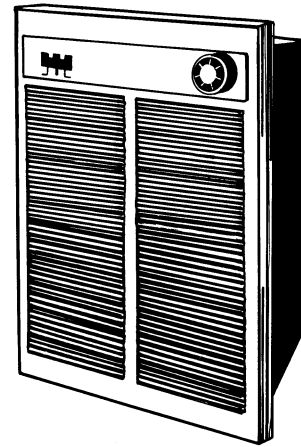




Marley
Engineered Products



B2451 & B2452 Series Wall Heaters

SPECIFICATIONS

MODEL	VOLTS	HZ	AMPS	WATTS	BTUH
B2451	120	60	12.5	1500	5120
B2452	240	60	8.3	2000	6826
	208	60	7.2	1500	5120

DIMENSIONS OVERALL • Height - 14 1/4" • Width - 11"
• Depth - 3 3/4"



File E21609

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 instructions 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 OR ELECTRIC SHOCK:

1. Disconnect all power coming to heater at main service panel before wiring or servicing.
2. All wiring must be in accordance with the National and Local Electrical Codes and the heater must be grounded.
3. Verify the power supply voltage coming to heater matches the ratings printed on the heater nameplate before energizing.
4. This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces.
5. Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock, fire, or damage to the heater.
6. Do not block air intakes or exhaust in any manner. Keep combustible materials, such as crates, drapes, etc., away from heater. Do not install behind doors, furniture, towels, or boxes.
7. A heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable liquids are stored.
8. Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.
9. This heater is not approved for use in corrosive atmospheres such as marine, green house, or chemical storage areas.

SAVE THESE INSTRUCTIONS



CAUTION



DISCONNECT ELECTRICAL SUPPLY BEFORE INSTALLING OR SERVICING THIS HEATER. IMPROPER INSTALLATION, OPERATION OR MAINTENANCE OF ANY ELECTRICAL HEATER CAN CAUSE FIRE OR ELECTRICAL SHOCK HAZARDS.

GENERAL

Counterflow grille louvers direct air downward for even heating throughout area. Heaters are controlled with an adjustable thermostat, which controls temperatures between 40° F and 90° F. The three position selector push button switch provides "OFF" position; "FAN ONLY" position; and "HEAT" position. The heaters have a fast low-mass alloy element; manual reset, and safety over-heat thermal fuse.

UNPACKING

Unpack carefully. Inspect for loose, missing, or damaged parts. In the event of missing components or hidden damage immediately contact your distributor or the delivering carrier concerning discrepancies. The motor/fan assembly has been carefully factory balanced. Care should be taken when handling to avoid damage resulting in unnecessary vibration and noise.

GENERAL SAFETY GUIDELINES

WARNING: Do not block heater in any manner.

Read instructions carefully before attempting to install, operate or service this wall heater. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

1. Follow all state and local safety codes as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).
2. Before attempting any electrical connections to this

heater, make sure that the circuit breaker controlling the circuit to which the heater is to be connected has been thrown to the off position. The circuit breaker panel door should be locked or tagged while heater wiring is being connected.

3. The heater must be grounded in accordance with applicable codes to the ground screw provided in the housing.
4. Protect the power supply cable from kinks, sharp objects, oil, grease, hot surfaces or chemicals.
5. Do not install the heater behind room or cabinet doors or in a position such that the air discharge can be blocked in any manner. Do not install behind towel racks, furniture, drapes or coat racks.
6. Check heater voltage on data plate and make sure that it is the same as the electric service supply.

GUIDE BRACKET ASSEMBLY

Optional tilt-out front plate makes installation easier. Guide bracket and guide screw located in bag assembly. See Fig. 1 and Fig. 2 for installation.

