



Kerosene Portable Heater
MH-0600-0M10
OPERATOR'S MANUAL



CAUTION

**RISK OF INJURY! READ ENTIRE MANUAL BEFORE OPERATING!
THIS MANUAL IS AN IMPORTANT PART OF THE PORTABLE HEATER
AND MUST REMAIN WITH THIS UNIT!**

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WARNING

This product contains one or more chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

INTRODUCTION

Congratulations on the purchase of your new Mi-T-M® Portable Heater! You can be assured your Mi-T-M® Portable Heater was constructed with the highest level of precision and accuracy. Each component has been rigorously tested by technicians to ensure the quality, endurance and performance of this heater.

This operator's manual was compiled for your benefit. By reading and following the simple safety, installation and operation, maintenance and troubleshooting steps described in this manual, you will receive years of trouble free operation from your new Portable Heater. The contents of this manual are based on the latest product information available at the time of publication. The Manufacturer reserves the right to make changes in price, color, materials equipment, specifications or models at any time without notice.



IMPORTANT!

A "DANGER, WARNING or CAUTION" safety warning will be surrounded by a "SAFETY ALERT BOX". This box is used to designate and emphasize Safety Warnings that must be followed when operating this heater. Accompanying the safety warnings are "Signal Words" which designate the degree or level of hazard seriousness. The "Signal Words" used in this manual are as follows:

DANGER: INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.

WARNING: INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.

CAUTION: INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED MAY RESULT IN MINOR OR MODERATE INJURY OR DAMAGE TO THE HEATER.

The symbols set below are "Safety Alert Symbols". These symbols are used to call attention to items or procedures that could be dangerous to you or other persons using this equipment.



ALWAYS PROVIDE A COPY OF THIS MANUAL TO ANYONE USING THIS EQUIPMENT. READ ALL INSTRUCTIONS IN THIS MANUAL AND ANY INSTRUCTIONS SUPPLIED BY MANUFACTURERS OF SUPPORTING EQUIPMENT BEFORE OPERATING THE PORTABLE HEATER AND ESPECIALLY POINT OUT THE "SAFETY WARNINGS" TO PREVENT THE POSSIBILITY OF PERSONAL INJURY TO THE OPERATOR.

Once the unit has been uncrated, immediately write in the serial number of your unit in the space provided below.

SERIAL NUMBER _____

Inspect for signs of obvious or concealed freight damage. If damage does exist, file a claim with the transportation company immediately. Be sure that all damaged parts are replaced and that the mechanical and electrical problems are corrected prior to operation of the unit. If you require service, contact Mi-T-M® Customer Service.

Mi-T-M® Corporation, 8650 Enterprise Drive, Peosta, IA 52068
563-556-7484 / 800-553-9053 / Fax 563-556-1235
Monday - Friday 8:00 a.m. - 5:00 p.m. CST

Please have the following information available for all service calls:



1. Model Number
2. Serial Number
3. Date and Place of Purchase

IMPORTANT SAFETY INSTRUCTIONS





READ ALL SAFETY WARNINGS BEFORE USING PORTABLE HEATER

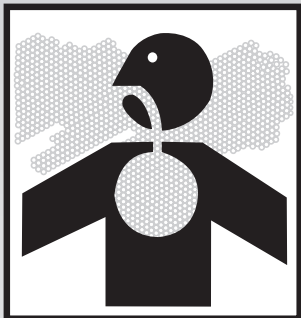


Hazard	Potential Consequence	Prevention
<p>RISK OF ELECTRIC SHOCK OR ELECTROCUTION</p> 	<p>Serious injury or death could occur if the portable heater is not properly grounded. Your heater is powered by electricity and may cause electric shock or electrocution if not used properly.</p> <p>Electrical shock may occur if the portable heater is not operated properly.</p> <p>Serious injury or death may occur if electrical repairs are attempted by unqualified persons.</p>	<p>Installation of this unit, including all electrical connections, must comply with all local, state and national codes.</p> <p>This product must be grounded. Connect to a GFCI circuit breaker when available. If the unit should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. Do not ground to a gas supply line.</p> <p>Improper connection of the equipment-grounding conductor can result in a risk of electrocution. Check with a qualified electrician or service personnel if you are in doubt as to whether the system is properly grounded.</p> <p>Always be certain the unit is receiving proper voltage. Specified on the model plate of the heater. Use only a three-prong, grounded outlet and extension cord.</p> <p>Keep all connections dry and install the heater so that it is not directly exposed to water spray, rain, dripping water or wind.</p> <p>Any electrical wiring or repairs performed on this heater should be done by Authorized Service Personnel in accordance with National and Local electrical codes.</p> <p>Always unplug the heater when not in use.</p>
<p>RISK OF BURNS</p> 	<p>Serious injury could occur from touching exposed metal parts. These areas can remain hot for some time after the heater is turned off.</p>	<p>Never allow any part of your body or other materials to make contact with any exposed metal parts on the heater.</p>






