

Anupam's Ceramic Band Heaters were developed to meet industrial requirements for high temperature long lasting heaters. They are ideally suited to comply with today's new resins, which calls for ever-increasing process temperatures.

Anupam

Relationship beyond Heating Technology ...

Ceramic Band Heaters

Ceramic Band Heaters design consists of a helically wound resistance coil made from 80/20 nichrome wire, evenly stretched and precisely strung through a specially designed ceramic insulating bricks forming a flexible heating mat. The ceramic heating mat along with ceramic fiber insulation is placed on a stainless steel housing made with serrated edges providing maximum flexibility for easy installation.



CE

STANDARD FEATURES :

- ▶ Thermal insulation
- ▶ Conserves energy
- ▶ Minimum heat loss
- ▶ Easy installation & removal
- ▶ Uniform temperature
- ▶ Better heater life
- ▶ Can be manufactured to your specification
- ▶ Available in various types of construction & terminations

SPECIFICATION :

Resistance	+ 10% -5%	Overall Thickness	15 mm
Wattage	+5% - 10%	Minimum Dia.	38 mm
Max. Watt Density	8 watts / sq.cm	Minimum Width	25 mm
Voltage	220VAC to 480VAC	Width - Normal	multiple of 15 + 6mm
Maximum Temp.	800°C	Std. gap between edges	5 to 10 mm

APPLICATIONS :

Injection moulding, Extruders & Blow moulding

Energy conservation is achieved by using 1" thick ceramic fiber insulating blanket on the outer surface increasing the overall outer diameter by 2". Reducing power consumption up to 30%. Because of low thermal conductivity of the ceramic fiber insulation, the external surface temperature of the insulation plus ceramic band heater is approximately 80°C while running the inside surface temperature at 300°C.

Energy Saving Ceramic Band Heaters



CE

STANDARD FEATURES

- ▶ Saving in energy up to 30 %.
- ▶ Reduced wattage of heater.
- ▶ More uniform heating.
- ▶ Less down time increases productivity.
- ▶ Reduced preheating time of machine.
- ▶ Heater cost is recovered in shorter time.
- ▶ Cool working atmosphere for operators.
- ▶ Overall outer diameter increase by 2" (50 mm)

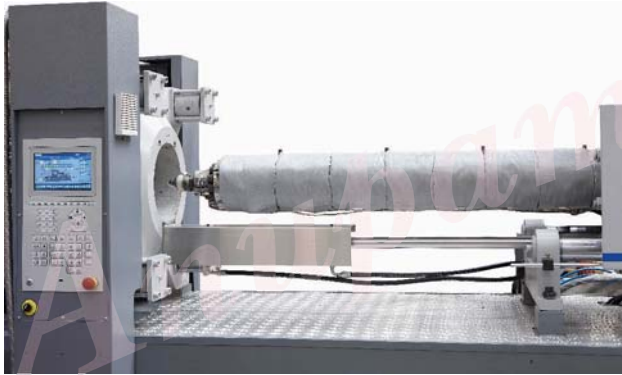
SPECIFICATION :

Resistance	+ 10% -5%	Overall Thickness	40 mm
Wattage	+5% - 10%	Minimum Dia.	90 mm
Max. Watt Density	8 watts / sq.cm	Minimum Width	100 mm
Voltage	220VAC to 480VAC	Width - Normal	multiple of 15 + 6mm
Maximum Temp.	800°C	Std. gap between edges	5 to 10 mm

Energy Saving Insulation Jackets for Band Heaters

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Say  Yes to Energy Saving
Save Money on Heat loss



Energy saving insulation Jackets can be used on any brand of Injection Moulding Machine. Their primary use lies in Saving Energy / Money by insulating the barrel from the Heat Loss. This in turn requires the Heater Bands to cycle less and lower electricity consumption.

