

“MAXPAK” Swaged Sleeve Heaters.....a revolutionary approach to cylindrical heating.

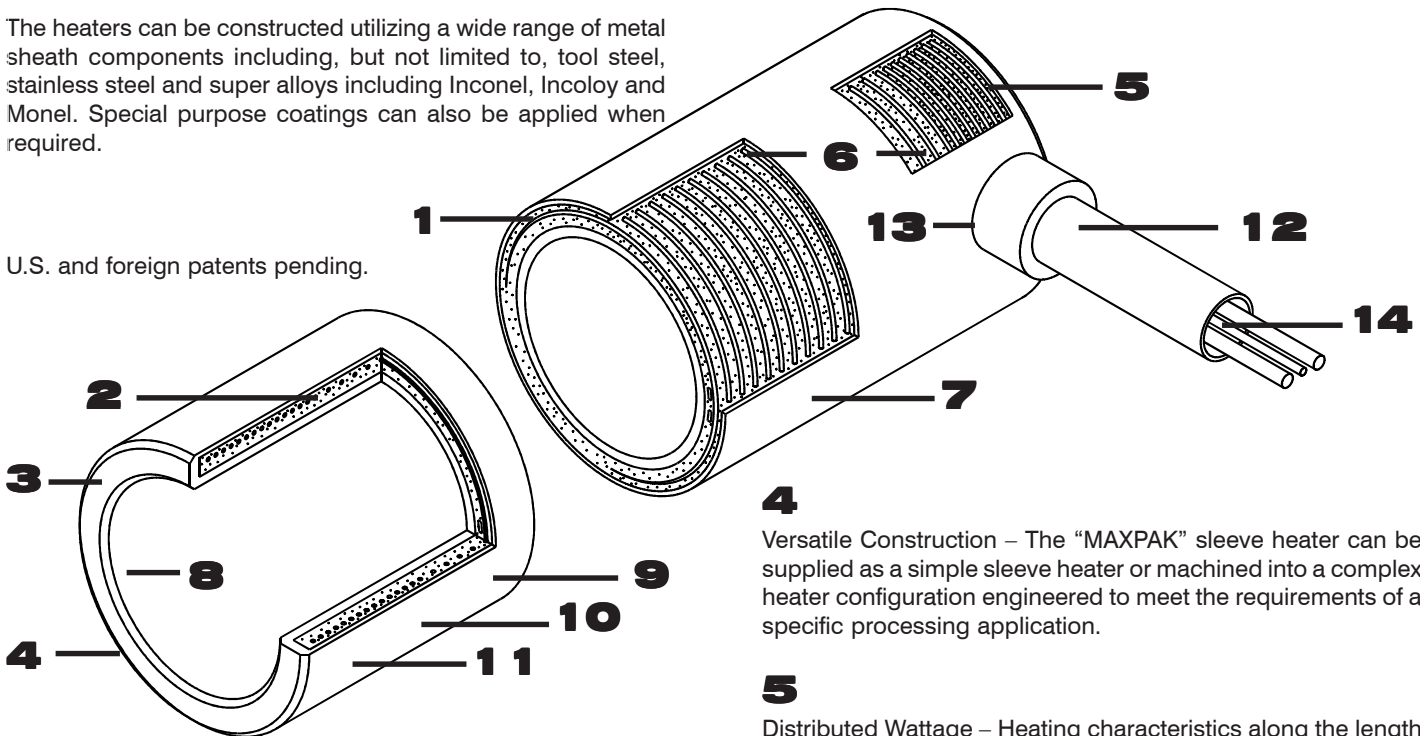
Duratherm is now offering revolutionary “MAXPAK” swaged sleeve heater. This exciting product offers the performance of a swaged cartridge heater in a hollow tube configuration. The versatile, swaged sleeve heater can be utilized in a very diverse range of applications including plastics, food process, packaging, glue dispensing, aerospace, liquid metal transfer, die casting, chemical liquid process, glass process and gas heating equipment.

Ultimate Performance And Versatility.....

The “MAXPAK” sleeve heater's thin wall section combined with high density swaged construction assures optimum performance in all external and internal heating applications. The sleeve heater also allows components to be inserted in the large bore when used for internal heating applications.

The heaters can be constructed utilizing a wide range of metal sheath components including, but not limited to, tool steel, stainless steel and super alloys including Inconel, Incoloy and Monel. Special purpose coatings can also be applied when required.

U.S. and foreign patents pending.



1
Extreme Durability – High temperature heating element assemblies imbedded in ceramic insulation have been compacted to near theoretical density providing optimum life and performance at temperatures up to 1600° F. (871° C.) .

2
Optimum Thermal And Electrical Properties – Swage compacted construction maximizes heat transfer while providing superior dielectric and insulation resistance.