IMPORTANT SAFETY INSTRUCTIONS

Hazard	Potential Consequence	Prevention
<p>RISK OF EXPLOSION OR FIRE</p>  	<p>Serious injury or death may occur from normal electrical sparks in motor and pressure switch</p> <p>Serious injury may occur if the heater air inlet or outlet is blocked.</p> <p>Serious injury or death may occur if improper fuels are used, if heater is running while refilling.</p> <p>Serious injury may occur if heater is not placed on level surface and is kept away from children and animals.</p>	<p>Always operate portable heater in a well ventilated area free of flammable vapors, combustible dust, gases or other combustible materials.</p> <p>Never place objects in front of air inlet (rear) or air outlet (front) of heater. Never use duct work in front or at rear of heater. Keep all combustible material away from this heater.</p> <p>Never use fuels such as gasoline, benzene, paint thinners, or other oil compounds in this heater. Never refill the heater's fuel tank while heater is operating or still hot. This heater is EXTREMELY HOT while in operation.</p> <p>Never use this heater where flammable vapors may be present.</p> <p>Never transport heater with fuel in its tank.</p> <p>Bulk fuel storage should be a minimum of 25 ft. from heaters, torches, portable generators, or other sources of ignition. All fuel storage should be in accordance with federal, state, or local authorities having jurisdiction.</p> <p>Never move or handle heater while still hot.</p> <p>If equipped with a thermostat, the heater may start at any time.</p> <p>Always locate heater on a stable and level surface away from children and animals.</p>

IMPORTANT SAFETY INSTRUCTIONS

Hazard	Potential Consequence	Prevention
<p>RISK TO BREATHING</p> 	<p>Serious injury or death could occur from failure to provide proper ventilation according to this manual..</p>	<p>This is a kerosene, direct-fired, forced air heater. It is primarily intended for use for temporary heating of buildings under construction, alteration or repair. Direct-fired means that all of the combustion products of the heater enter the heated space. This appliance is rated at 98% combustion efficiency, but does produce small amounts of carbon monoxide. Carbon monoxide is toxic. Humans can tolerate small amounts of carbon monoxide, and precautions should be taken to provide proper ventilation..</p> <p>Early signs of carbon monoxide poisoning resemble the flu. Symptoms of improper ventilation are: * headache * dizziness * burning of the nose and eyes * nausea * dry mouth * sore throat</p> <p>Use this heater only in well ventilated areas! Provide at least a three square foot (2,300 sq cm) opening of outside air for every 100,000 BTU/hr of heater rating.</p> <p>People with breathing problems should consult a physician before using the heater.</p> <p>Carbon Monoxide Poisoning: Early signs of carbon monoxide poisoning resemble flu-like symptoms such as headaches, dizziness, and/or nausea. If you have these symptoms, your heater may not be working properly.</p> <p>Get fresh air at once! Have the heater serviced. Some people are more affected by carbon monoxide than others. These include pregnant women, those with heart or lung problems, anemia, or those under the influence of alcohol, or at high altitudes.</p> <p>Never use this heater in living or sleeping areas.</p>

IMPORTANT SAFETY INSTRUCTIONS

-  **FIRE, BURN, INHALATION, AND EXPLOSION HAZARD. KEEP COMBUSTIBLES, SUCH AS BUILDING MATERIALS, PAPER OR CARDBOARD, A SAFE DISTANCE AWAY FROM THE HEATER AS RECOMMENDED BY THESE INSTRUCTIONS. NEVER USE THE HEATER IN SPACES WHICH CONTAIN PRODUCTS SUCH AS GASOLINE, SOLVENTS, PAINT THINNERS, DUST PARTICLES, VOLATILE OR AIRBORNE COMBUSTIBLES, OR ANY UNKNOWN CHEMICALS. THIS IS AN UNVENTED PORTABLE HEATER. IT USES AIR (OXYGEN) FROM THE AREA IN WHICH IT IS USED. ADEQUATE COMBUSTION AND VENTILATION AIR MUST BE PROVIDED. REFER TO VENTILATION.**
-  **CALIFORNIA RESIDENTS: THIS HEATER PRODUCES CARBON MONOXIDE, WHICH IS LISTED BY THE STATE OF CALIFORNIA AS A REPRODUCTIVE TOXIN UNDER PROPOSITION 65. NOT FOR USE IN HOMES OR RECREATIONAL VEHICLES.**
-  **MASSACHUSETTS STATE LAW PROHIBITS THE USE OF THIS HEATER IN ANY BUILDING WHICH IS USED IN WHOLE OR IN PART FOR HUMAN HABITATION. USE OF THIS HEATING DEVICE IN MASSACHUSETTS REQUIRES LOCAL FIRE DEPT. PERMIT (M.E.L.C. 148, SECTION 10A).**
-  **CANADIAN RESIDENTS: USE OF THIS HEATER SHALL BE IN ACCORDANCE WITH AUTHORITIES HAVING JURISDICTION AND CSA STANDARD B139.**
-  **NEW YORK CITY RESIDENTS: FOR USE ONLY AT CONSTRUCTION SITES IN ACCORDANCE WITH APPLICABLE NYC CODES FOR APPROVAL NUMBERS CONTACT YOUR LOCAL GRAINGER BRANCH.**



! SAVE THESE INSTRUCTIONS !





