

Thermal Solutions of Texas' band heater design is the result of many years of research, development and testing for a reliable mica insulated band heater that performs at higher operating temperatures, providing long, efficient service necessary for today's high productivity of plastic extruders, injection and blow molding machines, keeping costs down and machines running.



Product Features and Benefits

Performance Capabilities

- Sheath temperatures up to 900°F (480°C)
- Watt densities to 45W/in² (7W/cm²)

Applications

- Extruders
- Blown Film dies
- Injection Molding Machines
- Other cylinder heating applications

Features and Benefits

- Built-in bracket for superior clamping
- Unbreakable and torque-resistant screw terminals
- Full width stainless steel built-in strap
- Flexibility to incorporate holes and cutouts
- Available two-piece and expandable designs
- Best mica insulated heater on the market
- Fast delivery

Specifications and Tolerances

Performance Ratings

- Maximum temperature: 900°F (480°C)
- Nominal watt density: 20-45W/in² (3-7W/cm²)
- Maximum watt density: Depended on heater size and operating temperatures

Electrical Ratings

- Maximum voltage: 480VAC
- Maximum recommended voltage with leads: 240VAC
- Maximum amperage: Lead wire termination: 10A, Screw terminals: 8-32UNF – 20A, 10-32UNF – 25A
- Resistance Tolerance: +10%, -5%
- Wattage Tolerance: +5%, -10%

Construction Limitations

- Minimum width: 5/8" (15.9mm)
- Width tolerance: ±1/16" (1.59mm)
- Minimum inside diameter: 3/4" (19.0mm)
- Standard gap: 3/8" (9.5mm) – If a larger gap is required for probes or thermocouples, specify when ordering

Built-In Brackets

Heater Width	No. of Brackets
1½" to 3¾" (38-95mm)	1
3⅞" to 5¼"	2
5½" to 7" (140-178mm)	3
7½" to 12" (190-305mm)	4

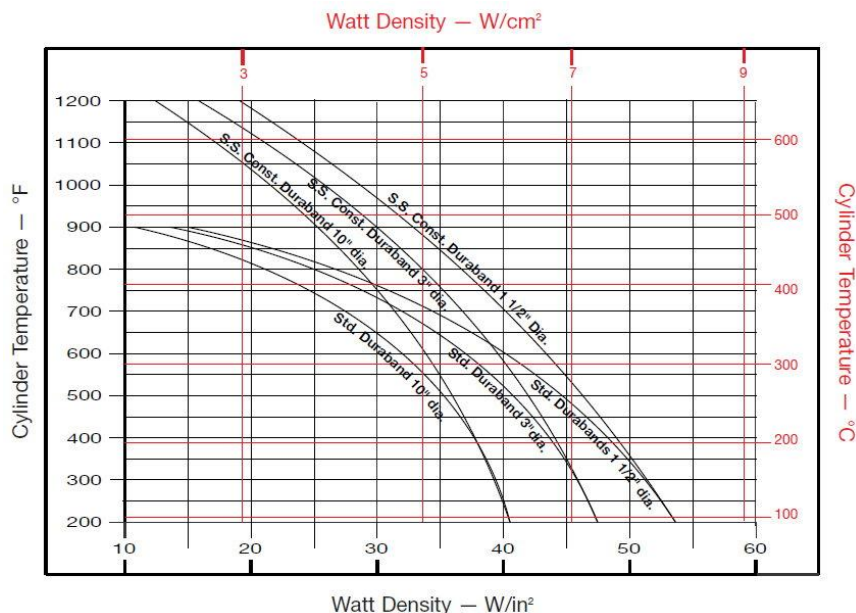
Minimum ID and Width for Construction/Clamp Styles

Style	Min. ID		Min. Width	
	in	mm	in	mm
Standard Built-in Strap				
One Piece	2	50.8	1½	38.1
Two Piece	3	76.2	1½	38.1
One Piece Expandable	2½	63.5	1½	38.1
Separate Straps				
One Piece	1½	38.1	5/8	15.9
Two Piece	2	50.8	5/8	15.9
One Piece Expandable	2½	63.5	1	25.4
Bent-up Flange (Ears)25.4				
One Piece	1	25.4	5/8	15.9
Two Piece	2	50.8	5/8	15.9
One Piece Expandable	2½	63.5	1	25.4
Spring Loaded with Built-in Bracket				
One Piece	4	101.6	1½	38.1
Two Piece	4	101.6	1½	38.1
One Piece Expandable	4	101.6	1½	38.1
Latch and Trunion				
One Piece	7	177.8	1½	38.1
Two Piece	7	177.8	1½	38.1
One Piece Expandable	7	177.8	1½	38.1
Wedge Lock				
One Piece	1	25.4	1	25.4

