



I N C O R P O R A T E D

FLUID CIRCULATION HEATERS

Applications

Heatrex Circulation Heaters are complete packaged units designed to control the heating of water, oils, steam, air and other gases.

Standard Features

- **Heater Assembly** - The heat source is of a bolted flanged design. This consists basically of metal sheath tubular elements, formed to a hairpin shape which are welded or silver brazed into a standard steel pipe flange. A NEMA I electrical terminal enclosure is standard.
- **Heater Chamber** - The inner pipe body of the heating chamber is constructed of type A-53 or type A-106 carbon steel pipe which is sized to accept the bundle diameter and length of the required heater assembly. One end of the heating chamber is sealed by welding a pipe cap to the body; a slip-on flange which mates with the pipe flange of the heater assembly is welded to the opposite end. Inlet and outlet connections are fitted into



properly located cut outs in the pipe body and are welded into position. The heating chamber is insulated completely with fiberglass and enclosed in a sheet metal outer housing. Exterior and nonmachined surfaces are finished with rust inhibiting paint.

Benefits

- Long life element; adaptable for literally thousands of processing operations; corrosion resistant mounting brackets; easy installation.

Heatrex Corrosion Policy

Heatrex, Inc. does not warrant any electric immersion heater against failure due to sheath corrosion if such failure is the result of operating conditions over which Heatrex has no control.

The purchaser has the responsibility to make the selection of sheath material based on his knowledge of the chemical composition of the solution being heated, the character of any materials being introduced into the solution, and the controls which will be maintained on the process.



Certificate No. 013867

WATER • OIL CIRCULATION HEATERS

TYPICAL APPLICATIONS:

WATER – Heating of washroom or dishwashing water, industrial process water, storage tanks and temperature boosting.
 OIL – Heating of light oil to improve flow, pre-heating of fuel oil to allow better atomization; heating heavier oils to improve process efficiency.

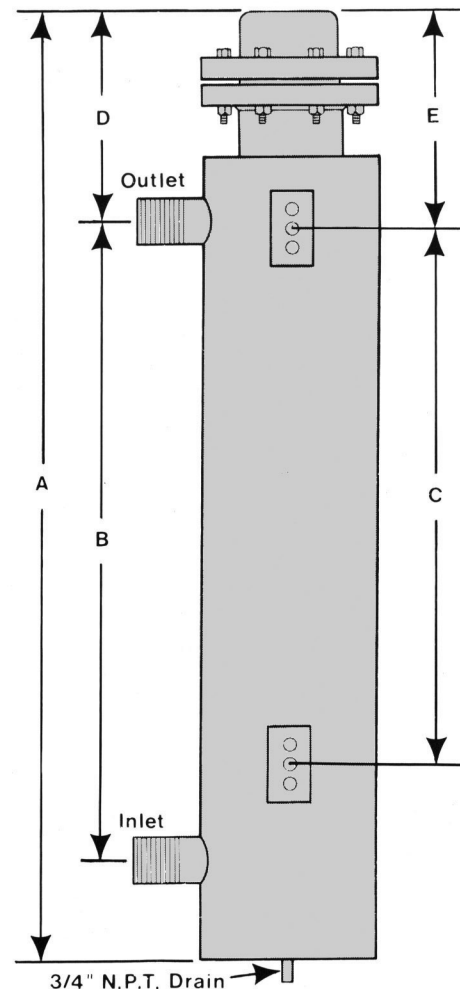
DESIGN FEATURES:

WATER – Copper sheathed tubular elements with a design watt density of 40 watts per square inch.
 OIL – Steel sheathed tubular elements with a design watt density of either 13 or 20 watts per square inch.
 Standard Construction – 150 pound pressure.

