

# PURE WATER, CORROSIVE SOLUTION AND HIGH TEMPERATURE GAS APPLICATIONS

## NWHMTSS, NWHIS and NWHOIS Series

- ✓ Screw Plug or Flanged Heater Design
- ✓ 3 - 14" Type 304 Stainless Steel Pipe Body, 150 Lb Construction
- ✓ 2 - 200 kW
- ✓ 120, 240 and 480V, 1 & 3 Phase
- ✓ General Purpose, Moisture Resistant/Explosion Resistant, Explosion Resistant or Moisture Resistant Terminal Enclosure
- ✓ 0.475" Dia. Stainless Steel or INCOLOY Sheath Elements (15 - 50 W/in<sup>2</sup>)
- ✓ With & Without Thermostat
- ✓ UL, CSA and Other Third Party Approval, Listing or Certification Available on Many Models

### APPLICATIONS

#### Pure Water:

Heating of demineralized or de-ionized water that is highly aggressive to mild steel.

#### Mildly Corrosive Solutions:

Heat mildly corrosive solutions (pH5 to pH9) using stainless elements and a passivated stainless pipe body.

#### Highly Corrosive Solutions

**and Oils:** Low watt density INCOLOY sheath elements coupled with a passivated Stainless Steel pipe body provides long service life when heating highly corrosive solutions and sulfur laden oils.

**Steam Superheating:** Increase the enthalpy and quality of steam. Smaller units can be used to make up line losses in steam generating and distribution systems.

#### High Temperature Gas:

INCOLOY elements and a Stainless Steel vessel enhance safe operation to nearly 1400°F outlet gas temperature in air, gas or steam superheating applications.

### FEATURES

**Terminal Enclosures:** Standard stock heater terminal enclosure E1 General Purpose. Moisture Resistant/Explosion Resistant E2, Explosion Resistant E3 or Moisture Resistant E4 Enclosures are available as assembly stock.

**Elements:** Sturdy 0.475" Dia. Stainless Steel or INCOLOY sheath elements provide superior strength and rigidity. TRODEKSLUX 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.

**Corrosion Resistance:** NWHMTSS, NWHIS and NWHOIS pipe bodies and all Stainless Steel heating elements are passivated to provide additional resistance to corrosion.

**Flanges:** Type 304 Stainless Steel flanges are standard on 3" and larger circulation heaters. Flange dimensions conform to ANSI B16.5 standards. Series NWHMTSS heaters utilize a Stainless Steel screw plug.

**Vessels:** Pipe body and nozzles are type 304 ASTM A312 ERW Stainless Steel pipe. The end disks are type 304 ASTM A240 Stainless Steel plate. Provided with thermal insulation and painted sheet metal jacket.

**Baffle Assemblies:** Internal baffle assemblies are provided for model GCHISB-18 heaters to increase the velocity of the air, gas or steam as it passes through the vessel. Increasing the velocity of the gas helps reduce the temperature of the element sheaths and the vessel walls in critical applications.

**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 sheath to enhance 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:** All stock and assembly stock heaters, Series MTSS, 03 and 06, come equipped with mechanical AR thermostats. These thermostats are suitable for most applications. Explosion-resistant and liquid-tight thermostats are provided on E2/E3 and E4 units, respectively. Individual product pages list other types of thermostats and controls available for each heater. For heaters listed without controls, refer to the Overview on Mechanical and Electrical Control Options in this section.

**Precision Temperature Control and Control Panels:** For larger kW heaters and precise control of gas temperatures in high temperature applications, TRODEKSLUX recommends the use of thermocouple sensors, electronic PID temperature controls and SCR power panels for circulation heater applications. The use of electronic and SCR controls will minimize overshoot and reduce the possibility of heater damage from overtemperature operation. 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.