Minimum ID and Width for Terminations

Termination	Min. ID		Min. Width	
	in	mm	in	mm
Post Terminals - Each Side	1½	38.1	7/8	22.2
Post Terminals - One Side	2½	63.5	7/8	22.2
Post Terminals - Next to Gap	1½	38.1	2	50.8
Button Terminals - Each Side	2	50.8	1	25.4
Button Terminals - One Side	2	50.8	1	25.4
Button Terminals - Next to Gap	2	50.8	2½	63.5
Leads - Straight thru Eyelet	1½	38.1	7/8	22.2
Leads - on One Side	¾	19.0	5/8	15.9
Leads - on One End	¾	19.0	1	25.4
Braided Leads thru Eyelet	1½	38.1	1-7/8	22.2
Braided Leads 180° from Gap	¾	19.0	1-1/8	28.6
Single Braided Leads	¾	19.0	¾	19.1
Braided Leads on One Side	¾	19.0	1	25.4
Straight Armor Cable	1½	38.1	1	25.4
Right Angle Armor Cable	1½	38.1	1¼	31.7
Removable Armor Cable	1½	38.1	1¼	31.7
Terminal Box (one side)	3	76.2	1	25.4
Terminal Box (next to Gap)	2½	63.5	2½	63.5
Low Profile Box (one side)	3	76.2	1	25.4
Low Profile Box (next to Gap)	2½	63.5	2½	63.5
Dbl/Single Ceramic Covers	1½	38.1	1¼	31.7
Cap Assembly	1½	38.1	2	50.8
Low Profile Assembly	3	76.2	2½	63.5
Vertical Box Assembly	3	76.2	1½	38.1
Horizontal Box Assembly	2½	63.5	2½	63.5
Leads with Spring Relief	1½	38.1	1	25.4

Maximum Watt Densities



Construction Types



One-Piece Band

Available on any termination and clamping variation. Can be used where band heaters can be slipped over the end of the cylinder.



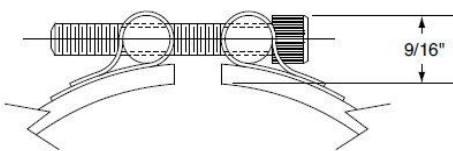
Two Piece Band

Two-piece design provides a built-in hinge, making handling and installation easier. Rated at watts and volts per each half.



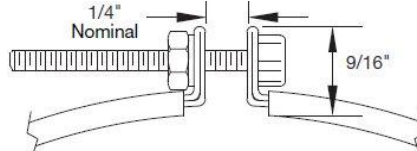
One-Piece Expandable

Can be used where a one-piece band heater would have to be expanded to fit over the barrel during installation.



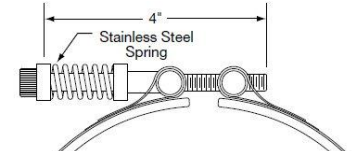
Standard Built-In Strap

Eliminates the use of awkward to handle separate straps, providing more drawing power than other clamping designs.



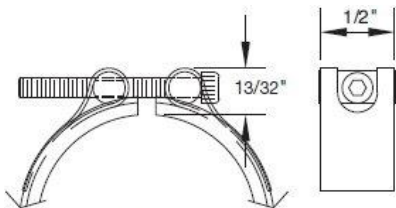
Bent up Flange

Outer sheath is made from a low thermal expansion alloy and is a standard design on many narrow band heaters.

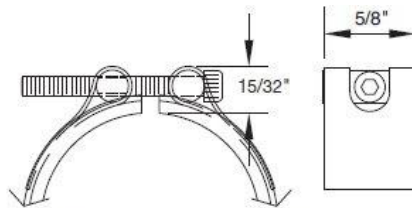


Spring Loaded

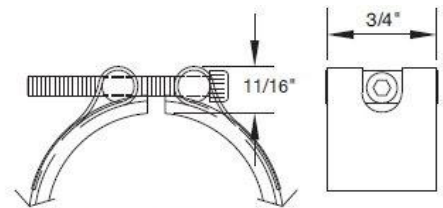
Heavy-duty stainless steel spring is recommended for heaters over 12" in diameter to prevent slipping, providing constant tension.



< 2" I.D. – 6-32 Screw



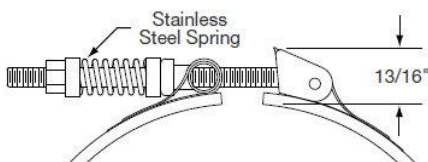
2 to 3-1/2" I.D. – 8-32 Screw



> 3-1/2" I.D. – 1/4-20 Screw

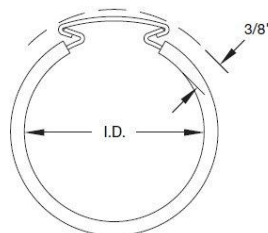
Separate Straps

Low profile barrel nuts are used on small diameter nozzle bands to alleviate clearance problems. Separate strap clearance dimensions are dependent on heater inside diameter. The dimensions are shown above.



