



HT MICA BANDS



MI BETTER BANDS



PERMAHEAT BAND
HEATERS



ULTIMA BANDS

HT Mica Band Heaters

Cost-Effective, High-Performance Heating for Cylindrical Applications



TUTCO's HT Mica Band Heaters are engineered to deliver fast, efficient, and reliable heating across a wide range of cylindrical applications. Designed with premium mica insulation, stainless-steel construction, and a precision-wound resistance element, these heaters provide uniform heat distribution, rapid response, and long service life in demanding industrial environments. Built to operate at temperatures up to 900°F / 482°C (Up to 1100°F for certain applications*), HT Mica Band Heaters are a versatile and cost-effective solution for industries ranging from plastics processing to chemical systems and scientific testing. Manufactured in the USA and fully customizable, TUTCO's HT Mica Bands are ideal for OEMs and end users seeking a balance of performance, flexibility, and value.

** Call for details*

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How HT Mica Band Heaters Work

HT Mica Band Heaters operate on the principle of electrical resistance heating. When voltage is applied, current flows through a resistance wire embedded within layers of mica insulation. This generates heat, which is transferred through a stainless-steel sheath directly to the cylindrical surface being heated.

Because the heater is tightly clamped around the component—such as a barrel or pipe—it delivers efficient conductive heat transfer with minimal energy loss.

The use of high-temperature mica insulation provides:

- Excellent dielectric strength
- Efficient thermal conductivity
- Stable performance at elevated temperatures

Specifications	
Maximum Operating Temperature	900°F /482°C (1100°F for certain applications)
Holes	Yes
Cutouts	Yes
Durability	Good
Power	45 W/in² (7 W/cm²)
Wattage Tolerance	+5% / -10%
Available Voltage	12 to 480V, 3 Phase Optional
Lead-Wire Terminations	10A
Screw Terminations	10-24UNC: 25 A (Standard) 8-32UNF: 20 A (On Request)
Resistance Tolerance	+10% / -5%
Minimum Width	3/4" (19.1mm)
Width Tolerance	±1/16" (1.59mm)
Minimum Inside Diameter	1" (25.4mm)

Features and Benefits

Fast Heat-Up and Response

HT Mica Band Heaters are designed for rapid temperature ramp rates, helping reduce startup times and improve process efficiency.

Efficient Heat Transfer

Mica insulation allows for uniform and consistent heat distribution, minimizing hot spots and improving process control.

Cost-Effective Performance

Compared to other band heater technologies, HT Mica Band heaters provide an excellent balance of performance and affordability, making them ideal for general-purpose industrial heating.

Durable Construction

A stainless-steel sheath protects the heater from corrosion and mechanical stress, ensuring long-lasting performance in industrial environments.

Flexible and Customizable Design

HT Mica Bands can be tailored to meet virtually any application requirement, including:

- One-piece or multi-piece construction
 - Partial coverage or reverse configurations
 - Custom holes, cutouts, and terminations
 - Multiple clamping and lead protection options
-

Design Considerations

Selecting the right HT Mica Band Heater requires careful evaluation of:

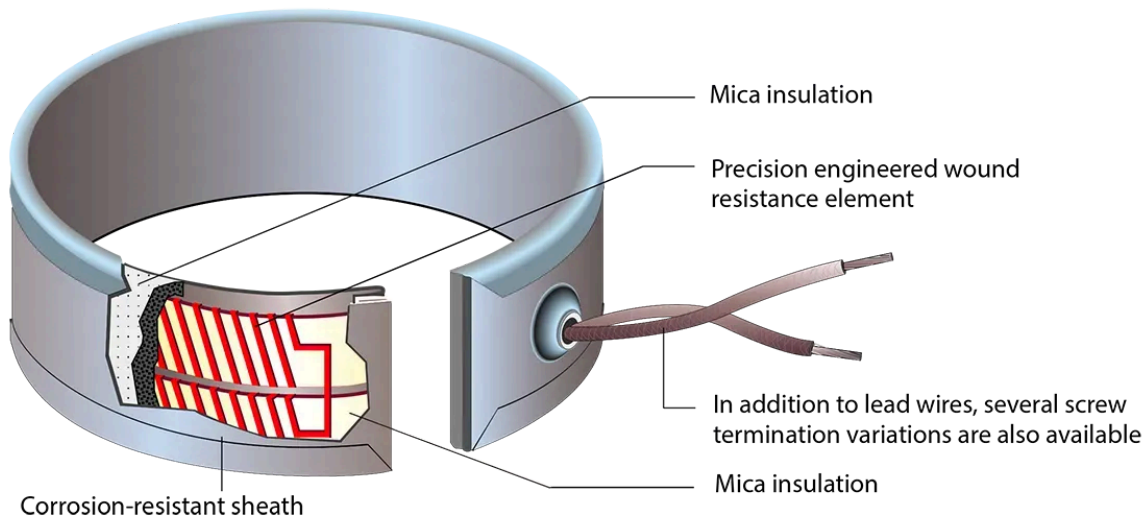
- Diameter and width of the heated surface
- Required operating temperature
- Watt density and heat-up time requirements
- Environmental exposure (moisture, contamination, vibration)
- Clamping pressure and surface contact

Proper installation is critical. A tight fit ensures efficient heat transfer and prevents overheating or premature failure.

Material and Construction

- Precision engineered wound resistor element
- Optional wire leads or screw-down terminations
- High-temperature oxidation-resistant stainless-steel sheath
- Connections are welded to an ST. ST. pad and properly insulated
- U.L. / C.S.A. available

- Standard wire length is 10". Custom length added upon request
- Several lead wire protection options - fiberglass sleeve, ST. ST. braid, armor, armor with German plug, ST. ST. box with German plug, copper 90° elbow, and other specified pipe couplings and power plugs
- Grounding options - none, ground stud or ground wire
- Clamping options - 1 or 2 piece standard or full-width strap, strap ends, bar, ear, Belleville spring washer, or spring bolt clamping



Applications

HT Mica Band Heaters are widely used in applications requiring precise, uniform heating of cylindrical surfaces.

Plastics

Plastic processing is one of the most common uses for HT Mica Band Heaters. Their ability to deliver consistent temperatures helps ensure material flow and product quality.

- Extruders and extrusion die heaters
- Plastic injection molding
- Injection molding nozzle heaters
- Blown film processes
- Blow molding machines

Food and Packaging

Consistent heat is essential for maintaining quality and efficiency in food and packaging operations.

