

Electric Heaters for Original Equipment and Processes



Vulcan

Strip Heaters

Sheath Material: Stainless steel suitable for sheath temperatures up to 1200° F

Sheath Sizes: Rectangular low profile 5/16" x 1-1/2" or 1/2" x 2-1/2", Lengths to 8 ft.

Installation: 5/16" x 1/2" mounting slot cut-outs at each end of tube

Standard Termination: #10-32 screw and nut with off-set orientation

Common Options: Wattage and voltage combinations, terminal orientations, lead wires, terminal housing, right angle flex conduit



Finned Strip Heaters

Sheath Material: Stainless steel with nickel plated steel fins for heat dissipation

Sheath Sizes: Tube is 1/2" x 1-1/2", Fins measure 1-3/8" x 2", Lengths to 4 ft.

Installation: 5/16" x 1/2" mounting slot cut-outs at each end of tube

Standard Termination: #10-32 screw and nut with off-set orientation

Common Options: Wattage and voltage combinations, terminal screw orientations, mounting brackets, lead wires, terminal housing, right angle flex conduit



Cartridge Heaters - Standard Construction

Sheath Material: 304 stainless sheath suitable for temperatures up to 1200° F and watt densities up to 50 watts/sq in max. depending on application

Sheath Sizes: 3/16" to 1-1/4" diameters in lengths from 1" to several feet

Installation: Insertion into tight tolerance hole

Standard Termination: High temperature lead wires internally connected

Common Options: Wattage and voltage combinations, flex conduit, right angle lead wires, internal thermostats, potted end seal



Cartridge Heaters - Thunderbolt High Wattage Construction

Sheath Material: Alloy sheath suitable for temperatures up to 1500° F and watt densities up to 350 watts/sq in max. depending on application

Sheath Sizes: 1/4" to 3/4" diameters in lengths from 1" to several feet

Installation: Insertion into tight tolerance hole

Standard Termination: High temperature lead wires externally connected

Common Options: Wattage and voltage combinations, flex conduit, right angle lead wires, internal thermostats, potted end seal



Cartridge Heaters - Immersion Style

Sheath Material: Alloy sheath designed for improved corrosion resistance

Sheath Sizes: 1/2", 5/8" and 3/4" diameters with extensive length selection

Installation: Threaded male fittings or flanges

Standard Termination: High temperature lead wire

Common Options: Wattage and voltage combinations, flex conduit, internal thermostats, potted end seal



Tubular Heaters

Sheath Material: Copper, Steel, Stainless, or Nickel Alloy. Selections for a variety of liquids, air/gas, and solids applications

Sheath Sizes: 1/4" to 1/2" with lengths up to 20 feet

Installation: Heaters can be supplied in almost any formed configuration with or without fittings, flanges, or custom mounting brackets

Standard Termination: Screw and nut studs (#8 - 32 or #10-32 depending on tube size)

Common Options: Wattage and voltage combinations, lengths, custom brackets, lead wires, tab terminals, flattened tube cross section, spliced heaters for lengths longer than 20 feet



Finned Tubular Heaters

Sheath Material: Steel with corrosion resistant finish suitable for sheath temperatures up to 800° F

Sheath Sizes: 7/16" diameter with 1-3/16" OD spiral wound fin brazed to tube

Installation: Standard models are available with and without threaded mounting fittings.

Standard Termination: Screw and nut studs (#8 - 32 or #10-32 depending on model)

Common Options: Wattage and voltage combinations, lengths, custom brackets, lead wires, tab terminals, stainless steel tube and fins, heavy Armorwall construction



Bushing Immersion Heaters

Sheath Material: Copper, Steel, Stainless, or Nickel Alloy. Selections for a variety of liquid materials.

Sheath Sizes: 5/16" to 1/2" in standard diameters. Single and multiple heating elements. Depth to 10 feet.

Installation: 1", 1-1/4", 2", and 2-1/2" NPT threaded mounting fittings in steel, stainless, and brass

Standard Termination: Screw and nut studs. Models with and without housing

Common Options: Wattage and voltage combinations, length, terminal housing, thermostats, temperature sensors, thermowells, lead wires, cordsets



Flanged Immersion Heaters



Sheath Material: Copper, Steel, Stainless, or Nickel Alloy. Selections for a variety of liquid materials.

Sheath Sizes: 5/16" to 1/2" in standard diameters. Multiple heating elements. Depth to 10 feet.

Installation: 3" through 14" 150 lb rated ANSI steel pipe flanges

Standard Termination: Screw and nut studs with general purpose or moisture resistant housing

Common Options: Wattage and voltage combinations, length, alternative terminal housing constructions, thermowells, thermostats, temperature sensors

Bottom Outlet (Urn Style) Heaters



Sheath Material: Copper for water temperatures up to boiling

Sheath Sizes: 7/16" diameter, single element and 3 element designs

Installation: Compression brass flange for through hole mounting in tank bottom

Standard Termination: Screw and nut studs with general purpose housing

Common Options: Wattage and voltage combinations, alternative terminal housings, low level thermostat cut-out switch

Over-The-Side Heaters



Sheath Material: Steel or Nickel Alloy for liquid heating.