# PURE WATER & MILDLY CORROSIVE SOLUTION APPLICATIONS



## NWHMTSS Series

- ✓ 2½" NPT Stainless Steel Screw Plug Design
- ✓ 2½" Passivated Stainless Steel Pipe Body, 150 Lb Construction
- ✓ 3 - 18 kW
- ✓ 120, 240 and 480V, 1 & 3 Phase
- ✓ General Purpose, Moisture Resistant/Explosion Resistant Terminal Enclosure
- ✓ Three 0.475" Dia. Stainless Steel Sheath Elements (50 W/in<sup>2</sup>)
- ✓ Integral Thermostat (60 - 250°F)
- ✓ UL, CSA and Other Third Party Approval, Listing or Certification Available on Many Models

### APPLICATIONS

Remote and Booster Heating of demineralized or de-ionized water and mildly corrosive solutions (pH5 to pH9).

### FEATURES

#### Terminal Enclosure:

E1 General Purpose is standard. E2 enclosure available.

#### Elements:

Three Type 304 passivated Stainless Steel sheath elements.

#### Screw Plug:

2½" Type 304 Stainless Steel screw plug with ½" thermowell for thermostat bulb.

#### Vessel:

Pipe body and nozzles are type 304 ASTM A312 ERW Stainless Steel pipe. The end disks are type 304 ASTM A240 or A479 Stainless Steel plate. Provided with thermal insulation and 20 gauge painted sheet metal jacket.

#### Wiring:

Convenient field wiring terminals are provided for easy installation.

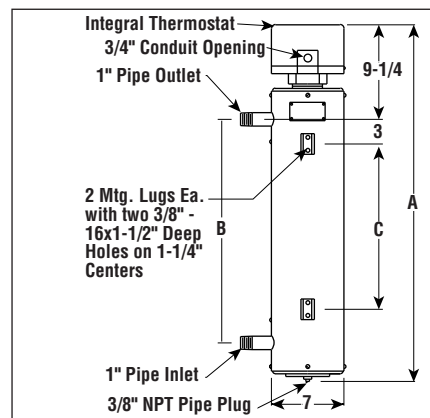
**Controls:** Stock and assembly stock heaters come equipped with integral thermostat.

### MOST POPULAR ITEMS HIGHLIGHTED

### To Order (Specify Model Number)



### Dimensions (Inches) NWHMTS-03



Note - Add 2" to A dimension for E2 Enclosure.

kW	Volts	Ckt & Phase	Dimensions (In.)			Model No.	Price	Wt. (Lbs.)
			A	B	C			
3	120	1-1	21%	9%	—	NWHMTSS-03-003P-E1/120	\$2237	15
3	240	1-1	21%	9%	—	NWHMTSS-03-003P-E1/240	2237	15
3	240	1-3	21%	9%	—	NWHMTSS-03-003P-E1/240/3P	2237	15
3	480	1-1	21%	9%	—	NWHMTSS-03-003P-E1/480	2237	15
3	480	1-3	21%	9%	—	NWHMTSS-03-003P-E1/480/3P	2237	15
4.5	240	1-1	21%	9%	—	NWHMTSS-03-04P5-E1/240	2286	15
4.5	240	1-3	21%	9%	—	NWHMTSS-03-04P5-E1/240/3P	2286	15
4.5	480	1-1	21%	9%	—	NWHMTSS-03-04P5-E1/480	2286	15
4.5	480	1-3	21%	9%	—	NWHMTSS-03-04P5-E1/480/3P	2286	15
6	240	1-1	34%	22½	16½	NWHMTSS-03-006P-E1/240	2401	22
6	240	1-3	34%	22½	16½	NWHMTSS-03-006P-E1/240/3P	2401	22
6	480	1-1	34%	22½	16½	NWHMTSS-03-006P-E1/480	2401	22
6	480	1-3	34%	22½	16½	NWHMTSS-03-006P-E1/480/3P	2401	22
9	240	1-1	34%	22½	16½	NWHMTSS-03-009P-E1/240	2471	22
9	240	1-3	34%	22½	16½	NWHMTSS-03-009P-E1/240/3P	2471	22
9	480	1-1	34%	22½	16½	NWHMTSS-03-009P-E1/480	2471	22
9	480	1-3	34%	22½	16½	NWHMTSS-03-009P-E1/480/3P	2471	22
12	240	1-1	57%	45%	39%	NWHMTSS-03-012P-E1/240	2543	40
12	240	1-3	57%	45%	39%	NWHMTSS-03-012P-E1/240/3P	2543	40
12	480	1-1	57%	45%	39%	NWHMTSS-03-012P-E1/480	2543	40
12	480	1-3	57%	45%	39%	NWHMTSS-03-012P-E1/480/3P	2543	40
15	240	1-1	57%	45%	39%	NWHMTSS-03-015P-E1/240	2654	40
15	240	1-3	57%	45%	39%	NWHMTSS-03-015P-E1/240/3P	2654	40
15	480	1-1	57%	45%	39%	NWHMTSS-03-015P-E1/480	2654	40
15	480	1-3	57%	45%	39%	NWHMTSS-03-015P-E1/480/3P	2654	40
18	240	1-1	57%	45%	39%	NWHMTSS-03-018P-E1/240	2772	40
18	240	1-3	57%	45%	39%	NWHMTSS-03-018P-E1/240/3P	2772	40
18	480	1-1	57%	45%	39%	NWHMTSS-03-018P-E1/480	2772	40
18	480	1-3	57%	45%	39%	NWHMTSS-03-018P-E1/480/3P	2772	40

