BARREL HEATERS

Watlow has the Barrel Heater for Your Plastics Processing Application

Watlow offers a full line of barrel heaters for the plastics industry. While every Watlow heater has a unique set of qualities, each Watlow barrel heater is designed with the needs of plastics processing in mind.Whether you require high performance, high temperature, high watt density, or all of these, Watlow has the heater to best fit your application.

Watlow's family of barrel heaters include:

- Ceramic Knuckle Heaters
- MI Heaters
- THINBAND® Mica Heaters

These barrel heaters are ideally suited to meet the demands of today's new resins and provide a wide range of benefits including:

- High performance materials such as Watlow's exclusive mineral insulation and high temperature ceramics which contribute to excellent insulation and long heater life
- Aluminized and stainless steel sheaths resulting in corrosion resistance
- Flexible designs ensuring easy installation and removal

Applications

- Injection molding machines
- Extrusion equipment
- Blown film dies

Ceramic Knuckle Heaters

Watlow's ceramic knuckle barrel heaters are designed to provide high performance heating at temperatures up to 760˚C (1400˚F).This level of performance is achieved from the ceramic knuckles that provide secure insulation and long heater life.

The construction of the ceramic knuckle heater includes interlocking ceramic blocks with resistance wires threaded through holes in the ceramic.This method provides superior heat distribution across the unit, resulting in a uniformly heated surface. Ceramic knuckle heaters are specifically engineered and manufactured with three layers:

- Aluminized steel sheath layer – improves mechanical protection to heater and resists corrosion
- Ceramic fiber layer – provides thermal insulation, energy conservation and minimizes heat loss
- Ceramic knuckle layer – provides mechanical protection and electrical insulation to the resistance element, which increases heater life and conducts or radiates the heat to the barrel

Features and Benefits

Ceramic insulator

- Allows for high temperature operation while providing longer heater life and accurate heating

Aluminized steel cover

- Provides excellent protection from abrasion

Conduction heat transfer method

- Ensures dependable heat distribution

Performance Capabilities

- 760˚C (1400˚F) operational temperatures
- Watt densities to 7 W/cm^2 (45 W/in^2)
- Single or three phase, 600V~(ac), 20 amp

WATLOW

STL-BARR-0102

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Printed in the USA on Recycled Paper, 15% Postconsumer Waste

MI Heaters

Watlow's mineral insulated (MI) barrel heaters are high performance barrel heaters that utilize Watlow's exclusive mineral insulation – a high thermally conductive material.The heater construction consists of a thin layer of the MI material used to electrically insulate the element wire from the inside diameter of the heater sheath.A thicker, "low" thermal conductivity layer backs up the element wire, directing the heat inward toward the part that is being heated.The result is more efficient heat transfer – a performance solution that lowers element wire temperatures and increases heater life.

Features and Benefits

Operating temperatures to 760˚C (1400˚F)

- Makes it possible to safely melt even the newest resins like PEEK™, Teflon®, Ultem® and Zytel®

Higher watt density than any other barrel heater

- Contributes to faster heat-up and throughput to increase productivity

High thermal conductivity of MI and low mass construction give almost instant response to temperature control

- Eliminates thermal lag and temperature overshoot

Stainless steel sheath as well as side fold design resists contamination by overflow of plastic or other free-flowing materials

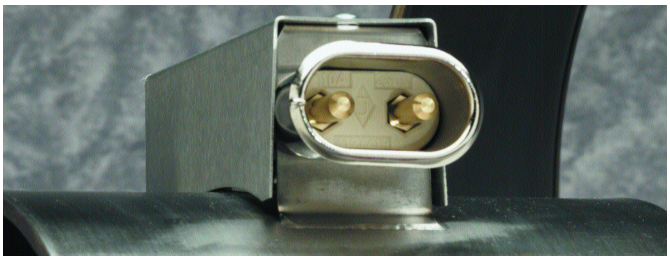
- Side folds are positioned on the inside diameter rather than the outside diameter

Permanently attached clamp bars eliminate cumbersome clamping straps

- Easier installation

Performance Capabilities

- Heater operating temperatures to 760˚C (1400˚F)
- Watt densities to 35.6 W/cm^2 (230 W/in^2) available on small diameter nozzle bands
- Watt densities to 15.5 W/cm^2 (100 W/in^2) available on large diameter barrel heaters



European Style Plugs provide a simple and safe way to apply power. The combination of high temperature male and female quick disconnect plug assemblies eliminate all live exposed terminals and electrical wiring.

THINBAND® Mica Heaters

Watlow's THINBAND® barrel heater is a redesign of traditional mica barrel heaters. THINBAND barrel heaters deliver fast and install easily, keeping costs down and machines running.

Features and Benefits

Flexible, one piece design

- Makes installation faster on plastic processing equipment because it can be opened to the full diameter of the barrel without internal damage to the heater; the THINBAND heater can be installed on a barrel without removing other heaters already in place

Only one set of leads or terminals needed

- Unlike two sets required on two-piece barrel heaters

Contamination resistance

- Heater construction eliminates outside folds on the heater

Barrel Heater Termination and Clamping Options
Termination Options

Watlow offers a large selection of termination styles providing the opportunity to customize the heater to a particular application for improved performance. Some termination choices include, but are not limited to, Post Terminals, Stainless Steel Braids, Flexible Lead Wire, Flexible Stainless Steel Hose and European Style Plugs (Horizontal and Vertical).

Clamping Options

In addition to Watlow's offering of various termination styles, we also offer a variety of clamping options. Some of these clamping options are, but are not limited to, Tig Welded Barrel Nuts, Low Profile Clamp Bars, Clamping Pads and HV Wedge-Lok.

For more information on Watlow's line of barrel heaters, contact your local Watlow representative.

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