3
Compact Heater Construction – Thin element wall section permits installation in restricted areas of tooling.

4
Versatile Construction – The “MAXPAK” sleeve heater can be supplied as a simple sleeve heater or machined into a complex heater configuration engineered to meet the requirements of a specific processing application.

5
Distributed Wattage – Heating characteristics along the length of the heater can be modified by varying the watt density on parallel cores and varying the element pitch along the length of individual element cores. This electrical construction option provides a means of adjusting heating conditions along the length of the heater to suit the requirements of the application.

6
Independent Heat Zones – Sleeve heaters can be configured with multiple independently controlled heat zones to provide localized adjustment of heating conditions along the heater length.

In addition to the “MAXPAK” sleeve heater's superior heat transfer and performance characteristics, it provides far superior dielectric properties than that of all cylindrical thin wall cast heater, coiled heater and coiled heaters imbedded in machined tube configurations.

The unique “MAXPAK” sleeve heater construction and design permits easy addition of heating control and performance enhancements. Common sleeve heater options include distributed wattage, multiple independent heat zones, multiple integral thermocouples and multiple thermowells designed to accommodate removable thermocouples.

"MAXPAK" Swaged Sleeve Heaters.....optimum performance and unequaled versatility.**7**

Superior Heat Uniformity – The computer designed, precision wound, single layer element in combination with high surface element wire coverage provides the best possible circumferential and longitudinal heat uniformity.

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Customizable Inner Bore – The sleeve heater inner bore can be machined to close tolerances for a precision fit to the outside diameter of any cylindrical component or into any special configuration dictated by the application.

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Customizable Exterior Sheath – The sleeve heater exterior sheath can be machined into simple or complex configurations to provide any desired combination of mechanical design and application specific features.

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Optional Sheath Materials – The "MAXPAK" sleeve heater can be supplied in a wide range of metal sheath materials including, but not limited to, tool steel, stainless steel and super alloys including Inconel, Incoloy and Monel.

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Optional Coatings – Special purpose coatings for corrosion, oxidation and wear resistance or to provide reduced friction and anti-stick properties can be applied when required.

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Optional Lead Systems – Standard leads exit from durable exit fittings providing a reinforced and sealed lead system. Optional lead insulation materials and lead protection provide trouble free operation. Lead systems can be customized to suit application requirement and are designed to be fully repairable.

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Optional Lead Locations – Single or multiple lead exits can be provided at the ends of the sleeve heater as well as any desired location along the length of the sleeve heater.

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Wide Selection Of Sensor Options – Sleeve heaters can be equipped with one or more internal thermocouples, RTD's, thermostats or thermowells designed to accommodate removable mineral insulated cable thermocouples. Thermocouple junctions can be located at any desired location along the sleeve heater length. Thermocouple options include popular type "J" and "K" calibration in both grounded junction and ungrounded junction configurations.

"MAXPAK" swaged sleeve heaters are offered in both an economical tube style construction and the fully customizable machined construction. Sleeve heaters can be utilized as a independent heater or can be supplied as fully machined integrally heated component with a virtually unlimited array of machined features.

Standard tube style sleeve heaters are manufactured with a 304 series stainless steel sheath but can be supplied in other alloys including incoloy 800. The machined sleeve heater version is normally supplied with a 303 series stainless steel but is readily available in optional sheath materials including other 300 and 400 series stainless steel alloys, tool steels, low expansion alloys and super alloys including Inconel, Incoloy and Monel. Selection of the appropriate metal sheath facilitates operation at temperatures up to 1600° F. (871° C.) continuous. Special purpose coatings can also be applied when required.

Versatile, Reliable And Cost Effective.....

The "MAXPAK" swaged sleeve heater is an extremely versatile heater configuration providing maximum performance in a diverse range of external cylindrical heating applications. The sleeve heaters large internal bore also allows tooling components and control devices to be inserted into or through the heater when applied as a cartridge heater in specialized internal heating applications.

Typical "MAXPAK" Swaged Sleeve Heater Applications

Runnerless System Bushings And Components
Injection Molding Machine Nozzles
Thermoplastic And Thermoset Mold Core Heating
Blow Molding Nozzles And Manifolds
Zinc And Magnesium Diecasting Nozzles
Glass Processing Equipment
Wire Extrusion Preheaters
Wire Insulation Sintering And Curing Equipment
Container Heat Sealing Heads
Plastic Film Sealing Rollers
Hot Melt Glue Equipment
Heat Staking And Insertion Tooling
Plastic Welding Heads
Melting Pots For Metals, Plastics, Waxes And Salts
Pultrusion Dies And Post Cure Tooling
Branding Equipment
Heated Spray Nozzles
High Temperature Dimple Die Equipment
Heated Roller Systems
Inline Process Heating Of Liquids And Gases
Specimen And Sample Heating Equipment
Valve And Pipe Heating Applications
Brazing And Soldering Furnaces
Steam Generation Equipment