**THE FOLLOWING PAGES CONTAIN OPERATING AND
MAINTENANCE INSTRUCTIONS.**

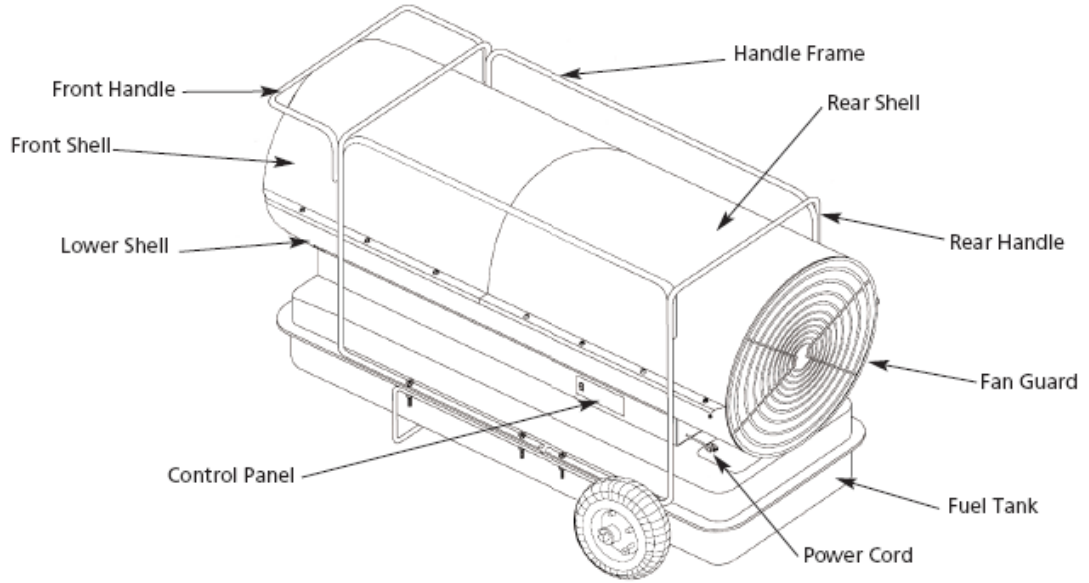
**DO NOT ATTEMPT TO OPERATE THIS PORTABLE HEATER
UNTIL YOU HAVE READ AND UNDERSTOOD ALL SAFETY
PRECAUTIONS AND INSTRUCTIONS LISTED IN THIS MANUAL.**

**INCORRECT OPERATION OF THIS UNIT CAN CAUSE SERIOUS
INJURY!!**

**DO NOT ALTER OR MODIFY THIS EQUIPMENT
IN ANY MANNER!**

PORTABLE HEATER FEATURES

Model MH-0600-0M10



PORTABLE HEATER SPECIFICATIONS

Model	MH-0600-0M10
Rating BTU/Hr	600,000
Fuel Consumption Gal/Hr	4.5
Fuel Tank Capacity Gallons	40.0
Pump Pressure PSI	128
Volt/Hz	120V/ 60 Hz
Amps	5.5
Phase	Single
Size (L x W x H)	75" x 34" x 43"
Net Weight (Lbs)	320

ASSEMBLY

COMPONENTS



Wheels
(Pneumatic)



Wheel Caps
(Black Rubber)



Screws (L)



Flat Washers (S)



Flat Washers (L)



Screws (S)



Cotter Pins



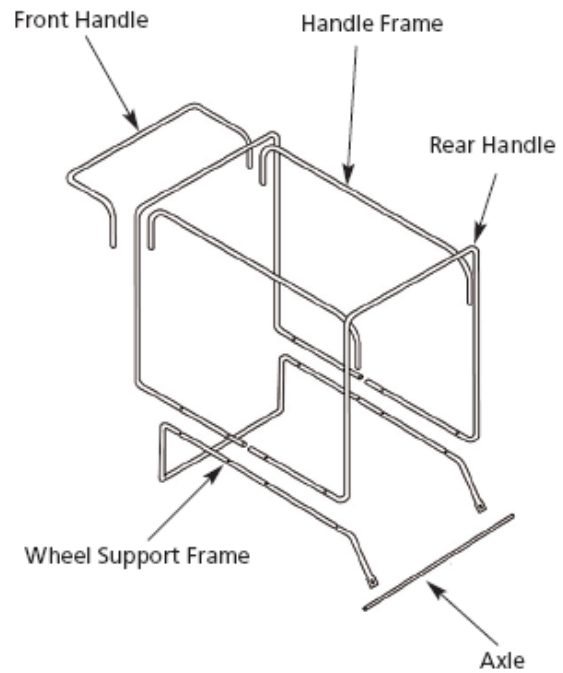
Bushings



Nuts



Cord Wraps



ASSEMBLY

Note: Tools required: medium phillips screw driver, open end or adjustable wrench, long nose pliers.