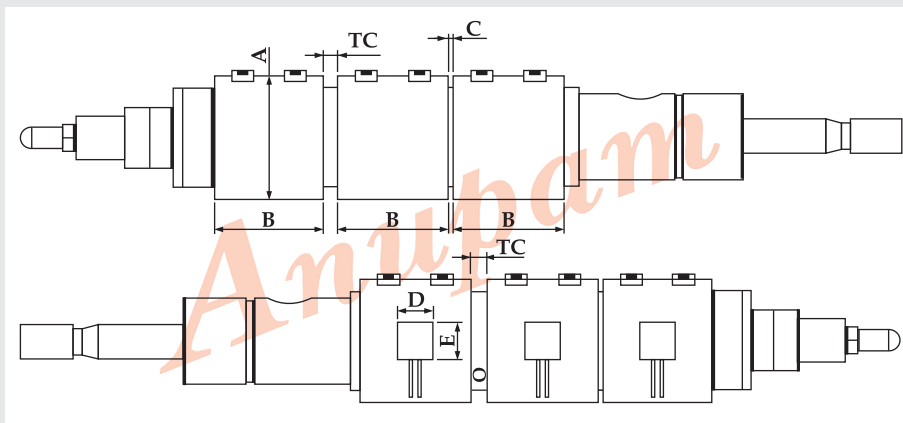
By using these insulation jackets, you establish a thermal barrier that impedes temperature dissipation released to its surrounding which permits us to keep the heat generated where it should be, inside the barrel of the machinery.

FEATURES :

- ▶ Energy saving of upto 35-40%
- ▶ Increases Heater Band Life
- ▶ Increases safety when working on or around the machines
- ▶ Velcro Closure system ensures best fitment
- ▶ Short payoff period
- ▶ Maximum personal protection

HOW TO ORDER :

Send the Barrel Diagram with Heater as shown below with necessary dimensions.



A = Outer Dia of the Heater

B = Length of the Heater

C = Gap between the Heater Bands

D = Width of the Terminal Box

E = Length of the Terminal Box

TC = Gap between the Heater Bands
(Where Thermocouple is mounted)

INSULATING MATERIAL :

High Density Ceramic Fiber Wool, resistant to high temperature while maintaining its original state, durability and flexibility throughout its useful life. Resists temperature upto 1250°C

Termination Options

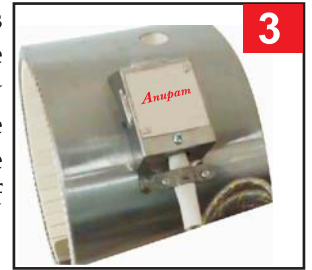
1 Ceramic Terminal cover on post terminals types : CI

Post terminals provide optimum connections. Ceramic covers with openings for loads are screwed onto post terminals providing a convenient, economical insulator. Can be provided on heater length 40 mm or more.



3 Metallic terminal box connection type : ST

Metallic terminal boxes that attach directly to the heater act as a safety feature by covering the terminals. Can be provided on heater of length 40 mm or more.



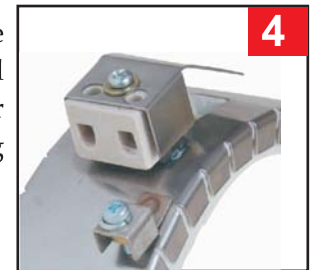
2 High temperature "Quick disconnect" Plug type : PL

This provide the simplest and fastest way to apply power to band heaters. This assembly eliminates all live exposed terminals and electrical wiring that can be potential hazard to employees or machine. Can be provided on heater length 40mm or more. Recommended for heater capacity upto 2.5 kw.



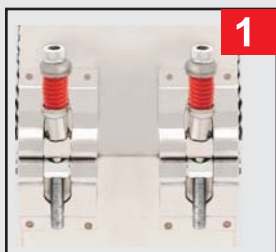
4 Ceramic Block Type Termination type : CN

Ceramic connector type terminal with metal protecting cover for easy wiring and wiring bunch, easy to replace.



Clamping Options

1 Spring loaded clamping type : ABS



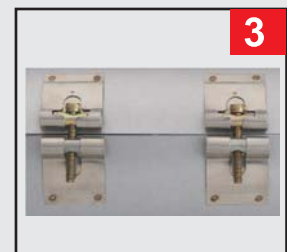
Allen bolt with spring loaded clamping systems provides excellent grip of the heater mounted vertically. Recommend in all die heaters.

2 Standard Allen Bolt clamping type : AB



Allen bolt with standard clamping systems generally used on all heaters.