- Food processing equipment
- Packaging and sealing systems
- Warming applications

Industrial Processes

HT Mica Bands provide reliable heating in a variety of industrial environments where temperature control is critical.

- Chemical processing
- Pipe and line heating
- Drum and barrel heating
- Fuel cell temperature control

Scientific and Specialty Applications

HT Mica Band Heaters are also used in applications requiring precise thermal control.

- Scientific testing equipment
 - 3D printers
 - Medical process heating
-

Why Choose an HT Mica Band Heater

Engineered for Performance and Value

HT Mica Bands provide an optimal balance of cost, efficiency, and durability for a wide range of applications.

Custom Solutions for Every Application

TUTCO engineers work closely with customers to design heaters that fit specific requirements, ensuring optimal performance.

Proven Reliability

Built with high-quality materials and precision manufacturing, TUTCO heaters are trusted across industries.

Fast Lead Times

From single-piece orders to large production runs, TUTCO supports customers at every stage.

Global Manufacturing Footprint

Flexible production capabilities support customers worldwide.

When to Choose HT Mica Band Heaters

HT Mica Band Heaters are often the preferred solution when applications require reliable performance at a competitive cost. However, selecting the right band heater depends on temperature, environment, and durability requirements.

HT Mica Bands are typically the best choice when:

- Operating temperatures are below 900°F (482°C)
- The environment is clean and relatively dry
- Fast heat-up and responsiveness are important
- Cost efficiency is a key consideration

For more demanding conditions, other TUTCO band heater options may be better suited:

- MI Better Bands for higher temperatures and watt densities
- Ultima Bands for harsh, contaminated, or high-vibration environments
- Permaheat Bands for lower temperature applications requiring durable aluminum construction

Performance Considerations

Several factors influence the performance of HT Mica Band Heaters in real-world applications:

Watt Density Selection

Higher watt density provides faster heat-up but must be balanced against the ability of the system to dissipate heat. Improper selection can lead to overheating and reduced lifespan.

Heat Loss and Insulation

Applications with significant heat loss—such as exposed barrels or high airflow environments—may benefit from external insulation to improve efficiency and reduce energy consumption.

Thermal Expansion

As cylindrical components expand and contract during operation, heater fit and clamping must accommodate these changes without compromising contact.

Process Stability

Consistent heater performance contributes directly to process stability, particularly in applications like plastic extrusion and injection molding where temperature variations can affect product quality.

OEM Integration and Customization

HT Mica Band Heaters are widely used by OEMs due to their flexibility, scalability, and ease of integration into equipment designs.

TUTCO works closely with OEM manufacturers to develop heaters that:

- Fit within tight mechanical constraints
- Integrate with existing control systems
- Support production scalability from prototype to high volume
- Meet specific electrical and thermal requirements

Customization options allow OEMs to design heating solutions that align with their equipment, rather than adapting equipment to standard heater designs.

LEAD OPTIONS

ON THICKNESS,
EACH SIDE OF
GAP

ON ONE SIDE OF
GAP

ON TOP, ONE
NEAR GAP,

Available with leads exiting axially or along the width of the band. Axial leads can be positioned on each side of the gap or on one side only. Axial leads feature full contact clamping for longer heater life. 10" (25.4 cm) leads standard, other lengths available.

FLEXIBLE LEADS, NEAR GAP, WITH CAP



**ON TOP, NEAR
GAP WITH CAP
AND 90° TUBE**



**ON TOP, NEAR
GAP WITH CAP
AND 90° TUBE**



**ON TOP, NEAR
GAP WITH CAP
AND 90° TUBE**

Low profile cap and tube with leads exiting axially, 90° to axis, or at a specified 15°, 30°, or 45° from axis. Axial leads exit in direction of junction/termination. If heaters are in tandem, they can be positioned next to one another. 90 degree cap ideal for installations where access is limited. 10" (25.4 cm) leads standard, other lengths available.

Low profile cap and tube with leads exiting axially, 90° to axis, or at a specified 15°, 30°, or 45° from axis. Axial leads exit in direction of junction/termination. If heaters are in tandem, they can be positioned next to one another. 90 degree cap ideal for installations where access is limited. 10" (25.4 cm) leads standard, other lengths available.

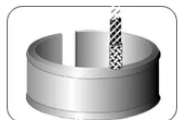
TWO PIECE BAND

Specify for easy installation/removal where projections or tandem positioned heaters are in use. When using two-piece heaters, each half is designed with half of the total wattage requirement. This has the capability of being used on either 120 Volt ($V_1 = V_2 = V$ Total) when connected in parallel or 240 Volts ($V_1 + V_2 = V$ total) when connected in series.

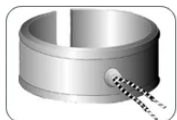
GROUND WIRE

A ground wire is available on most heaters where grounding is required.

Additional Lead Options: FLEXIBLE LEADS, OPPOSITE GAP



**ON THICKNESS,
OPPOSITE GAP**

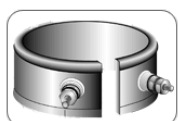


**ONE PIECE ON
TOP,
OPPOSITE GAP**

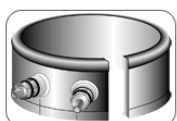
The cap and tube option gives protection near the sheath. Leads can exit axially, 90° to the axis, or at a specified 15°, 30° or 45° from the axis. 10" (25.4 cm) lead standard. Other lengths available.

SCREW TERMINAL OPTIONS

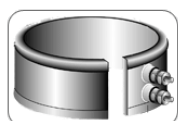
SCREW TERMINALS NEAR GAP



**ON TOP, EACH
SIDE
OF GAP**



**ON TOP, ONE
PLACE NEAR GAP,
ALONG LENGTH**



**ON TOP, ONE
PLACE NEAR GAP,
ALONG WIDTH**

Screw terminals can be positioned near the gap on each side, along the width, or along the length. This style of terminal helps simplify lead wire connections.

SCREW TERMINALS OPPOSITE GAP



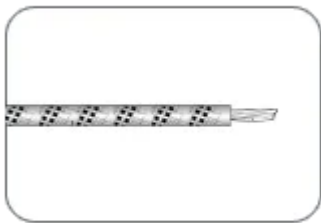
ON TOP,
OPPOSITE GAP,
ALONG LENGTH



ON TOP,
OPPOSITE GAP,
ALONG WIDTH

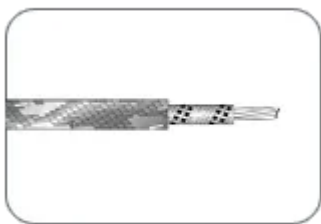
Screw terminals can also be positioned opposite the gap either along the width or along the length.

