

CARTRIDGE HEATERS

Specialist In: Custom Built Heaters & Heater Assembly Unit Along-With Temperature Controller As Per Customer's Specification.



AN ISO 9001:2015 COMPANY

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Company Profile

"SUBHOT" the brand name of **Three Decades Rich**, quality oriented and completely indigenously manufactured IEC standard product since 1990, we are catering successfully to domestic and international Industries. We design develop and supply industrial heaters, heating elements, thermocouples and other high temperature Material Management equipments as per the customer's requirement. We have in house Design, Development & research facilities, follows by stringent quality control measures right from beginning to delivery of the material. Customer satisfaction is our first priority.

We manufacture various types of Tubular Electrical Heaters and heating systems, along with control accessories Cartridge Heaters, Mica Band Heaters, Ceramic Band Heaters, Casted Heaters, Furnace Heaters, Nozzle Heaters, Coil heaters, which are used in Hazardous and Non Hazardous area. In Tubular Electrical heater Heating element is Mineral filled sheathed tubular type. Heating element Insulation material used is Mgo (Magnesium oxide) and heating element wire material is Nichrome. Heating elements are manufactured and tested as per IS-4159 BIS Standards. Electrical heaters are suitable for application for Water, Oil, Chemical, Air, Fuel gas, Natural gases etc and Design as per requirement of customer based on the technical input provided by them. Heating unit consist of Heater vessel, Heater bundle, Terminal box, and U-Shaped heating element fitted on Tube sheet .The selection of heating element for a particular assembly depends on the uses & customers requirement total rating, surface loading, diameter of heating element tube, Operating temperature, space limitation, Type of electrical connection and number of bank etc. The heating element can be permanently fixed on tube sheet OR Can be removable type. Various Sheath material and sizes are available based on design requirement. The heating unit can be supplies Complete with Heater Vessel, Inlet-Outlet Nozzle/Flange, Lug Support and external insulation.

Heater vessels are generally designed as per ASME SecVIII Div-1. For Hazardous area flameproof terminal box are used which are duly certified by CMRI Dhanabad for Gas group IIA, IIB or IIC.

We are also manufacturing the following product at our works:

- Immersion heating elements for Water, Oil and Chemical heating.
- Air Heating element
- Fuel gas and Process gas heater.
- Regeneration heaters.
- Large heating unit upto 520KW with terminal box and control panel.
- Heater for ESP and Ash handling system.
- Cartridge Heaters
- Mica Band Heaters
- Ceramic Band Heaters
- Casted Heaters
- Furnace Heaters



Size of heating tube: 8.2mm, 9.5mm, 11.0mm, 12.0mm, 12.5mm, and 16.0mm,19.0 mm or as per customer requirement.

MOC of Heating Tube: Copper, Titanium, SS all grade, Incoloy 800,Inconel etc.

Sizing of Tube Sheet: As per design requirement.

Sizing of Heater Vessel: As per design requirement.

Thermocouple: J & K Type own make in SS all grade and Incoloy.

CARTRIDGE HEATER



DESCRIPTION

Cartridge Heaters Are Tubular Heating Elements Designed To Deliver Efficient, Precise, And Controlled Heating In A Wide Variety Of Industrial Applications. These Heaters Consist Of A High-Quality Resistance Coil Insulated With Compacted Materials And Enclosed Within A Metal Sheath, Ensuring Excellent Thermal Conductivity And Electrical Safety.

They Are Available In Two Types:

- High Density Cartridge Heater
 - Built Using High-Purity MgO (Magnesium Oxide) Insulation Densely Packed Around The Resistance Coil.
 - Supports High Watt Densities And Elevated Operating Temperatures (Up To 800°C).
 - Designed For Demanding Industrial Applications Requiring Durability And Uniform Heating.
- Low Density Cartridge Heater
 - Uses Ceramic Powder Insulation With Lower Compaction.
 - Ideal For General Heating Requirements, Where Extreme Watt Density Is Not Necessary.

COMPONENTS

Component	Details
Heating Element	NiCr resistance wire wound for maximum efficiency and heat generation.
Metal Sheath	Stainless steel or Incoloy sheath for durability, oxidation, and corrosion resistance.
Insulation	High-purity MgO (High Density) / Ceramic Powder (Low Density) for electrical isolation and thermal conductivity.
Terminals	Sturdy terminals with options for flexible leads, threaded fittings, or right-angle exit.
Sealing Options	Epoxy, silicon, or Teflon sealing to resist moisture, oil, and contaminants.
Mounting Options	Flanges, threaded fittings, or press-fit installation for secure mounting.

TECHNICAL SPECIFICATION

Parameter	Specification
Type	High Density, Low Density
Power Range	50 W to 5 kW
Voltage Options	Up to 480 V
Temp. Range	Up to 800°C
Diameter	3 mm to 30 mm (custom available)
Length	25 mm to 1500 mm (custom available)
Sheath Material	SS304, SS316, or Incoloy
Insulation	MgO (High Density) / Ceramic (Low Density)
Termination	Leads, terminals, threaded post, or customized exit
Tolerance	Diameter: ± 0.02 mm, Length: ± 1 mm

ADVANTAGES

- Versatile – Suitable for both high-performance (high density) and general-purpose (low density) applications.
- Efficient – High thermal conductivity ensures fast and uniform heating.
- Durable – Corrosion-resistant sheath materials extend service life.
- Compact Design – High watt density allows more power in smaller space.
- Customizable – Wide range of diameters, lengths, and terminations available.
- Energy Saving – Quick response time reduces heat-up cycles and saves energy.
- Low Maintenance – Reliable performance with minimal downtime.

APPLICATIONS

- **Plastic Industry** – Injection molding, hot runner systems, sealing bars
- **Packaging Machinery** – Cutting, sealing jaws, shrink tunnels
- **Food Processing** – Heat sealing, food-grade heating equipment
- **Medical Equipment** – Sterilizers, diagnostic and testing devices
- **Laboratory & R&D** – Precision heating in analytical equipment
- **Industrial Heating** – Dies, molds, platens, fluid heating systems

FEATURES

- Available in High Density and Low Density variants
- Excellent heat transfer and uniform heat distribution
- High watt density for compact heating requirements
- Long life due to durable sheath and high-grade insulation
- Corrosion and oxidation resistant
- Customizable in diameter, length, wattage, voltage, and termination
- Options for right-angle, straight, or flexible lead exits
- Quick heating response and efficient energy utilization