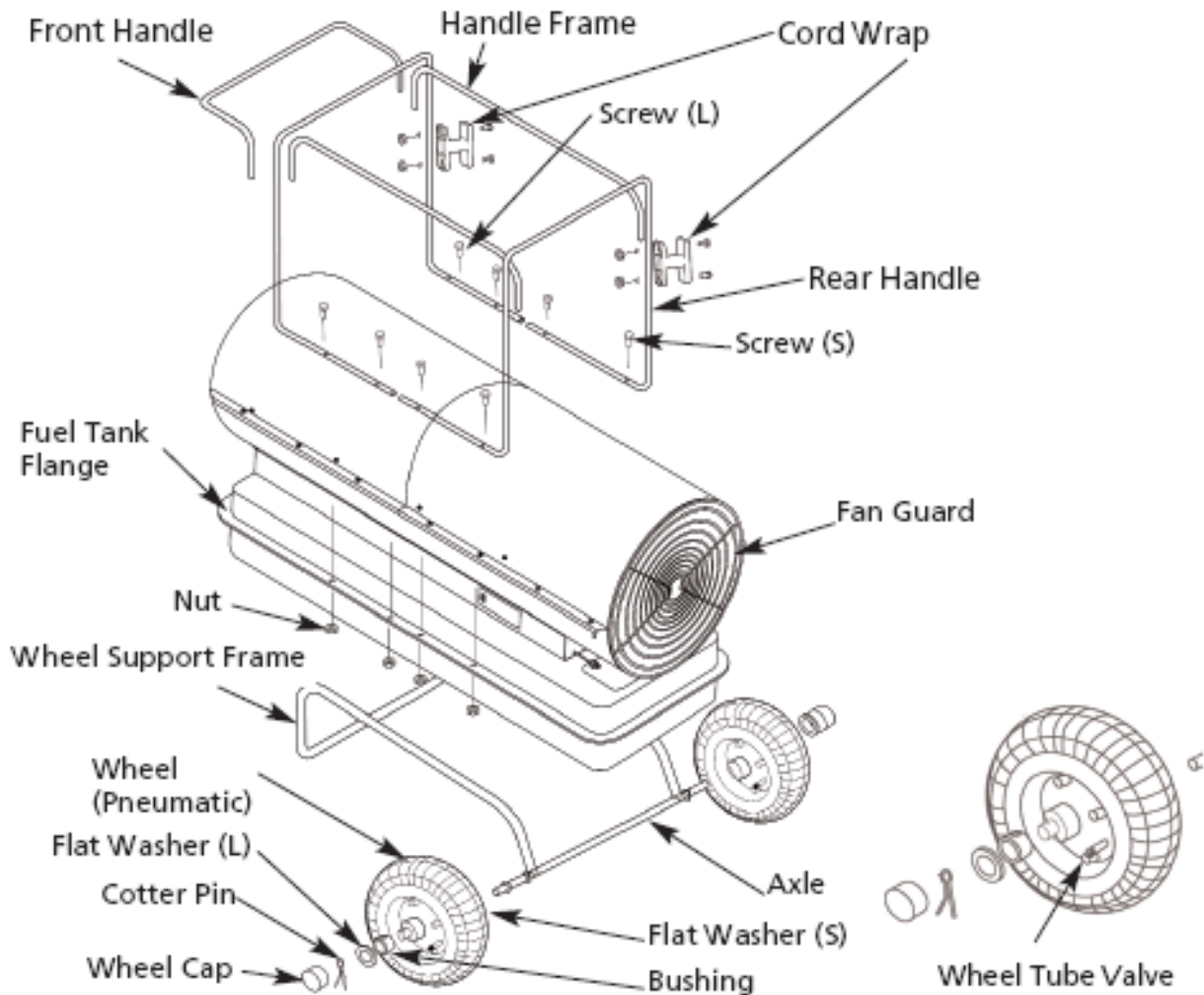
ASSEMBLING FRAME AND WHEELS

1. Slide axle through wheel support frame. Install wheel bushings, flat washers (S) and wheel on axle.

NOTE: When installing wheels, tube valve should face out from support frame.

2. Place flat washers (L) and cotter pins on axle ends and bend cotter pins with long nose pliers to secure.
3. Place wheel cap on flat washers (L) and put wheel cap in flat washers (L) end.
4. Place heater on wheel support frame. Make sure air inlet end (rear) of heater is over wheels. Align the holes on fuel tank flange. Insert screws through handles (front and rear), fuel tank flange, and wheel support frame as shown in below and attach nut finger tight after each screw is inserted.
5. After all screws are inserted, tighten nuts firmly.

⚠ DO NOT OPERATE HEATER WITHOUT SUPPORT FRAME FULLY ASSEMBLED TO TANK.



OPERATION

KEROSENE (1-K)

For optimal performance of this heater, it is strongly suggested that 1-K kerosene be used. 1-K kerosene has been refined to virtually eliminate contaminants, such as sulfur, which can cause a rotten egg odor during the operation of the heater. However, #1, #2 (diesel fuel), JP-8 or Jet A fuel oil may also be used if 1-K kerosene is not available. Be advised that these fuels do not burn as clean as 1-K kerosene, and care should be taken to provide more fresh air ventilation to accommodate any added contaminants that may be added to the heated space.

NOTE: Kerosene should only be stored in a blue container that is clearly marked “kerosene”.

Never store kerosene in a red container. Red is associated with gasoline.

- NEVER store kerosene in the living space. Kerosene should be stored in a well ventilated area outside the living area.
- NEVER use fuel such as gasoline, benzene, alcohol, white gas, camp stove fuel, paint thinners, or other oil compounds in this heater (THESE ARE VOLATILE FUELS THAT CAN CAUSE A FIRE OR EXPLOSION).
- NEVER store kerosene in direct sunlight or near a source of heat.
- NEVER use kerosene that has been stored from one season to the next. Kerosene deteriorates over time. OLD KEROSENE WILL NOT BURN PROPERLY IN THIS HEATER.
- Use 1-K kerosene in this heater. #1, #2 (diesel fuel), JP-8, or Jet A fuel oil is a suitable substitute.
- Use of #1 or #2 fuel oil will require increased maintenance of unit.

THEORY OF OPERATION

Fuel System: This heater is equipped with a fuel pump that forces fuel through the fuel line connected to the fuel intake, and then through a nozzle in the burner head. This fuel is then sprayed into the combustion chamber in a fine mist.

“SureFire Ignition”: The electronic ignitor sends voltage to a specially designed spark plug. The spark plug ignites the fuel and air mixture.

The Air System: The heavy duty motor turns a fan that forces air into and around the combustion chamber. Here, the air is heated and then forced out the front of the heater.

Temperature Limit Control: This heater is equipped with a Temperature Limit Control designed to turn the heater off should the internal temperature rise to an unsafe level. If this device activates and turns your heater off, it may require service. Once the temperature falls below the reset temperature, you will be able to start your heater.

Electrical System Protection: This heater’s electrical system is protected by a fuse that protects it and other electrical components from damage. Fuse is located inside of an in-line “FUSE BARREL”. If your heater fails to operate, check this fuse first and replace as needed. Refer to Specification Chart in this manual.

