

## NWH Series Clean Water Applications

- Screw Plug or Flanged Heater Design
- 2 - 14" Galvanized Carbon Steel Pipe Body, 150 Lb Construction
- 3 - 500 kW
- 120, 240 and 480V, 1 & 3 Phase
- General Purpose, Moisture Resistant Terminal, Moisture Resistant/Explosion Proof Enclosure
- 0.475" Dia. Copper Sheath Elements (45 - 50 W/in<sup>2</sup>)
- With & Without Thermostat
- UL, CSA, ATEX and Other Third Party Approval, Listing or Certification Available on Many Models

### *Applications*

**Clean Water Heating** — Ideal for heating municipal water for industrial washing and rinsing processes.

Other applications include indirect heating of viscous liquids and temperature maintenance of storage tanks.

### *Features*

**Terminal Enclosures** — Standard stock heater terminal enclosure is General Purpose E1. Explosion Proof/Moisture Resistant E2 or Moisture Resistant E4 enclosures are available as assembly stock.

**Elements** — Sturdy 0.475" diameter copper sheath elements provide superior strength and rigidity. Chromalox elements utilize high quality resistance wire for coil construction. The coil is surrounded with high purity magnesium oxide which is compacted to a dense solid to ensure high thermal conductivity and dielectric strength.

**Flanges** — Zinc coated carbon steel flanges are standard on 3" and larger water circulation heaters. Flange dimensions conform to ANSI B16.5 standards. NWHMT heaters utilize a brass screw plug.

**Vessels** — Chromalox vessels consist of a pipe body, nozzles and end cap. The pipe body and nozzles are galvanized ASTM A53B carbon steel pipe. The end cap or disk is galvanized ASTM A516 Grade 70 carbon steel plate. Mounting lugs are welded to the pipe wall. The vessel is wrapped with thermal insulation and covered with a painted sheet metal jacket.

**Wiring** — Wiring terminals are spaced to provide proper arcing and creepage clearances per the NEC. Termination insulators provide electrical isolation between the terminals and the grounded metal sheaths to ensure personnel safety and equipment service life. Heavy duty jumper straps and other terminal parts assure tight connections and an extra margin of current carrying capacity.



**Controls** — Some heaters come equipped with mechanical AR thermostats. These thermostats are suitable for most applications. Explosion-resistant and liquid-tight thermostats are provided on E2 and E4 units, respectively.

**WARNING** — **Hazard of Fire.** These devices function as temperature controls only. Because they do not fail-safe, an approved temperature and/or pressure safety control must be used for safe operation. Consult Controls section of this catalog.

**Control Panels** — Integral or remote mounted control panels with electronic controls and solid state (SCR) or contactor power controllers can be provided using virtually any combination of control devices. Consult the Controls Section for details.

## NWH Clean Water Applications

- 3 - 14" ANSI Blind Flange Design
- 3 - 14" Galvanized Carbon Steel Pipe Body, 150 Lb Construction
- 6 - 500 kW
- 240 and 480V, 1 & 3 Phase
- General Purpose, Moisture Resistant Terminal, Moisture Resistant/Explosion Proof Enclosure
- 0.475" Dia. Copper Sheath Elements (45 - 50 W/in<sup>2</sup>)
- With & Without Side Mounted AR Thermostat (60 - 250°F)
- UL, CSA ATEX and Other Third Party Approval, Listing or Certification Available

### Features

**Terminal Enclosure** — E1 General Purpose is standard. E2 Moisture Resistant/Explosion Proof or E4 Moisture Resistant Enclosures available.

**Flange** — 3 - 14" ANSI B-16.5 Blind Flange with 1/2" thermowell for thermostat bulb and a 1/8" NPT threaded opening for a thermocouple or RTD.

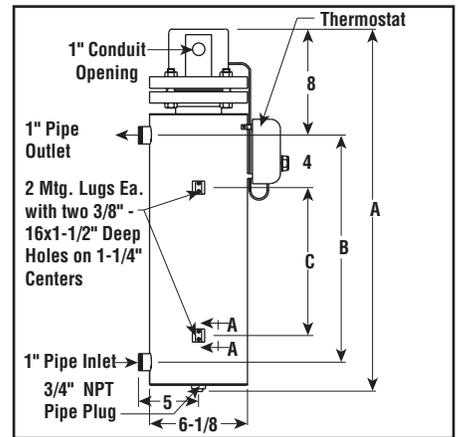
**Vessel** — Pipe body and nozzles are galvanized ASTM A53B carbon steel pipe. The end disk is galvanized ASTM A516 Grade 70 carbon steel plate. Provided with thermal insulation and painted sheet metal jacket.