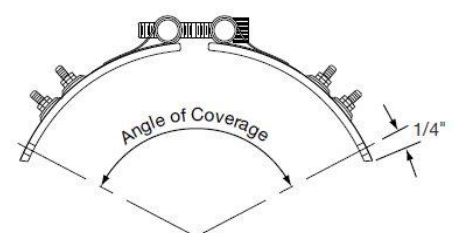
Latch and Trunion

Ideal in absorbing thermal expansion due to the spring loading on the screws. The latch fully opens, for installation on large diameter cylinders.



Wedge Lock

Wedge lock clamping is designed for applications where mounting space is severely limited, lending itself mainly to small diameter nozzle heaters.



Partial Coverage: One Piece

Normally required when holes and cutouts will not allow the heater to sufficiently clear obstructions. Heater is screwed to the cylinder and the strap is pulled tight.

Termination Types

Post Terminals



Each side of gap

Considered standard on most band heaters unless otherwise specified.



Next to gap – one side

Recommended for narrow band heaters where screw terminals are preferred.



Next to gap – vertical

The preferred design on band heaters over 3" wide or when a terminal box is required.

Ceramic Terminals covered



Double port In-line



Double port 90°



Single port

Ceramic terminal covers consist of two individual ceramic parts. Unlike conventional ceramic caps, Thermal Solutions fully insulates any standard #8 or #10 terminal lugs used for electrical hookups.

Button Terminals



Each side of gap

Low profile button terminals are available on any clamping or construction variations. Button terminal locations are similar to the post terminal locations.



Next to gap – one side



Next to gap – vertical

Lead Wire



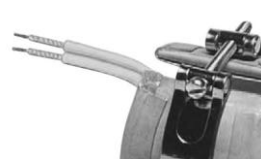
Straight lead wires

Lead wires exit through a brass eyelet.



Lead wires – one side

Preferred termination on all small diameter and width band heaters.



Lead wire – one end

A suitable lead for small band heaters.



Strain Relief

A spring is attached to the heater at the termination exit to reduce strain on leads.

Lead Wire (continued)



Braided Leads



Braided - Straight Wire



Braided - Single Wire



Braided - on one side

Wire braid leads offer sharp bending not possible with armor cable. Braid exits at 180° from the gap for special nozzle heating applications.



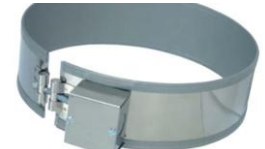
Straight Armor Cable



Right Angle Cable



Removable Cable



Terminal Boxes

Armor cable provides far superior protection to lead wires where abrasion is a constant problem.

The armor cable fitting will accept the standard cable connector.

Protects employees from electric shock from exposed wiring.



Quick Disconnect - Standard



Quick Disconnect - Low Profile



Vertical Box Assembly



Horizontal Box Assembly

The combination of plug and cup assembly along with armor cable covers leads and eliminates all live exposed terminals or wiring that can be a potential hazard to employees and machines.

How to Order

INSIDE DIAMETER: _____ IN. MM VOLTS: _____
 WIDTH: _____ IN. MM WATTS: _____
 LEAD LENGTH: _____ IN. MM QTY: _____

CONSTRUCTION: ONE PIECE TWO PIECE ONE PIECE EXPANDABLE
 WEDGE LOCK BENT-UP FLANGE BUILT-IN STRAP SEPARATE STRAPS
 PARTIAL 1-PC PARTIAL 2-PC SPRING LOADED W/BRACKET LATCH & TRUNION

TERMINATION: POST TERMINALS: EACH SIDE OF GAP NEXT TO GAP - ONE SIDE ONE SIDE VERTICAL
 CERAMIC COVERS: SINGLE PORT DOUBLE PORT - INLINE DOUBLE PORT - 90°
 BUTTON TERMINALS: EACH SIDE OF GAP NEXT TO GAP - ONE SIDE ONE SIDE VERTICAL
 LEAD WIRE: STRAIGHT WIRES ON ONE SIDE WIRES ON ONE END
 BRAIDED 180° STRAIGHT BRAIDED SINGLE WIRE BRAIDED
 BRAIDED LEADS ON ONE SIDE
 PLUGS & BOXES: STRAIGHT CABLE RIGHT ANGLE ARMOR CABLE REMOVABLE CABLE
 STD CUP ASSY LOW PROFILE ASSEMBLY TERMINAL BOX
 VERTICAL BOX HORIZONTAL BOX ASSEMBLY

OTHER INFO: _____