARNING —

### RISK OF INDOOR AIR POLLUTION

Use heater only in well ventilated areas. People with breathing problems should consult a physician before using the heater.

*"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, 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 m<sup>3</sup>) 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 indoor air pollution. Do not use the heater in a bathroom or any other small room with the door closed."*



# FUEL GUIDE

The Toyostove LR-450 is designed for use with high-quality kerosene only. Use of low-quality kerosene will cause burner performance to drop, leading to smoking and odor problems.

Purchase only 1-K kerosene in non-red cans reserved exclusively for kerosene and marked accordingly with the word "KEROSENE". Always store your kerosene in a separate area from where you store gasoline for your power equipment, to avoid accidental use of gasoline in your heater.

## What to Buy . . .

- ALWAYS: Crystal clear, colorless, high-quality KEROSENE, ASTM No. 1-K.
- 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: 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 a glass container, or one that has been used for other fuels
- NEVER: For longer than six months (Begin each heating season with fresh kerosene; discard at the end of the season.)

## Why It is Important . . .

Pure, clean kerosene is essential for safe and efficient heater operation.

Poor quality or contaminated kerosene can cause:

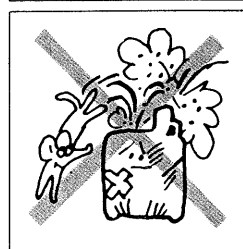
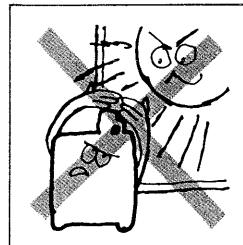
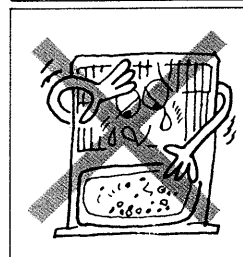
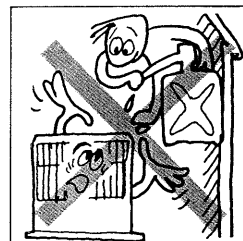
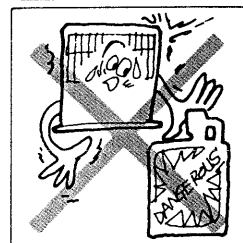
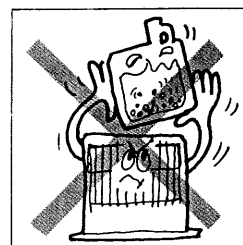
- Excess tar deposits on burner
- Incomplete combustion
- Reduced heater life
- Odor and/or smoke
- White deposits on grille and/or louver

Use of a highly volatile flammable fuel such as gasoline can produce uncontrollable flames, creating a severe fire hazard.

## CAUTION

Flames observed emerging from the heater body are a clear indication that fuel is dangerously contaminated with gasoline or other highly flammable material. If this occurs,

- a. Never attempt to move the heater
- b. Call the Fire Department
- c. Use a class "ABC" fire extinguisher



# SPECIFICATIONS

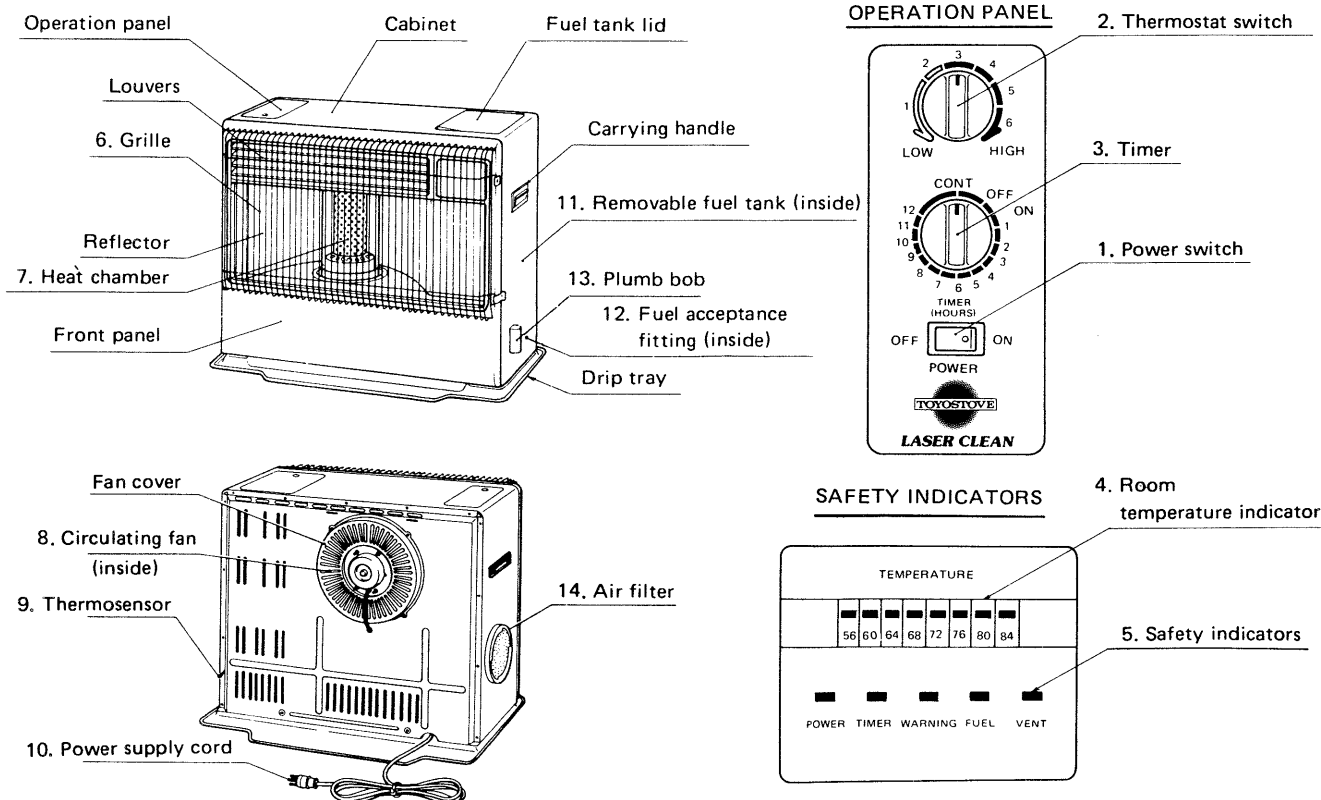
MODEL	LR-450	
HEAT RATING	HIGH	25,000 BTU/hr
	LOW	12,500 BTU/hr
FUEL TANK CAPACITY	2.0 gallons	
BURNING TIME/TANK	11-21 hours	
SIZE (W x H x D)	27 $\frac{3}{4}$ " x 22" x 17-7/8"	
WEIGHT	54.9 lbs.	
ELECTRICAL RATING	120 Volts: AC 60Hz Preheat: 275W Burning: 50W	