LEAD PROTECTION



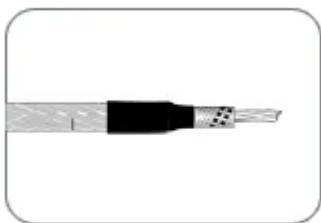
PLAIN LEADS

Our high temperature mica insulated leadwire with nickel standard conductors is suitable for continuous service up to 842°F (450°C).



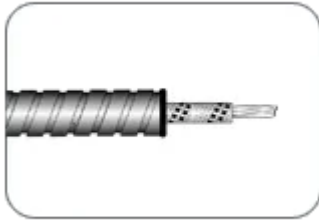
SLEEVING

Fiberglass silicone rubber coated sleeving class C1, 392°F (200°C) service. Provides extra insulation where wire is exposed to heat, molten plastics or abrasion. Rated for 1500 volts at 428°F (220°C), except 5/16" size which has no voltage rating.



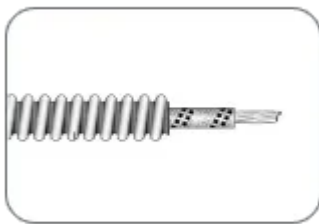
STAINLESS STEEL BRAID

Stainless steel over braid is most commonly specified in applications where leads may be subjected to abrasion due to movement of the application. Lead wires may be rubbing together or passing over sharp objects.



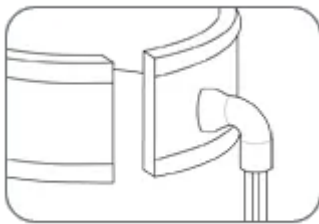
STAINLESS STEEL ARMOR

Used over leads in areas where more protection is necessary. Selected for similar applications as the stainless steel braid, in addition to applications where non-fluid contamination may come in contact with the leads. This lead protection is not as flexible as the braid. Stainless steel square lock construction.



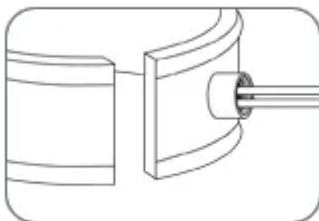
CONVOLUTED ARMOR

This is a seamless product and can be attached to the heater so that fluids do not contaminate the leads. This system of lead protection is generally associated with the Sealed Band construction. Not recommended where leads are flexed in the application.



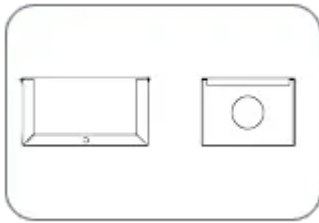
COPPER ELBOW

Simple straight abrasion-resistant stainless steel armor or moisture-resistant armor is attached to a 90° copper elbow to accommodate applications where lead access is only possible from one side and armor exit direction is a concern. When ordering without a swivel option, specify direction of 90° copper elbow.



PIPE COUPLING/EXTENSION TUBE

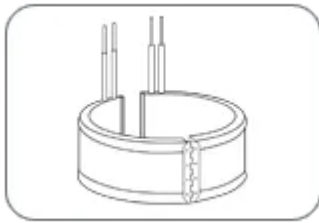
These pipe couplings, welded to the heater sheath, provide a method of fastening conduit or armor to the heater which can be disconnected from the heater as required. Standard stainless steel.



STANDARD TERMINATION BOX

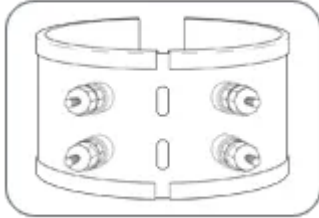
Designed for protection safety, snap-off cover leaves terminals easily accessible.

SHAPES AND CONSTRUCTION



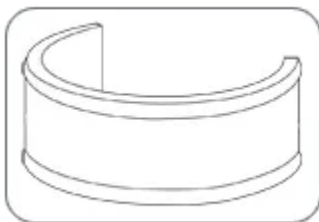
HINGED BAND

Available in two-piece heaters for applications in which the assembly is frequently required to be opened for easy and registered positioning around the surface.



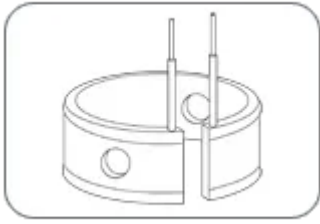
EXPANDABLE BAND

A heater which can be easily expanded to fit around a surface. Not for applications requiring consistent removal. Can be expanded 2-3 times without parting.



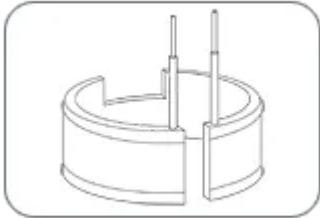
PARTIAL BAND

Available in a variety of terminations and clamping styles (please indicate when ordering). Specially constructed to any angle. Please specify inner diameter, width, angle and termination style.



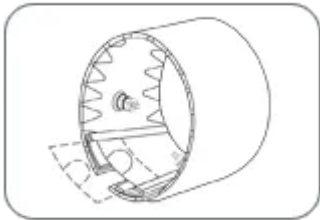
SPECIAL WITH HOLES

Heaters can be built to satisfy your special requirements. Certain applications require holes for thermocouples, to clear tubing, wiring, and other obstacles. These modifications require customer drawings to specify exact diameters and locations of the holes. Special order only.



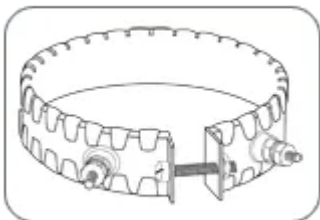
SPECIAL WITH CUTOUT

When clearance is a problem with band heater installation, consider requesting slot cut-outs. This can greatly facilitate installation. Drawing is required with exact dimensions and locations. Special order only. Specify length, maximum length: 12" (30 cm).