Larger round hole in guide bracket should be placed on locating hole (flared extrusion) on inside surface of front plate between heater assembly and motor bracket below switch (see Fig.2). Line up screw hole on guide bracket with that on plate and install black-oxide screw through front plate into guide bracket to secure it. The guide screw should be screwed into the housing from the outside panel inward (see Fig. 1). The extended threaded portion of the screw acts as the pivot arm for the guide bracket. The guide screw should line up with the large slot in the guide bracket upon installing the heater in the enclosure.

FIG. 1

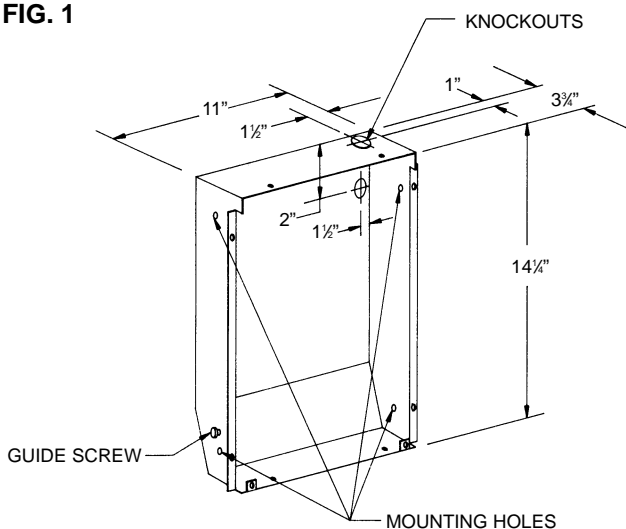
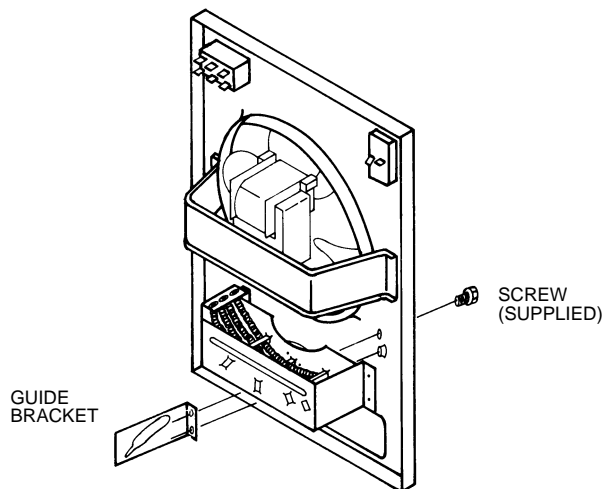


FIG. 2



INSTALLATION

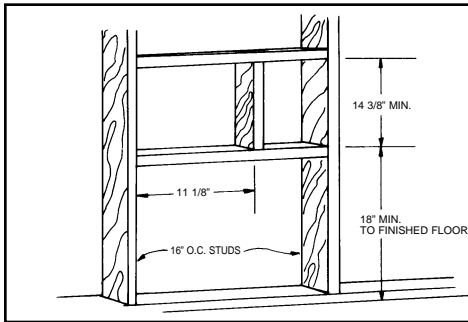


FIG. 3

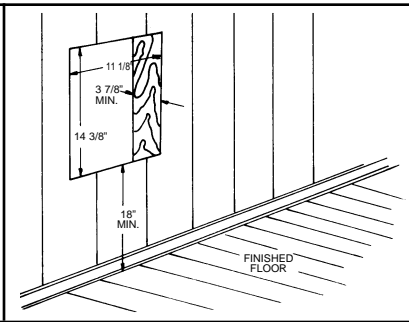


FIG. 4

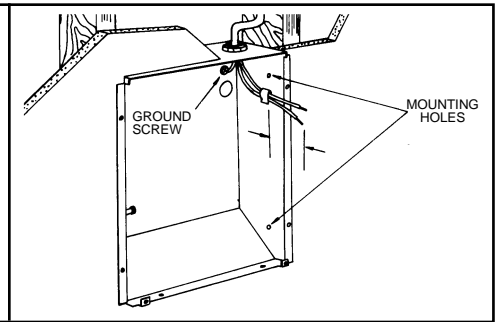


FIG. 5

LOCATION

Select the location so that any doors near the heater will not block the front of the heater when they are opened. Avoid any similar circumstances such as draperies or furniture blocking heater. Heater must be installed at least 8" from adjacent walls and 18" from the finished floor.