Flame-Out Sensor: Utilizes a photocell to monitor the flame in burn chamber during normal operation. It will cause the heater to shut off should the burner flame extinguish.

FUELING YOUR HEATER

NEVER fill the heater fuel tank in the living space: fill the tank outdoors. Do not overfill your heater and be sure heater is leveled.



WARNING: NEVER REFILL FUEL TANK WHEN HEATER IS OPERATING OR STILL HOT.

IMPORTANT: REGARDING FIRST IGNITION OF HEATER. The first time you light the heater, it should be done OUTDOORS. This allows the oils, etc. used in manufacturing the heater to burn off outside.

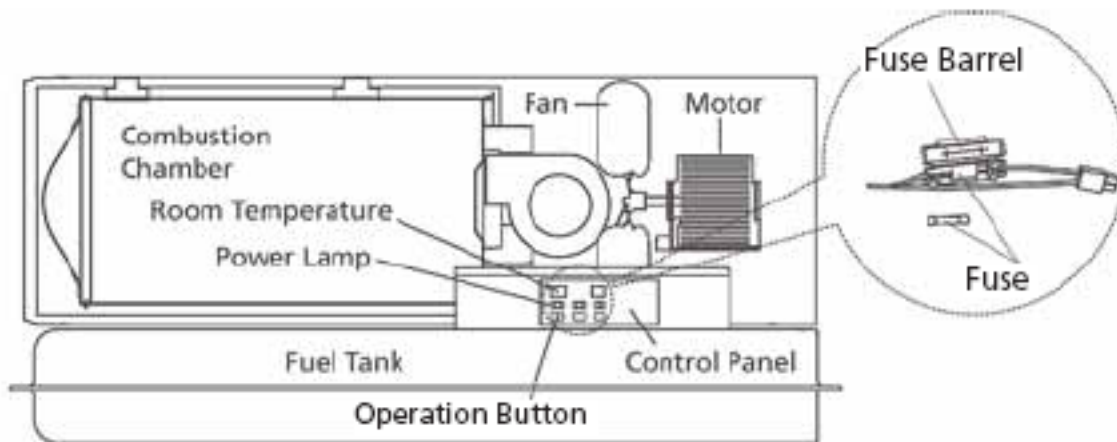
VENTILATION



WARNING: RISK OF INDOOR AIR POLLUTION. USE HEATER ONLY IN WELL VENTILATED AREAS.

Provide a fresh air opening of at least 3 square feet. (2,800 sq. cm.) for each 100,000 BTU/Hr. rating. Provide extra fresh air if more heaters are being used.

OPERATION



TO START HEATER

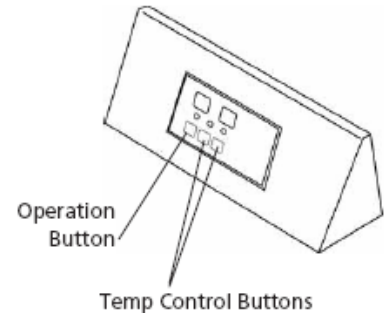
1. Fill fuel tank with kerosene or No. 1 fuel oil.
2. Attach fuel cap.
3. Plug power cord into three-prong, grounded extension cord. Extension cord must be at least six feet long.

Extension Cord Wire Size Requirements:

- 6 to 10 feet long, use 14 AWG conductor.
 - 101 to 200 feet long, use 12 AWG conductor.
 - 201 to 300 feet long, use 10 AWG conductor.
 - 301 to 400 feet long, use 8 AWG conductor.
 - 401 to 500 feet long, use 6 AWG conductor.
4. Push "OPERATION BUTTON". Power indicator lamp and room temperature display will light and heater will start. Push the up and down arrow keys on the control panel to adjust the thermostat settings.

If heater does not start, the thermostat setting may be too low. Push "TEMP CONTROL UP ARROW" to higher setting to start heater. If heater still does not start, see Troubleshooting Chart.

NOTE: The major electrical components of this heater are protected by a circuit breaker (fuse) mounted to the power switch. If your heater fails to start, check this first and replace as necessary. You should also check your power source to insure that proper voltage and frequency are being supplied to the heater.



TO STOP HEATER

⚠ WARNING: NEVER UNPLUG HEATER WHILE HEATER IS RUNNING.

Heater must go through cooling cycle. The cooling cycle cools the combustion chamber. Damage to heater can occur if combustion chamber is not cooled. Do not restart heater until cooling cycle is complete.

1. Push "OPERATION BUTTON", This will cause heater flame to go out. The motor will continue to run during the cooling cycle. This allows the fan to cool the combustion chamber. When the cooling cycle (approx. 2 minutes) is finished, the motor will stop. Do not unplug heater until cooling cycle is finished.
2. Disconnect heater from power source.
3. To temporarily stop heater, set thermostat at a temperature lower than air around heater. Heater will cycle back on if air temperature around heater matches thermostat setting.

OPERATION

TO RESTART HEATER

⚠ CAUTION: DO NOT RESTART HEATER UNTIL COOLING CYCLE IS FINISHED.

The cooling cycle cools the combustion chamber.