## \*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/ft<sup>2</sup>/hr; if you live in a moderate climatic area, multiply the primary area (in square feet) by 12 BTU/ft<sup>2</sup>/hr.

# OPERATING CONTROLS AND PART NAMES

BEFORE USING HEATER, FAMILIARIZE YOURSELF WITH THE FOLLOWING OPERATING CONTROLS AND PART NAMES.



Make a note of your heater's serial number, located on the outside cabinet surface.  
Your heater's serial number:

SERIAL NO.

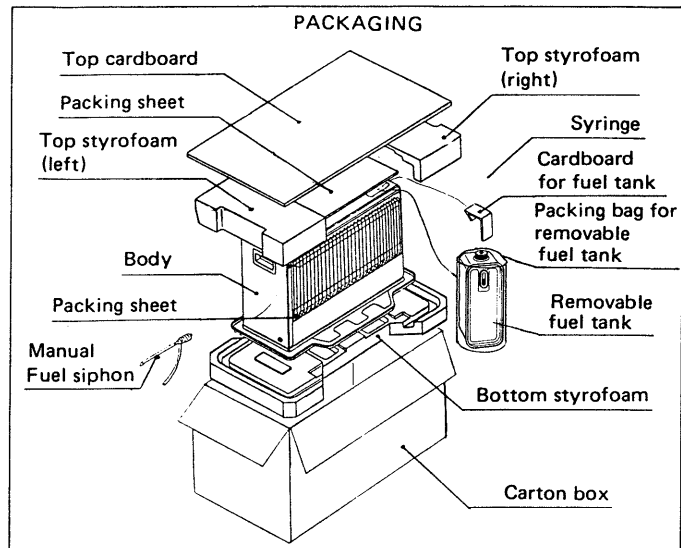
1. **POWER SWITCH:** Main switch which turns heater on and off. When switched on, igniter begins operation and combustion starts after a 240-second preheat period.
2. **THERMOSTAT:** Maintains a comfortable room temperature by automatically adjusting heat output in accordance with temperature selected by user.
3. **TIMER:** Turns heater on automatically after the time period selected by user (see Page 8, "Timer Ignition").
4. **ROOM TEMPERATURE INDICATOR:** Shows room temperature sensed by thermosensor.
5. **SAFETY INDICATORS:** Show heater operation conditions for user safety and convenience (see Page 10, "Indicator Lamps").
6. **GRILLE:** Extensive grillework covers the hot surfaces of the heater, reducing the possibility of accidental contact burns. Latch mechanism allows opening for cleaning of reflector and louvers.
7. **HEAT CHAMBER:** Warms room efficiently by emitting strong radiant heat at high combustion, and gentle radiant heat at low combustion setting.
8. **CIRCULATING FAN:** Provides quick, efficient and even heat by circulating warm air outward from heater front.
9. **THERMOSENSOR:** Senses room temperature.  
  
NOTE: Thermosensor may malfunction if located near another heat source.
10. **POWER SUPPLY CORD:** For use in 120V, AC electrical outlets.
11. **REMOVABLE FUEL TANK:** Allows easy refueling without moving heater.  
2.0 gallon fuel capacity.
12. **FUEL ACCEPTANCE FITTING:** Ensures optimum heater performance by helping to eliminate dust and water from fuel.
13. **PLUMB BOB:** Allows user to check if heater is sitting evenly (see Page 7).
14. **AIR FILTER:** A double-construction air filter consisting of an inner mesh filter and an outer sponge filter helps keep airborne dust and dirt from entering the combustion air supply intake.  
  
NOTE: Clean filter by vacuuming once a week.  
  
NOTE: Do not operate heater without air filter attached.