OPTIONS:

- Special wattage ratings
- High pressure construction-300 lb. and up
- Horizontal mounting • ASME design and certification
- Flanged inlet and outlet • Internal baffling
- Thermocouple installation • Special materials
- Control Selection • Moisture resistant terminal enclosure
- Explosion resistant terminal enclosure

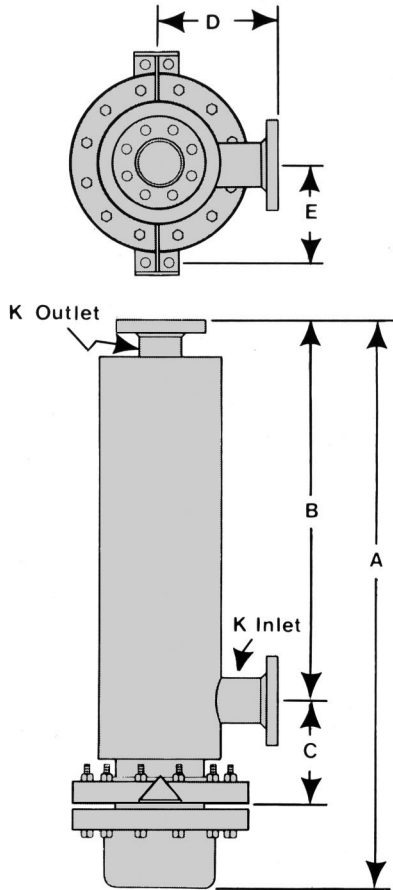
Caution: All installations utilizing electric heaters must be grounded to earth to eliminate shock hazard. Power must be disconnected before servicing heaters.



| Heater Flange Size | Water Heater Copper Sheath – 40 w/in. ² | | Regular Oil Heater Steel Sheath – 20 w/in. ² | | Fuel Oil Heater Steel Sheath – 13 w/in. ² | | 150 lb. Flange Dimensions (Inches)* | | | | | | |
|--------------------|---|----------------|--|----------------|---|----------------|--|---------|---------|---------|---------|-------------|-------------|
| | Kw | Catalog Number | Kw | Catalog Number | Kw | Catalog Number | A | B | C | D | E | N.P.T. Size | Weight Lbs. |
| 3" | 6 | 302001 | 3 | 303001 | 2 | 304001 | 30-9/16 | 16-1/2 | 13 | 8-3/8 | 11-1/16 | 1 | 68 |
| | 9 | 302002 | 4.5 | 303002 | 3 | 304002 | 38-13/16 | 24-3/4 | 21-1/4 | | | | |
| | 12 | 302003 | 6 | 303003 | 4 | 304003 | 46-13/16 | 32-3/4 | 29-1/4 | | | | |
| | 15 | 302004 | 7.5 | 303004 | 5 | 304004 | 55-1/16 | 41 | 37-1/2 | | | | |
| | 18 | 302005 | 9 | 303005 | 6 | 304005 | 63-1/16 | 49 | 45-1/2 | | | | |
| 5" | 18 | 302006 | 9 | 303006 | 6 | 304006 | 39-3/4 | 22-9/16 | 20-1/16 | 10 | 12-3/16 | 2 | 144 |
| | 24 | 302007 | 12 | 303007 | 8 | 304007 | 47-3/4 | 30-9/16 | 28-1/16 | | | | |
| | 30 | 302008 | 15 | 303008 | 10 | 304008 | 55-3/4 | 38-9/16 | 36-1/16 | | | | |
| | 40 | 302009 | 20 | 303009 | 13 | 304009 | 69-1/4 | 52-1/16 | 49-7/16 | | | | |
| | 60 | 302010 | 30 | 303010 | 20 | 304010 | 96-7/16 | 79-1/4 | 76-3/4 | | | | |
| 6" | 36 | 302011 | 18 | 303011 | – | – | 39-3/4 | 22 | 19-1/2 | 10-1/16 | 12-1/4 | 2 | 195 |
| | 48 | 302012 | 24 | 303012 | – | – | 47-3/4 | 30 | 27-1/2 | | | | |
| | 60 | 302013 | 30 | 303013 | 20 | 304011 | 56 | 38-1/4 | 35-3/4 | | | | |
| | 72 | 302014 | 36 | 303014 | 24 | 304012 | 64 | 46-1/4 | 43-3/4 | | | | |
| 8" | 54 | 302015 | – | – | – | – | 39-3/4 | 20-1/8 | 18-3/4 | 10-7/8 | 12-1/2 | 3 | 297 |
| | 72 | 302016 | 36 | 303016 | 24 | 304013 | 48 | 28-3/8 | 27 | | | | |
| | 90 | 302017 | 45 | 303017 | 30 | 304014 | 56 | 36-3/8 | 35 | | | | |
| | 120 | 302018 | 60 | 303018 | 40 | 304015 | 69-1/2 | 49-7/8 | 48-1/2 | | | | |
| | 150 | 302019 | 75 | 303019 | 50 | 304016 | 83-1/4 | 63-5/8 | 62-1/4 | | | | |
| 10" | – | – | 72 | 303021 | – | – | 64-1/4 | 43-1/2 | 42-1/16 | 11 | 12-5/8 | 3 | 563 |
| | 160 | 302020 | 80 | 303022 | 54 | 304017 | 69-3/4 | 49 | 47-9/16 | | | | |
| | 200 | 302021 | 100 | 303023 | 65 | 304018 | 83-1/4 | 62-1/2 | 61-1/16 | | | | |
| 12" | 215 | 302022 | 108 | 303024 | 70 | 304019 | 64-1/8 | 42-3/8 | 41 | 11 | 12-5/8 | 3 | 750 |
| | 240 | 302023 | 120 | 303025 | 80 | 304020 | 69-5/8 | 47-7/8 | 46-1/2 | | | | |
| | 300 | 302024 | – | – | – | – | 83-1/8 | 61-3/8 | 60 | | | | |
| 14" | 288 | 302025 | 144 | 303026 | – | – | 67-1/4 | 40-7/8 | 40-1/2 | 14-5/8 | 15-3/4 | 4 | 960 |
| | 320 | 302026 | 160 | 303027 | 105 | 304021 | 72-1/2 | 46-1/8 | 45-3/4 | | | | |
| | 400 | 302027 | 200 | 303028 | – | – | 86 | 59-5/8 | 59-1/4 | | | | |