EXISTING CONSTRUCTION

- Cut an 11 1/8"W x 14 3/8"H opening in the wall, with one 14 3/8" cut along the edge of a wall stud. A strip approximately 3 1/4" thick x 15" long may be nailed to the adjacent stud so that an attaching surface is provided for each side of the housing. (See Fig. 4)
- Run service cable to wall opening, and through housing knockout, leaving at least 12" extended inside housing. Secure cable to housing using an approved connector.
- Position housing in wall opening with knockouts at top right. Secure housing with nails or screws.
- Complete installation as described in "NEW CONSTRUCTION".

NEW CONSTRUCTION

- Install 2" x 4" headers as shown in Fig. 3. Note 18" minimum distance to finished floor.
- Install housing in 11 1/8" W x 14 3/8" H space framed by 2" x 4" headers and wall stud. Observe "top" notation on label affixed to inside of housing. Before nailing or screwing housing to stud and header, determine thickness of wall paneling or drywall. Flanges of housing must be spaced away from wall studs equal to thickness of paneling or drywall. Printed tape with standard thicknesses indicated are provided at housing corners. Nail or screw housing to 2" x 4" stud and header through holes shown in Fig. 5.
- Run service to housing and connect to desired knockout with approved connector. Leave 8" of cable extending beyond connector for connection to heater assembly. Strip outer jacket from cable back to connector. Connect ground wire under ground screw. Run cable leads under cable clamp. Cut leads 2" beyond clamp and strip wires for connection to heater. (See Fig. 5)
- Place heater assembly in housing by slipping the two slots in the bottom of heater assembly over the two tabs provided on the housing as shown in Fig. 6. Tilt unit up until pin in housing is centered in large area of slot in guide bracket, if installed. Push guide bracket over pin and tilt heater assembly back down until it rests on end of slot in guide bracket.