# OPERATION

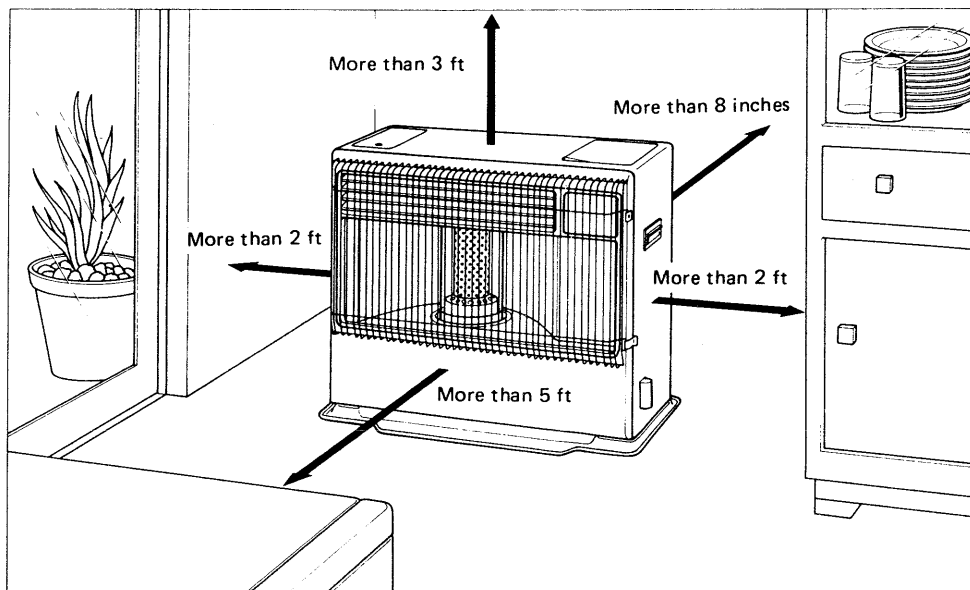
## UNPACKING AND PLACEMENT

1. Remove registration card from shipping carton, fill out and mail as soon as possible.
2. Remove heater from box carefully to avoid damage.
3. Remove all packing materials from heater.
4. Make sure all screws are tight and all parts intact.

NOTE: Save shipping carton and all packing materials for future storage of your heater.



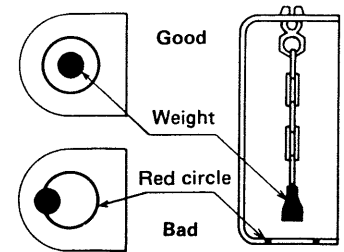
5. When positioning your heater for use, keep it away from walls and all other materials as illustrated below.



- The floor surface on which heater is placed should be level and stable. Check the plumb bob (located on the side of the heater) from directly above. If the plumb bob weight is within the red circle, floor surface is level.

**NOTE:** If your heater is not on a level surface, change its location. Do not attempt to prop heater up with books or other objects.

**NOTE:** Smoke alarms may be set off by moisture and combustion materials produced by heater even when no smoke is present. If smoke alarm is activated by heater operation, try changing the location of the heater or smoke alarm.



Plumb bob as viewed from above.

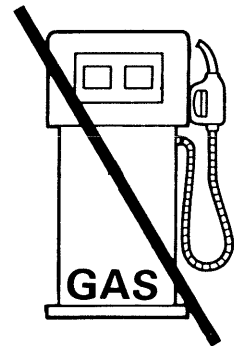
## FUELING

**WARNING:** Use only water-clear kerosene (ASTM No. 1-K kerosene). NEVER USE GASOLINE or other flammable liquids.

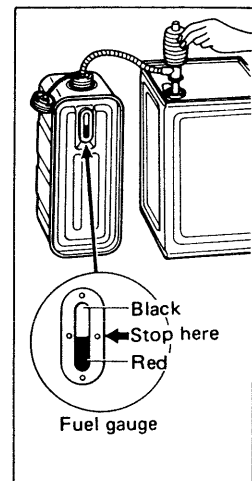
- Open the fuel tank lid on the top of heater cabinet and lift out the removable fuel tank. Turn the removable tank upside down and remove the fuel tank cap.
- Insert the straight tube of the manual siphon into the kerosene container; insert the siphon's flexible hose into the removable fuel tank opening.
- Turn the air vent knob on the top of the siphon clockwise to close the vent. Start the flow of kerosene by squeezing the bulb of the siphon vigorously six or seven times. Once flow begins, it is no longer necessary to squeeze the bulb.
- Watch the fuel gauge on the removable tank to avoid overfilling. When it shows half red, stop flow by turning the air vent knob counterclockwise.

**NOTE:** Be careful to avoid overfilling the tank, especially with very cold kerosene. Overflow might occur due to expansion when the fuel warms up.

- Remove the siphon carefully, allowing excess kerosene to drain from the tube back into the container. Replace fuel tank cap and tighten it securely. Be sure to wipe away any spilled kerosene from tank and other heater parts.
- After making sure fuel tank cap is tightly fastened, invert tank and replace into heater body.



USE KEROSENE ONLY



Fill the tank until the red part reaches the arrow mark.

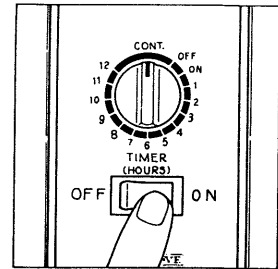


# IGNITION

1. Plug heater into 120V AC electrical outlet.
2. Press power switch to the "ON" position. "POWER" lamp should turn on.

NOTE: "POWER" lamp remains lit while heater is in operation.

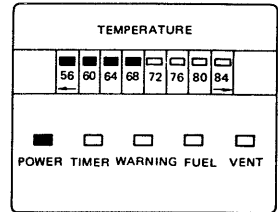
NOTE: Timer knob should be in "CONT" position.



3. Ignition takes place after approximately 4 minutes of preheat time.

NOTE: Fuel pump may produce an audible operating noise at ignition. This is only temporary.

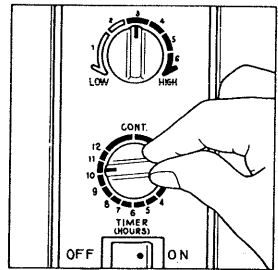
NOTE: An abnormal noise may result if heater is reignited immediately after turn-off. Wait approximately 10 minutes before reigniting.



