

Chromalox®

Installation, Operation

and

RENEWAL PARTS IDENTIFICATION

SERVICE REFERENCE

| | |
|--------------------------------------|---------------------|
| DIVISION 4 | SECTION CVCH, CVCHS |
| SALES REFERENCE (Supersedes PE432-1) | PE432-2 |
| 161-058123-001 | |
| DATE | APRIL, 1999 |

Type CVCHS Circulation Heaters

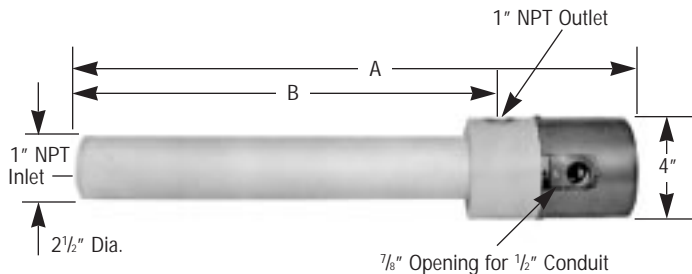


Figure 1

Specifications – Table A

| Model | Volts | Phase | kW | Dimensions (In.) | |
|-----------|-------|-------|-----|---------------------------------|--------------------------------|
| | | | | A | B |
| CVCHS-151 | 120 | 1 | 1.5 | 17 ⁵ / ₁₆ | 12 ³ / ₈ |
| CVCHS-151 | 240 | 1 | 1.5 | 17 ⁵ / ₁₆ | 12 ³ / ₈ |
| CVCHS-201 | 120 | 1 | 2.0 | 17 ⁵ / ₁₆ | 12 ³ / ₈ |
| CVCHS-201 | 240 | 1 | 2.0 | 17 ⁵ / ₁₆ | 12 ³ / ₈ |
| CVCHS-251 | 120 | 1 | 2.5 | 21 ⁵ / ₁₆ | 16 ³ / ₈ |
| CVCHS-251 | 240 | 1 | 2.5 | 21 ⁵ / ₁₆ | 16 ³ / ₈ |
| CVCHS-301 | 120 | 1 | 3.0 | 21 ⁵ / ₁₆ | 16 ³ / ₈ |
| CVCHS-301 | 240 | 1 | 3.0 | 21 ⁵ / ₁₆ | 16 ³ / ₈ |

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 CVCHS is a clean solution or corrosive solution circulation heater ideally suited for sidarm heating, in-line circulation and engine preheaters.

The INCOLOY® sheathed tubular heating element is centered in a CPVC pipe body. This material is a good thermal insulator in reducing heat loss and eliminating the need for support jackets. Its screwplug type mounting provides easy removal when necessary.

The CVCHS has a stainless steel flange.

An integral 60° — 180°F range thermostat is provided to control outlet temperatures. However, this control does not fail-safe. Therefore automatic reset (195°F) cutout is provided.

WARNING: 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.

1. When the CVCHS Circulation Heater is vertically mounted, the terminal housing will be at the top of the heater.
2. When mounting the heater horizontally, the outlet pipe **must** be up. This is to prevent any inadvertent drainage of the heater.
3. No additional support other than the connecting pipes is needed.

4. Make piping connections to either new or existing plumbing at the 1" x 11 1/2" N.P.T. threaded inlet and outlet as shown in Figure 1.
5. **DANGER: Hazard of Fire.** Provide minimum of 6" spacing from chamber and related piping to nearest combustible material. Avoid operation of heater near combustible fluids or in combustible vapor or gas laden atmosphere.
6. Provide adequate space at terminal end to permit withdrawal of the heater from chamber should servicing be required.

WIRING

WARNING: Hazard of Shock. Any installation involving electric heaters must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.

