

**CAUTION: DISCONNECT ALL POWER SOURCES BEFORE WORKING ON THIS EQUIPMENT**

## description

The catalog number and electric ratings of the heater and fan motor are given on the nameplate located on the terminal box door.

A wiring diagram showing external and internal wiring is located on the inside surface of the terminal box cover. An automatic reset overtemperature cutout on all units, except 5KW and under single phase, de-energizes the heater in the event of an overtemperature condition. It automatically resets itself after the heater temperature returns to normal. 5KW and under single phase units use manual reset thermal cutouts in the power wiring as overtemperature protection.

## location

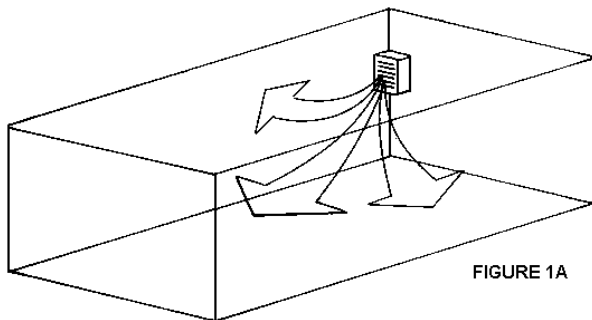


FIGURE 1A

Unit heaters should be concentrated along outside walls or other areas of maximum heat loss, spaced so as to set up a generally circular air movement, each heater supporting the airstream of the others. Distance between unit heaters should not be less than the throw, nor more than twice the throw of the heater. Unit heaters mounted adjacent to door openings should be high velocity units and should blow across, not toward, the opening.

Unit heaters should not be mounted in a horizontal discharge position at heights greater than 15 to 18 feet. Placement of unit heaters at too high a level is the most common cause of an ineffective heating system. In high bay areas and interior spaces of the building, the vertical

## maintenance

Brasch Electric Unit Heaters are designed to operate for extended periods without maintenance. It is important, however, to make sure air passages remain free of dirt and other obstructions that could cause reduced airflow and

Motor overcurrent protection is provided by an automatic reset thermal overload protector built into the motor. Motor branch circuit fuses are built-in when the heater capacity exceeds 40 amps and the motor is 1/8 HP or more as required by UL Standard 1025. All models incorporate an automatic fan delay. When the thermostat calls for heat, fan action is delayed for approximately 30 seconds until the heater element is warm. When the thermostat is satisfied, the fan continues to operate until the heater element is cool. This action prevents circulation of cold air and allows removal of residual heat from the heater element for maximum heat utilization.