#### Ordering Example:

**NWHMTSS-03-009P-E1/480** is a 9 kW, 1 Phase, 480 Volt Heater, \$2471.

#### Ordering Information

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

#### Model NWHMT SS

#### Pure Water and Mildly Corrosive Solution

Water Circulation Heater with Screw Plug  
Stainless Steel Sheath — Stainless Steel Vessel

#### Code Number of Elements

03 Three

#### Code kW

003P	3	009P	9	018P	18
04P5	4.5	012P	12		
006P	6	015P	15		

#### Code Terminal Enclosure

E1	General Purpose
E2	Moisture Resistant/Explosion Resistant

NWHMTSS 03 003P E1 Typical Model Number

# PURE WATER AND MILDLY CORROSIVE SOLUTION APPLICATIONS

## NWHIS Series

Dimensions: in  
NWHIS-03

**MOST POPULAR MODELS HIGHLIGHTED!**

### To Order (Specify Model Number)

kW	Volts	Ckt & Phase	Dimensions: in			Model No.	Price	Wt. (lb)
			A	B	C			
Series 03—3", 150 lb, 304 Passivated Stainless Steel Vessel, 3 INCOLOY Elements (45 W/in²) with Side Mounted Thermostat (60 to 250°F)—1 NPT Pipe Inlet and Outlet								
6	240	1-3	32 <sup>15</sup> / <sub>16</sub>	22½	16½	NWHIS-03-006P-E1/240	\$5800	70
6	480	1-3	32 <sup>15</sup> / <sub>16</sub>	22½	16½	NWHIS-03-006P-E1/480	5800	70
12	240	1-3	42 <sup>15</sup> / <sub>16</sub>	32½	26½	NWHIS-03-012P-E1/240	6200	80
12	480	1-3	42 <sup>15</sup> / <sub>16</sub>	32½	26½	NWHIS-03-012P-E1/480	6200	80
18	240	1-3	55 <sup>7</sup> / <sub>16</sub>	45	39	NWHIS-03-018P-E1/240	6700	98
18	480	1-3	55 <sup>7</sup> / <sub>16</sub>	45	39	NWHIS-03-018P-E1/480	6700	98
Series 06—5", 150 lb, 304 Passivated Stainless Steel Vessel, 6 INCOLOY Elements (45 W/in²) with Side Mounted Thermostat (60 to 250°F)—2 NPT Pipe Inlet and Outlet								
24	240	2-3	41¾	30	11¾	NWHIS-06-024P-E1/240	\$10,750	140
24	480	1-3	41¾	30	11¾	NWHIS-06-024P-E1/480	10,750	140
30	240	2-3	48¾	37	14¾	NWHIS-06-030P-E1/240	11,700	155
30	480	1-3	48¾	37	14¾	NWHIS-06-030P-E1/480	11,700	155
40	240	2-3	60¾	48½	20%	NWHIS-06-040P-E1/240	13,200	176
40	480	2-3	60¾	48½	20%	NWHIS-06-040P-E1/480	13,200	176
50	480	2-3	73¾	61¾	27 <sup>3</sup> / <sub>16</sub>	NWHIS-06-050P-E1/240	14,950	210
Series 18—8", 150 lb, 304 Passivated Stainless Steel Vessel, 18 INCOLOY Elements (45 W/in²)—2½ NPT Pipe Inlet and Outlet								