1. Wait until cooling cycle is finished after stopping heater.
2. Repeat steps under TO START HEATER.

LONG-TERM STORAGE OF HEATER

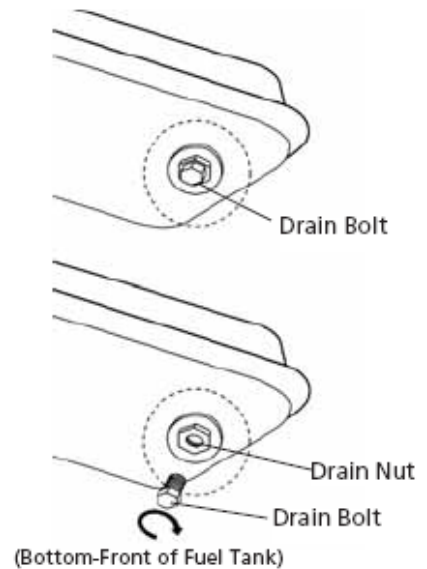
1. Remove drain nut from rear bottom side of fuel tank by unscrewing nut and drain.
2. Using a small amount of kerosene, swirl and rinse the inside of the tank. **NEVER MIX WATER WITH KEROSENE**, as it will cause rust inside the tank. Pour the kerosene out, making sure that you remove it all.

IMPORTANT: Do not store kerosene over summer for use during next heating season. Using old fuel may damage heater.

3. Reinstall drain bolt as follows:
 - Insert bolt's seal head fully into drain hole so that flange is flush to tank's bottom.
 - Insert seal cap fully into head hole so that cap flange is flush to head flange.

IMPORTANT: Reinstall bolt fully into hole in tank; otherwise it will not seal completely.

- Make sure storage place is free of dust and corrosive fumes.
- Store the heater in the original box with the original packing material and keep **USER'S MANUAL** with heater.



MAINTENANCE

WARNING: NEVER SERVICE HEATER WHILE IT IS PLUGGED IN OR WHILE HOT!

NOTE: USE ORIGINAL EQUIPMENT REPLACEMENT PARTS. Use of third party or other alternate components will void warranty and may cause unsafe operating conditions.

FUEL TANK

- Flush every 200 hours of operation or as needed (See Storage).

FAN BLADES

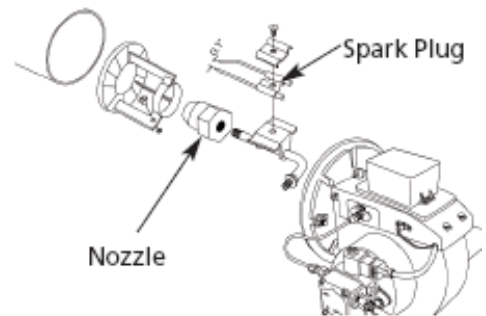
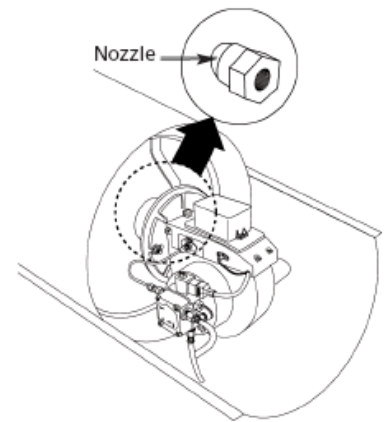
CLEAN EVERY SEASON OR AS NEEDED.

- Remove upper shell (See air intake filter).
- Use Allen wrench to loosen set screw which holds fan blade to motor shaft.
- Slip fan blade off motor shaft.
- Clean fan blade using soft cloth moistened with kerosene or solvent.
- Dry fan blade thoroughly.
- Reinstall fan blade to motor shaft.
- Place fan hub flush with end of motor shaft.
- Place set screw on flat end of shaft.
- Tighten screw firmly (40-50 inch pounds/ 4.5-5.6 N-m). Reinstall upper shell

NOZZLE

Remove dirt in nozzle as needed.

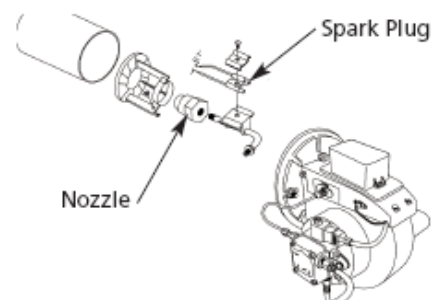
- Remove upper shell.
- Remove fuel line B from burner assembly by using wrench.
- Remove burner head from burner assembly.
- Remove lead wire from spark plug.
- Remove spark plug from burner head.
- Carefully remove nozzle from burner head using socket wrench.
- Blow compressed air through face of nozzle (This will remove any dirt).
- Inspect nozzle for damage. If damaged or clogged, replace nozzle.
- Make sure plug is in place on burner head.
- Reinstall nozzle into burner head and tighten firmly (175-200 inch-pounds).
- Reinstall spark plug in burner head.
- Attach burner head to combustion chamber.
- Attach spark plug wire to spark plug
- Attach fuel line to burner head and tighten firmly.
- Replace upper shell.
- Attach ignitor wire to spark plug.
- Attach fuel and air line hoses to burner head.
- Reinstall fan blade and upper shell.



SPARK PLUG

CLEAN AND REGAP EVERY 600 HOURS OF OPERATION OR REPLACE AS NEEDED.

- Remove upper shell.
- Remove spark plug wire from spark plug.
- Remove spark plug from burner head using medium Phillips screwdriver.
- Clean and regap spark plug electrodes to 0.1" (2.5 mm) gap.
- Reinstall spark plug into burner head.
- Attach spark plug wire to spark plug.
- Reinstall upper shell.