# TIMER IGNITION

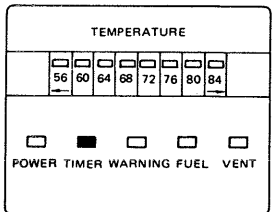
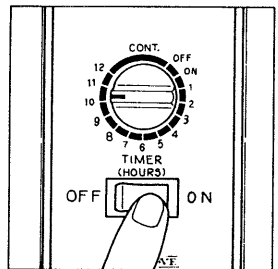
1. Turn timer knob clockwise to set timer. If timer is set at "10", for example, heater will ignite 10 hours later.

NOTE: If you wish to set the timer for less than 4 hours, first turn timer knob clockwise beyond "4", then back to desired position.



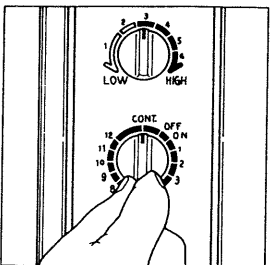
2. Set power switch to the "ON" position. Make sure the timer lamp is on.

NOTE: If timer is set while heater is operating, heater will automatically extinguish and will reignite at the indicated time.



3. Heater will ignite after the indicated time has elapsed.

NOTE: As a safety measure, heater is designed to extinguish automatically one hour after timed ignition. If you wish to continue heater use without interruption, turn timer knob to the "CONT" position within one hour of timed ignition.

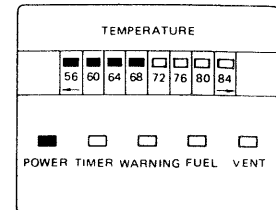
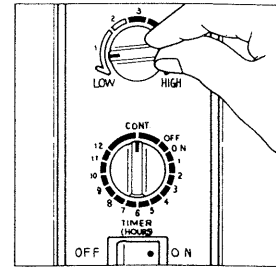


# TEMPERATURE REGULATION

1. The temperature control should be set at the position you find most comfortable between the "HIGH" and "LOW" markings. Heat output will automatically be regulated in accordance with the room temperature registered by the thermosensor at rear of heater. This temperature is indicated on the heater front panel.
2. Heater will burn at high combustion until room temperature reaches the selected temperature level. When room temperature exceeds the selected setting heater will automatically shift to low combustion to maintain the desired temperature level.

NOTE: The temperature indicated on front panel represents air temperature as measured directly behind heater. This temperature may not correspond exactly to true room temperature.

NOTE: For a few minutes following ignition, heater operates at low combustion regardless of temperature control setting. After this period, output may be adjusted as desired using the temperature control.

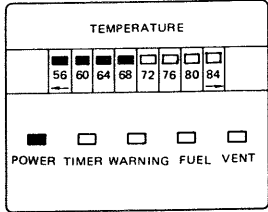
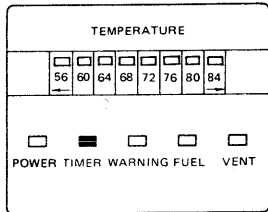
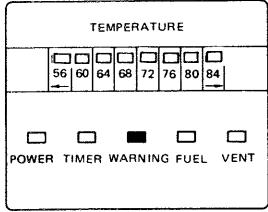
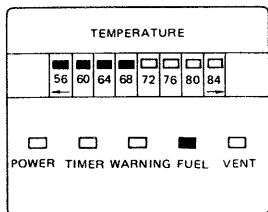


## FLAME CONDITION

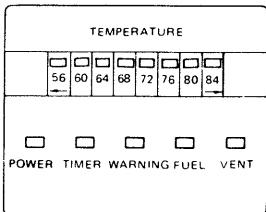
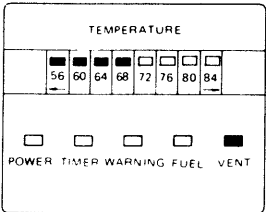
- The flame conditions described below are in the HIGH heat output setting.

Flame Condition		Cause	Corrective Measure
<b>Normal</b> <ul style="list-style-type: none"> <li>○ Blue flame combustion</li> <li>○ Tip of flame tinged with yellow</li> <li>○ Heat element is an almost uniform red. Flame is low and burning is quiet.</li> </ul>			
<b>Abnormal</b> <ul style="list-style-type: none"> <li>○ Heat element color is not an even red. Noisy burning.</li> </ul>		Oversupply of air for combustion	Consult your dealer.
<b>Abnormal</b> <ul style="list-style-type: none"> <li>○ Yellowish flames extend up to the heat element.</li> <li>○ Whistling/blowing noise.</li> </ul>		Insufficient air supply for combustion Combustion ring improperly set in burner Burner mat damaged or improperly set in burner	Check if air filter is plugged. Consult your dealer.

