

UNVENTED WICKLESS KEROSENE HEATER OPERATION AND MAINTENANCE INSTRUCTIONS



LASER CLEAN

MODEL LCB-30

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 popular kerosene heaters ever made. TOYOTOMI, the leader in kerosene heater technology, has tested and refined the LCB-30 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.

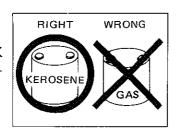
SAFETY TIPS

Before operating your heater, please review these safety tips:

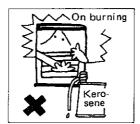
---WARNING----

RISK OF EXPLOSION

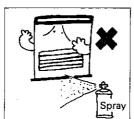
1. Never use any fuel other than water-clear kerosene (ASTM No. 1-K kerosene). NEVER USE GASOLINE. Use of gasoline can lead to uncontrollable flames resulting in destructive fire.



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.

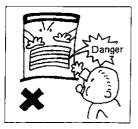


5. Never store or transport kerosene in other than a metal or plastic container that is (1) acceptable for kerosene, (2) non-red in color, and (3) clearly marked, "KEROSENE". Never store kerosene in the living space.



RISK OF BURNS OR FIRE

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



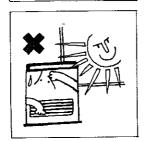
2. To avoid possible burns or fire, do not move, refuel or attempt to service your heater while it is burning or still hot.



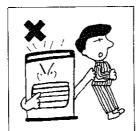
3. To avoid unstable burning, do not operate your heater in areas exposed to strong drafts. Do not operate your heater in high traffic areas such as doorways or hallways where it may be touched, jarred or tipped accidentally.



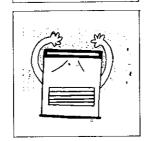
4. Do not operate heater in direct sunlight to avoid overheating, which may cause abnormal flame behavior. Do not allow room temperature in the room to go above $80^\circ-85^\circ\text{F}_{\odot}$



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



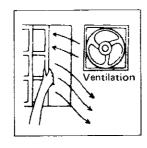
6. Do not operate heater in dusty areas. Dust can clog up air filters and cause improper combustion.



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 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 indoor air pollution. Do not use the heater in a bathroom or any other small room with the door closed."



FUEL GUIDE

The Toyostove LCB-30 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
- o 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 only a class "B" fire extinguisher













SPECIFICATIONS

MODEL		LCB-30	
HEAT RATING	HIGH	12,800 BTU/hr	
	LOW	6,400 BTU/hr	
FUEL TANK CAPACITY		1.4 gallons	
BURNING TIME/TANK		14 – 29 hours	
SIZE (W x H x D)		20-3/5" x 20-3/5" x 13-1/12"	
WEIGHT		31.7 lbs.	
ELECTRICAL RATING		120 Volts; 60Hz Preheat; 620W Burning; 43W	

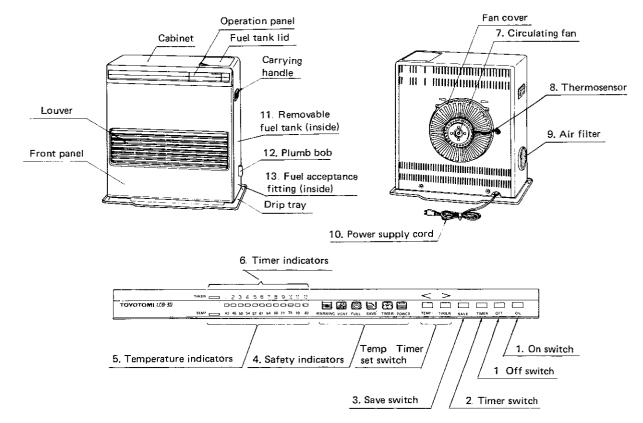
*Matching Room Size to HEAT RATING

- 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,

OPERATING CONTROLS AND PART NAMES

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



1. ON SWITCH/OFF SWITCH:

Main switches which turn heater on and off. When switched on, igniter begins operation and combustion

starts after a 80-second prefeat period.

2. TIMER:

Turns heater on automatically after the time period

selected by user.