50	240	3-3	45¾	24 <sup>1</sup> / <sub>16</sub>	27 <sup>3</sup> / <sub>16</sub>	NWHIS-18-050P-E1/240	\$20,050	396
50	480	3-3	45¾	24 <sup>1</sup> / <sub>16</sub>	27 <sup>3</sup> / <sub>16</sub>	NWHIS-18-050P-E1/480	20,050	396
75	240	3-3	53¾	32 <sup>1</sup> / <sub>16</sub>	29 <sup>3</sup> / <sub>16</sub>	NWHIS-18-075P-E1/240	21,700	414
75	480	3-3	53¾	32 <sup>1</sup> / <sub>16</sub>	29 <sup>3</sup> / <sub>16</sub>	NWHIS-18-075P-E1/480	21,700	414
100	240	3-3	60¾	39 <sup>1</sup> / <sub>16</sub>	36 <sup>3</sup> / <sub>16</sub>	NWHIS-18-100P-E1/240	21,800	425
100	480	3-3	60¾	39 <sup>1</sup> / <sub>16</sub>	36 <sup>3</sup> / <sub>16</sub>	NWHIS-18-100P-E1/480	21,800	425
125	240	3-3	67 <sup>7</sup> / <sub>16</sub>	47 <sup>7</sup> / <sub>16</sub>	43 <sup>3</sup> / <sub>16</sub>	NWHIS-18-125P-E1/240	26,000	470
125	480	3-3	67 <sup>7</sup> / <sub>16</sub>	47 <sup>7</sup> / <sub>16</sub>	43 <sup>3</sup> / <sub>16</sub>	NWHIS-18-125P-E1/480	26,000	470
150	240	3-3	77 <sup>3</sup> / <sub>16</sub>	56 <sup>1</sup> / <sub>16</sub>	53 <sup>1</sup> / <sub>16</sub>	NWHIS-18-150P-E1/240	28,850	535
150	480	3-3	77 <sup>3</sup> / <sub>16</sub>	56 <sup>1</sup> / <sub>16</sub>	53 <sup>1</sup> / <sub>16</sub>	NWHIS-18-150P-E1/480	28,850	535
175	240	3-3	86 <sup>3</sup> / <sub>16</sub>	65 <sup>1</sup> / <sub>16</sub>	62 <sup>5</sup> / <sub>16</sub>	NWHIS-18-175P-E1/240	31,650	625
175	480	3-3	86 <sup>3</sup> / <sub>16</sub>	65 <sup>1</sup> / <sub>16</sub>	62 <sup>5</sup> / <sub>16</sub>	NWHIS-18-175P-E1/480	31,650	625
200	240	3-3	96 <sup>3</sup> / <sub>16</sub>	75 <sup>1</sup> / <sub>16</sub>	72 <sup>1</sup> / <sub>16</sub>	NWHIS-18-200P-E1/240	34,950	705
200	480	3-3	96 <sup>3</sup> / <sub>16</sub>	75 <sup>1</sup> / <sub>16</sub>	72 <sup>1</sup> / <sub>16</sub>	NWHIS-18-200P-E1/480	34,950	705

### Model Pure Water and Mildly Corrosive Solution

NWH Water Circulation Heater  
IS INCOLOY Elements — Stainless Steel Vessel

### Code Number of Elements

03 Three  
06 Six  
18 Eighteen

Code	kW	Code	kW
006P	6	040P	40
012P	12	050P	50
018P	18	075P	75
024P	24	100P	100
030P	30	125P	125
150P	150		
175P	175		
200P	200		