# INDICATOR LAMPS

Lamp	Meaning	Necessary Measures
<b>Power Lamp (Yellow)</b> 	<p>When lamp is lit, heater is preheating or in operation.</p>	
<b>Timer Lamp (Green)</b> 	<p>When lamp is lit, ignition timer is in operation.</p>	
<b>Warning Lamp (Red)</b> 	<p>When lamp is lit (heater is extinguished):</p> <ul style="list-style-type: none"> <li>○ Water present in fuel sub-tank (water-adulterated kerosene has been used)</li> <li>○ Extremely high fuel level in sub-tank</li> <li>○ Gasoline present in sub-tank or removable tank</li> <li>○ Heater has just been moved from extremely cold room to extremely hot room.</li> </ul>	<p>Remove fuel from sub-tank using a syringe, and dry. Check fuel. If it is not kerosene, empty removable tank and refill with pure kerosene.</p>
<b>Fuel Lamp (Red)</b> 	<p>When lamp flashes (heater continues operation):</p> <ul style="list-style-type: none"> <li>○ Removable fuel tank is empty and heater will extinguish within 20 minutes.</li> <li>○ Soil or water in fuel acceptance fitting is preventing flow of kerosene.</li> </ul> <p>When lamp is lit (heater is extinguished):</p> <ul style="list-style-type: none"> <li>○ No kerosene in heater</li> </ul>	<ul style="list-style-type: none"> <li>○ Turn off heater. Refuel after cooling.</li> <li>○ Remove fuel acceptance fitting, remove soil or water. Wash with kerosene.</li> <li>○ Refuel after cooling.</li> </ul>

## INDICATOR LAMPS (Continued)

Lamp	Meaning	Necessary Measures
<b>All Lamps OFF</b> 	<p>When all lamps go off (heater ceases operation):</p> <ul style="list-style-type: none"> <li>○ Insufficient air supply for combustion</li> <li>○ Heavy cigarette smoke, dust, etc. present in air</li> <li>○ Air filter clogged by dirt or dust</li> </ul>	<ul style="list-style-type: none"> <li>○ Consult your dealer.</li> <li>○ Ventilate room thoroughly.</li> <li>○ Clean air filter.</li> </ul>
<b>Vent Lamp (Red)</b>  <p>Ventilate room 1-2 times an hour, regardless of vent lamp. Be especially careful to ventilate when using heater in basement rooms.</p>	<p>When lamp flashes (heater is extinguished):</p> <ul style="list-style-type: none"> <li>○ Insufficient oxygen level in room due to prolonged operation without ventilation</li> <li>○ Excessive room temperature (over 88°F)</li> <li>○ Activation of safety device due to re-igniting heater immediately after turn-off</li> </ul>	<ul style="list-style-type: none"> <li>○ Ventilate room by opening doors or windows, then reignite.</li> <li>○ Allow room to cool.</li> <li>○ Wait ten minutes before reigniting.</li> </ul>

**NOTE:** In the following cases, heater may also stop its operation with all lamps off.

- when heater is brand new
- when heater is reignited immediately after turn-off

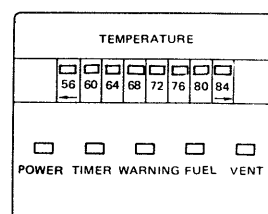
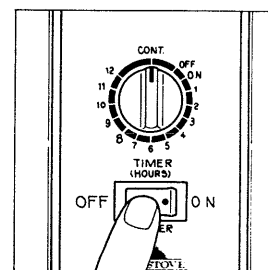
**CONSULT YOUR DEALER IF ANY LAMP FAILS TO GO OUT AFTER CORRECTIVE MEASURES ARE TAKEN.**

## TURNING OFF THE HEATER

Press power switch to "OFF" position. Make sure power lamp goes out and burner flame is extinguished.

**NOTE:** After turning heater off, wait approximately ten minutes before reigniting.

**NOTE:** Disconnect heater plug from electrical outlet before you go out or when heater will be out of use for any period.