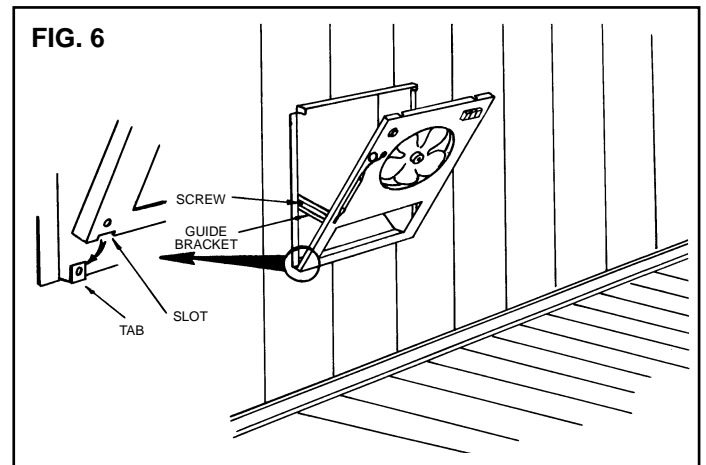


FIG. 6

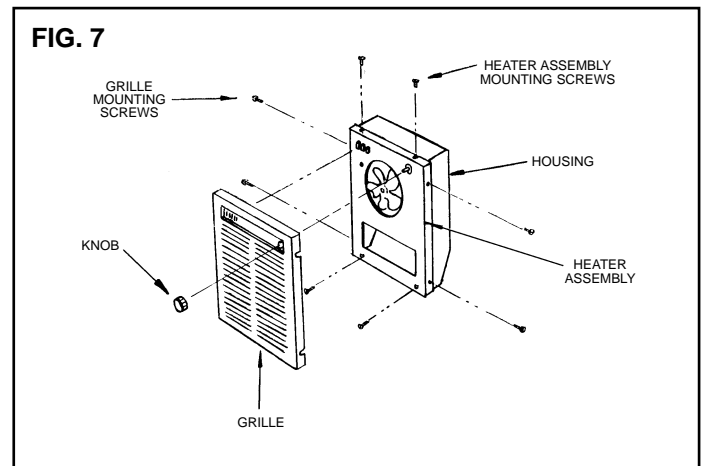
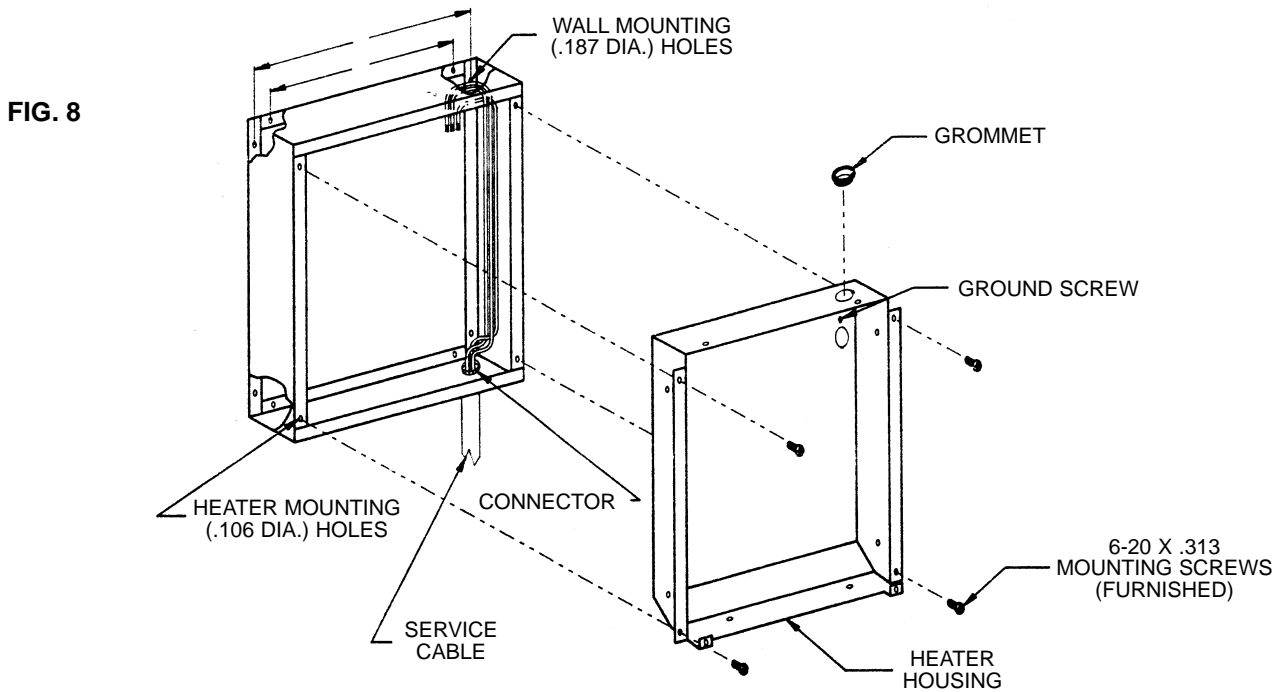


FIG. 7

- Unit can now be wired per local electrical code by connecting service leads from knockout to heater with an approved connector. Check nameplate to be certain proper voltage is being used.
- After wiring is complete, tilt heater assembly up until it is flush with wall, fasten with four screws provided. (See Fig. 7)
- Fasten grille to unit through two slots in each side with four screws provided. Push knob on unit. (See Fig. 7)
- Check heater for proper operation. See operating instructions.