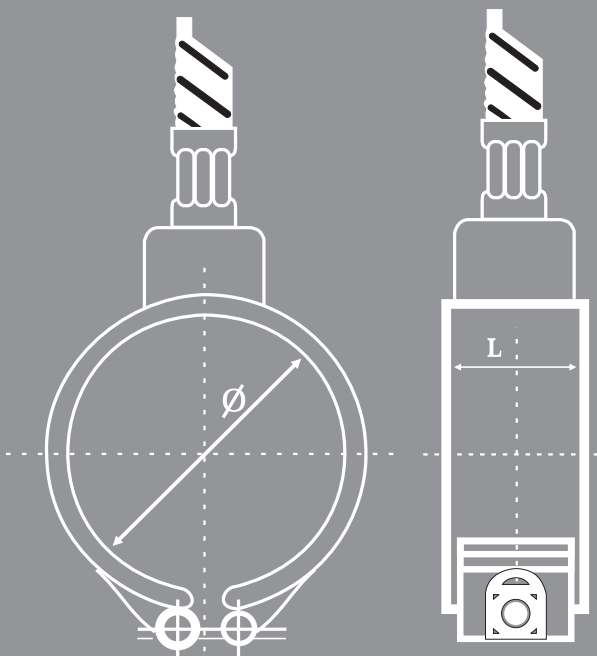
3 Easy Clamping - de clamping type : ABE



Allen bolt with easy clamping, de-clamping generally used where heaters are require to open frequently.

Installation & Maintenance Recommendation

1. Ceramic Band Heaters are very flexible and can be made in large widths and one-piece construction for easy installation eliminating heat losses between narrow bands and sharply reducing labour cost in installation.
2. Before installation & during operation, the surface of the barrel and ceramic band heater must be clean and free from all contaminants that might liquify under heat and find their way into the heater elements, carbonizing and becoming conductive. The smallest amount of contamination can cause electrical shorts creating heater failure.
3. Tighten the allen bolt until the serrated edges become firmly in direct contact with the barrel to get the uniform contact. Do not over tighten, as to the point where serrated edges begin to collapse and thrust outwards. Unlike all other types of band heaters, ceramic heater works on conduction and radiation principle and they do not require the same clamping force essential on all other types of band heaters.
4. To prevent the overheating and heater failure, adequate temperature controllers should be installed. Thermocouples must be kept free of contaminants and checked for good response to temperature changes. A bad thermocouple can be the cause of destroying an entire heating zone.
5. Keep all electrical connections properly protected to avoid accident.
6. Never perform any type of service on heaters without disconnecting all electrical power.
7. Incorrect wiring is a common cause in heater burn out.
8. Qualified person should do electrical wiring of heaters.



Ordering Information

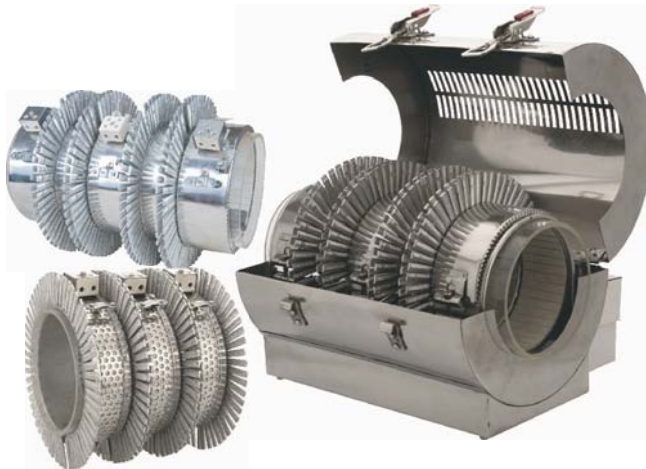
- ▶ Inside diameter (Ø)
- ▶ Length of the heater (L) Multiple of 15 + 6 mm.
- ▶ Operating Voltage (V).
- ▶ Wattage (W).
- ▶ Location dimensions of holes for T/C and slots in the heater (if any).
- ▶ Termination type and location.
- ▶ Lead length.
- ▶ Quantity.
- ▶ In case of repeat order please specify Anupam code no. as punched on heater

Air Cooled Ceramic Band Heaters

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Relationship beyond Heating Technology ...

Anupam's Air cooled Ceramic Band Heaters are designed for super efficient and economical cooling on extrusion and blow moulding machines.



Heater band is 60% open by perforated metal sheet which ensures maximum surface exposure for better cooling. The Heater band is covered with Blower cover for mounting the blower. Advantages of Air cooled over liquid cooled operation includes lower cost, easy replacement, low maintenance, no leakage problem and uniform temperature control.



