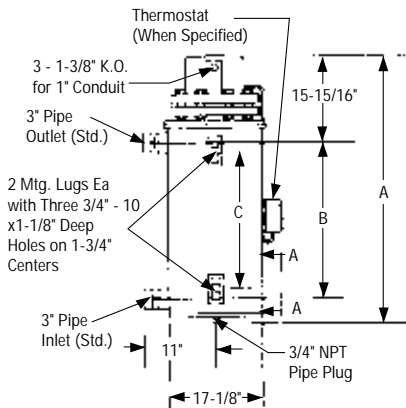


Chromalox®

Installation and RENEWAL PARTS IDENTIFICATION

Type NWHO(F)-27 Series Circulation Heater (for Regular and Fuel Oil Heating)



Specifications — Table A

Regular Oil Heaters							
Model	Volts	Phase	kW	W/in ²	Dimensions (In.)		
					A	B	C
NWHO-2780R15	240 or 480	3	80	20	77-9/16	52	48-1/2
NWHO-2790R15	240 or 480	3	90	20	81-9/16	56	52-1/2
NWHO-27100R15	240 or 480	3	100	20	87-9/16	62	58-1/2
NWHO-27120R15	240 or 480	3	120	20	97-9/16	72	68-1/2
Fuel Oil Heaters							
NWHO-2750R15	240 or 480	3	50	12	77-9/16	52	48-1/2
NWHO-2760R15	240 or 480	3	60	12	87-9/16	62	58-1/2
NWHO-2770R15	240 or 480	3	70	12	97-9/16	72	68-1/2

Dimensions and ratings vary according to customer requirements. Check engineering drawing for specifications. F-Denotes heater is baffled, i.e., NWHOF

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.

Hazardous area terminal enclosures are available, consult your local Chromalox representative for details.

The NWHO-27 series is a general-purpose oil circulation heater intended for use indoors.

The 27 or 36 steel sheathed tubular elements are welded to a removable steel flange and centered in a 10 inch diameter steel heating chamber.

Depending upon the specifications, the NWHO-27 may or may not be factory equipped with AR or other Chromalox thermostats. Such thermostats function to control outlet temperatures and limits internal temperature under abnormal flow conditions. These controls do not fail-safe. Thermocouples are also available as an option.

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 installation is the responsibility of the user, Chromalox will be glad to make equipment recommendations.

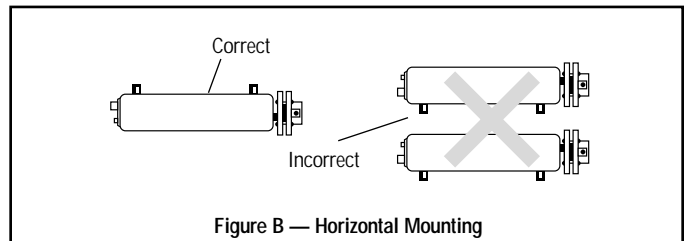
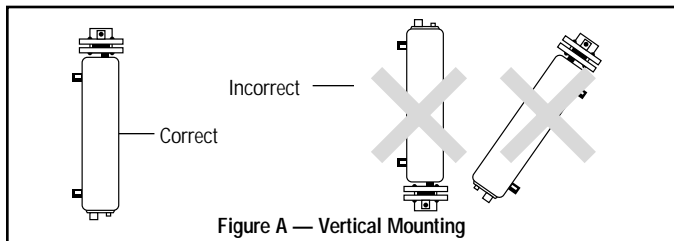
INSTALLATION

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

1. Vertical mounting (axis of chamber vertical as in sketch above) is preferred. (Terminal housing at top of heater) (Figure A)
2. When mounting heater horizontally, inlet and outlet MUST be up. In any other position, heater cannot be purged of air and elements may be seriously damaged. (Figure B)
3. This series of circulation heaters are provided with mounting lugs to support the heater chamber. Refer to sketch above for location of these mounting lugs.
4. Mount heaters to permit unrestrained expansion of chamber due to temperature. This can be accomplished by using a slotted mount-

ing assembly on either of the lugs.

