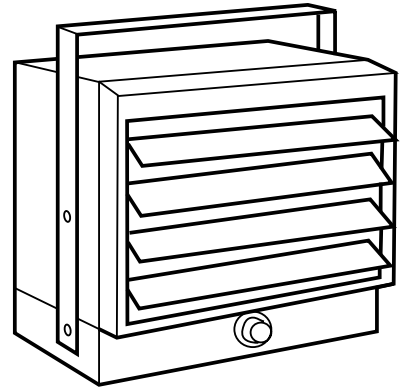




Marley
Engineered Products



FILE #E21609

Model No. MWUH
Horizontal / Vertical Unit Heater
(Field Adjustable from 1.9KW @ 208V to 5KW @ 240V)

Installation & Maintenance Instructions

Dear Owner,

Congratulations! Thank you for purchasing this new heater manufactured by a division of Marley Engineered Products. You have made a wise investment selecting the highest quality product in the heating industry. Please carefully read the installation and maintenance directions shown in this manual. You should enjoy years of efficient heating comfort with this product from Marley Engineered Products... the industry's leader in design, manufacturing, quality and service.

*... The Employees of
Marley Engineered Products*



WARNING



Read Carefully - These instructions are written to help you prevent difficulties that might arise during installation of heaters. Studying the instructions first may save you considerable time and money later. Observe the following procedures, and cut your installation time to a minimum.

TO REDUCE RISK OF FIRE, ELECTRIC SHOCK OR HEATER FALLING:

1. Use minimum 60° copper wire only.
2. Heater air flow must be directed parallel to, or away from, adjacent walls.
3. Observe wall, floor, and ceiling clearance requirements.
4. All wiring must conform to national and local electrical codes and the heater must be grounded as a precaution against possible electrical shock. Heater circuit must be protected with proper fuses. See Table 1 on page 3.
5. The mounting structure and the anchoring hardware must be capable of reliably supporting the weight of the heater and, if used, the mounting bracket.
6. All electrical power must be disconnected at the main service box before installing, inspecting, cleaning or servicing the heater. This is a precaution to prevent possible electrical shock.
7. This heater is **not** suitable for use in hazardous locations as defined by the National Fire Protection Association (NFPA). This heater has hot and arcing (sparking) parts inside. Do not use in areas where gasoline, paint, or flammable liquids are used or stored.
8. This heater is **not** suitable for use in corrosive atmospheres such as marine, green houses or chemical storage areas.
9. This heater must be mounted at least 6 feet (1829 mm) off the floor.
10. This unit only operates on 240 or 208 volts (AC), 60Hz. Improper installation or failure to follow the procedures outlined in this instruction manual can result in serious electrical shock.

SAVE THESE INSTRUCTIONS



INTRODUCTION

Your new heater has unmatched operating flexibility, designed to meet a variety of heating requirements by simply switching a few easily accessible wires located in the base of the unit. With heat output ranging from 6,396 to 17,065 BTU's per hour, this unique feature lets you use a single unit to meet a wide range of heating applications.

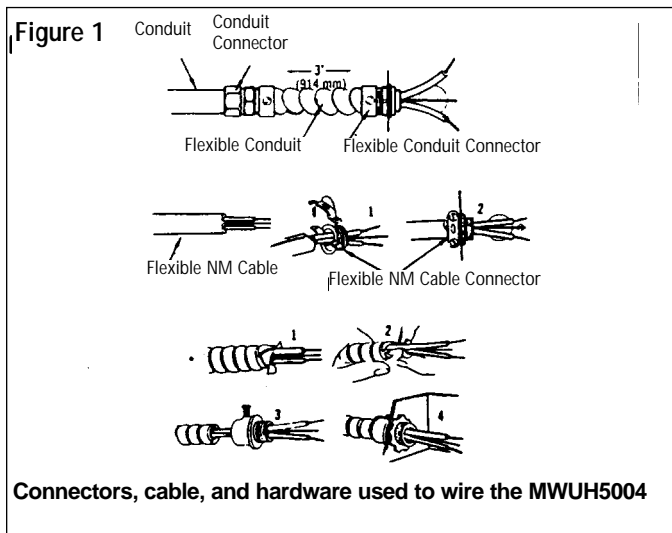
This manual shows you how to install, operate, and maintain your MWUH5004 electric heater.