**Wiring** — Convenient field wiring terminals are provided for easy installation.

**Controls** — Series 3 and 6 stock and assembly stock heaters come equipped with side mounted thermostat. Series 18 and 45 furnished without thermostat.



*Dimensions (Inches)  
NWH-3*



**Note** — Add 2" to A dimension for E2 enclosure.

### Applications

**Clean Water Heating** — Higher kilowatt ratings and larger capacity tanks for industrial and commercial water heating applications.

### Specifications and Ordering Information

| kW   | Volts | Ckt & Phase | Dimensions (In.) |        |         | Model          | Stock | PCN    | Wt. (Lbs.) |
|--|-------|-------------|------------------|--------|---------|----------------|-------|--------|------------|
|  |       |             | A                | B      | C       |                |       |        |            |
| <b>Series 3 — 3 inch, 150 lb carbon steel vessel — 3 copper elements (45 W/in<sup>2</sup>) with side mounted thermostat — 1" NPT pipe inlet and outlet</b> |       |             |                  |        |         |                |       |        |            |
| 6  | 240   | 1-1         | 32-15/16         | 22-1/2 | 16-1/2  | NWH-03-006P-E1 | S     | 100052 | 70         |
| 6  | 240   | 1-3         | 32-15/16         | 22-1/2 | 16-1/2  | NWH-03-006P-E1 | NS    | 100060 | 70         |
| 6  | 480   | 1-1         | 32-15/16         | 22-1/2 | 16-1/2  | NWH-03-006P-E1 | NS    | 010065 | 70         |
| 6  | 480   | 1-3         | 32-15/16         | 22-1/2 | 16-1/2  | NWH-03-006P-E1 | S     | 100087 | 70         |
| 9  | 240   | 1-1         | 32-15/16         | 22-1/2 | 16-1/2  | NWH-03-009P-E1 | NS    | 100183 | 70         |
| 9  | 240   | 1-3         | 32-15/16         | 22-1/2 | 16-1/2  | NWH-03-009P-E1 | S     | 100191 | 70         |
| 9  | 480   | 1-1         | 32-15/16         | 22-1/2 | 16-1/2  | NWH-03-009P-E1 | NS    | 010161 | 70         |
| 9  | 480   | 1-3         | 32-15/16         | 22-1/2 | 16-1/2  | NWH-03-009P-E1 | S     | 100212 | 70         |
| 12   | 240   | 1-1         | 42-15/16         | 32-1/2 | 26-1/2  | NWH-03-012P-E1 | NS    | 010217 | 80         |
| 12   | 240   | 1-3         | 42-15/16         | 32-1/2 | 26-1/2  | NWH-03-012P-E1 | S     | 100319 | 80         |
| 12   | 480   | 1-1         | 42-15/16         | 32-1/2 | 26-1/2  | NWH-03-012P-E1 | NS    | 010250 | 80         |
| 12   | 480   | 1-3         | 42-15/16         | 32-1/2 | 26-1/2  | NWH-03-012P-E1 | S     | 100335 | 80         |
| 15   | 240   | 1-1         | 55-7/16          | 45     | 39      | NWH-03-015P-E1 | NS    | 010313 | 94         |
| 15   | 240   | 1-3         | 55-7/16          | 45     | 39      | NWH-03-015P-E1 | S     | 100431 | 94         |
| 15   | 480   | 1-1         | 55-7/16          | 45     | 39      | NWH-03-015P-E1 | NS    | 010364 | 94         |
| 15   | 480   | 1-3         | 55-7/16          | 45     | 39      | NWH-03-015P-E1 | S     | 100458 | 94         |
| 18   | 240   | 1-1         | 55-7/16          | 45     | 39      | NWH-03-018P-E1 | NS    | 010410 | 94         |
| 18   | 240   | 1-3         | 55-7/16          | 45     | 39      | NWH-03-018P-E1 | S     | 100554 | 94         |
| 18   | 480   | 1-1         | 55-7/16          | 45     | 39      | NWH-03-018P-E1 | NS    | 010460 | 94         |
| 18   | 480   | 1-3         | 55-7/16          | 45     | 39      | NWH-03-018P-E1 | S     | 100570 | 94         |
| <b>Series 6 — 5 inch, 150 lb carbon steel vessel — 6 copper elements (45 W/in<sup>2</sup>) with side mounted thermostat — 2" NPT pipe inlet and outlet</b> |       |             |                  |        |         |                |       |        |            |
| 24   | 240   | 2-3         | 41-3/4           | 30     | 11-3/8  | NWH-06-024P-E1 | NS    | 100677 | 140        |
| 24   | 480   | 1-3         | 41-3/4           | 30     | 11-3/8  | NWH-06-024P-E1 | S     | 100693 | 140        |
| 30   | 240   | 2-3         | 48-3/4           | 37     | 14-1/8  | NWH-06-030P-E1 | NS    | 100790 | 155        |
| 30   | 480   | 1-3         | 48-3/4           | 37     | 14-1/8  | NWH-06-030P-E1 | S     | 100810 | 155        |
| 40   | 240   | 2-3         | 60-1/4           | 48-1/2 | 20-5/8  | NWH-06-040P-E1 | NS    | 100917 | 176        |
| 40   | 480   | 2-3         | 60-1/4           | 48-1/2 | 20-5/8  | NWH-06-040P-E1 | NS    | 010671 | 176        |
| 50   | 480   | 2-3         | 73-5/8           | 61-7/8 | 27-5/16 | NWH-06-050P-E1 | NS    | 010700 | 210        |
| 60   | 480   | 2-3         | 86-5/8           | 74-7/8 | 33-7/8  | NWH-06-060P-E1 | NS    | 010735 | 240        |
| <b>Stock Status: S = stock NS = non-stock<br/>To Order—Specify model, volts, phase, kW, PCN and quantity.</b>  |       |             |                  |        |         |                |       |        |            |