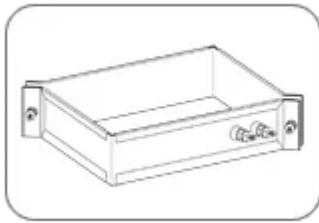
REVERSE BAND

Design allows the heater to be expanded and thus heat from an internal surface. Available in a variety of clamping styles (please indicate when ordering; shown is the wedge lock low profile clamping). Constructed with a fully notched case.



FULLY NOTCHED BAND

Fully notched band provides greater flexibility. Available in a wide variety of termination styles.



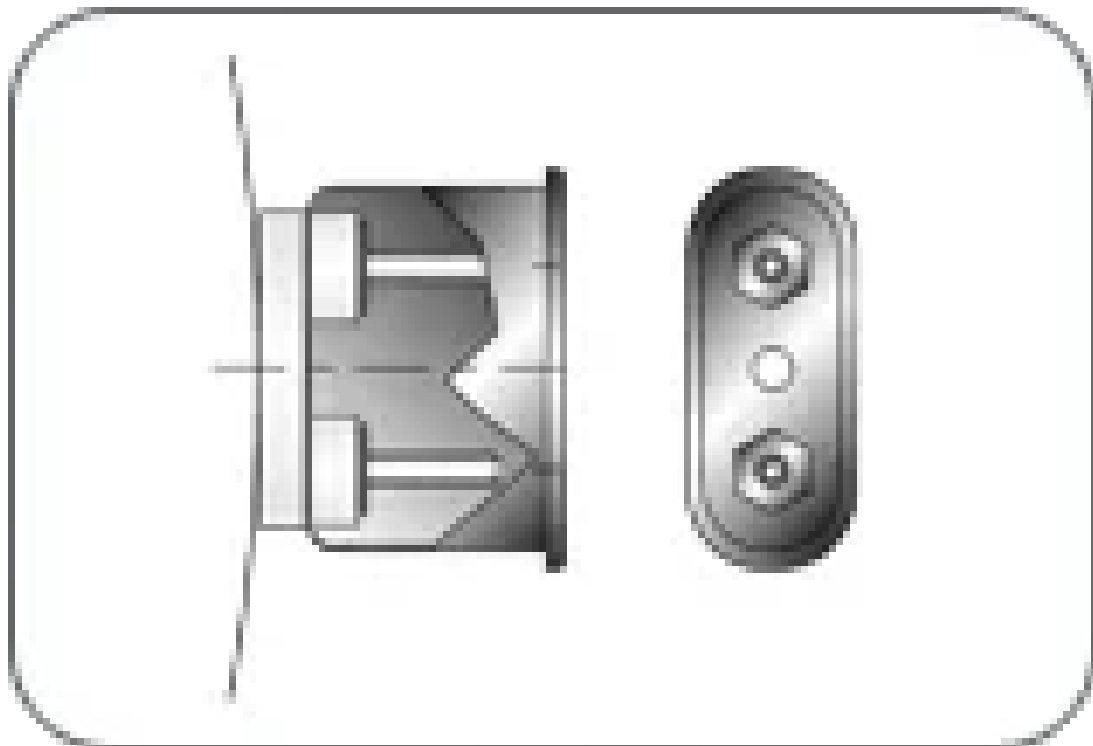
RECTANGULAR BAND

Specify inside dimensions, width dimensions and clamping ears. Available in a variety of termination styles and two location choices for clamping ears.