Hardware Needed

You will need the following hardware for installation:

- Enough 10 ga. min. insulated copper conductor (with ground) wire to run power from the breaker/ fuse to the heater. Only use copper wire rated at least 60° C. Do not use aluminum wire with this unit.
- Proper size fuses or circuit breakers in accordance with the National Electrical Code. Also see Table 1, page 3.
- Wood Screw, 3/8" x 2" (9.5 mm x 50 mm) Lag bolts (Qty. 1 or 2).
- Washer, 3/8" (9.7 mm) (Qty. 2)
- Wire connectors sized to your application.

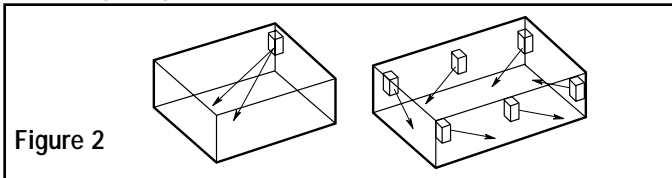
NOTE: For certain applications, conduit may be required (see Fig. 1). Check local electrical codes. Also, if you run the wiring in conduit and wish to be able to turn the heater, be sure to purchase enough flexible conduit to allow the heater to be turned.



FINDING THE BEST LOCATION FOR YOUR HEATER

The heater should be installed out of traffic areas and at least 6' off the floor. The direction of air flow should not be restricted (ie: by columns or machinery) and the air flow should wipe exposed walls, rather than blowing directly at them. When more than one heater is used in an area, the heaters should be arranged so that the air discharge of each heater supports the air flow of the others to provide best circulation of warm air, as indicated in figure 2, below.

Mounting Height



See Specifications, page 4.

Distance from Walls

See Specifications, page 4.

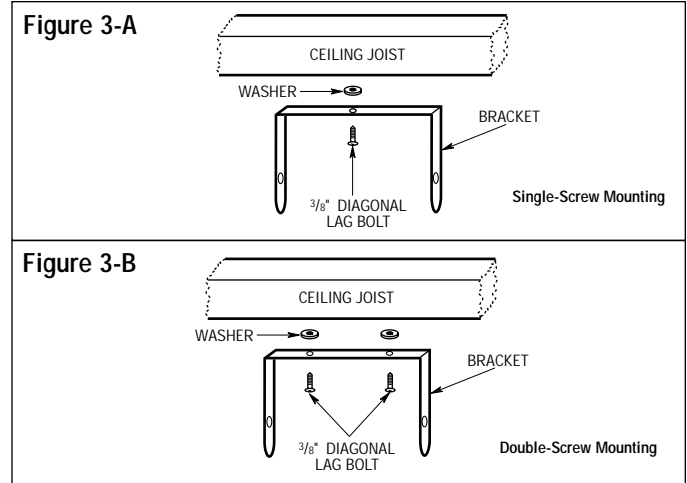
1. Mounting the Bracket

Locate a joist in the ceiling and attach the mounting bracket to the ceiling joist as shown in figures 3-A or 3-B. You will need to remove the mounting bracket from the heating unit by loosening the bracket screws with a wrench and slipping the handle off over the screw heads.

Remember to place a washer on the screws before you insert them through the holes in the mounting bracket and screw them into the joist. Tighten the screws enough to securely hold the heating unit with the air flow pointed in the proper direction.

2. Hanging the Heater

Attach the heating unit to the mounting bracket. Lift the heater up and



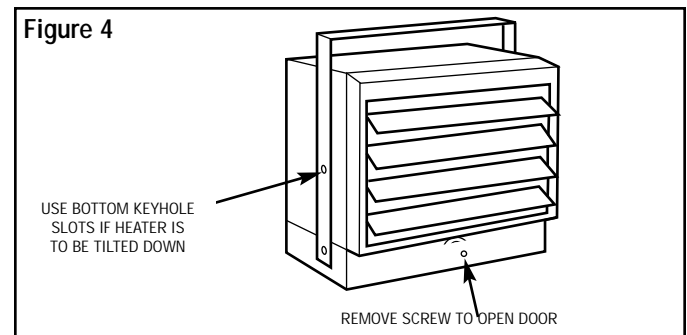
into the mounting bracket. The bracket screws, located on each side of the heating unit, allow the heater to be attached easily to the mounting brackets. If the heater is to be tilted, it must be positioned in the lower keyhole slots (see Fig. 4). Tighten the bracket screws with a wrench so the unit is securely suspended at the desired horizontal or vertical level.

