

# Chromalox®

## Installation and MAINTENANCE INSTRUCTIONS

### SERVICE REFERENCE

|                                      |             |
|--------------------------------------|-------------|
| DIVISION 4                           | SECTION OCE |
| SALES REFERENCE (Supersedes PN402-3) | PN402-4     |
| 161-057951-001                       |             |
| DATE                                 | MAY, 2023   |

## Type OCE Open Coil Elements



Nominal 2" size O.D. 1-7/8"  
Nominal 3" size O.D. 2-3/4"

### GENERAL

**WARNING: This heater is not intended for use in hazardous atmospheres where flammable vapors, gases, liquids or other combustible atmospheres are present as defined in the National Electrical code. Failure to comply can result in explosion or fire.**

The OCE type (open coil element) electric heating element(s) supplied herein is ruggedly constructed and designed for long life. When properly installed, operated and maintained, it should give dependable, trouble free service.

The OCE type elements are available in 2" and 3" nominal sizes. The two sizes are intended for installation inside a metal pipe or tube

and can be from 2' to 60' and more in length.

Since excessive temperatures may permanently damage the heater and cause premature failure, the use of temperature regulating and limiting controls is recommended.

**CAUTION: Users should install adequate back-up controls and safety devices with their electric heating equipment. Where the consequences of failure may be severe, back-up controls are essential. Although the safety of the installation is the responsibility of the user, Chromalox will be glad to make equipment recommendations.**

### INSTALLATION

**WARNING: Hazard of Shock. Disconnect all power before installing heater.**

High heating efficiency, low element temperatures and longer heater life result when the OCE type elements are properly installed.

1. Precaution should be taken while unpacking, handling and installing the ceramic insulators to avoid chipping or cracking. Heaters with damaged insulators should be returned to the factory for repair, contact your local sales office for return authorization.
2. Heater mounting must allow for linear expansion. A minimum allowable length would be 1/3" per foot of heater length. When heater assembly is mounted inside a metal pipe, provide proper clearances for maximum efficiency and heat transfer. Allow at least 1/8" clearance between the ceramic insulators and the wall of the pipe for ease of installation.
3. The OCE type elements are designed with certain amount of flexibility to permit easy installation in cramped areas. However, the element should only be bent in a vertical plane with ground strap on the bottom. The minimum radius is 12". A shorter radius may result in electrical shorts and/or other problems causing short

heater life. Heating elements should not be bent in a horizontal plane.

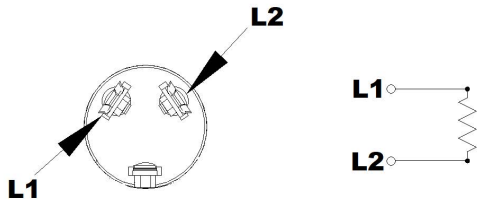
4. **DANGER: Hazard of Fire.** Since the basic OCE element is capable of developing high temperatures, extreme care should be taken to:
  - A. Avoid mounting or exposing elements in an atmosphere containing combustible gases and vapors.
  - B. Avoid contact between the heating elements and combustible materials.
  - C. If the heating element is mounted in a pipe or tube, be sure the inside surface of this pipe or tube is clean of all foreign materials, especially any that would be combustible.
5. The OCE type element **must not be mounted in the vertical position** as the resistance wire could sag thus causing uneven heating or even short circuit.
6. Installations designed for liquid heating must be provided with low level shutdown equipment. **WARNING: Heaters installed in liquid heating applications can cause fire or explosion if operated in "run dry" or low level condition.**

## WIRING

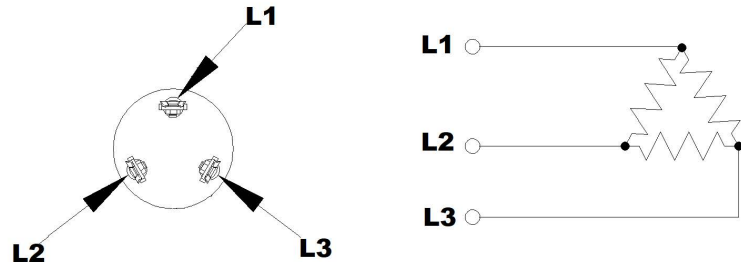
**WARNING: Hazard of Shock. OCE type elements contain exposed electrical terminals and must be properly guarded to prevent electrical shock. Any installation involving electric heaters must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.**

1. Electrical wiring to heating elements must be sized and installed in accordance with the National Electrical Code and applicable local codes by a qualified person as defined in the NEC.
2. Temperatures at the heater terminals will require the use of manganese nickel or equivalent temperature lead wire. (Type TGS, TGT or TGGT are recommended.)

Single Phase OCE Element Wiring



Three Phase OCE Element Wiring



## OPERATION

1. Do not operate heaters at voltages in excess of that stamped on the heater since excess voltage will shorten heater life.
2. Heaters should not be operated in environments with factors that can destroy the electrical insulating characteristics of the

ceramic insulators. Foreign contaminants can create leakage (shock) hazards, permanent heater damage or cause heater failure and therefore should be avoided.

## MAINTENANCE

**WARNING: Hazard of Shock. Disconnect all power to heater before servicing or replacing the heaters.**

1. Make certain both the terminals and the ceramic insulators are free from contact with oil, liquid or other foreign matter.

**NOTE:** Chromalox cannot be responsible for failures or damage caused by contamination on the ceramic insulators. Make certain the heaters are not exposed to contaminants.

2. Check electrical connections at heater terminals and tighten if necessary. This will help avoid hot terminals which may destroy wire insulation or heater terminals.
3. Check overheat operation to assure heater protection.

### Limited Warranty:

Please refer to the Chromalox limited warranty applicable to this product at [http://www.chromalox.com/customer-service/policies/terms\\_of\\_sale.aspx](http://www.chromalox.com/customer-service/policies/terms_of_sale.aspx).

**Chromalox**<sup>®</sup>  
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