

# Chromalox®

## Installation and OPERATION INSTRUCTIONS

### SERVICE REFERENCE

DIVISION 4	SECTION MB
SALES REFERENCE (Replaces PV401-1)	PM401-1
161-026689-001	
DATE	SEPTEMBER, 2004

## Type MB Mica-Insulated Band Heaters

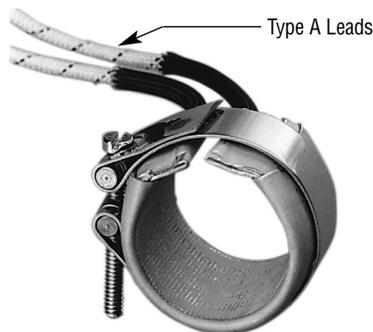


Figure 1 — One-Piece Construction

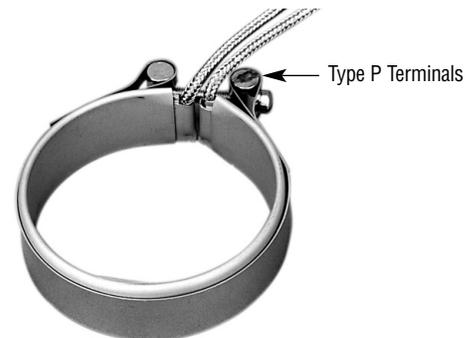


Figure 2 — Two-Piece Construction

### GENERAL

Chromalox type MB Mica-insulated band heaters are primarily designed for use on barrels and dies of plastic injection molding machines and extruders, autoclaves and heating pipe sections up to 10 inches O.D.

1. Heater construction characteristics —
  - A. One-piece stainless steel clamping band.
  - B. A high quality nickel chromium resistor wire is wound on a carefully selected, high quality mica strip which is then enclosed in an aluminum-coated steel sheath.
  - C. Available in either one-piece construction (see Figure 1) or two-piece construction (Figure 2).
  - D. One-piece construction equipped with either Type “A” leads consisting of stranded nickel leadwire protected by stainless steel woven braid or Type “P” post terminals designed to prevent excess torsion during tightening of connections.

**Note:** If loose post terminal is encountered, tighten bottom nut to ceramic bushing.

- E. Two-piece construction available with Type “P” post terminals only.
- F. Heavy construction of clamp and bolt allow firm grip on heater and tight heater fit to pipe or barrel.

### ⚠ WARNING

**The system designer is responsible for the safety of this equipment and should install adequate back-up controls and safety devices with their electric heating equipment. Where the consequences of failure could result in personal injury or property damage, back-up controls are essential.**

### INSTALLATION

1. Before installing, check your band heater, the surface to be heated should be clean. Remove any material or dirt and check surface for irregularities which could cause hot spots.
2. After making sure that the heater is seated properly, the clamping band should be tightened down as much as possible. **After initial heat-up, the clamping band should be retightened in order to maintain efficient heat transfer.** **Note:** During installation, do not pry open the one-piece construction band heater more than it opens naturally when the clamping band is disengaged. This could cause insulation breakage resulting in premature failure of the heater.
3. Thermal insulation may be used to reduce heat losses providing insulation does not come in contact with heaters.

### ⚠ WARNING

**FIRE HAZARD. Since heaters are capable of developing high temperatures, extreme care should be taken to:**

- A. Avoid mounting heaters in an atmosphere containing combustible gases and vapors.
- B. Avoid contact between heaters and combustible materials.
- C. Keep combustible materials far enough away to be free of the effects of high temperatures.

## WIRING

### WARNING

**ELECTRIC SHOCK HAZARD. Disconnect all power before installing or servicing heater. Failure to do so could result in personal injury or property damage. Heater must be installed by a qualified person in accordance with the National Electrical Code, NFPA 70.**

**ELECTRIC SHOCK HAZARD. Any installation involving electric heaters must be performed by a qualified person and must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.**

1. Power supply voltage should be the voltage specified on heater. Wiring must be in accordance with local and National Electrical Codes.
2. Use high-temperature manganese nickel leadwire or alloy busbar for electrical connections at the heater itself.
3. Standard 2 piece mica band heaters can be wired in parallel and operated on 240 volts or wired in series and operated on 480 volts.
4. Protection with properly sized fuses and breakers is important to minimize hazards.

## OPERATION

1. Do not operate heaters at voltages in excess of that stamped on the heater since excess voltage will shorten heater life.
2. **CAUTION:** Sheath temperatures of heaters should not exceed 900°F. Do not operate heaters under conditions that result in temperatures higher than the recommended maximum sheath temperature since excess temperatures can cause premature heater failure
3. Electrical terminals should be protected from spillage of plastics, water, oil and their vapors which can create electrical hazards and/or heater failure.

## MAINTENANCE

### WARNING

**ELECTRIC SHOCK HAZARD. Disconnect all power before installing or servicing heater. Failure to do so could result in personal injury or property damage. Heater must be installed by a qualified person in accordance with the National Electrical Code, NFPA 70.**

1. Maintain good contact between heater and work cylinder by periodically checking clamping tightness of band. Repeated cycling of overheat controls indicates the need for tightening the clamping band.

2. Make certain that both the terminals and band are free from contact with oil, liquids or other foreign matter.
3. Check electrical connections at heater terminals and tighten if necessary.
4. Check overheat operation to insure heater protection.

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