Sheath Sizes: 7/16" diameter "L" shape or circular shape heating element bundle

Installation: Designed for easy in and out removal through top of tank. Heat is concentrated at bottom

Standard Termination: Screw and nut studs with moisture resistant housing

Common Options: Wattage and voltage combinations, element configurations, thermostat control, temperature sensors

Circulation Heaters - Pipe Styles



Sheath Material: Steel, Stainless, or Nickel Alloy within heat transfer pipe or tube shell.

Sheath Sizes: 7/16" and 1/2" diameter with overall exchanger lengths up to 10 feet

Installation: Inlet and outlet pipe fitting. Brackets on larger units.

Standard Termination: Screw and nut studs with general purpose or moisture resistant housing

Common Options: Wattage and voltage combinations, length, alternative terminal housing constructions, thermowells, thermostats, temperature sensors

Circulation Heaters - Compact Models



Sheath Material: Nickel Alloy sheath for excellent corrosion resistance

Sheath Size: 5/16" diameter with energy efficient multiple hairpin configuration

Installation: 1-1/2" NPT female fittings at each end of 2-3/8" diameter stainless exchanger

Standard Termination: Lead wires or screw and nut studs within 4 x 4 x 2 enclosure

Common Options: Wattage and voltage combinations, control thermostat, overtemp thermostat, exchanger lengths

Flow Through Air Heaters



Sheath Material: Stainless steel outer shell with efficient open resistance coil and ceramics

Sheath Size: Compact 1-1/4" diameter outer shell

Installation: 1/2" NPT male fittings at each end of exchanger tube

Standard Termination: High temperature leads with general purpose housing

Common Options: Wattage and voltage combinations, length, shell diameter, temperature sensors

Duct Heaters - Low Temperature



Sheath Material: Steel with corrosion resistant aluminum finish

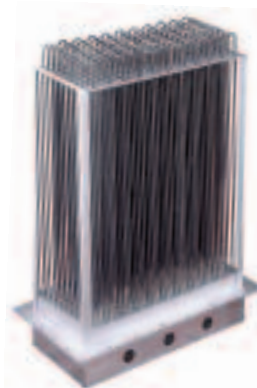
Sheath Size: 7/16" diameter with 1-3/16" OD spiral wound fin brazed to tube

Installation: Integral sheet metal flange for duct mounting. Standard models include auto and reset thermostats

Standard Termination: Screw and nut studs wired for single or 3 phase with housing

Common Options: Wattage and voltage combinations, insertion depth, temperature sensors

Duct Heaters - High Temperature



Sheath Material: Nickel Alloy suitable for sheath temperatures up to 1100° F

Sheath Size: 3/8" and 7/16" diameter up to several feet insertion depth

Installation: Pre-drilled heavy duty mounting flange plate

Standard Termination: Pre-jumpered screw and nut studs with metal housing

Common Options: Wattage and voltage combinations, insertion depth, thermostats, temperature sensors, moisture resistant housing

Enclosure Heaters with Shroud

Sheath Material: Nickel Alloy for maximum longevity in air application

Sheath Size: 5/16" diameter tubular construction configured for maximum heat dissipation

Installation: Perforated shroud can be mounted in various positions

Standard Termination: #10-32 screw tabs

Common Options: Wattage and voltage combinations, terminal housing, lead wires, temperature sensors



Enclosure Heaters - Low Profile

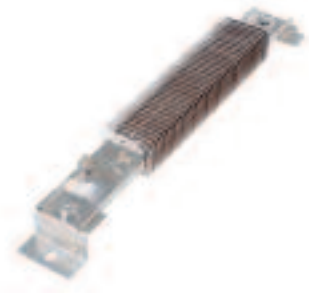
Sheath Material: Stainless steel with Nickel plated steel fins

Sheath Size: Tube is 5/16" x 1-1/2", Fins measure 1-3/8" x 2"

Installation: Right angle brackets with mounting holes

Standard Termination: Screw and nut stud

Common Options: Wattage and voltage combinations, length, lead wires, moisture resistant construction



Preweld Heaters

Sheath Material: Stainless steel for high temperature corrosion resistance

Sheath Size: Special flattened configuration for optimum heat transfer

Installation: Bracket provisions included for mounting bolts

Standard Termination: Twist lock plugs or screw and nut studs

Common Options: Wattage and voltage combinations, tube configurations, alternative terminal housing constructions



Heated Cutting and Sealing Tools

Sheath Material: Alloy sheath for high temperature performance and durability

Sheath Size: 1/2" diameter with precision machined and welded tool

Installation: Hand held tool designed for use on heat resistant work surface

Standard Termination: Cord set for power supply hook-up

Common Options: Wattage and voltage combinations, machined configuration of tool, cord set length



Vulcan

Headquartered in Porter, Maine USA, we take pride in our traditional values and the importance of providing our customers with quality engineered products and exceptional service. We realize that in today's competitive global environment we must continually strive for superior product performance, excellence in our manufacturing operations, and deliver outstanding value to our customers. Our success depends on your success with every Vulcan product purchased.