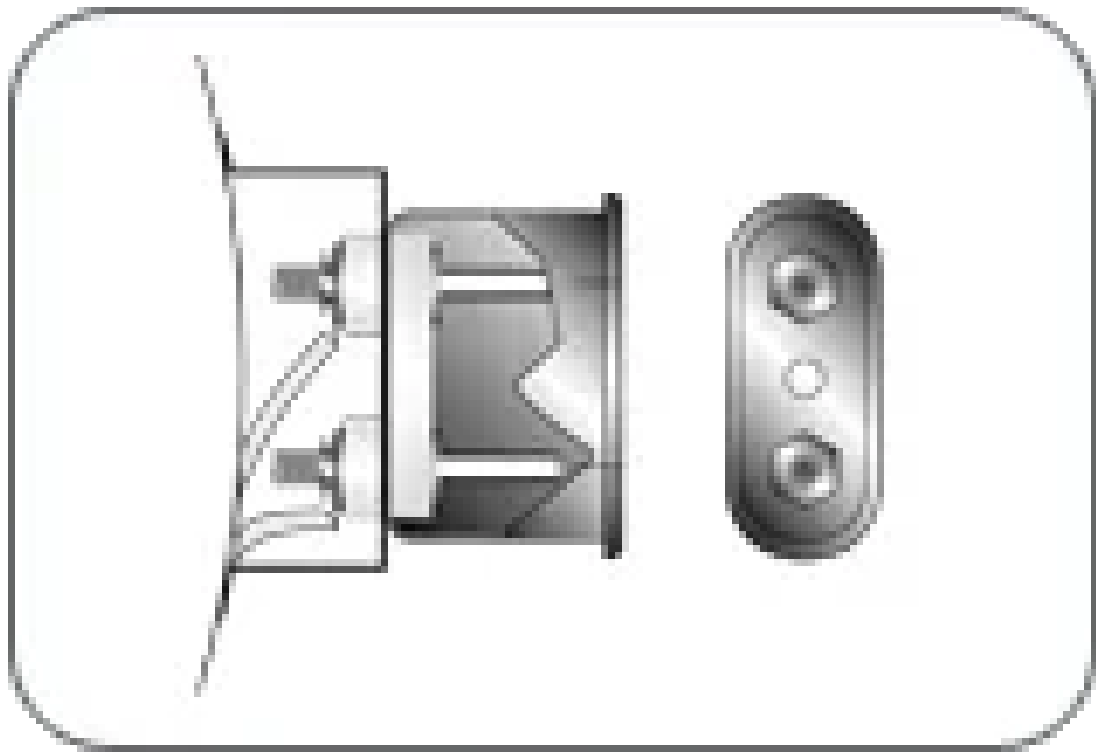
PLUGS

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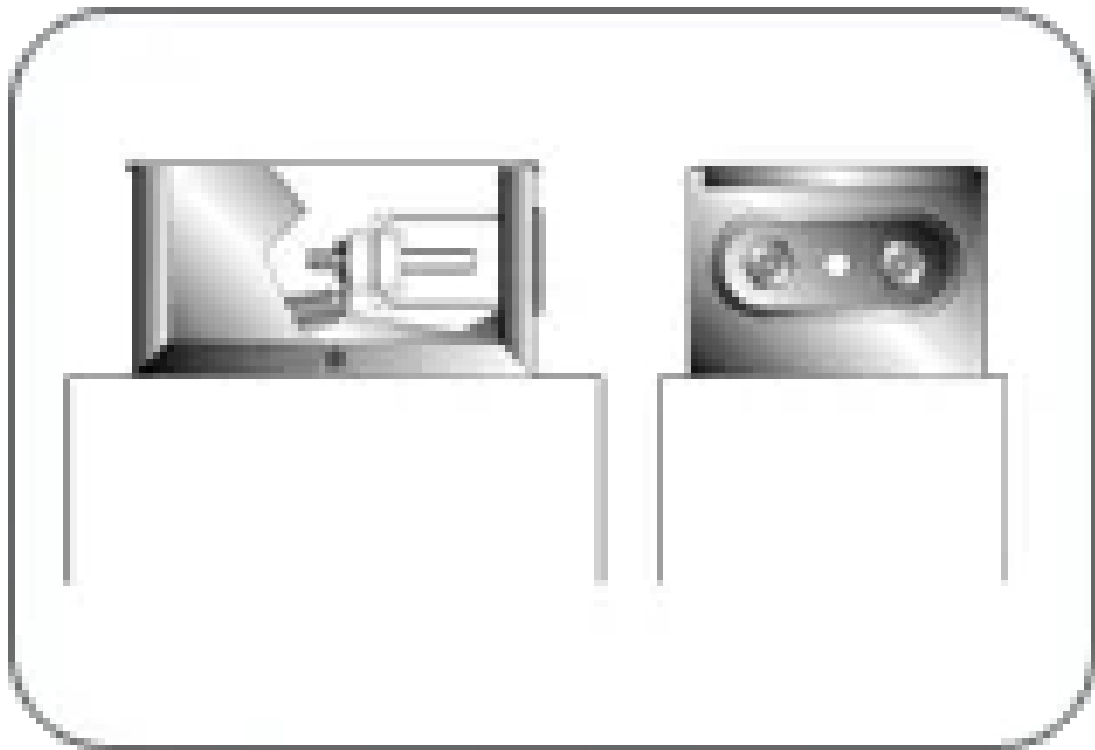
GERMAN POWER PLUG OPTIONS



GERMAN PLUG



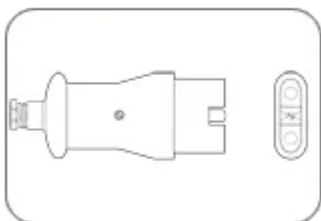
GERMAN PLUG WITH BRACKET



GERMAN PLUG WITH BOX

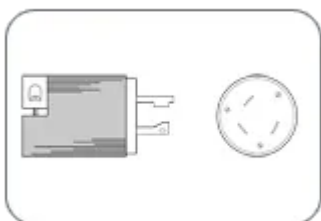
The German Power Plug is illustrated in the most common position. There are occasions for special boxes where the plug may be positioned on the top surface of the box.

OTHER PLUG OPTIONS



QUICK DISCONNECT SOCKET

2 POLE, 25 AMP, 250V, 600°F (315°C) Service. Ideal for power connection to heaters. Durable cast aluminum body on female side. Both sides have ceramic insulators. Ground connection via contact fingers.



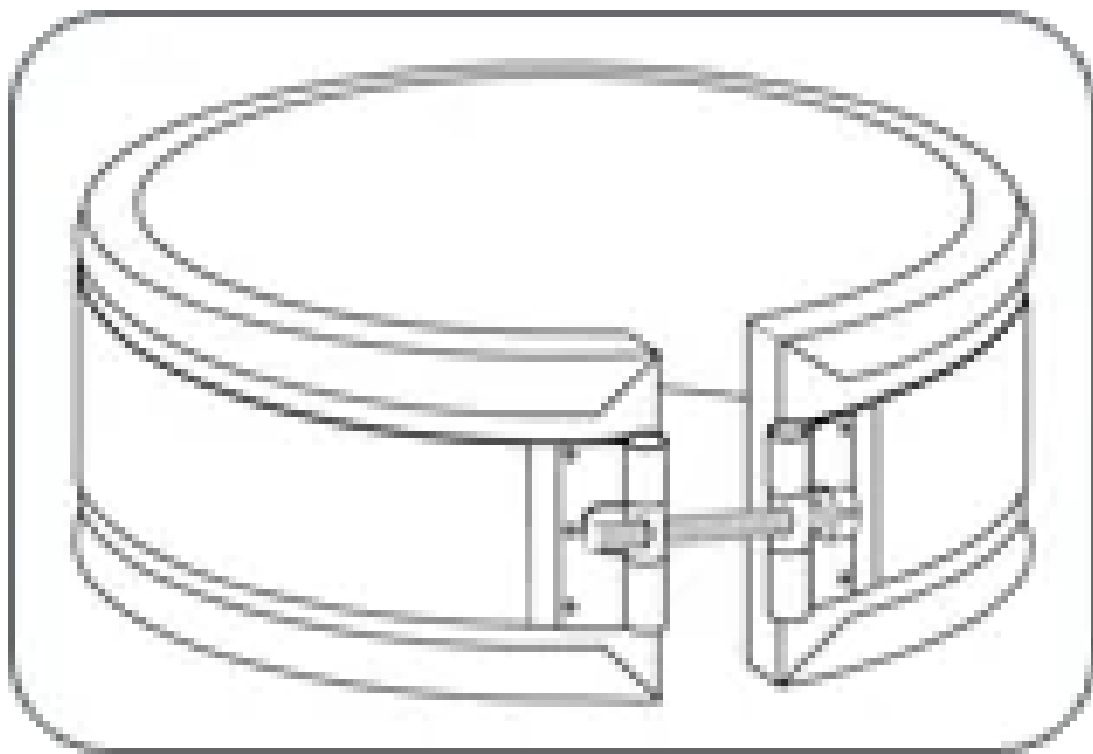
SPECIALTY PLUGS

Customer to specify manufacturer, type, part number, and amperage required.