SURFACE MOUNTING:

1. Mount surface wall adapter to wall with appropriate fasteners (furnished by installer) through wall mounting holes. Adapter must be mounted a minimum of 18" above the finished floor. **NOTE: LARGE (.187 Diameter) HOLES are clearance holes for wall mounting screws and SMALL (.106 Diameter) HOLES for mounting heater to adapter.**
2. Allow 30" of service cable, removing 28" of outer jacket, and stripping individual conductors 1/2" from the ends.
3. Run service leads through the hole in the bottom of the surface wall adapter using an approved connector. Install provided grommet in top knockout hole in heater housing. Run cable through grommet.
4. Place heater housing inside of the adapter as shown in illustration above and secure with the (4) 6-20 x 5/16" screws. Connect ground wire under ground screw in housing.
5. Proceed to mount and wire heating unit assembly per HEATER ASSEMBLY INSTALLATION AND WIRING instructions.



OPERATION

The heater is operated using two controls: A thermostat marked **Heat Control** and a three-position switch marked **HEAT, FAN** and **OFF**.

1. **OFF:** Unit is completely disconnected from power source.
2. **FAN:** Fan will circulate air in room without heat.
3. **HEAT:** Set **HEAT CONTROL** in its fully clockwise position and depress **HEAT** button. When the room reaches desired comfort level, turn the **HEAT CONTROL** knob counterclockwise until the fan stops operating. The heater will then maintain that comfort level.

NOTE: Do not energize heater before it is fully assembled; this will cause the limit switch to trip.

LIMIT SWITCH

1. This unit is equipped with a manual-reset, high temperature limit switch. If no heat is delivered with thermostat set fully clockwise, turn thermostat fully counterclockwise, and check red reset button in center of front plate.
2. In order for heater to operate, the limit switch must be reset. Using a toothpick or similar piece of wood, push button IN where it should remain.
3. Turn thermostat fully clockwise and repeat above steps when heater resumes normal operation.
4. If the heater still does not function, or if after a 10-20 minute cool-down period button will not reset (remain IN), have heater checked by a qualified electrician.

NOTE: Due to the sensitivity of the limit switch, it may have tripped from vibration during shipment. It may be necessary to reset switch prior to initial start-up of the heater.

MAINTENANCE

CAUTION: Before attempting any cleaning or maintenance on this heater, open the circuit to the heater by removing the fuse or opening the circuit breaker for the heater circuit.

SIX MONTH

1. Loosen screws securing grille and remove grille. Loosen screws securing heater assembly and allow heater assembly to tilt out until it rests on guide bracket and pin.
2. Vacuum or wipe dust from inside of heater. Take caution not to bend or otherwise damage heater fan blade or other components.
3. Reassemble heater.

YEARLY

After cleaning add 2 or 3 drops of S.A.E. 10W or 20W oil to fan motor bearings.