## NWH

### Clean Water

### Applications (cont'd.)

#### Specifications and Ordering Information

| kW   | Volts | Ckt & Phase | Dimensions (In.) |          |          | Model          | Stock | PCN    | Wt. (Lbs.) |
|--|-------|-------------|------------------|----------|----------|----------------|-------|--------|------------|
|  |       |             | A                | B        | C        |                |       |        |            |
| <b>Series 18 — 8 inch, 150 lb carbon steel vessel — 18 copper elements (50 W/In<sup>2</sup>) — 2-1/2" NPT pipe inlet and outlet</b>  |       |             |                  |          |          |                |       |        |            |
| 50   | 240   | 3-3         | 45-1/4           | 24-11/16 | 27-3/16  | NWH-18-050P-E1 | NS    | 102664 | 396        |
| 50   | 480   | 3-3         | 45-1/4           | 24-11/16 | 27-3/16  | NWH-18-050P-E1 | NS    | 102672 | 396        |
| 75   | 240   | 3-3         | 53-1/4           | 32-11/16 | 29-3/16  | NWH-18-075P-E1 | NS    | 102701 | 414        |
| 75   | 480   | 3-3         | 53-1/4           | 32-11/16 | 29-3/16  | NWH-18-075P-E1 | NS    | 102710 | 414        |
| 100  | 240   | 3-3         | 60-1/4           | 39-11/16 | 36-3/16  | NWH-18-100P-E1 | NS    | 102744 | 425        |
| 100  | 480   | 3-3         | 60-1/4           | 39-11/16 | 36-3/16  | NWH-18-100P-E1 | NS    | 102752 | 425        |
| 125  | 240   | 3-3         | 67-7/8           | 47-5/16  | 43-13/16 | NWH-18-125P-E1 | NS    | 080012 | 470        |
| 125  | 480   | 3-3         | 67-7/8           | 47-5/16  | 43-13/16 | NWH-18-125P-E1 | NS    | 080020 | 470        |
| 150  | 240   | 3-3         | 77-3/8           | 56-13/16 | 53-5/16  | NWH-18-150P-E1 | NS    | 080039 | 535        |
| 150  | 480   | 3-3         | 77-3/8           | 56-13/16 | 53-5/16  | NWH-18-150P-E1 | NS    | 080047 | 535        |
| 175  | 240   | 3-3         | 86-3/8           | 65-13/16 | 62-5/16  | NWH-18-175P-E1 | NS    | 080055 | 625        |
| 175  | 480   | 3-3         | 86-3/8           | 65-13/16 | 62-5/16  | NWH-18-175P-E1 | NS    | 080063 | 625        |
| 200  | 240   | 3-3         | 96-3/8           | 75-13/16 | 72-5/16  | NWH-18-200P-E1 | NS    | 080071 | 705        |
| 200  | 480   | 3-3         | 96-3/8           | 75-13/16 | 72-5/16  | NWH-18-200P-E1 | NS    | 080080 | 705        |
| <b>Series 45 — 14 inch, 150 lb carbon steel vessel — 45 copper elements (50 W/In<sup>2</sup>) — 6" flanged pipe inlet and outlet</b> |       |             |                  |          |          |                |       |        |            |
| 250  | 480   | 3-3         | 68-1/2           | 49-11/16 | 59-3/16  | NWH-45-250P-E1 | NS    | 086019 | 830        |
| 300  | 480   | 3-3         | 76               | 57-3/16  | 66-11/16 | NWH-45-300P-E1 | NS    | 086027 | 960        |
| 350  | 480   | 3-3         | 83-1/2           | 64-11/16 | 74-3/16  | NWH-45-350P-E1 | NS    | 086035 | 1,090      |
| 400  | 480   | 3-3         | 91               | 72-3/16  | 81-11/16 | NWH-45-400P-E1 | NS    | 086043 | 1,220      |
| 450  | 480   | 3-3         | 98-1/2           | 79-11/16 | 89-3/16  | NWH-45-450P-E1 | NS    | 086051 | 1,350      |
| 500  | 480   | 3-3         | 106              | 87-3/16  | 96-11/16 | NWH-45-500P-E1 | NS    | 086060 | 1,480      |