### Code Terminal Enclosure

E1 General Purpose  
E2 Moisture Resistant/Explosion Resistant  
E3 Explosion Resistant  
E4 Moisture Resistant

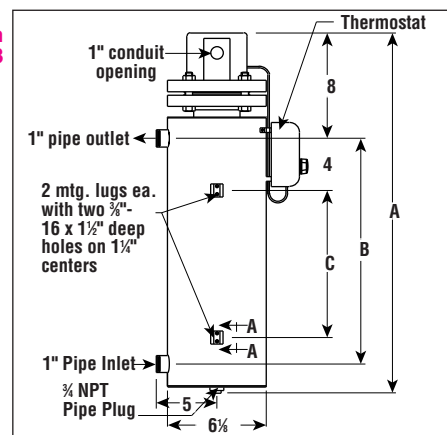
NWH 03 006P E1 Typical Model Number

**Ordering Example:**  
NWHIS-18-050P-E1/240,  
50 kW, 240V heater,  
\$20,050.

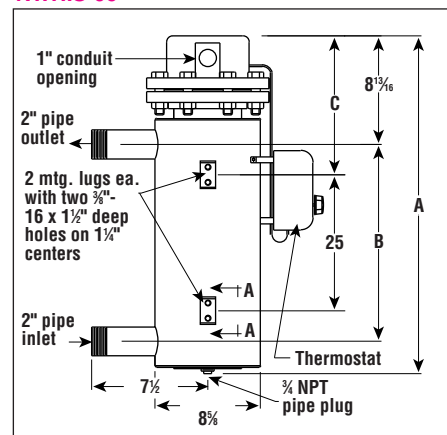
**Note:** Refer to the Controls section for side mounted controls or control panels.

### Ordering Information

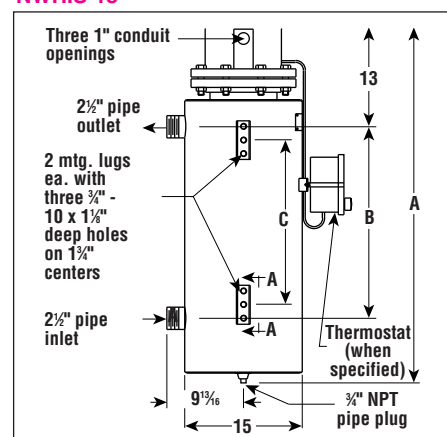
To Order—  
Complete the  
Model Number  
using the  
Matrix  
provided.