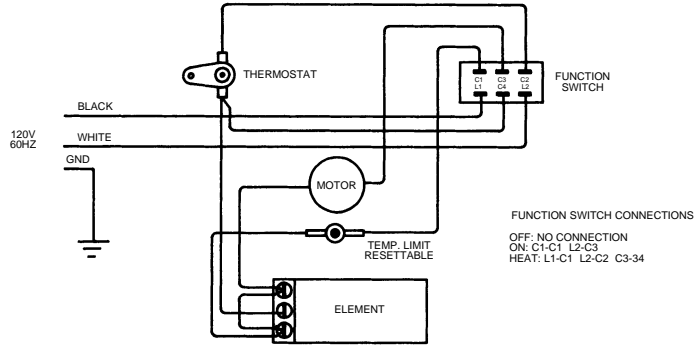
TROUBLE-SHOOTING CHART

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
Heater does not come on.	<ol style="list-style-type: none"> 1. Thermostat set too low (too far counterclockwise). 2. Circuit breaker in distribution panel not closed. 3. Circuit breaker in distribution panel does not stay closed. 4. Resettable temperature limit switch in heater not closed. 5. Open in wiring to heater. 6. Thermostat 7. Thermal Fuse (applicable units only) 	<ol style="list-style-type: none"> 1. Turn the thermostat knob clockwise until heater operates. 2. Close circuit breaker. * 3. A short circuit exists in the heater wiring. 4. Manually close limit switch (See Operation Section "Note"). *If limit switch will not stay in, have the heater checked. * 5. Open main circuit breaker. Check wiring continuity. * 6. Open main circuit breaker to heater, jumper across thermostat terminals. Close main circuit breaker. If heater operates, thermostat should be replaced. Remove jumper after opening main circuit breaker. * 7. Open main supply circuit to heater. Check thermal fuse. If blown, determine cause and correct. Replace thermal fuse.
Fan blade does not turn.	<ol style="list-style-type: none"> 1. Jammed fan blade. 2. Leads not connected to fan motor. 3. Winding in fan motor open. 4. Locked motor bearing. 	<ol style="list-style-type: none"> 1. Remove fan blade obstruction. * 2. Reconnect fan motor leads. * 3. Replace fan motor. 4. Oil motor bearings; if bearings do not unlock, replace motor.
Heater will not shut off.	<ol style="list-style-type: none"> 1. Heat loss from room is greater than heater capacity. 2. Thermostat 	<ol style="list-style-type: none"> 1. Close doors and windows. Provide additional insulation or additional heaters. * 2. Rotate thermostat knob to extreme counterclockwise position. If heater continues to run, replace thermostat.
Heater discharges smoke.	<ol style="list-style-type: none"> 1. Dust, dirt and lint accumulate inside of heater. 	<ol style="list-style-type: none"> 1. Clean heater. See Six Month Maintenance Section for cleaning instructions.
Heater fan operating, but does not discharge warm air.	<ol style="list-style-type: none"> 1. Open heater element.* 2. Wire loose from element assembly. 3. Heater connected to wrong electrical service voltage. 	<ol style="list-style-type: none"> 1. Replace heating unit assembly. * 2. Replace wire. * 3. Check supply voltage.

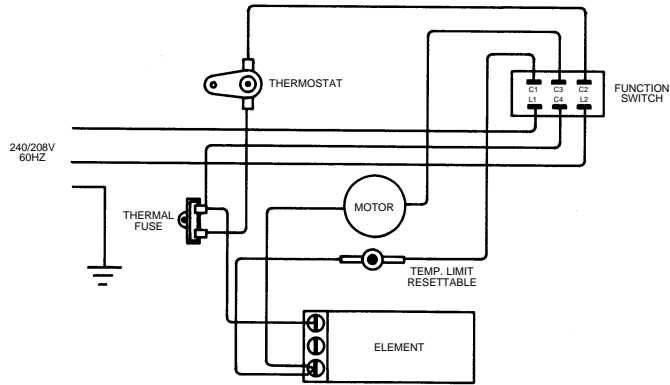
*** WARNING: MUST BE PERFORMED BY QUALIFIED ELECTRICAL PERSONNEL ONLY. CONTACT MANUFACTURER FOR INSTRUCTIONS ON RETURNING UNIT TO AN AUTHORIZED SERVICE CENTER.**