3. Connecting the Power

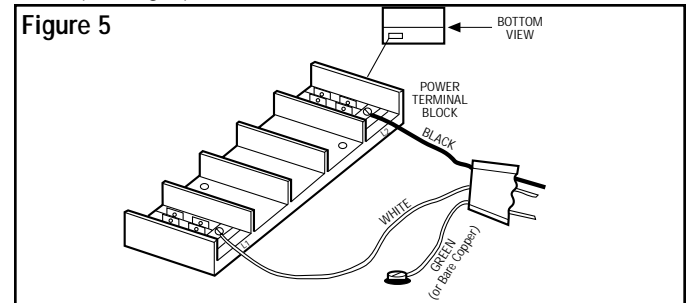
To connect the power to the heater, simply remove the screw from the front of the unit. This allows the hinged bottom to open, providing access to the electrical wiring and connectors. (See Fig. 4)

Attach the cable connectors to the unit (See Fig. 1) and slide the 10 gauge wire through the cable connector. Pull enough of the wire through the connector so you will have enough wire to work with when you make the connections.

NOTE: Wiring compartment volume = 370 in³ (6063 cm³)



Connect the wire to the power terminal block located in the base of the heater (See Fig. 5).



NOTE: To decrease the heat output of the heating unit, see Table 1 and wiring diagram on page 3.

Turn on the power at the main service.

OPERATION

2 Setting the Thermostat

Rotate thermostat knob clockwise to high position. After room reaches desired comfort level, rotate thermostat knob counter-clockwise until the thermostat clicks off. (Note that the fan delay will keep the fan running until the elements cool.) Heater will cycle on and off to maintain room temperature.

NOTE: The first time you operate the unit, it may smoke slightly. This is due to the residual cleaning agents used to clean the element when the heater is manufactured. This is normal and does not indicate a problem with the unit. This condition will stop after the heater has been in operation for a few minutes.

Automatic Fan Delay: The MWUH5004 has an automatic fan delay. When the thermostat calls for heat, fan action is delayed momentarily until the heating elements warm. This prevents the circulation of cold air. When the heater raises the temperature of the room to the thermostat set point, the heating element is turned off but the fan will continue to run until the heating element cools down. This prevents exposing the unit to residual heat, provides a higher comfort level and prolonged element life.

Thermal Cutout: The MWUH5004 is also equipped with a thermal cutout which will automatically shut off the heater in the event of overheating. The heater will turn on when the operating temperature returns to normal. Should the unit overheat and activate the thermal cutout cycle, the cause of the overheating should be determined before further operation.

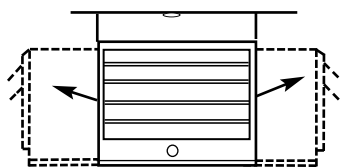
NOTE: If the unit is installed in an area where the temperature is below 50° F, the fan may cycle on and off until the temperature in the room rises above 50° F, this is normal and does not indicate a problem with the unit. As soon as the heater warms the air in the room above 50°, the unit will cycle normally.

Adjusting Air Flow Direction

You can adjust the direction of air flow by:

- A. Turning the unit. If the unit has been installed with a single lag bolt, as shown in the Figure 6, simply turn the entire unit as needed to adjust air flow.
 - B. Tilting the unit. Loosen the bracket screws, tilt the heater to the desired position, and re-tighten the bracket screws (see Figure 4).
- NOTE:** To tilt the heater it must be mounted in bottom keyhole slots of mounting bracket to maintain adequate clearance and prevent possible overheating.
- C. Adjusting the louvers to the desired position.

Figure 6



NOTE: The louvers are designed so they can not be completely closed. Do not attempt to defeat this feature, damage to the unit can result.

ADJUSTING HEAT OUTPUT

Heat output can be increased or decreased by switching wires at the wattage change terminal board. The heater is factory wired to deliver a heat output of 17,065 BTU per hour. Should your particular application require less heat output, refer to Table 1 and change the wires at the wattage change terminal board as shown in Wiring Diagram Fig. 7.