In addition to Electric Heaters for Original Equipment and Processes, we design and manufacture the following product lines:

Precision Thermocouples for Silicon Process Technologies

Thermocouple Calibration and Repair Services including our Flexible Thermocouple Management Programs

Temperature Sensor assemblies including capabilities with a complete range of Thermocouples, RTDs, and Thermistors

Temperature switches including the versatile Cal-stat Cartridge Thermostats in 1/4", 1/2" and 5/8" diameters with several mounting constructions

Flexible and Rigid-Flex Circuits including our diverse manufacturing process capabilities for multiple layer circuitry in combination with many specialized features

The Total Thermal Solution approach

Vulcan Electric designs and manufactures an extensive selection of metal sheathed heater constructions, temperature sensors, and assemblies. Our capabilities extend well beyond the industry typical sheathed heaters. Many of our customers take advantage of our Total Thermal Solution approach. Too often, the heater and temperature sensor are selected for an application based on “what is available”. This product selection approach may work okay in some applications, however, often the result is inefficient heating and poor temperature control performance (as well as unnecessary costly components and assembly labor). Our experience has shown that significant advantages in performance can be achieved by incorporating the heater and sensor as an integral part of the product or process. In other words, “let us design the heat into your application”. Our engineers will review your complete application and determine the best approach to put the heat in and produce the results you need.

General Application Guide for Heater Types

	Heater Construction	Advantage	Common Application Categories
Liquids Heating	Cartridge Heaters - Immersion Style	Compact design, high wattage concentrated in a small space.	Process baths, chillers, dispensing equipment, vending, lab equipment
	Bushing Immersion Heaters	Standard NPT installation fittings in sizes from 1" to 2-1/2". Permits 1 and 3 phase options.	Water heating, custom process equipment, heat transfer equipment, distillation
	Flanged Immersion Heaters	Standard ANSI pipe flanges for mounting. Very high total wattage capacities.	Industrial processes, waste treatment, holding tanks, viscosity control
	Over-The-Side Heaters	No special adapter fittings or flanges required. Good for temporary heating.	Cleaning tanks, drums, freeze protection, hydraulic oils, evaporation
	Bottom Outlet Heaters	Very low profile. High wattage concentrated in small area. Good for water heating applications.	Water heating, vaporizing, boiling, steam tables
	Circulation Heaters - Compact models	Compact design ready for plumbing to circulation system. Good corrosion resistance.	Recirculating or single pass systems, heat transfer equipment, tanks, cleaning processes
	Circulation Heaters - Pipe models	Standard ANSI pipe body with fittings. Ready for plumbing into circulation system.	Large recirculating or single pass systems, petro-chemical, waste treatment
	* Strip Heaters	Flat low profile. Multiple heaters can be assembled side by side to outside of tank wall.	Square or rectangular tanks, vessels, process equipment, viscosity control
	* Flattened Tubular Heaters	High wattage construction. Can be formed into a variety of shapes mounted to outside of tank wall.	Contoured tanks, vessels, process equipment, viscosity control
	<i>* Strip Heaters and Flattened Tubular Heaters are designed for mounting to the outside tank or vessel wall</i>		
Air/Gas Heating	Finned Strip Heaters	Integral mounting slots. Easy wiring of multiple heaters.	Drying chambers, freeze protection, ovens
	Finned Tubular Heaters	Can be designed into various shapes. High wattage concentration.	Forced air systems, volume drying processes, heating ducts, load banks
	Duct Heaters	Pre-assembled ready for installation into duct system. Low and High temperature options.	Make-up air, heat transfer systems, industrial processes, air handling systems
	Enclosure Heaters	Compact designs with low wattage output. Mounting provisions included.	Signal boxes, condensation control, panel warming, freeze protection, cabinets
	Flow Through Air Heaters	Tube design for concentrated localized heating. High wattage output.	Spot drying, air knives, cap sealing, adhesive curing, heat shrinking, ink drying
Solids Heating	Cartridge Heaters	Precision diameters for insertion into tight fitting holes. Efficient heating of solids.	Dies, thermal print heads, extruders, marking equipment, heat sealing, hot melt dispensing
	Tubular Heaters	High wattage construction. Can be formed into a variety of shapes for contours.	Preweld heating, contoured thermal tooling, semiconductor chucks
	Strip Heaters	Flat profile. Good for applications where machining of element holes is not practical.	Press platens, hopper dryers, desiccating equipment

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