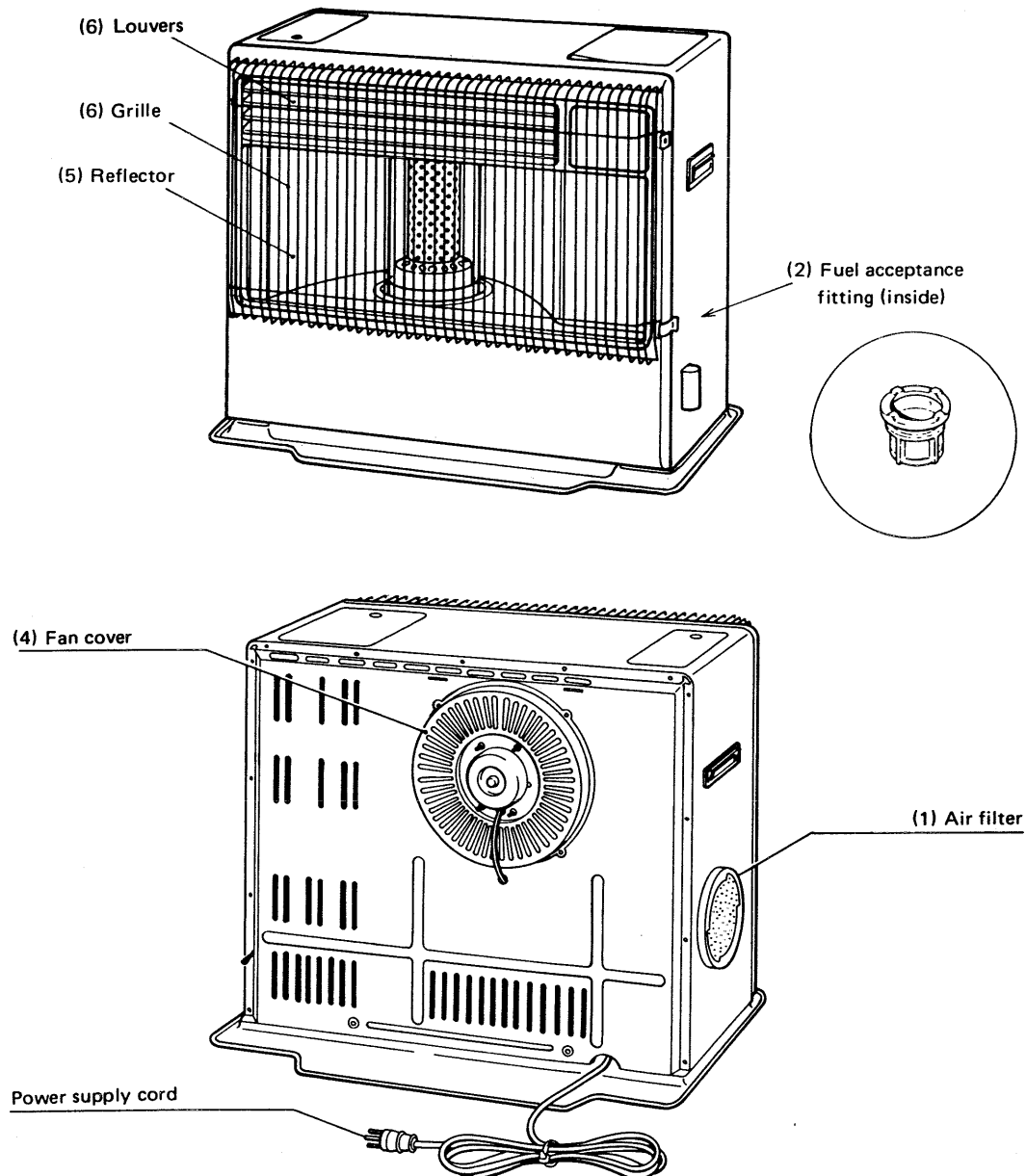
# ROUTINE MAINTENANCE

**CAUTION:** Be sure to unplug heater before performing any checks or cleaning.

**CAUTION:** Do not remove any parts from the heater except removable fuel tank, fuel acceptance fitting and air filter.

**WARNING:** Allow heater to cool completely before cleaning or maintenance.

FOR OPTIMUM HEATER PERFORMANCE THE PARTS SHOWN BELOW SHOULD BE CLEANED ONCE A WEEK.

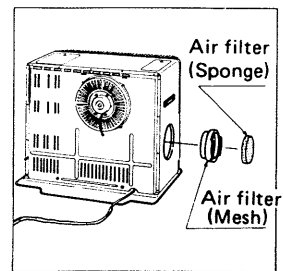


1. Clean Air Filter

A dual mesh and sponge filter is located on heater cabinet side. Once a week filter should be unscrewed to remove, the sponge and screen sections separated, and both should be vacuumed clean. If filter is plugged with dust or lint, soot, smoking and improper combustion may result.

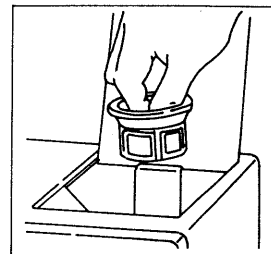
NOTE: If filter is washed in water, dry completely before replacing.

NOTE: Never remove the buffer ring which is behind the air filter. This ring plays an important role in ensuring normal combustion.



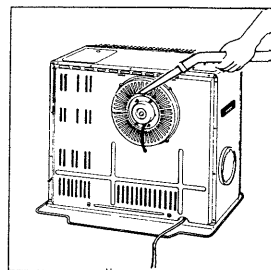
2. Clean Fuel Acceptance Fitting

When dirt or dust accumulates in the fuel acceptance fitting, it should be cleaned. Check fuel acceptance fitting each time you refuel.



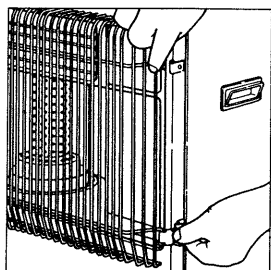
3. Check for Kerosene Leaks

Make it a habit to check for signs of kerosene leakage. Wipe off any spilled kerosene on the fuel sub-tank and the removable tank. Spilled kerosene may cause odor or risk of fire.



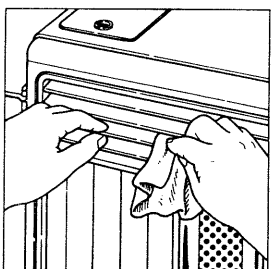
4. Clean Fan Cover

Remove any dust from the fan cover at the back of the heater, using a vacuum cleaner.



5. Clean Reflector

Reflector should always be kept clean for optimum heating efficiency. To open grille, release the latch at lower right side of grille and pull grille upward slightly before swinging open. Wipe away any dust and stains on reflector with a damp cloth.



6. Clean Louvers and Grille

Dust and stains should be wiped off louvers and grille with a damp cloth. If dust and stains are allowed to build up over a period of time, removal will become difficult. Make it a point to wipe clean regularly.

# TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
POWER LAMP FAILS TO TURN ON	<ul style="list-style-type: none"> <li>– Disconnected power plug</li> <li>– Out of fuel</li> <li>– Excessive room temperature</li> <li>– Incorrect wiring</li> <li>– Circuit board malfunction</li> </ul>	<ul style="list-style-type: none"> <li>– Plug into outlet.</li> <li>– Check fuel lamp; refuel.</li> <li>– Allow room to cool.</li> <li>– Consult your dealer.</li> <li>– Consult your dealer.</li> </ul>
NO IGNITION	<ul style="list-style-type: none"> <li>– Clogged air filter</li> <li>– Use of inferior kerosene</li> <li>– Incorrect wiring</li> <li>– Circuit board, ignition heater or fuel pump malfunction</li> </ul>	<ul style="list-style-type: none"> <li>– Clean air filter.</li> <li>– Remove fuel and refuel using fresh, clear kerosene.</li> <li>– Consult your dealer.</li> <li>– Consult your dealer.</li> </ul>
NO FLAME GROWTH	<ul style="list-style-type: none"> <li>– Excessive room temperature</li> <li>– Incorrect wiring</li> <li>– Circuit board or fuel pump malfunction</li> </ul>	<ul style="list-style-type: none"> <li>– Allow room to cool.</li> <li>– Consult your dealer.</li> <li>– Consult your dealer.</li> </ul>
YELLOW FLAMES	<ul style="list-style-type: none"> <li>– Clogged air filter</li> <li>– Use of inferior kerosene</li> <li>– Oxygen shortage in room</li> <li>– Use at elevations over 3000 ft</li> <li>– Incorrect wiring</li> <li>– Circuit board or fuel pump malfunction</li> </ul>	<ul style="list-style-type: none"> <li>– Clean air filter.</li> <li>– Remove fuel and refuel using fresh, clear kerosene.</li> <li>– Open door and windows to ventilate room thoroughly.</li> <li>– Consult your dealer.</li> <li>– Consult your dealer.</li> <li>– Consult your dealer.</li> </ul>

## TROUBLESHOOTING (Continued)

PROBLEM	CAUSE	SOLUTION
ODOR	<ul style="list-style-type: none"> <li>– Clogged air filter</li> <li>– Spilled kerosene</li> <li>– Use of inferior kerosene</li> <li>– Loose screw or incorrect assembly</li> <li>– Fuel pump/solenoid malfunction</li> </ul>	<ul style="list-style-type: none"> <li>– Clean air filter.</li> <li>– Wipe off any kerosene spills from fuel sub-tank, removable tank and drip tray.</li> <li>– Remove fuel and refuel using fresh, water-clear kerosene.</li> <li>– Consult your dealer.</li> <li>– Consult your dealer.</li> </ul>
FLAME DIE-OUT	<ul style="list-style-type: none"> <li>– Excessive room temperature</li> <li>– Oxygen shortage in room</li> <li>– Clogged air filter</li> <li>– Activation of tipover switch</li> <li>– Water in fuel acceptance fitting</li> <li>– Flame sensor or fuel pump malfunction</li> </ul>	<ul style="list-style-type: none"> <li>– Allow room to cool.</li> <li>– Open doors and windows to ventilate room thoroughly.</li> <li>– Clean air filter.</li> <li>– Reignite.</li> <li>– Remove fuel and refuel using fresh, water-clear kerosene.</li> <li>– Consult your dealer.</li> </ul>
NOISE (From Motors, Cabinet or Fuel Pump)	<ul style="list-style-type: none"> <li>– Loose screws or incorrect assembly</li> <li>– Incorrect wiring</li> <li>– Circuit board or fuel pump malfunction</li> </ul>	<ul style="list-style-type: none"> <li>– Consult your dealer.</li> <li>– Consult your dealer.</li> <li>– Consult your dealer.</li> </ul>

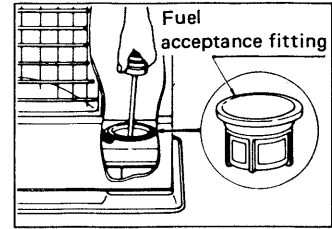


# LONG TERM STORAGE

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

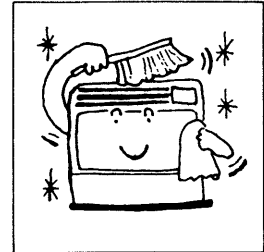
1. Drain Fuel Tank

Remove any kerosene, dust or water remaining in the fuel sub-tank and removable tank to prevent rusting.



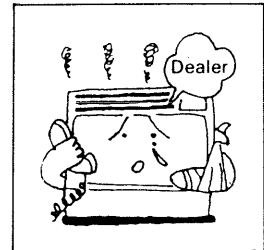
2. Clean Heater

Wipe off any dirt or dust on heater with a damp cloth, then wipe again using a dry cloth.



3. Service/Repair

If your heater needs any service or repair, now is the time to call your dealer to have it done before storage. That way, it will be ready for immediate use when the next heating season begins.

