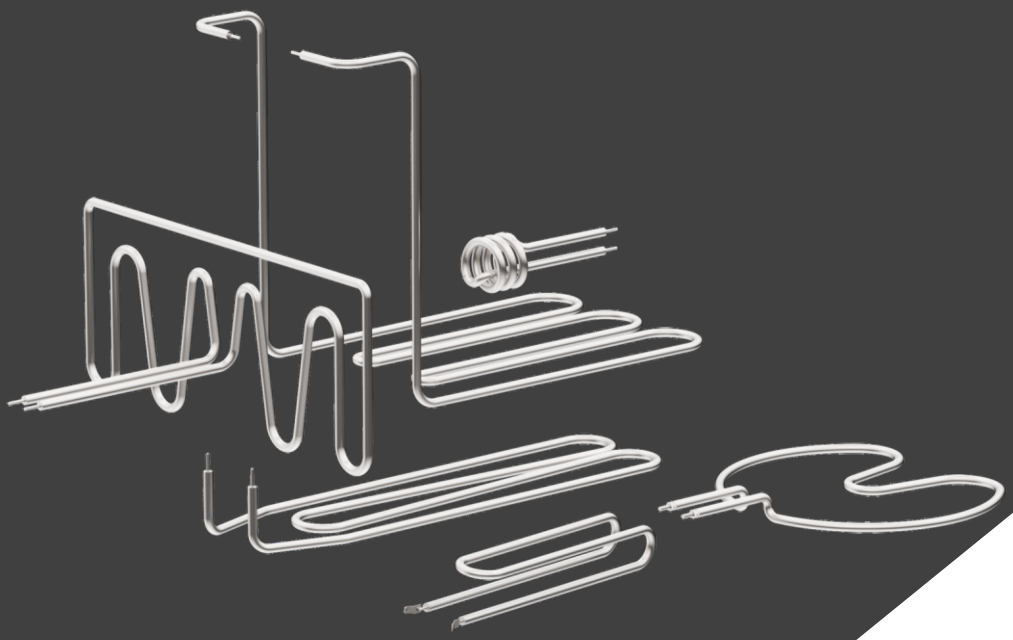
nobleheat™
Heating Technologies

AN ISO : 9001-2015 CERTIFIED CO.



TUBULAR HEATERS

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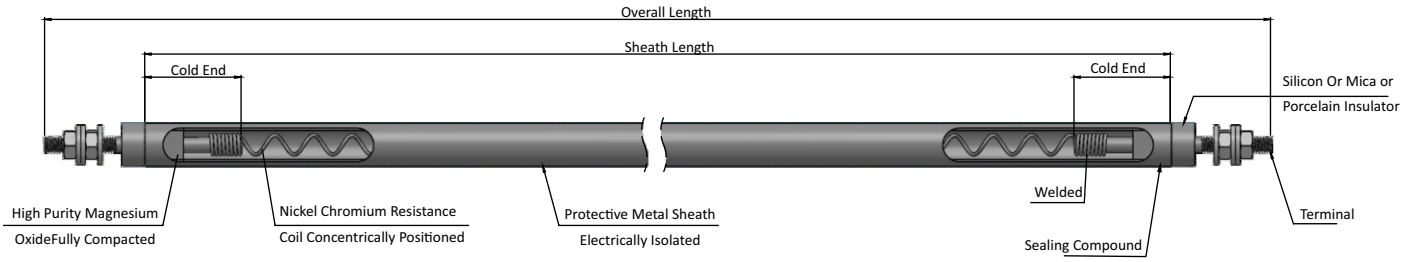
SCREW PLUG HEATERS :

These days, every industry uses heating applications in one way or another. Our daily lives are significantly impacted by the heating.There are significant concerns about the safety, environmental impact, and efficiency of many of the heating solutions being employed as the reliance on heating applications increases.While some of the systems are susceptible to fire incidents, many other conventional systems pollute the environment and produce large amounts of CO2 and other emissions. One of the best options available today is a tubular electric heater, which is the safest way to heat any fluid or surface without releasing any harmful gases.Usually, a resistive coil enclosed in a metal tube filled with insulating substances like magnesium oxide is used to create tubular heaters.No electric shock is transmitted to the exterior thanks to the heating coil, which is positioned in the center with uniform pitches and is isolated from the outer metal sheath by compacted magnesium oxide. All of the generated heat energy is simultaneously delivered to the process via the external body. Thus, the heater is considered one of the safest and most effective heating options.Heaters that use tubing Tubular heaters are well-known for their adaptability, durability, and dependability. They can be made from a variety of materials, electrical ratings, sizes, and supply systems. To fit a particular purpose, the heaters can be shaped into any shape. The process fluids, such as gas, liquid, and vapor, can be heated using the heaters.

Construction



1. Chromium and Nickel Resistance wire: The element's active length is traversed by a uniformly wound wire. To make cold ends, the ends are verified using the terminal pins.
2. High purity magnesium is found in magnesium oxide. To guarantee proper insulation, conduction, and compactness, oxide power is filled at an automated filling station between the coil and outer tube.
3. The heating element's outer sheath is a tube, either seamless or welded, that serves as protection. The choice of outer tube is influenced by a number of variables, including the fluid to be heated, pressure, and temperature.
4. The extended extremities of the heating elements are referred to as termination pins. The coils are fused at both ends with SS rods of a specified diameter. The non-heating length needed for any installation or application determines the rod's length.
5. End Sealing: Sealing is accomplished by using sealants, soft seals, and ceramic beads. The sealing keeps the heating element dry and prevents moisture from the air from getting inside. References and associated material

Applications.

Material of outer sheath	Application
Copper	Water, Oil, Grease, metal surface heating
Stainless Steel	Immersion Heating's in Water, Alkaline cleaning solutions, Tars, Mild Corrosive liquids, food processing equipment, Indirect and Radiant heating Air heating/ Gas heating. Hopper & tank heatings Large process plant applications.
Alloy 800	Cleaning and degreasing solutions, Corrosive liquids / gases. High temperature / High pressure
Alloy 600 series	Plating and pickling solutions, acid
Titanium	High Corrosive liquids

Design Considerations.

To guarantee the effectiveness, security, and dependability of the system, each and every application requires a thorough review. Each tubular heater and its associated components have different watt densities, sizes, shapes, and sheaths depending on their intended use.

Sheath Material	Copper, Stainless Steel (SS304, SS316, SS321) , Incoloy, Titanium, Other alloys as per application selection
Sheath Length	Up To 10mtr
Diameter	6mm, 8mm, 11mm, 12.5, 13.7mm, 16mm and 25mm

End Seal Options.

1. Teflon Seal is used where an effective sealing is required against moisture and oil contamination.
2. Silicon Rubber Seal : Most popular and highly used sealing method. The sealing can withstand upto 200 deg C temperature and provides long lasting moisture protection.
3. Epoxy Seal : Epoxy potting forms a good moisture seal with more mechanical strength than a silicon rubber seal. Recomonded for a system assembly with large no of tubular elements.
4. Cement : recomonded for the heater which operates at very high skin temperature. Provides protection against high viscous fluids and dusts. The top layer can be provided with a additional insulation to make it moisture resistance as well.

Note: *Watt density depends largely on the fluid to be heated and it can vary anywhere between 0.7w/cm² to 15W/cm².*