MAINTENANCE



WARNING

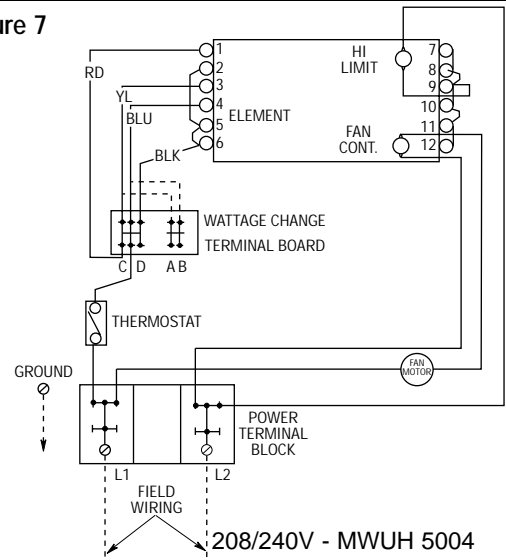


TO PREVENT POSSIBLE ELECTRIC SHOCK, DISCONNECT POWER TO THE HEATER AT THE MAIN SERVICE BOX BEFORE ATTEMPTING TO ADJUST THE HEAT OUTPUT OF THIS UNIT.

TABLE 1. HEAT OUTPUT ADJUSTMENTS

BTU/HR	VOLTS	WATTS	MAX FUSE SIZE	HEATER AMPS	MOVE JUMPERS FROM C-D TO A-B
17065	240	5000	30	20.9	NONE
14215	240	4165	25	17.4	BLUE
11365	240	3332	20	13.9	BLUE & YELLOW
8533	240	2500	15	10.4	BLUE, YELLOW & RED
12799	208	3750	25	18.0	NONE
10659	208	3123	20	15.0	BLUE
8533	208	2500	15	12.0	BLUE & YELLOW
6396	208	1874	15	9.0	BLUE, YELLOW & RED

Figure 7



Because of its rugged design, superior engineering, and high-quality craftsmanship, the MWUH5004 requires little maintenance. With proper care, your electric heater should last a lifetime, but seasonal cleaning is recommended to maintain the efficiency of the heater.



WARNING



TO PREVENT POSSIBLE ELECTRICAL SHOCK, ALL POWER MUST BE SHUT OFF AT THE MAIN SERVICE BEFORE INSPECTING OR CLEANING.

Cleaning the Heating Element

To clean the heating element, loosen (but do not remove) the four Phillips head screws located behind the louvers in the corners of the louver housing. (See Fig. 8) Grasp the louver housing on both sides, lift up, and pull out. This provides access to the heating element. Remove dust or lint with a soft brush or a vacuum cleaner. Replace the louver housing and tighten the Phillips head screws.



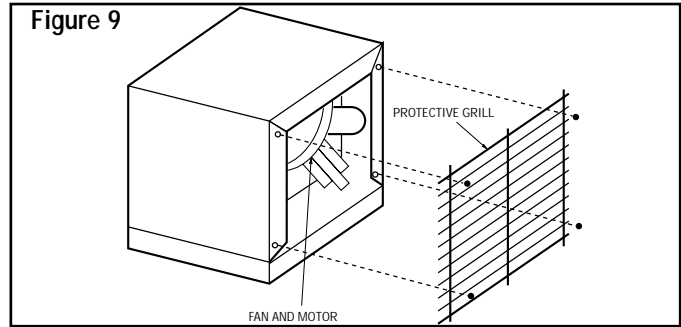
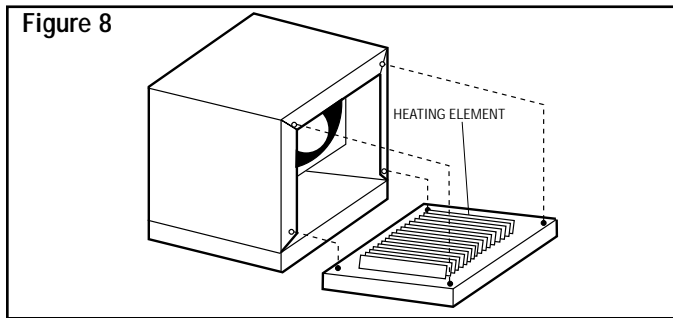
CAUTION