1. Be sure line voltage matches heater voltage (on nameplate).
2. Electric wiring to heater must be installed in accordance with local and National Electrical Codes by a qualified person as defined in the NEC.
3. Remove terminal cover by backing out screw in center of cover and feed wires through the conduit bracket.
4. Connect one wire to the pigtail lead and one to the unused ther-

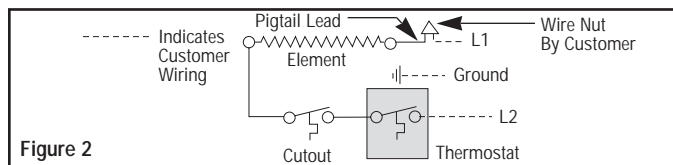


Figure 2

5. To set thermostat, turn the slotted screw at top of thermostat counter-clockwise until flat side is facing terminals. This is the "OFF" position. Next, turn the slotted screw clockwise until slot in screw points to the desired temperature shown on scale. **Note:** Scale is marked in increments of 60°F. Replace terminal cover. (See Figure 3)

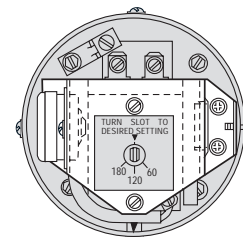


Figure 3

OPERATION

WARNING: Type CVCHS Circulation Heaters are equipped with INCOLOY® heating elements and centered in a CVPVC pipe body. It is the responsibility of the user to know the chemical composition of the corrosive solution and the character of the materials entering the solution as well as the corrosive effect of the solution upon the heating elements and chamber. Chromalox cannot warrant any electric circulation heater against failure by sheath corrosion if such failure is the result of operating conditions beyond our control.

WARNING:

1. Do not permit heater to operate when liquid has been drained from chamber. Dry operation of the heater will cause failure and possible fire hazard.
2. Terminal ends of heater must be protected from drippings, condensation, spray or direct spill-over of material. Their presence at the terminals may damage heater electrical insulation. Liquid-tight terminal enclosures are available to protect heater. Check Factory.

MAINTENANCE

1. **WARNING: Hazard of Shock.** Disconnect all power before servicing heater.
2. If automatic reset cutout fails or will not reset, do not bypass.
3. Remove heating element assembly periodically to check heater sheath for scaling, corrosion or excessive oxidation. Correct operating conditions to minimize sheath deterioration.
4. Periodically check temperature control operation to insure accurate and safe process operation.
5. Check all electrical connections periodically and retighten connections which may have loosened in service. Replace wire and wire terminals which shows signs of oxidation which would interfere with establishment of reliable electrical connections.

RENEWAL PARTS IDENTIFICATION

| Model | Volts | kW | Heater Assembly (Heating element and flange only) |
|-----------|-------|-----|---|
| CVCHS-151 | 120 | 1.5 | 155-058147-007 |
| CVCHS-151 | 240 | 1.5 | 155-058147-008 |
| CVCHS-201 | 120 | 2.0 | 155-058147-001 |
| CVCHS-201 | 240 | 2.0 | 155-058147-002 |
| CVCHS-251 | 120 | 2.5 | 155-058147-003 |
| CVCHS-251 | 240 | 2.5 | 155-058147-004 |
| CVCHS-301 | 120 | 3.0 | 155-058147-005 |
| CVCHS-301 | 240 | 3.0 | 155-058147-006 |

| Parts Common To All Heaters | |
|--------------------------------|----------------|
| Temperature Control Thermostat | 300-057474-001 |
| Automatic Reset Cutout | 300-026629-005 |
| O-Ring Gasket P/N | 132-057731-001 |

Note: When ordering parts for Model Numbers suffixed by "XX" or any other letter or letters not specifically identified on this instruction sheet, order Renewal Parts on special order basis, giving name of part required, as well as the part number, model number and description of the complete circulation heater.

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Chromalox®
PRODUCT SERVICE
 2150 N. RULON WHITE BLVD., OGDEN, UT 84404
 Phone: 1-800-368-2493

WIEGAND INDUSTRIAL DIVISION
 EMERSON ELECTRIC CO.