(see page 8, "TIMER IGNITION".)

3. SAVE SWITCH:

Shifts heater to low combustion or turn-off automatic-

ally to avoid overheating.

(see page 10, "SAVE OPERATION".)

4. SAFETY INDICATORS:

Show heater operation conditions for user safety and

convenience.

5. TEMPERATURE INDICATORS:

Show room temperature sensed by thermosensor, and

show temperature set by user.

6. TIMER INDICATORS:

Show indicated time set by user.

7. CIRCULATING FAN:

Provides quick, efficient and even heat by circulating

warm air outward from heater front.

8. THERMOSENSOR:

Senses room temperature.

9. AIR FILTER:

A double-construction air filter consisting of an inner

mesh filter and an outer sponge filter.

Helps keep air-borne dust and dirt from entering the

combustion air supply intake.

10. POWER SUPPLY CORD:

For use in 120V, AC electrical outlets.

11. REMOVABLE FUEL TANK:

Allows easy refueling without moving heater.

1.4 gallons fuel capacity...

12. PLUMB BOB:

Allows user to check if heater is sitting evenly, (see page

7.)

13. FUEL ACCEPTANCE FITTING:

Ensures optimum heater performance by helping to

eliminate dust and water from fuel.

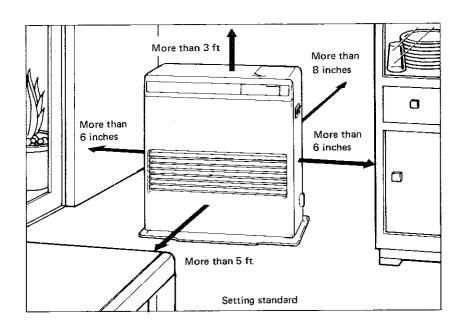
OPERATION

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.

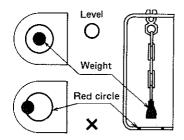
NOTE: Save shipping carton and all packing materials for future storage of your heater.

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



6. 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.



Plumb bob as viewed from above.

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.

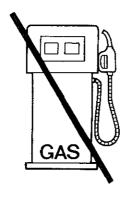
FUELING

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

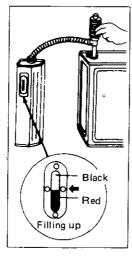
- 1. Open the fuel tank lid on the top of heater cabinet and lift out the removable fuel tank. Turn the removable tank upside down and remove the fuel tank cap.
- 2. Insert the straight tube of the manual siphon into the kerosene container; insert the siphon's flexible hose into the removable fuel tank opening.
- 3. 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.
- 4. 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.

- 5. 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.
- 6. After making sure fuel tank cap is tightly fastened, invert tank and replace into heater body.



USE KEROSENE ONLY

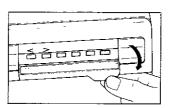


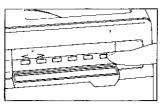
Fill the tank until the red part reaches the arrow mark.

IGNITION

- 1. Plug heater into 120V AC electrical outlet.
- 2. Press lightly "ON" switch. "POWER" lamp should turn on.

NOTE: If you press "ON" switch more than 10 seconds, power lamp turns off and heater does not ignite.







3. Ignition takes place after approximately 80 seconds of preheat time.

NOTE: Fuel pump may produce an audible operating noise at ignition.

This is only temporary.

NOTE: A slight odor may be noticed at ignition and the glass may be

clouded with water vapor. This will disappear when heater

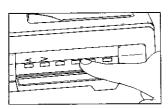
warms up...

NOTE: An abnormal noise may result if heater is reignited immediately

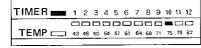
after turn-off.. Wait approximately 10 minutes before reigniting.

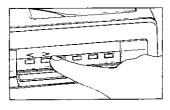
TIMER IGNITION

1. Press "TIMER" switch, and make sure the timer lamp is on.



2. Press "TEMP - TIMER SET" switch to set timer. If timer is set at "10", for example, heater will ignite 10 hours later.





[EXAMPLES]



Heater will ignite 3 hours later



Heater will ignite 8.5 hours later.