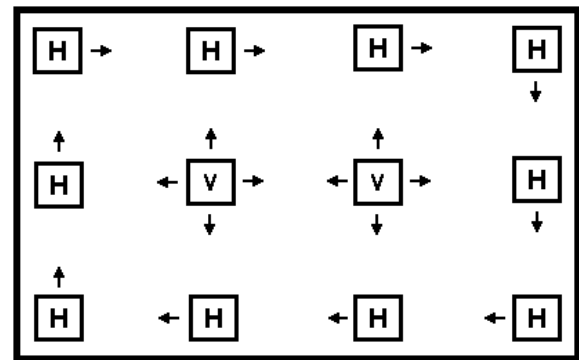


FIGURE 1B

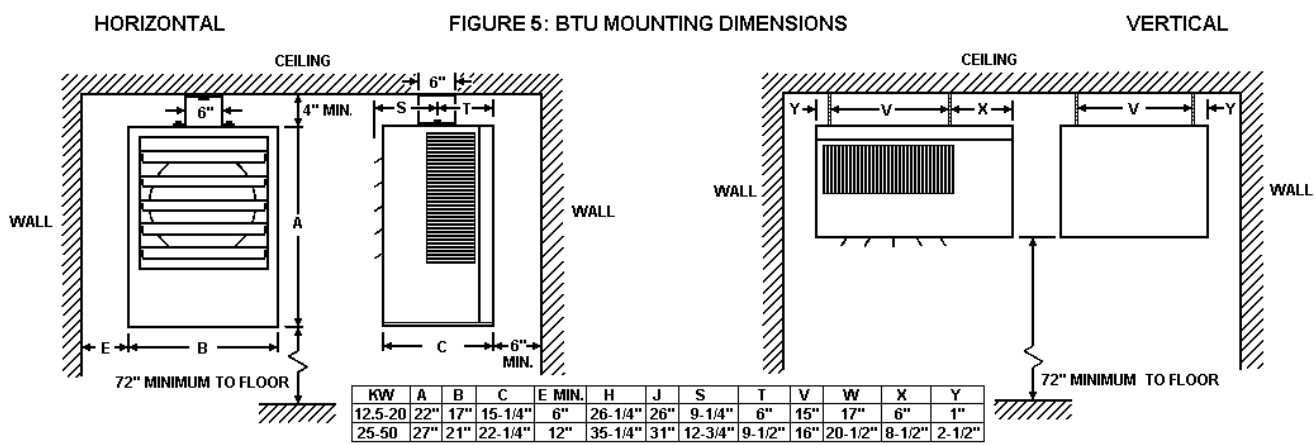
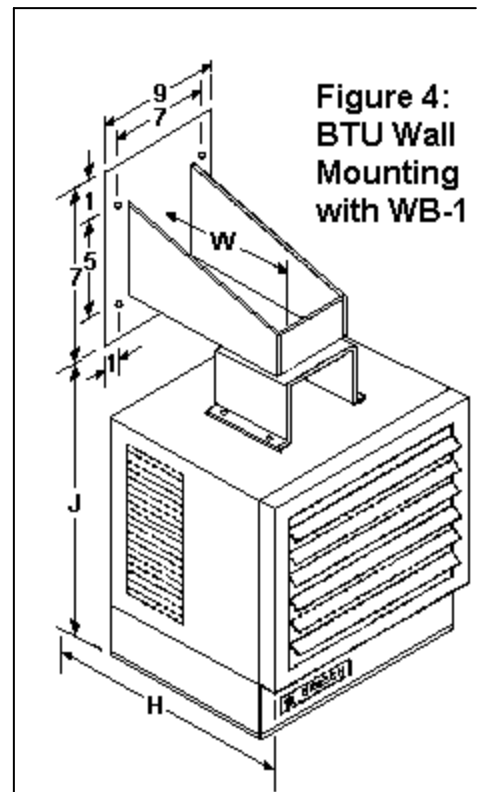
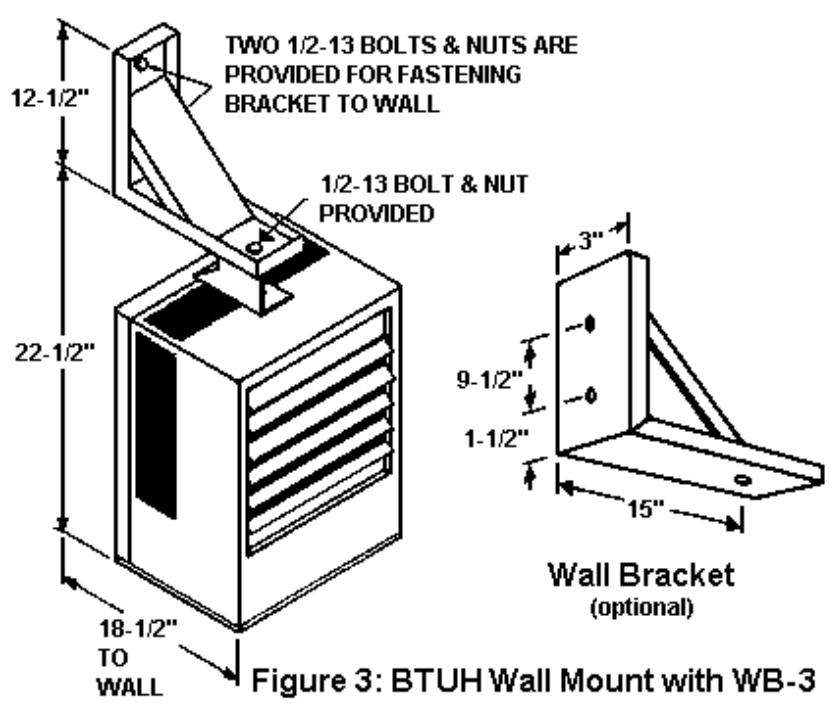
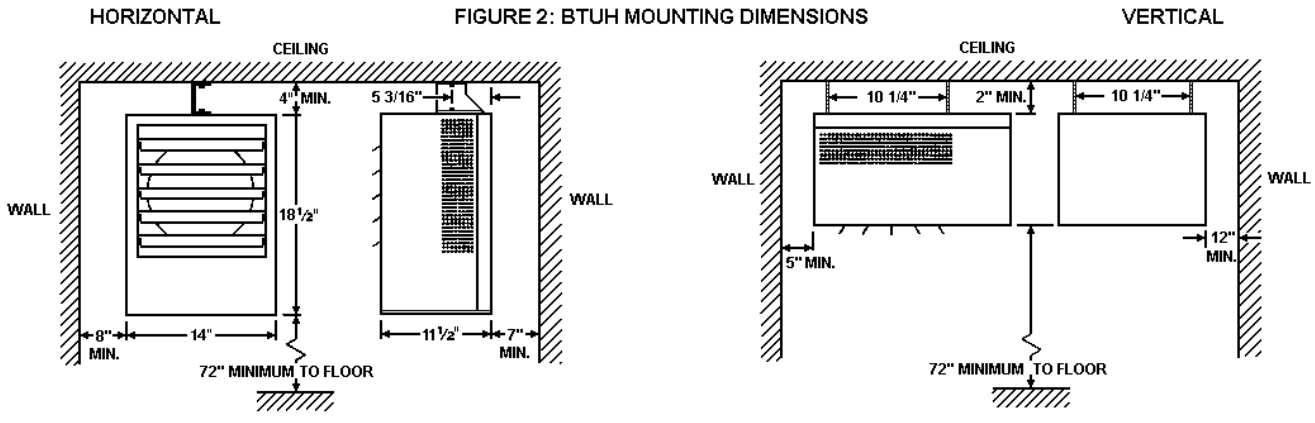
downflow position should be used. Size and selection of heater should be based on recommended mounting height.