WIRING DIAGRAMS

FIG. 9

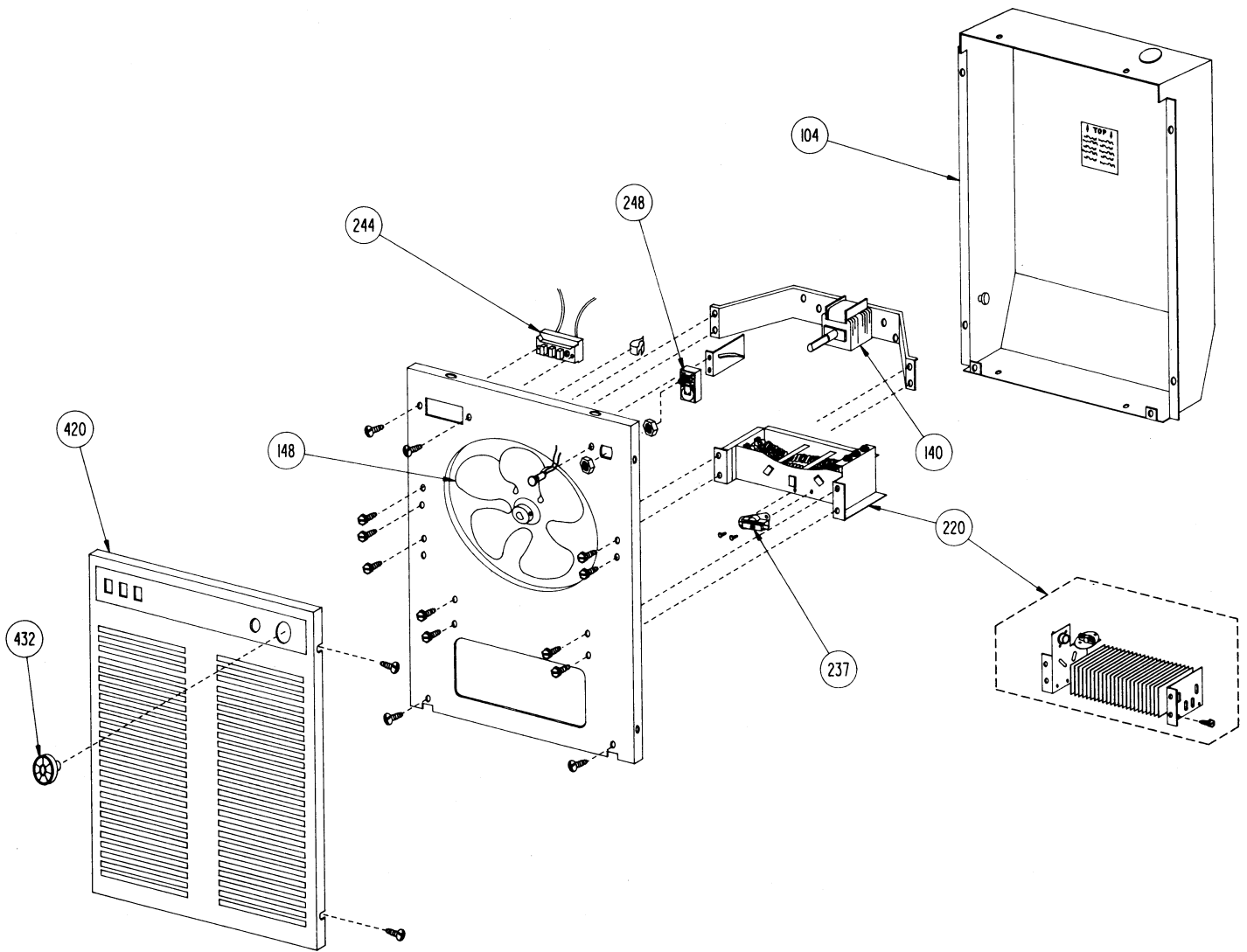


MODEL B2451



MODEL B2452

FIG. 10



REF NO	DESCRIPTION	QTY	MODEL USED ON
420	GRILLE ASSEMBLY	1	ALL
432	KNOB	1	ALL
148	BLADE, 7/32" BORE - 7/8" DIA	1	ALL
244	SWITCH, THREE POSITION	1	ALL
248	THERMOSTAT	1	B2451, B2452
104	HOUSING ASSEMBLY	1	ALL
140	MOTOR 120V ASSY	1	B2451, B2452
220	ELEMENT ASSEMBLY	1	ALL
237	LIMIT SWITCH, MANUAL	1	B2451, B2452
	LIMIT CONTROL	1	
550	THERMAL FUSE	1	B2452

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

Part No. 5200-2537-001

ECR 35194
03-02



Marley
Engineered Products

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Bennettsville, SC 29512 USA