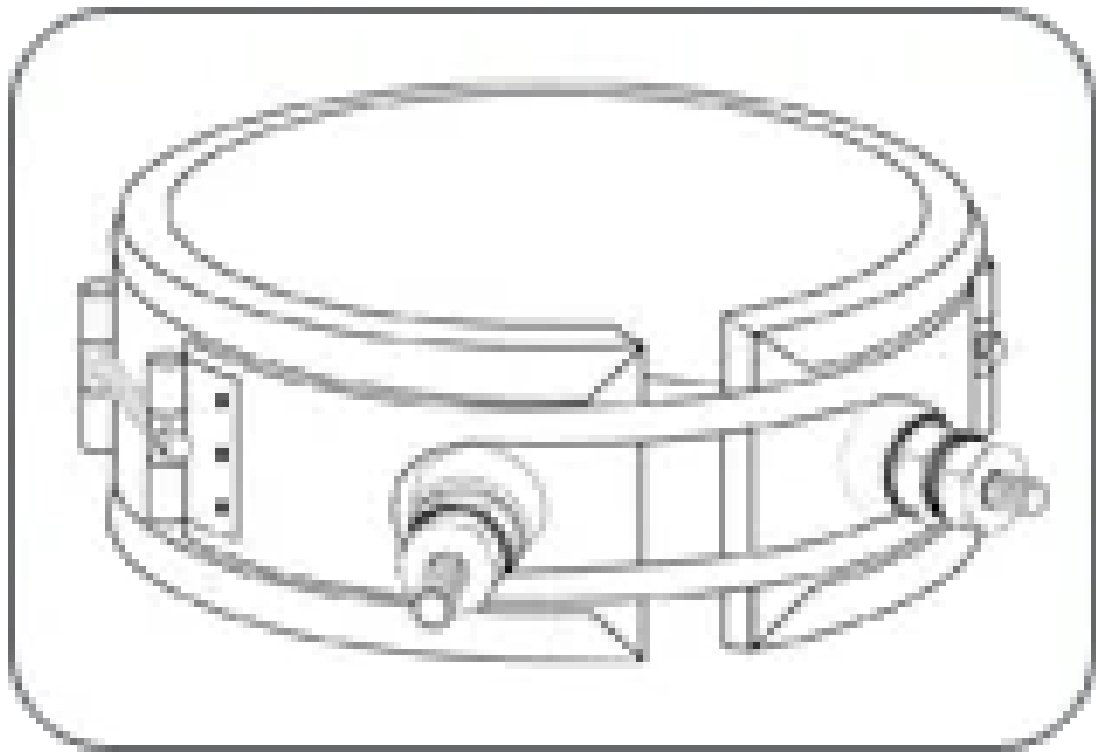
CLAMPING

STRAP STANDARDS

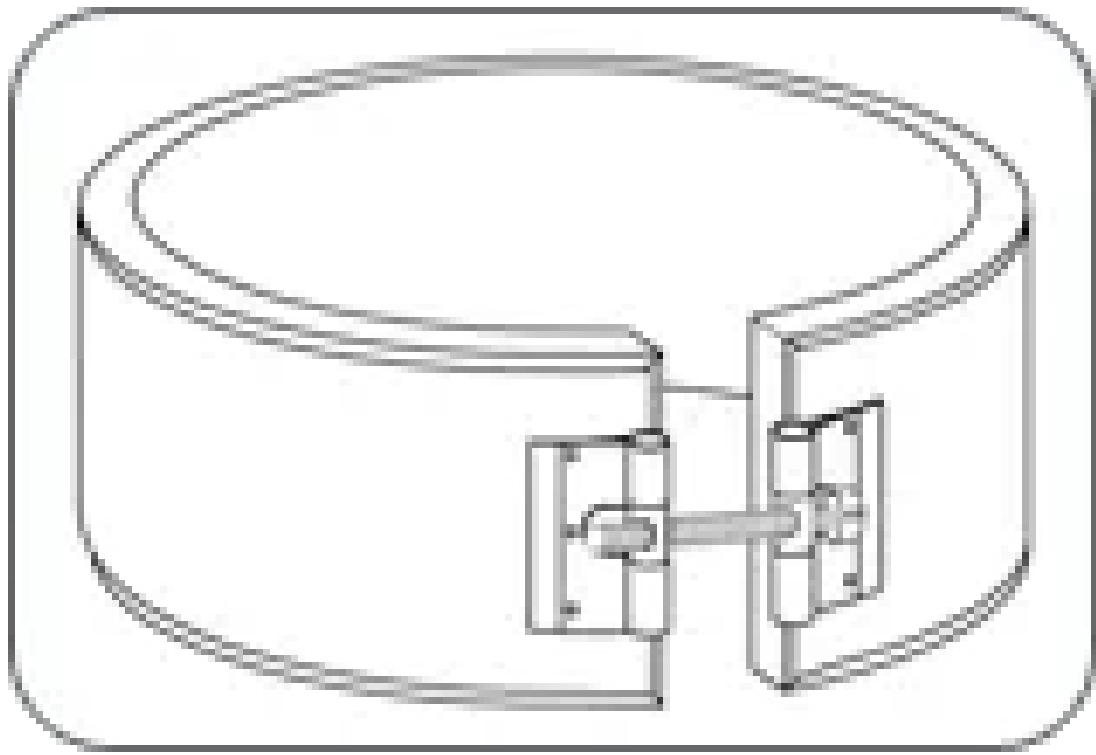
Straps or strap ends can be vastly modified to fit a wide variety of bands. As wider bands are used, multiple straps will most likely be designed in. Normally barrel nuts are built into the ends: one threaded, one through hole. Slots shown are to clear termination areas. Unless otherwise specified, straps are assigned by our engineering staff to best suit each application.