MAINTENANCE

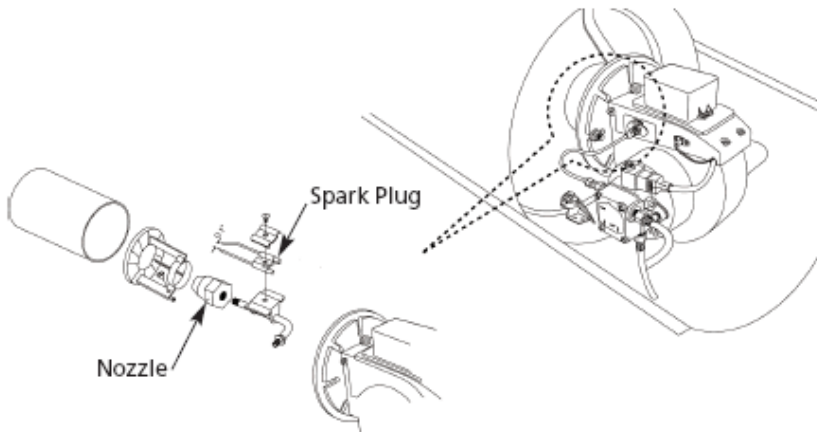
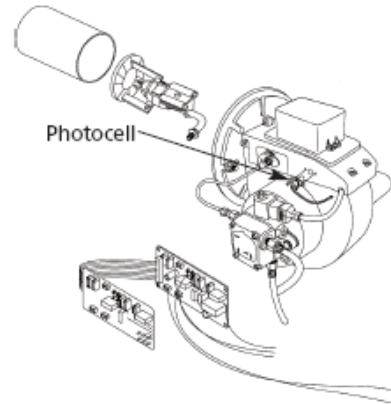
PHOTOCELL

CLEAN PHOTOCELL ANNUALLY OR AS NEEDED.

- Remove upper shell.
- Remove fan (See fan blades).
- Remove photocell from its mounting bracket
- Clean photocell lens with cotton swab.

TO REPLACE: Remove side cover near Operation switch.

- Disconnect wires from Operation switch and remove photocell.
- Disconnect wires from circuit board and remove side cover.
- Install new photocell and attach wires to circuit board.
- Replace switch wires to operation switch and side cover.
- Replace fan and upper shell.



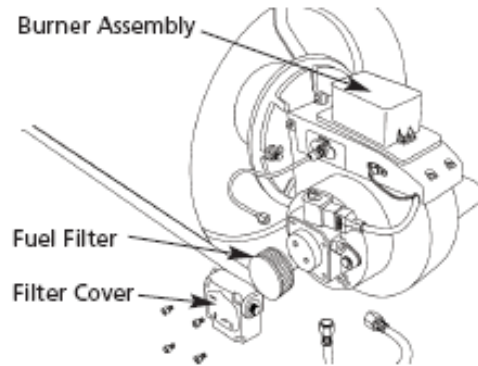
FUEL FILTER

CLEAN TWICE PER HEATING SEASON OR AS NEEDED.

- Open rear shell.
- Remove filter cover by unscrewing four screws.
- Remove fuel filter from filter cover.
- Wash fuel filter in clean kerosene.
- Replace fuel filter and filter cover.

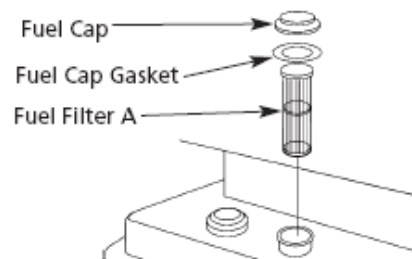
FUEL FILTER A IN FUEL TANK

- Remove fuel cap.
- Take out fuel filter from fuel tank.
- Wash fuel filter A with clean kerosene.
- Replace fuel filter in fuel tank.
- Replace fuel cap on fuel tank.



PUMP PRESSURE ADJUSTMENT

1. Remove rear shell.
2. Remove fuel line A from fuel pump by using wrench.
3. Replace pressure gauge at outlet of fuel pump.
4. Adjust pump pressure by turning pressure adjustment screw
5. Replace pressure gauge at outlet of fuel pump.
6. Adjust pump pressure by turning pressure adjustment screw.
7. Turn relief valve clockwise to increase pressure.
8. Turn relief valve counterclockwise to decrease pressure.



MAINTENANCE

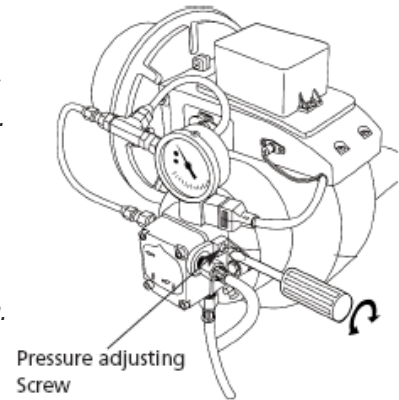
- Set pump pressure to 128 PSI by turning screwdriver.

Note: Pump pressure gauge is not supplied.

NOTE: Use only original equipment replacement parts. Use of alternate or third party components will void any warranty and may cause unsafe operating conditions.

- Stop heater (See OPERATION in this manual).
- If accessory pressure gauge is being used, remove pressure gauge.
- Replace pressure gauge, and plug in end of filter cover.

NOTE: If heater does not ignite when heater is turned on, please turn AIR VENT SCREW counter clockwise to release air, then turn OPERATION SWITCH back on.



TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	REMEDY
Heater fires, but Main PCB shuts heater off after a short period of time. Lamp is flickering, and LED display shows "E1".	<ol style="list-style-type: none"> 1. Incorrect pump pressure 2. Dirty Fuel Filter 3. Nozzle is Dirty 4. Photocell lens is Dirty 5. Photocell not installed properly 6. Photocell Defective 7. Improper electrical connection between Main PCB and Photocell. 	<ol style="list-style-type: none"> 1. Adjust Pump Pressure 3. Clean/replace Fuel Filter 4. Clean/replace Nozzle 5. Clean/replace Photocell 6. Adjust Photocell position 7. Replace Photocell 8. Check wiring connections (See Wiring Diagrams)
Heater will not operate, or motor runs for short time. Lamp flickers and LED display shows "E1".	<ol style="list-style-type: none"> 1. No kerosene in fuel tank 2. Incorrect pump pressure 3. Corroded Spark Plug or incorrect plug gap. 4. Dirty Fuel Filter 5. Dirty Nozzle 6. Moisture in Fuel/Fuel Tank 7. Improper electrical connection between Transformer and Circuit Board 8. Ignitor Wire not connected to Spark Plug 9. Defective Ignitor 	<ol style="list-style-type: none"> 1. Fill tank with fresh kerosene 2. Adjust Pump Pressure 3. Clean/replace Spark Plug 4. Clean/replace Fuel Filter 5. Clean/replace Nozzle 6. Rinse out fuel tank with clean fresh kerosene 7. Inspect all electrical connections. See Wiring Diagrams 8. Re-attach Ignitor wire to Spark Plug 9. Replace Ignitor
Fan does not operate when heater is plugged in and Power Switch is in the "ON" position. The lamp is flickering or on and LED Display shows "E1" or "E2".	<ol style="list-style-type: none"> 1. Thermostat is set too low 2. Broken electrical connection between Main PCB and motor 	<ol style="list-style-type: none"> 1. Rotate thermostat to a higher setting 2. Inspect all electrical connections. See Wiring Diagrams
Lamp is flickering, and LED display shows "E3"	<ol style="list-style-type: none"> 1. Thermostat Switch has failed 2. Short Circuit 	<ol style="list-style-type: none"> 1. Replace Thermostat Switch. 2. Check Wiring Diagrams and connection
Lamp is flickering, and LED display shows "E4"	<ol style="list-style-type: none"> 1. Sensor Disconnected 	<ol style="list-style-type: none"> 1. Check limit control thermostat 2. Check sensor connection
Lamp is flickering, and LED display shows "E5"	<ol style="list-style-type: none"> 1. Temperature limit safety device is overheated 	<ol style="list-style-type: none"> 1. Wait until unit cools down
Poor Combustion	<ol style="list-style-type: none"> 1. Flames extending beyond heater and low heat output 	<ol style="list-style-type: none"> 1. Align the red mark between the air screw and pump body.
Heater does not turn on	<ol style="list-style-type: none"> 1. No power supply to heater 	<ol style="list-style-type: none"> 1. Check/replace Fuse



STATEMENT OF WARRANTY

Mi-T-M warrants this heater to the original retail purchaser only, to be free from defects in material and workmanship for a period of

one (1) year from the date of initial purchase.

This product must be properly installed, maintained and operated in accordance with the instructions provided. Mi-T-M requires reasonable proof of your date of purchase from an authorized retailer or distributor. Therefore, you should keep your sales slip, invoice, or cancelled check from the original purchase.

EXCLUSIONS

1. This Limited Warranty shall be limited to the repair or replacement of parts, which prove defective Mi-T-M shall determine at its reasonable discretion. This warranty does not include wear items: filters, vanes, nozzles, and rotors.
2. This Limited Warranty does not cover any failures or operating difficulties due to normal wear and tear, accident, abuse, misuse, alteration, misapplication, improper installation or improper maintenance and service by you or any third party. Failure to perform normal and routine maintenance on the heater, shipping damage, damage related to insects, birds, or animals of any kind, and damage due to weather conditions are also not covered.
3. In addition, the Limited Warranty does not cover damage to the finish, such as scratches, dents, discoloration, rust or other weather damage, after purchase.

All transportation costs for the return of the damaged product or parts will be the responsibility of the purchaser. Upon receipt of damaged item, Mi-T-M will examine the item and determine if defective. Mi-T-M will repair or replace and return the item, freight pre-paid. If Mi-T-M finds the item to be in normal operating condition, or not defective, the item will be returned freight collect.

This Limited Warranty is in lieu of all other express warranties. Mi-T-M disclaims all warranties for products that are purchased from sellers other than authorized retailers or distributors.

AFTER THE PERIOD OF THE ONE (1) YEAR EXPRESS WARRANTY EXPIRES, MI-T-M DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR APPLICATION. FURTHER, MI-T-M SHALL HAVE NO LIABILITY WHATSOEVER TO PURCHASER OR ANY THIRD PARTY FOR ANY SPECIAL, INDIRECT, PUNITIVE, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.

Mi-T-M assumes no responsibility for any defects caused by third parties. This Limited Warranty gives the purchaser specific legal rights; a purchaser may have other rights depending upon where he or she lives. Some states do not allow the exclusion or limitation of special, incidental or consequential damages, or limitations on how long a warranty lasts, so the above exclusion and limitations may not apply to you. Mi-T-M does not authorize any person or company to assume for it any other obligation or liability in connection with the sale, installation, use, removal, return, or replacement of its equipment, and no such representations are binding on Mi-T-M. Always be sure to specify model number and serial number when making any claim with Mi-T-M.

**For Service or Warranty Consideration, contact
Mi-T-M® Corporation, 8650 Enterprise Drive, Peosta, IA 52068
563-556-7484 / 800-553-9053 / Fax 563-556-1235
Monday - Friday 8:00 a.m. - 5:00 p.m. CST**

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