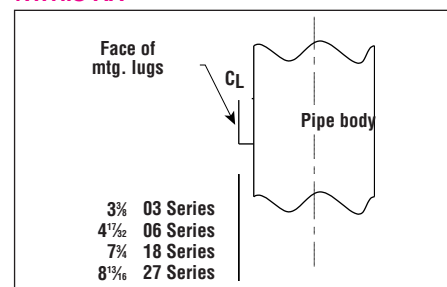
NWHIS-06



NWHIS-18



NWHIS-AA



# CORROSIVE OIL & HIGHLY CORROSIVE SOLUTION APPLICATIONS

## NWHOIS Series



**To Order (Specify Model Number)**

**MOST POPULAR  
ITEMS HIGHLIGHTED**

kW	Volts	Ckt & Phase	Dimensions (in.)			Model No.	Price	Wt. (Lbs.)
			A	B	C			
Series 03 — 3 inch, 150 lb 304 passivated stainless steel vessel, 3 INCOLOY elements (15 W/in <sup>2</sup> ) with side mounted thermostat (60 to 250°F) — 1" NPT pipe inlet and outlet								
2	240	1-3	32 <sup>15</sup> / <sub>16</sub>	22½	16½	NWHOIS-03-002P-E1/240	\$3279	70
2	480	1-3	32 <sup>15</sup> / <sub>16</sub>	22½	16½	NWHOIS-03-002P-E1/480	3279	70
4	240	1-3	42 <sup>15</sup> / <sub>16</sub>	32½	26½	NWHOIS-03-004P-E1/240	3495	80
4	480	1-3	42 <sup>15</sup> / <sub>16</sub>	32½	26½	NWHOIS-03-004P-E1/480	3495	80
6	240	1-3	55 <sup>5</sup> / <sub>16</sub>	45	39	NWHOIS-03-006P-E1/240	3784	98
6	480	1-3	55 <sup>5</sup> / <sub>16</sub>	45	39	NWHOIS-03-006P-E1/480	3784	98
Series 06 — 5 inch, 150 lb 304 passivated stainless steel vessel, 6 INCOLOY elements (15 W/in <sup>2</sup> ) with side mounted thermostat (60 to 250°F) — 2" NPT pipe inlet and outlet								
8	240	1-3	4 <sup>13</sup> / <sub>16</sub>	30	11½	NWHOISR-06-008P-E1/240	6069	140
8	480	1-3	4 <sup>13</sup> / <sub>16</sub>	30	11½	NWHOISR-06-008P-E1/480	6069	140
12	240	1-3	60¼	48½	20½	NWHOISR-06-012P-E1/240	7445	176
12	480	1-3	60¼	48½	20½	NWHOISR-06-012P-E1/480	7445	176
Series 06 — 5 inch, 150 lb 304 passivated stainless steel vessel, 6 INCOLOY elements (23 W/in <sup>2</sup> ) with side mounted thermostat (60 to 250°F) — 2" NPT pipe inlet and outlet								
25	240	2-3	73¾	61½	27¾	NWHOIS-06-025P-E1/240	8402	176
25	480	1-3	73¾	61½	27¾	NWHOIS-06-025P-E1/480	8402	176
30	240	2-3	86¾	74¾	33¾	NWHOIS-06-030P-E1/240	9407	240
30	480	1-3	86¾	74¾	33¾	NWHOIS-06-030P-E1/480	9407	240

**Ordering Example:** NWHOISR-06-008P-E1/480 is a 8 kW, 480 Volt Heater, \$6069.

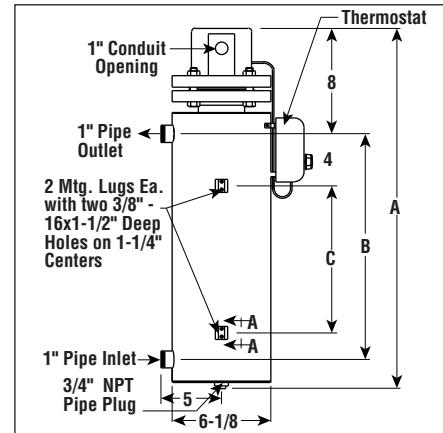
**Note** — Refer to the Controls section for side mounted controls or control panels.

### Ordering Information

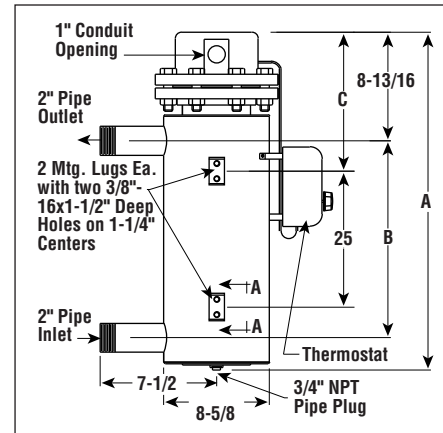
To Order — Complete the Model Number using the Matrix provided.

Model	Corrosive Oil and Highly Corrosive Solution		
NWHOIS	Oil Circulation Heater INCOLOY Elements — Stainless Steel Vessel Reduced Watt Density		
Code	Number of Elements		
03	Three		
06	Six		
Code	kW		
002P	2	008P	8
004P	4	012P	12
006P	6	025P	25
		030P	30
Code	Terminal Enclosure		
E1	General Purpose		
E2	Moisture Resistant/Explosion Resistant		
E3	Explosion Resistant		
E4	Moisture Resistant		
NWHOIS 03	002P	E1	Typical Model Number

**Dimensions (Inches)  
NWHOIS-03**



**NWHOIS-06**



**NWHOIS-AA**