Dimensions shown are approximate and may vary slightly. Contact factory on critical applications.

STEAM • AIR • GAS CIRCULATION HEATERS



TYPICAL APPLICATIONS:

Heating of air and industrial gases for a variety of industrial processes. Super heating steam to enhance its quality.

DESIGN FEATURES:

Incoloy sheathed tubular elements with a design watt density of 13 or 20 watts per square inch.
Standard Construction – 150 pound pressure.

OPTIONS:

- Special wattage ratings
- High pressure construction-300 lb. and up
- Horizontal mounting
- ASME design and certification
- Internal baffling
- Thermocouple installation
- Control selection
- Moisture resistant terminal enclosure
- Explosion resistant terminal enclosure

Caution: All installations utilizing electric heaters must be grounded to earth to eliminate shock hazard. Power must be disconnected before servicing heaters.

| Heater Flange Size | Steel Tank | | | | S.S. Tank | | 150 lb. Flange Dimensions (Inches)* | | | | | | Weight Lbs. |
|--------------------|--|----------------|--|----------------|---|----------------|-------------------------------------|--------|--------|--------|---------|-------|-------------|
| | Incoloy Sheath Element 750°F Max. Temp. 20 Watts/sq. in. | | Incoloy Sheath Element 950°F Max. Temp. 13 Watts/sq. in. | | Incoloy Sheath Element 1250°F Max. Temp. 13 Watts/sq. in. | | A | B | C | D | E | K | |
| | Kw | Catalog Number | Kw | Catalog Number | Kw | Catalog Number | | | | | | | |
| 3" | 3 | 500182 | 2 | 500205 | 2 | 500228 | 32 | 22-1/8 | 5-7/8 | 5-3/8 | 4-1/2 | 1-1/2 | 100 |
| | 6 | 500183 | 4 | 500206 | 4 | 500229 | 48-3/8 | 38-1/2 | | | | | 155 |
| | 9 | 500184 | 6 | 500207 | 6 | 500230 | 64-1/2 | 54-5/8 | | | | | 220 |
| 5" | 12 | 500185 | 8 | 500208 | 8 | 500231 | 52-5/16 | 40 | 7-1/2 | 6-3/4 | 5-3/4 | 2 | 285 |
| | 15 | 500186 | 10 | 500209 | 10 | 500232 | 60-5/16 | 48 | | | | | 300 |
| | 20 | 500187 | 13 | 500210 | 13 | 500233 | 74 | 61-5/8 | | | | | 320 |
| | 30 | 500188 | 20 | 500211 | 20 | 500234 | 101 | 88-5/8 | | | | | 345 |
| 6" | 24 | 500189 | 16 | 500212 | 16 | 500235 | 54-3/8 | 41 | 8-1/2 | 7-3/4 | 6-1/4 | 3 | 380 |
| | 30 | 500190 | 20 | 500213 | 20 | 500236 | 62-1/4 | 48-7/8 | | | | | 405 |
| | 36 | 500191 | 24 | 500214 | 24 | 500237 | 70-3/8 | 57 | | | | | 435 |
| 8" | 36 | 500192 | 23 | 500215 | 23 | 500238 | 56-5/8 | 41-1/2 | 10-1/8 | 9-1/4 | 7-1/2 | 4 | 465 |
| | 45 | 500193 | 30 | 500216 | 30 | 500239 | 64-3/4 | 49-5/8 | | | | | 480 |
| | 54 | 500194 | 35 | 500217 | 35 | 500240 | 72-7/8 | 57-3/4 | | | | | 520 |
| | 60 | 500195 | 40 | 500218 | 40 | 500241 | 78-3/8 | 63-1/4 | | | | | 550 |
| | 75 | 500196 | 50 | 500219 | 50 | 500242 | 91-7/8 | 76-3/4 | | | | | 575 |
