

# Chromalox®

## Installation, Operation and RENEWAL PARTS IDENTIFICATION

### SERVICE REFERENCE

DIVISION 4	SECTION NWH
SALES REFERENCE (Supersedes PE404-7)	PE404-8
161-048467-001	
DATE	APRIL, 2005

## NWH-JR Circulation Heater For Water Heating

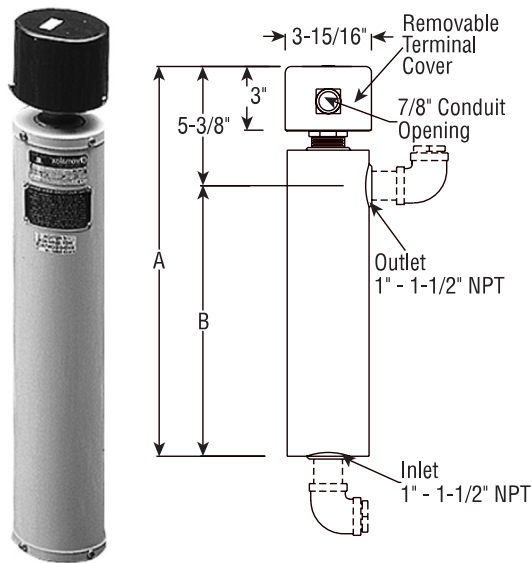


Figure 1

### Specifications – Table A

Model	Volts	kW	Watt Density	Dimensions (In.)	
				A	B
<b>Galvanized Iron Construction</b>					
NWHJRG-01-01P5-E1	120	1.5	82	18	12-3/8
NWHJRG-01-002P-E1		2	83		
NWHJRG-01-02P5-E1	or	2.5	78	22	16-3/8
NWHJRG-01-003P-E1	240	3	78		
<b>Brass Construction</b>					
NWHJRB-01-01P5-E1	120 or	1.5	82	18	12-3/8
NWHJRB-01-002P-E1	240				
NWHJRB-01-02P5-E1	240	2.5	78	22	16-3/8
NWHJRB-01-003P-E1	240	3	78		

## GENERAL

### ⚠ WARNING

**FIRE/EXPLOSION HAZARD. 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 personal injury or property damage.**

The NWH-JR is a compact water circulation heater ideally suited for use as an engine coolant water heater and for many other uses where on-the-spot hot water is required.

The copper-sheathed tubular heating element is centered in a galvanized iron or brass pipe body. Its screw-plug type mounting

provides easy removal when necessary. The assembly is surrounded by insulation and a sheet metal jacket.

An integral 60-180°F range thermostat is provided to control outlet temperatures. However, this control does not fail-safe.

### ⚠ 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

### ⚠ 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. The NWH-JR circulation heater should be mounted vertically with the terminal enclosure at the top. No additional support other than the connecting pipes is needed.
2. Make piping connections to either new or existing plumbing at the 1 x 1-1/2" NPT threaded inlet and outlet as shown above.

3. If foreign material is to be carried by the liquid flow, install suitable filters in the inlet pipe to the heater.
4. Provide adequate space at terminal end to permit withdrawal of the heater from chamber should servicing be required.

### ⚠ WARNING

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

- A. Provide a minimum of 6" spacing from chamber and related piping to nearest combustible material.
- B. Do not heat combustible materials.

## 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.**

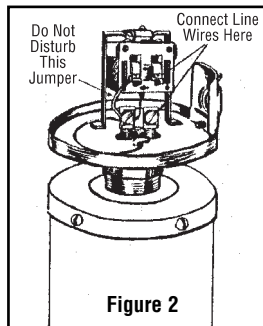
### ⚠ WARNING

**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. Be sure line voltage matches heater voltage (on nameplate).
2. Electric wiring to heater must be installed in accordance with the National Electrical Code and local 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 BX mounting bracket. (See Table B for recommended wire size.)
4. Connect one wire to the unused heater terminal and one to the unused thermostat terminal.

**Note:** Do not disturb the existing jumper wire. (See 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 10°



Wire Size – Table B

Model	Volts	Watts	Recommended Wire Size
NWHJR (G & B)	120 or 240	1500	14
NWHJR (G & B)	120	2000	12
	240		14
NWHJR (G & B)	120	2500	10
	240		14
NWHJRG	120	3000	8
NWHJR (G & B)	240	3000	14

## OPERATION

1. Do not heat solutions that are corrosive to the heating element sheath or the heating chamber.
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.

3. Do not allow heater to operate when liquid flow is interrupted.

## 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. Remove heating element assembly periodically to check heater sheath for scaling, corrosion or excessive oxidation. Correct operating conditions to minimize sheath deterioration.
2. Periodically check temperature 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 and wire terminals which show signs of oxidation which would interfere with establishment of reliable electrical connections.

## RENEWAL PARTS IDENTIFICATION

HEATING ELEMENT SUB ASSEMBLIES								Thermostat	Terminal Cover
120V 1500W	240V 1500W	120V 2000W	240V 2000W	120V 2500W	240V 2500W	120V 3000W	240V 3000W		
156-018184-013	156-018184-014	156-018184-015	156-018184-016	156-018184-017	156-018184-018	156-043029-002	156-043029-001	300-019560-002	306-019080-004

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