NOTE: Once timer is set, heater always ignites after indicated time has elapsed unless indicated time is changed.

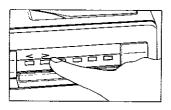
NOTE: If timer is set while heater is operating, heater will automatically extinguish and will reignite at the indicated time...

3. Heater will ignite after the indicated time has passed, and then temperature is indicated instead of timer indicated time.

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, press "ON" switch within one hour of timed ignition.

TEMPERATURE REGULATION

1. Set "TEMP - TIMER SET" switch at desired temperature by pressing >". Flashing lamp indicates temperature you selected.



[An example]

Room temperature:

50° F

Set temperature:

68° F

NOTE: If set temperature corresponds to true room temperature, lamp

will not flash.

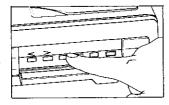
NOTE: If you do not select any temperature you like, temperature will

be automatically set at 64 (64°F) and its lamp flashes.

Set temperature Room temperature

SAVE OPERATION

When room temperature exceeds the selected temperature level by approx. 4°F heater will automatically shift to low combustion, and when it exceeds the selected temperature level by approx. 7°F heater will automatically extinguish. Then when room temperature reaches the selected temperature heater will automatically reignite.



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: 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.

FLAME CONDITION

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

Flame Condition	Cause	Corrective Measure
Normal Blue flame combustion. Tip of flame tinged with yellow. Flame is low and burning is quiet.		
Abnormal Yellowish flames and noisy burning.	Oversupply of air for combustion.	Consult your dealer.
Abnormal Towering yellowish flames.	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
POWER LAMP WATERING VERY ULL GAVE TIMER FAME	When lamp is lit, heater is preheating or in operation.	
TIMER LAMP TIMER LAMP RAMING 441 FUEL SAVE TIMEA FORCE	When lamp is lit, ignition timer is in operation	
WARNING LAMP WARNING VEHT FUEL SAVE THEER FONER	 When lamp is lit: Water present in fuel sub-tank (water-adulterated kerosene has been used). Extremely high fuel level in sub-tank. Gasoline present in sub-tank or removable fuel tank. Heater has just been moved from extremely cold room to extremely hot room. 	Remove kerosene from sub-tank using a syringe, and dry. Replace kerosene in removable fuel tank with pure kerosene
FUEL LAMP WASHING VEYT MEL SAME TIMER POWER	When lamp flashes (heater continues operation): Removable fuel tank is empty and heater will extinguish within 20 minutes. Soil or water in fuel acceptance fitting prevent flow of kerosene	 Turn off heater Refuel after cooling. Remove fuel acceptance fitting, remove soil or water. Wash with kerosene.
	When lamp is lit (heater is extinguished): O No kerosene in heater.	Refuel after cooling.

Lamp	Meaning	Necessary Measures	
VENT LAMP	When lamp is lit (heater is extinguished):		
WASHING VENT FUEL SAVE TAKEN ONEN	 Insufficient air supply for combustion. Heavy cigarette smoke, dust, etc. present in air. Air filter clogged by dirt or dust. 	Ventilate room thoroughly.Clean air filter.	
	Excessive room temperature (over 91°F)	Allow room to cool.	
	When lamp flashes (heater is extinguished):		
	 Insufficient oxygen level in room due to prolonged operation without ventilation. 	 Ventilate room by opening doors or windows, then reignite. 	
NOTE: The vent lamp may also light up and heater is extinguished in the following cases: o when heater is brand new when heater is reignited immediately after turn-off.			
TEMP TIMER SET	When all lamps flash (heater is extinguished):		
1 2 3 4 5 6 7 8 9 10 11 12 43 46 50 54 57 61 64 68 71 75 79 82	O Activation of safety device	Consult your dealer	

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

TURNING OFF THE HEATER

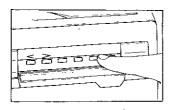
Press "OFF" switch. Make sure power lamp goes out and burner flame is extinguished.

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

reigniting.

NOTE: Disconnect heater plug from electrical outlet before you go out

when heater will be out of use for any period.