CU. FINS



AL. FINS

CE

STANDARD FEATURES :

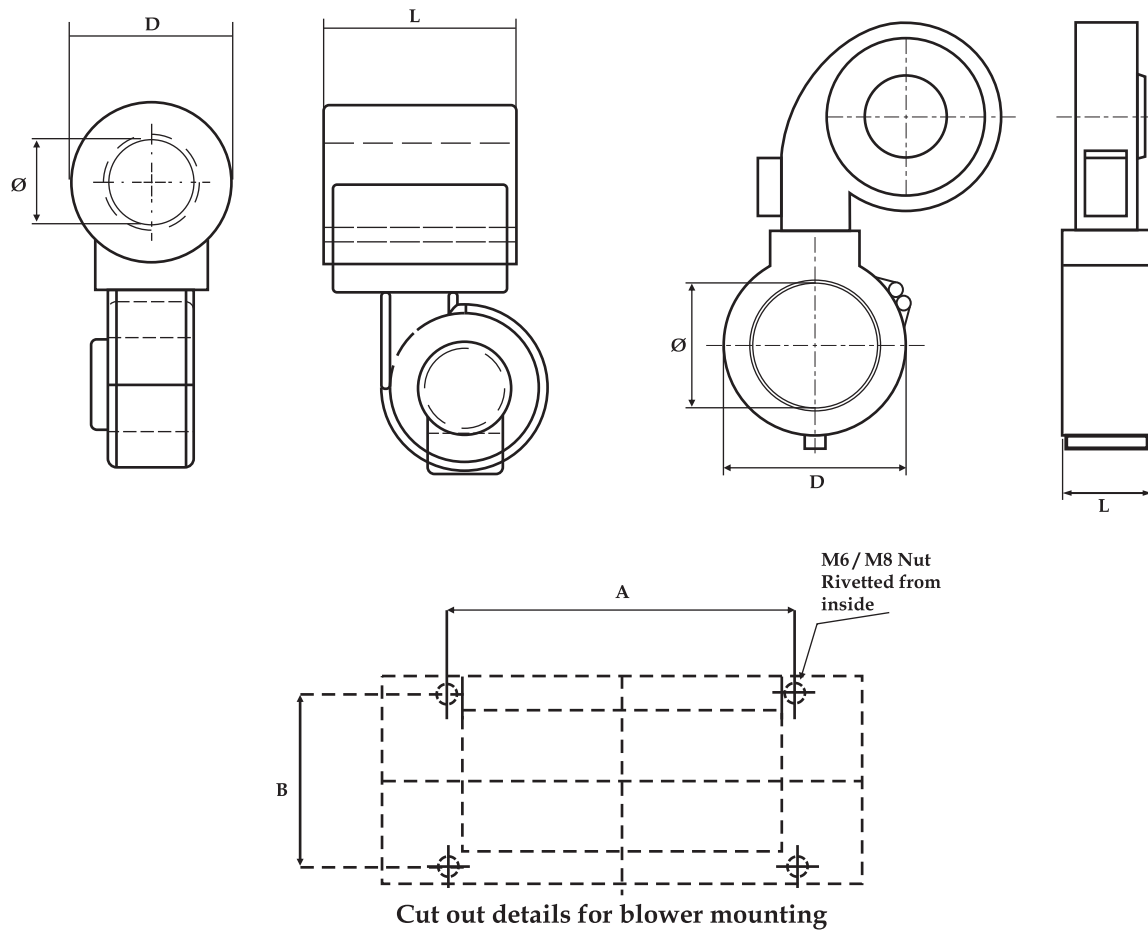
- ▶ To heat and cool the barrel
- ▶ Low maintenance
- ▶ Easy replacement
- ▶ Improves quality of finished products
- ▶ Space saving
- ▶ Increases productivity
- ▶ Heater band is 60% open ensures better surface cooling
- ▶ Available with fins for faster cooling

FEATURES OF HIGH EFFICIENT HEATING & COOLING FINS (AL. & CU.)

- ▶ Can be made in any dia and width.
- ▶ Al. Fins takes 30% & Cu. Fins takes 40% less time to reach set temperature of 350°C.
- ▶ Al. Fins takes 30% and Cu. Fins takes 40% less time for cooling from 350°C. to 100°C.
- ▶ If working temperature requirement is around 300 to 350°C. it is recommended to use Al. Fins as it is cost wise economical and performance wise almost at par with Cu. Fins.
- ▶ These fins can also be used in mounting between the heaters as cooling fins.

Installation & maintenance recommendation : Kindly refer page no. 7

ORDERING INFORMATION :



\varnothing	Inside Diameter	Tapping Size for Blower Mounting
D	Out Side Diameter $D = [(\varnothing) + 80 \text{ mm}]$	Length of inside Heater
L	Total Length of Heater	Number of inside heater with wattage of inside heater
T	Location of Thermocouple Hole	Total Wattage
TH \varnothing	Thermocouple Hole Diameter	Voltage
AB	Distance between M6 / M8 Nut Rivetted from inside	Lead Length