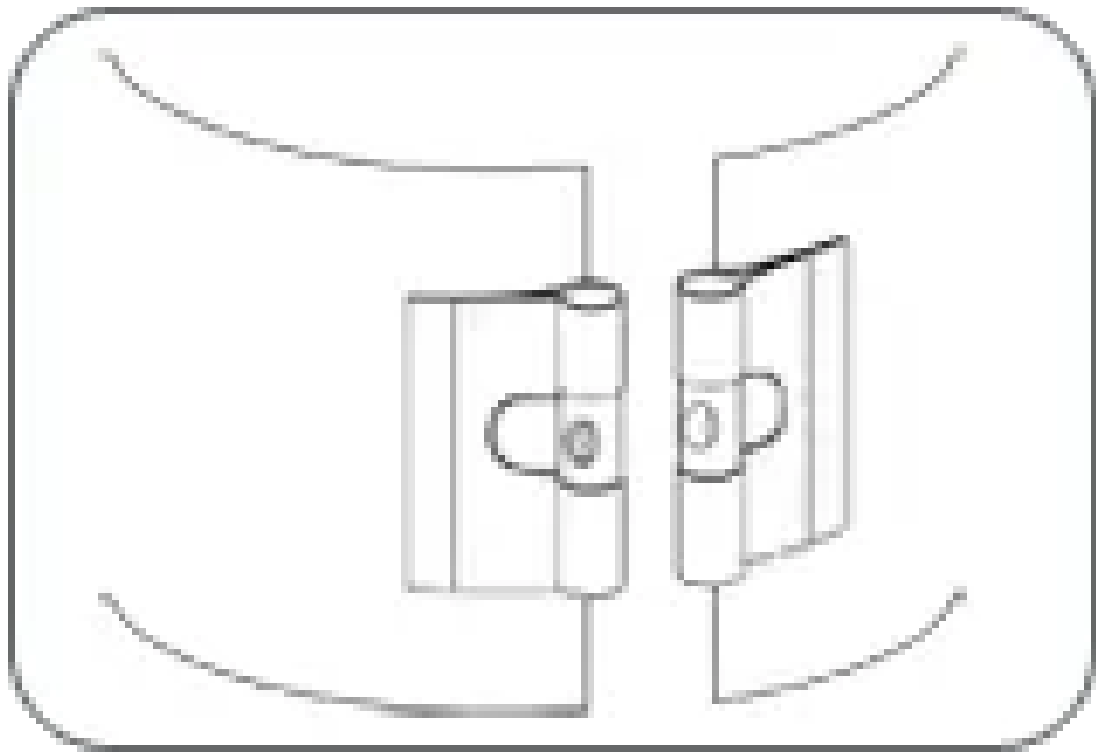
ONE-PIECE STRAP



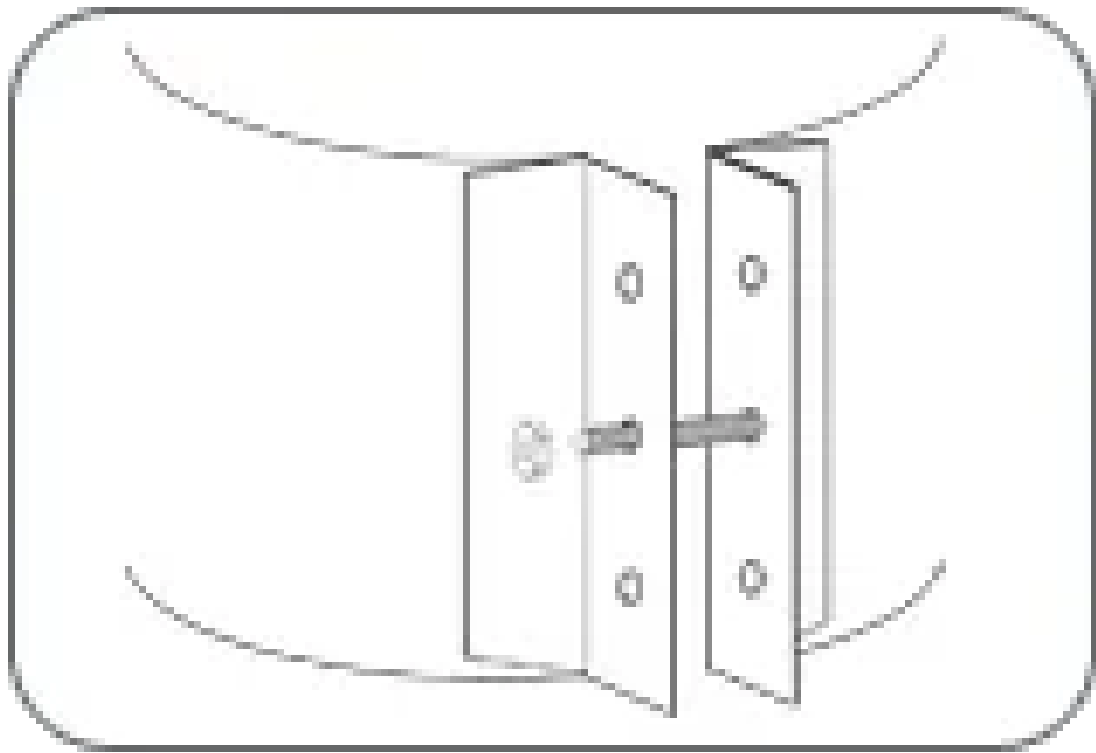
TWO-PIECE STRAP



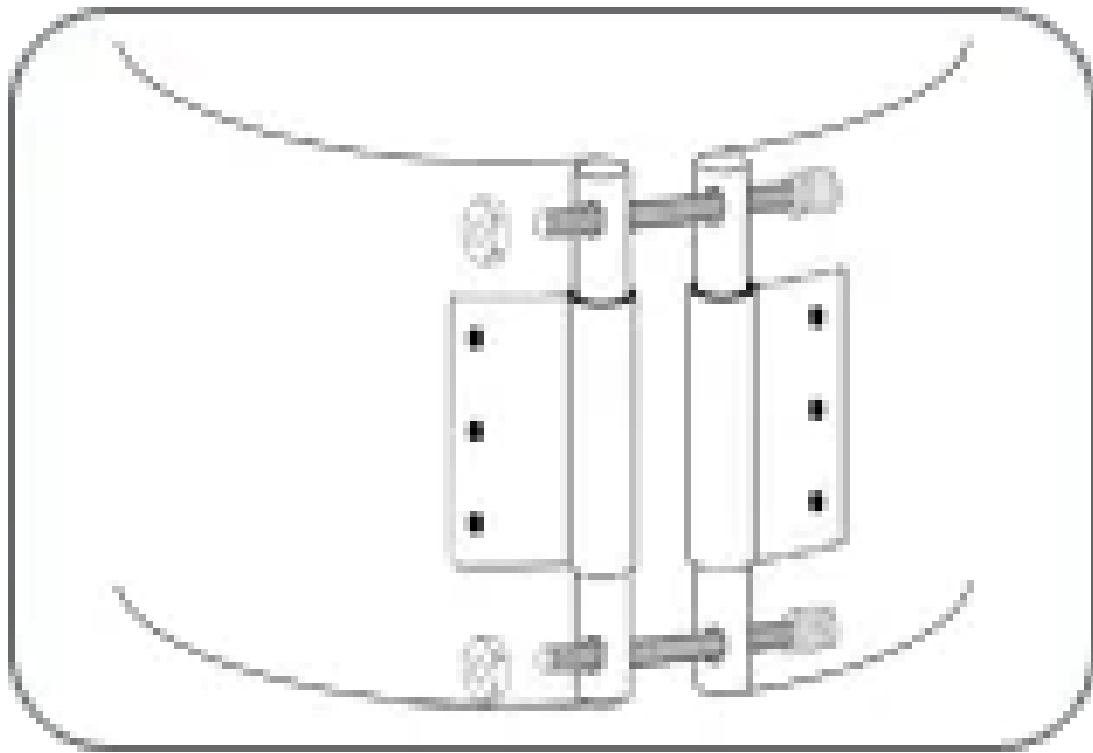
STRAP



STRAP ENDS



EAR CLAMPING

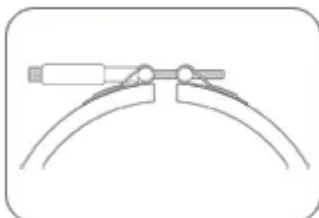


BAR CLAMPING

Illustrated are the various available styles of clamping for band heaters. When a band is provided the material is of a low coefficient of expansion type. Width of the clamping band or the number used per heater is dictated by the design standards. There are a variety of clamping mechanisms that can be attached to the band or directly to the heater. The most common forms are the strap and strap ends. Factors influencing the type and size of clamping are:

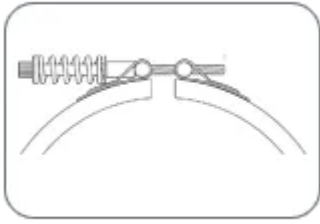
- Type of band heater
- Diameter and Width
- Termination type and location
- Holes and notches in heater
- Preferences of the user

Consult factory for other custom options.



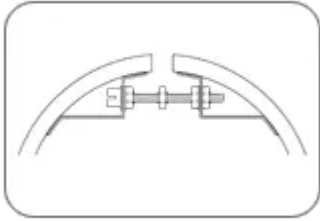
BELLEVILLE SPRING WASHER CLAMPING

A clamping system is generally selected for use with large diameter heaters where additional compensation of band elongation is required. Belleville clamping comes with a standard 1/4 – 20 X 5 (12.7 cm) long screw.



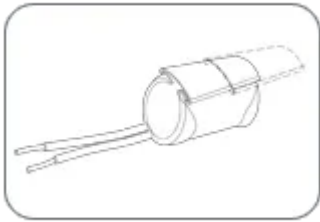
SPRING BOLT CLAMPING

Spring bolt clamping applies constant tension on the clamping mechanism to compensate for heater elongation once it has been energized. Spring bolt clamping comes with either a 1/4 – 20 X 4 (10.7cm) or 1/4 “ – 20 X 5 (12.7cm) long screw.



TURNBUCKLE

Specified where a heater is used to heat an I.D. surface. Use of this mechanism is governed by the heater diameter and width. Obstructions such as shafts passing along the center line of the heater may present an interference problem.



WEDGE-LOCK

Specially designed for mounting where space is limited. Eliminates the need for straps. Leads must exit opposite gap.

Get Started with HT Mica Band Heater Solutions

Share your application details and discover how TUTCO's HT Mica Band Heaters can improve performance, efficiency, and reliability across your process. Contact our engineering team today to develop a custom cylindrical heating solution designed for durability and long-term success.

[REQUEST A QUOTE](#)



Tutco HT Mica Band Heater Fits Textile Manufacturer Nicely

TUTCO custom HT Mica band heater solution for textile manufacturing. Reverse-engineered design improved reliability and reduced downtime.

[GET INFO](#)



Design With Mica In Mind

At TUTCO-Farnam, the majority of our custom-designed heaters use mica board machined to meet the customer's specifications.

[GET INFO](#)



All About Tolerances In Conductive Heaters