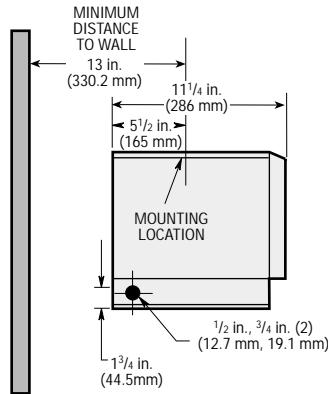
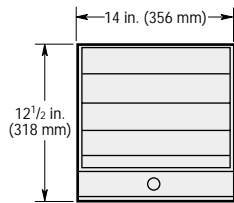
USE CARE TO PREVENT DAMAGE TO INTERNAL HEATER WIRING WHEN CLEANING ELEMENT. MAKE SURE ALL CONNECTIONS REMAIN TIGHT AND ALL WIRING IS ROUTED AWAY FROM ELEMENT FINS WHEN REASSEMBLING THE UNIT. ALLOWING WIRING TO TOUCH THE ELEMENT FINS COULD RESULT IN A FIRE HAZARD.

Cleaning the Fan and Motor

Remove the protective grille from the rear of the heater. This provides access to the fan and motor. Wipe off the fan and motor with a soft cloth or brush. The fan motor does not require lubrication. Replace protective grille. (See Fig. 9.)



Dimension Data



SPECIFICATIONS

FRONT VIEW

SIDE VIEW

Heater Rating and Voltage	BTU per Hr.	Phase	Contactor Built-in	Mounting Height, ft. (mm)				Horizontal Air Throw, ft. (mm)	Min. Distance from Mounting Hole to Wall, in (mm)
				Vertical Installation		Horizontal Installation			
				Min.	Max.	Min.	Max.		
*5000 W @ 240V	17,065	1	No	6'	11'	6'	8'	18'	**13"
4165W @ 240V	14,215								
3332W @ 240V	11,365								
2500W @ 240V	8,533								
*3750W @ 208V	12,799	1	No	6'	11'	6'	8'	18'	**13"
3123W @ 208V	10,659								
2500W @ 208V	8,533								
1874W @ 208V	6,396								

*Heater is shipped from factory wired for these wattages. Heater can be field adjusted to the other wattages (Refer to "Adjusting the Heat Output" on page 4.)

**48" (1219 mm) when heater air flow is between 45° downward and vertical.

LIMITED WARRANTY

All products manufactured by Marley Engineered Products are warranted against defects in workmanship and materials for one year from date of installation, except heating elements which are warranted against defects in workmanship and materials for five years from date of installation. This warranty does not apply to damage from accident, misuse, or alteration; nor where the connected voltage is more than 5% above the nameplate voltage; nor to equipment improperly installed or wired or maintained in violation of the product's installation instructions. All claims for warranty work must be accompanied by proof of the date of installation.

The customer shall be responsible for all costs incurred in the removal or reinstallation of products, including labor costs, and shipping costs incurred to return products to Marley Engineered Products Service Center. Within the limitations of this warranty, inoperative units should be returned to the nearest Marley authorized service center or the Marley Engineered Products Service Center, and we will repair or replace, at our option, at no charge to you with return freight paid by Marley. It is agreed that such repair or replacement is the exclusive remedy available from Marley Engineered Products.

THE ABOVE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE AFORESAID EXPRESSED WARRANTIES ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS AGREEMENT. MARLEY ENGINEERED PRODUCTS SHALL NOT BE LIABLE FOR CONSEQUENTIAL DAMAGES ARISING WITH RESPECT TO THE PRODUCT, WHETHER BASED UPON NEGLIGENCE, TORT, STRICT LIABILITY, OR CONTRACT.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

For the address of your nearest authorized service center, contact Marley Engineered Products in Bennettsville, SC, USA, at 1-800-642-4328. Merchandise returned to the factory must be accompanied by a return authorization and service identification tag, both available from Marley Engineered Products. When requesting return authorization, include all catalog numbers shown on the products.

HOW TO ORDER REPAIR PARTS

In order to obtain any needed repair or replacement parts, warranty service or technical information, please contact Marley Engineered Products Service Center toll-free by calling 1-800-642-HEAT.

When ordering repair parts, always give the information listed as follows:

1. The Model Number
2. The Part Description
3. Date of Manufacture

Part No: 5200-2297-000

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Marley
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