Airflow should be directed away from room occupants. Heaters should be located so as not to interfere with possible placement of future plant equipment and should be out of the way of lift trucks or other material handling equipment.

Wall mounted thermostats should be located in such a way that heater discharge air will not blow directly on the thermostat. Recommended thermostat locations are behind the heater or off to the side, where it will sense return air, not discharge air.

subsequent cycling of the heater on the over-temperature cutouts. Motor bearings (sleeve below 1/4 HP, ball bearing 1/4 HP and greater) are permanently lubricated.

# mounting



## horizontal mounting

### BTUH

The heater can be ceiling mounted either stationary, using threaded rod hanger kit TR-3, or with the SB-3 swivel bracket, allowing 360° rotation for control of airflow direction. Wall mounting is achieved with the WB-3 wall mount bracket, which includes the 360° swivel provision.

## vertical mounting

### BTUH

Four 5/16-18 threaded inserts provided in the back of the unit allow the heater to be mounted for downward vertical discharge. The threaded rod kit, TR-3, is available for this purpose. A variety of diffuser kits, four-way, radial and cone, are also available for vertically mounted units.

## wiring

**Caution:** To avoid possible electrical shock, ensure the power is turned off before attempting to wire. All wiring must be in accordance with local electrical codes. This equipment requires a ground as precaution against electrical shock.

1. Connect only to the voltage and frequency specified on the nameplate.
2. Knockouts are located in the back of the heater on the terminal box. The smallest knockout is for control wiring. Choose a power knockout that is suitable for the required size power conductors, plus ground wire, from among the remaining knockouts.
3. Wire used to connect to the heater should have insulation rated to at least 60°C.
4. Connections are to be made as shown on the wiring diagram located inside the terminal box cover.
5. These heaters comply with the National Electrical Code, Fusing Requirements for Fixed Electric Space Heaters, as required by UL.
6. A disconnecting means and ground must be provided in accordance with the National Electrical Code.
7. An optional integral thermostat may be installed to control heating element and fan. If so equipped, the thermostat range is approximately 40°F to 100°F.

## service

**Caution:** Disconnect all sources of power before servicing this equipment. This unit contains energy saving controls. The fan will run automatically to disperse warm air near the ceiling. A 30 to 60 second time delay on startup is normal.