**Stock Status:** S = stock NS = non-stock  
**To Order**—Specify model, volts, phase, kW, PCN and quantity.

**Note** — Refer to the Controls section for control panels.

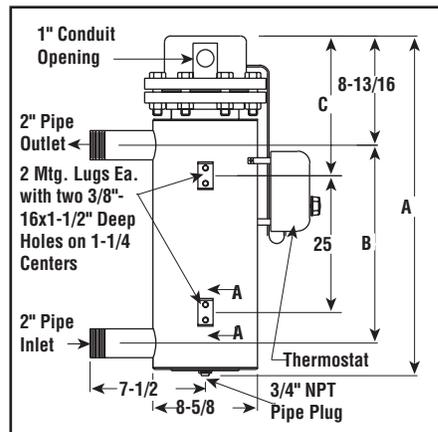
#### Ordering Information

To Order — Complete the Model Number using the Matrix provided.

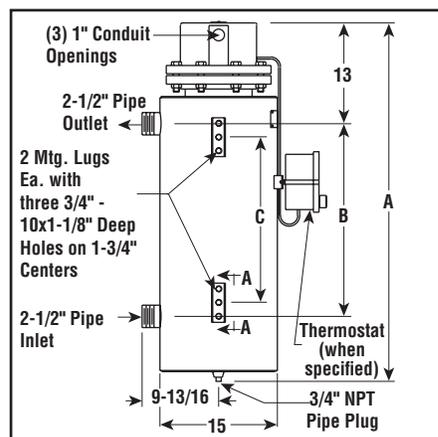
| Model | Clean Water                                      |
|-------|--|
| NWH   | Water Circulation Heater                         |
|       | <b>Code</b> <b>Number of Elements</b>            |
|       | <b>03</b> Three                                  |
|       | <b>06</b> Six                                    |
|       | <b>18</b> Eighteen                               |
|       | <b>45</b> Forty Five                             |
|       | <b>Code</b> <b>kW</b>                            |
|       | <b>024P</b> 24 <b>075P</b> 75 <b>300P</b> 300    |
|       | <b>030P</b> 30 <b>100P</b> 100 <b>350P</b> 350   |
|       | <b>040P</b> 40 <b>125P</b> 125 <b>400P</b> 400   |
|       | <b>050P</b> 50 <b>200P</b> 200 <b>450P</b> 450   |
|       | <b>060P</b> 60 <b>250P</b> 250 <b>500P</b> 500   |
|       | <b>Code</b> <b>Terminal Enclosure</b>            |
|       | <b>E1</b> General Purpose                        |
|       | <b>E2</b> Moisture Resistant/Explosion Resistant |
|       | <b>E4</b> Moisture Resistant                     |
| NWH   | <b>06 024P E1</b> Typical Model Number           |

#### Dimensions (Inches)

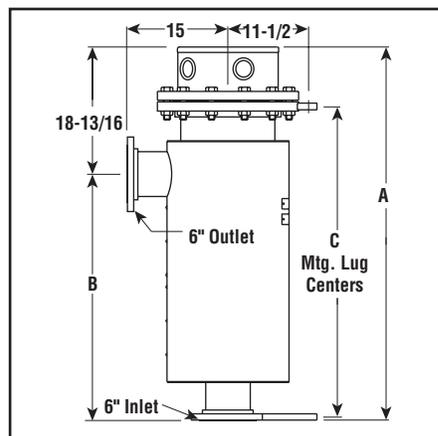
##### NWH-6



##### NWH-18



##### NWH-45



##### NWH-AA