5. **DANGER: Hazard of Fire.** Provide minimum of 6" spacing from a 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.
7. If two or more heaters are needed to provide the needed heating capacity, arrange them for series oil flow.
8. **DANGER: Possible Explosion.** A pressure relief valve should be provided by customer at outlet of vessel. There should be no other valving between vessel and valve.



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. Electrical wiring to heater must be installed in accordance with the National Electrical Code and local electrical codes by a qualified person as defined in the NEC.
2. Because of the high operating temperatures expected, aluminum wiring is not recommended.
3. Refer to wiring Diagram Figure C for typical wiring used for connecting the NWHO-27 series heater.
4. Three 3 phase circuits is a typical design for these heaters. Other circuit arrangements are often supplied depending upon customer specifications or amperage rating. Check engineering drawing for specific wiring diagram of custom orders.

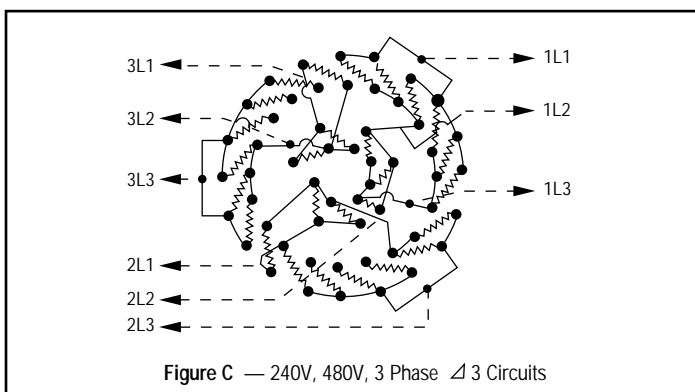


Figure C — 240V, 480V, 3 Phase Δ 3 Circuits

OPERATION

1. Do not heat materials that are corrosive to the heating element sheath or chamber. For oil heating service, condensate drain may be provided from bottom of chamber. Check factory.
2. Terminal ends of heater must be protected from drippings condensation, spray or direct spill-over of material whose presence at the

terminals may damage heater's electrical insulation. Liquid-tight terminal enclosures are available to protect heater. Check factory.

3. If foreign material is carried by the oil flow, install suitable filters in the inlet pipe to the heater.
4. Do not allow heater to operate when fluid flow is interrupted.

MAINTENANCE

WARNING: Hazard of Shock. Disconnect all power before servicing heater.

1. Remove heating element assembly periodically to check heater sheath for corrosion or excessive oxidation. Correct operating conditions to minimize sheath deterioration.
2. Periodically check temperature control and pressure temperature

safety limit control operation to insure accurate and safe process operation.

3. Check all electrical connections periodically and retighten connections which may have loosened in service. Replace wire terminals which show signs of oxidation which would interfere with establishment of reliable electrical connections.

RENEWAL PARTS IDENTIFICATION

Order Renewal Parts on a Special Order Basis. Give the name of the part number, voltage, and wattage to your Chromalox Representative for identification of renewal parts.

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Chromalox warrants only that the Products and parts manufactured by Chromalox, when shipped, and the work performed by Chromalox when performed, will meet all applicable specification and other specific product and work requirements (including those of performance), if any, and will be free from defects in material and workmanship under normal conditions of use. All claims for defective or nonconforming (both hereinafter called defective) Products, parts or work under this warranty must be made in writing immediately upon discovery, and in any event, within one (1) year from delivery, provided, however all claims for defective Products and parts must be made in writing no later than eighteen (18) months after shipment by Chromalox. Defective and nonconforming items must be held for Chromalox's inspections and returned to the original f.o.b. point upon request. THE FOREGOING IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES WHATSOEVER, EXPRESS, IMPLIED AND STATUTORY, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

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