### BTUH

All Brasch BTUH Electric Unit Heaters have built-in safety protection (manual reset thermal cutout in single phase units 5KW and under, automatic reset thermal cutout in all others). Manual reset devices should not be reset without first correcting the problem causing them to open.

To service the fan and fan motor, remove the spring-loaded louvers from the bezel and remove the fan blade. Disconnect the motor leads inside the terminal box. Remove the two screws securing the plate, and the three locknuts and washers that attach the motor to the motor mount. Clip the nylon wire ties from around the leads below the motor mount and pull the leads through the plastic bushing. Push the motor towards the back of the heater until the motor mounting screws clear the motor mount tabs. Drop the motor down and remove.

**Caution:** When replacing the motor, the motor sealing ring must be reinstalled on the new motor and the assembly installed in the motor mount to assure proper cooling of the motor.

If heating element replacement is necessary, please consult the factory for service information.

### BTU

The heater can be ceiling mounted either stationary, using threaded rod hanger kit TR-1, or with the SB-1 swivel bracket, allowing 360° rotation for control of airflow direction. Wall mounting is achieved with the WB-1 wall mount bracket, which includes the 360° swivel provision.

### BTU

Four 1/2-13 threaded inserts provided in the back of the unit allow the heater to be mounted for downward vertical discharge. The threaded rod kit, TR-1, is available for this purpose. A variety of diffuser kits, four-way, radial and cone, are also available for vertically mounted units.

### BTU

All Brasch BTU Electric Unit Heaters have built-in automatic reset thermal cutout(s) in the control circuit for safety protection. The heater may also have additional optional manual reset safety devices that can be reset through access holes in the back of the heater. Manual reset devices should not be reset without first correcting the problem causing them to open.

To service the fan and fan motor, remove the screws holding the bottom of the bezel to the terminal box from inside the terminal box. Use a tool to pry out and down on the bezel to remove.

Remove the side panels to service the heater elements and/or thermal cutouts. Remove the screws retaining the panels from inside the terminal box. Pull out gently on the bottom if the side panel and pull down after the bottom edge of the side panel is clear of the cabinet, exposing the elements.

## **troubleshooting**

### **Heater will not operate.**

- Make sure installation instructions and wiring diagram were followed.
- Disconnect switch or main circuit breaker may be in off position.
- Check for proper control voltage.
- Automatic or manual reset thermal cutout(s) may have opened due to overheating. Let unit cool before resetting manual cutouts. Determine and correct the cause for overheating.
- Check fuses. If open, correct cause of failure before replacing.

### **Heater short cycles.**

- Make sure remote thermostat is not directly in discharge airstream of unit heater.
- Automatic reset thermal cutout may be cycling. If so, correct insufficient airflow condition by ensuring fan operation and absence of obstructions.

### **Improper temperature regulation.**

- Make sure installation instructions and wiring diagram were followed.
- Check thermostat for faulty operation
- Make sure associated control equipment, such as thermostats, are in the correct location, unaffected by other heating sources, and all controls are adjusted according to manufacturer's specifications for existing field conditions.
- Automatic reset thermal cutout may be cycling before room thermostat is satisfied. See "Heater short cycles" above.
- Insufficient heat may be caused by an open thermal cutout, incorrect supply voltage, stalled fan or the heater's capacity may be inadequate for the application.

### **limited warranty**

All Brasch Manufacturing Company, Inc. products covered in this bulletin are warranted against defects in material and workmanship for one year from date of purchase. This warranty does not apply to damage from accident, misuse or alteration; nor where the connected voltage is more than 5% above product nameplate voltage; nor to equipment improperly installed or wired or maintained in violation of installation instructions. This warranty is valid only in the fifty states of the United States. No other written or oral warranty applies. No employee, agent, dealer or other person is authorized to extend warranty on behalf of Brasch Manufacturing Company.

The customer shall be responsible for all costs incurred in the removal or reinstallation and shipping of the product for repairs. Inoperative units should be returned to Brasch, to the attention of Service Manager for or replacement at our option. Product will be returned freight prepaid. Repair or replacement is the exclusive remedy available from Brasch who is not liable for damages of any kind, including incidental and consequential damage.