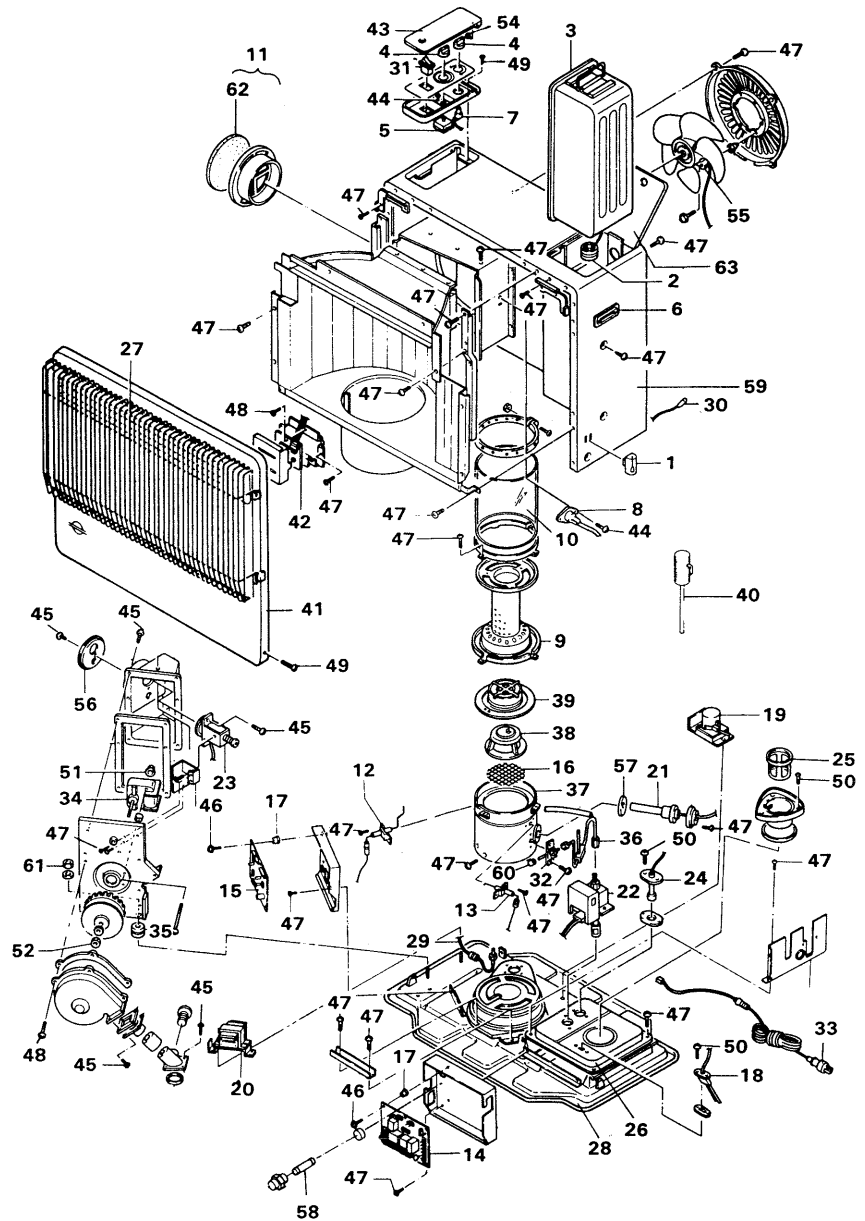


4. Store Heater

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

# COMPONENT PARTS

REF #	PART #	PART NAME
1	20450007	Plumb bob
2	20474524	Fuel tank cap
3	20475422	Removable fuel tank
4	20474001	Knob for timer & thermostat
5	20475402	Timer
6	20474004	Carrying handle
7	20474505	Thermostat switch
8	20474506	High limit switch
9	20475608	Heat element assembly
10	20474109	Glass cylinder
11	20474610	Air filter
12	20475611	Primary flame rod
13	20475671	Secondary flame rod
14	20475612	High voltage circuit board
15	20475672	Low voltage circuit board
16	20474113	Burner mat
17	20474014	Spacer A
18	20475415	Water detector
19	20474516	Tip-over switch
20	20475417	Transformer
21	20475418	Igniter
22	20475419	Fuel pump
23	20474620	Solenoid
24	20474521	Float switch
25	20474525	Fuel acceptance fitting
26	20475426	Fuel sub tank
27	20474128	Louver
28	20475429	Drip tray
29	20475431	Burner thermistor
30	20475473	Thermistor
31	20474533	Power switch
32	20474134	Fuel nozzle
33	20475435	Power supply cord
34	20475437	Blower motor assembly
35	20474539	Insulator B
36	20475441	Fuel pipe assembly
37	20475642	Burner assembly
38	20474143	Burner ring
39	20475675	Flame lead ring
40	20474045	Syringe
41	20475446	Front panel with grille assembly
42	20474576	Indicator lamp circuit
43	20474077	Control panel cover with pin
44	20450120	Screw for ignitr unit
45	20474048	Screw B
46	20474049	Screw R
47	20474050	Screw C
48	20474051	Screw D
49	20474052	Screw E
50	20474053	Screw F
51	20474057	Flange nut
52	20474058	Nut A
53	20474058	Holder A
54	20474060	Holder B
55	20475469	Circulation fan motor
56	20475668	Orifice
57	20474080	Igniter gasket
58	20474579	Fuse
59	20475478	Cabinet assembly
60	20474083	Fuel nozzle gasket
61	20474586	Nut H
62	20474640	Air filter sponge
63	20475465	Tank lid with holder
64	20475695	Instruction manual
65	20475699	Carton



# LIMITED WARRANTY

TOYOTOMI AMERICA INC. ("TOYOTOMI") warrants each 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:

An extended warranty period of 36 months is offered for vented FF heaters. This coverage is limited to the combustion assembly, specifically the burner pot, radiant chamber and heat exchanger. The remainder of heater is subject to 12 months.

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

**WHAT IS NOT COVERED:**

(1) This warranty does not extend to any defect due to the negligence of others; failure to install, operate or maintain unit in accordance with installation instructions (operating and maintenance instructions are furnished with each new unit); unreasonable use; accidents; alteration, use of unauthorized or non-standardized Toyotomi parts and accessories; electrical malfunctions, i.e., as resulting from large power surges, short circuit, etc.; incorrect installation; use of any fuel other than that specified in owners manuals; or repair by anyone other than a service facility specified by Toyotomi.

(2) Normal wear and tear of parts, including wicks, batteries, igniter coils and siphons, cutting blades, hoses, cables, burner mats and accessories.

**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 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 at:

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

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No one other than TOYOTOMI has authority to extend or modify the terms of this Limited Warranty in any manner whatsoever.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so these limitations or exclusions may not apply to you. This Limited Warranty gives you specific legal rights and you may also have other rights which vary from state to state.



**TOYOTOMI AMERICA INC.**

P.O. Box 176, Brookfield, CT 06804-0176

*This manual supersedes earlier editions. Part No. 20475695*