There are normal variations in the dimensions and electrical properties of heaters we build, and it's good to know what they are so there are no surprises.

[GET INFO](#)



Industrial Band Heaters | Cylindrical Heating Solutions

TUTCO band heaters are meticulously engineered to work with cylindrical applications, spanning from plastic processing to scientific testing.

[GET INFO](#)

Frequently Asked Questions

WHAT SHOULD I AVOID TO PREVENT HEATER FAILURE?



The HT Mica Band Heater is rated for continuous operation up to 900°F (482°C). Maintain tight surface contact to ensure efficient heat transfer and avoid localized overheating. Keep watt density within recommended limits for the heater size and application. Protect against moisture ingress, oil contamination, and frequent thermal cycling, as these factors significantly reduce heater longevity.

CAN I CUSTOMIZE THE HT MICA BAND HEATER FOR MY SETUP?



TUTCO offers a wide range of configurations to fit specific process requirements, including one-piece or multi-piece construction, custom holes and cutouts, lead protection (fiberglass sleeve, stainless-steel braid, or armor), grounding options, and multiple clamping styles. Custom voltages, wattages, and termination styles are also available to match unique system specifications or space constraints.

WHY IS MICA INSULATION USED IN THESE BAND HEATERS?



Mica offers excellent dielectric strength and thermal conductivity, allowing efficient heat transfer with minimal internal heat buildup. TUTCO's HT Mica Band Heaters use high-temperature phlogopite mica for superior stability and performance in elevated-temperature environments. This insulation design provides consistent surface temperatures and extends element life under demanding industrial conditions.

HOW DO I DETERMINE THE CORRECT SIZE AND WATT DENSITY FOR MY APPLICATION?



Select the inside diameter and width to match the barrel or pipe dimensions precisely. Next, calculate the watt density required to meet process temperature and heat-up time targets without exceeding the heater's rated limits. Higher watt densities produce faster heat-up but reduce service life. TUTCO engineering support can assist with sizing and power calculations to ensure proper heater selection.

HOW CAN I MAXIMIZE THE SERVICE LIFE OF MY HT MICA BAND HEATER?



For optimal performance, ensure the heater is installed on a clean, smooth, and properly sized surface. Any oil, residue, or air gaps will reduce heat transfer and increase internal temperatures. After the initial thermal cycle, re-tighten clamps to maintain firm contact. Periodically inspect the heater for surface buildup, lead wear, or insulation damage to prevent premature failure.