| 10" | 72 | 500197 | 47 | 500220 | 47 | 500243 | 76-1/2 | 59-1/4 | 12-1/8 | 11-1/8 | 9-1/16 | 5 | 845 |
| | 80 | 500198 | 54 | 500221 | 54 | 500244 | 82 | 64-3/4 | | | | | 880 |
| 12" | 108 | 500199 | 70 | 500222 | 70 | 500245 | 79-3/4 | 60-1/4 | 13-5/8 | 12-1/4 | 10-1/2 | 6 | 1080 |
| | 120 | 500200 | 80 | 500223 | 80 | 500246 | 85-1/4 | 65-3/4 | | | | | 1120 |
| 14" | 144 | 500201 | 96 | 500224 | 96 | 500247 | 88-5/8 | 65-3/4 | 15-1/8 | 13-7/8 | 11-9/16 | 8 | 1285 |
| | 160 | 500202 | 105 | 500225 | 105 | 500248 | 94-1/8 | 71-1/4 | | | | | 1365 |
| | 200 | 500203 | 130 | 500226 | 130 | 500249 | 107-5/8 | 84-3/4 | | | | | 1480 |
| | 240 | 500204 | 160 | 500227 | 160 | 500250 | 121-1/8 | 98-1/4 | | | | | 1585 |

Dimensions shown are approximate and may vary slightly. Contact factory on critical applications.

MINI CIRCULATION WATER HEATERS

Applications

Heatrex Mini Circulation Water Heaters are designed for small water heating requirements in restaurants, hotels, hospitals or industrial plants.

Standard Features

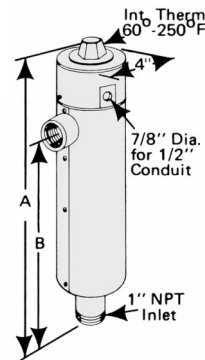
- Integral 60/250°F thermostat; copper sheathed element

Installation

Small compact design is self supporting utilizing inlet and other connection only.



| Kw | Volts | Dimensions (in.) | | Catalog Number | Wt. lbs. (approx.) |
|-------------------------------------|-------|------------------|----|----------------|--------------------|
| | | A | B | | |
| WATER-copper sheath elements | | | | | |
| 1.5 | 120 | 19 | 14 | 305001 | 14 |
| | 240 | | | 305002 | |
| 2 | 120 | 19 | 14 | 305003 | 14 |
| | 240 | | | 305004 | |
| 3 | 120 | 19 | 14 | 305005 | 16 |
| | 240 | | | 305006 | |
| 5 | 240 | 29 | 24 | 305007 | 18 |



CAUTION:
All installations utilizing electric heaters must be grounded to eliminate shock hazard. Power must be disconnected before servicing heaters.

CIRCULATION HEATER CONTROLS

Heatrex Circulation Heaters provide the user with an extremely efficient heat source which is readily adaptable to the control requirements which suit his process. When combined with properly selected controls, these heaters function with accuracy and economy of operation.

SELECTION: The selection of controls or a control system for a specific application or process should be based on the careful consideration of a number of factors including:

- Heater selection of proper size and type
- Acceptable range of temperature above and below desired set point
- Medium use for heat transfer
- Fluctuations of temperature due to variables in the process
- Over temperature protection requirements
- Operator requirements such as readability, control monitoring, etc.

Heatrex application engineering personnel are available to assist in the evaluation of your control requirements.



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