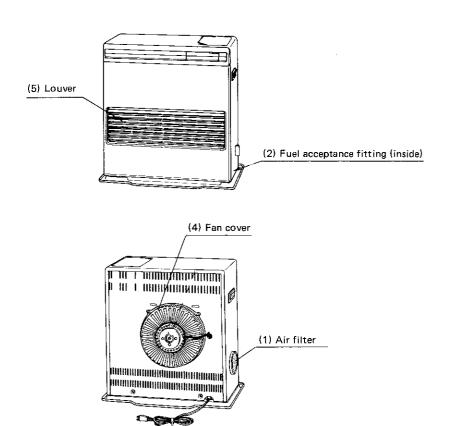
ROUTINE MAINTENANCE

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

CAUTION: Do not remove any parts from the cabinet except 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

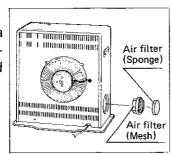
Make it a habit to check for signs of kerosene leakage. Wipe off any spilled kerosene on the fuel sub-tank and the removable tank. Spilled kerosene may cause odor or risk of fire.

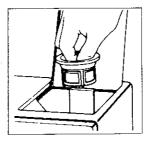
4. Clean Fan Cover

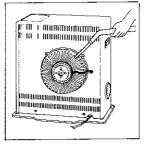
Remove any dust from the fan cover at the back of the heater, using a vacuum cleaner.

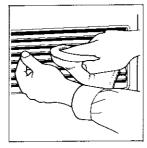
5. Clean Louvers

Dust and stains should be wiped off louvers 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	 Disconnected power plug Out of fuel Excessive room temperature Incorrect wiring Circuit board malfunction 	 Plug into outlet Check fuel lamp; refuel Allow room to cool Consult your dealer Consult your dealer
NO IGNITION	- Clogged air filter - Use of inferior kerosene - Incorrect wiring - Circuit boards, ignition heater or fuel pump malfunction	- Clean air filter. - Remove fuel and refuel using fresh, clear kerosene. - Consult your dealer. - Consult your dealer.
NO FLAME GROWTH	- Clogged air filter - Excessive room temperature - Incorrect wiring - Circuit boards or fuel pump malfunction	- Clean air filter. - Allow room to cool. - Consult your dealer. - Consult your dealer.
YELLOW FLAMES	 Clogged air filter Use of inferior kerosene Oxygen shortage in room Use at elevations over 3000 ft Incorrect wiring Circuit boards or fuel pump malfunction 	 Clean air filter Remove fuel and refuel using fresh, clear kerosene Open door and windows to ventilate room thoroughly. Consult your dealer. Consult your dealer. Consult your dealer.

TROUBLESHOOTING (Continued)

PROBLEM	CAUSE	SOLUTION
ODOR	Clogged air filter	Clean air filter.
	Spilled kerosene	Wipe off any kerosene spills from fuel sub-tank, removable tank and drip tray
	Use of inferior kerosene	Remove fuel and refuel using fresh, water-clear kerosene.
	Loose screws/incorrect assembly	- Consult your dealer.
	Fuel pump/solenoid malfunction	Consult your dealer,
FLAME DIE-OUT	Excessive room temperature	Allow room to cool
	Oxygen shortage in room	Open doors and windows to ventilate room thoroughly.
	Activation of tipover switch	– Reignite
	Water in fuel acceptance fitting	Remove fuel and refuel using fresh, water-clear kerosene.
	Flame sensor or fuel pump mal- function	Consult your dealer.
NOISE (From Motors, Cabinet or Fuel Pump)	Loose screws or incorrect assembly	Consult your dealer
Castrict of Facility	 Incorrect wiring 	- Consult your dealer.
	Circuit boards or fuel pump mal- function	- Consult your dealer.

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.

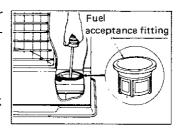
2. Clean Heater

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

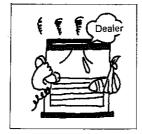
3. If your heater needs any service or repair, now is the time to call your dealer to have it done before storage. That way, it will be ready for immediate use when the next heating season begins.

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.







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:

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) This warranty does not cover normal wear and tear of items such as but not limited to; wicks, batteries,

igniter coils, 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 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:

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