Mica Nozzle Heaters

PHP Mica Nozzle heaters are available with or without outer heat saving insulation covers in various sheathing materials, viz. Chrome Nickel Steel, Brass, MS, depending upon applications which provides the best combination of physical strength, high emissivity & good thermal conductivity to heat cylindrical parts, good for sheath temperature upto 300°C.

Features

- Available in Premium, Economy & Power Saving Options
- Engineered for Uniform Temperature with max Amperage carrying capacity
- Available in Brass, Chrome Nickel Steel & MS galvanized Sheathing with Power Saving Options
- Robust Terminal junction with Specially Designed Chrome Nickel Steel Protection Cap
- Special High Grade Mica insulation for Superior Thermal Conductivity and die electric strength
- Available in Various Lead Terminations & Clampings.
- Sheath Temperature upto 300°C
- Expandable to fit around the Barral O.D. Easy installation & removal
- Conserves Energy with improved Heating Efficiency Up to 30 Watts per square inch
- Min Dia available 25 mm
- Min width available 25 mm

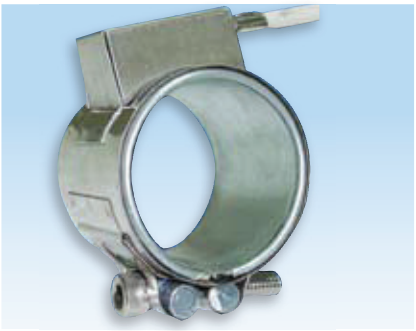
Applications

- Injection Moulding
- Film extruders
- Blow Moulding
- Plastic & Rubber Processing Machinery

3 Construction Styles To Choose From

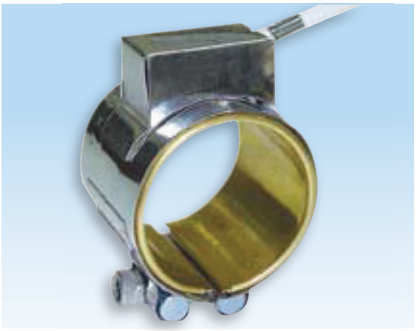
1 Eco-Heat

- Chrome Nickel Steel Clamping with MS galvenised Inner Sleeve
- Single Piece Construction
- 500 mm Glass Fibre insulated Cable
- Terminal Protection Box, unless specified
- Clamping : Barrel Nut Key type
- Also available in Two Piece Construction



2 Premium-Heat

- Chrome Nickel Steel Clamping with Brass / Chrome Nickel Steel inner Sleeve
- Single Piece Construction
- 500 mm Glass Fibre insulated
- Metal Braided Cable
- Terminal Protection Box, unless specified
- Clamping : Barrel Nut Key type
- Also available in Two Piece Construction



3 Power Saver

- Chrome Nickel Steel Clamping with Brass / Chrome Nickel Steel Inner Sleeve
- Energy saving insulated cover
- Single Piece Construction
- Power saving Insulated Outer Cover
- 500 mm Glass Fibre insulated Metal Braided Cable
- Barrel Nut Key type clamping with Terminal Protection Box, unless specified
- Also available in Two Piece Construction

Technical Data

Sheath material	:	Chrome Nickel Steel / Brass / MS Galvanised
Insulation Material	:	Mica
Heat Saving Insulation	:	Ceramic Fibre Thermal Insulation (std. 1/8" thick)
Heating Elements	:	NiCr 60:16, NiCr 80:20
Nominal Wall Thickness	:	4-5 mm (without insulating cover)
Connection Wire	:	Fibre Glass Braided / Metal Braided (std. 10" long)
Voltage Range	:	110V - 440V
Surface Loading	:	Upto 35W / in^2 (depending upon application)
Power Rating	:	Depending upon application
Power Tolerance	:	± 10%
HV Testing	:	1.5 Kv between heating element and sheath
Insulation Resistance (Cold)	:	< 20 MOhms
Sheath Temperature	:	Upto 300°C maximum (Chrome Nickel Steel sheath)

Limitations

Mn. Inside Diameter	:	25 mm
Mn. Width	:	25 mm without mounting / thermocouple holes 35mm with mounting / thermocouple holes
Tolerance Allowed	:	Diameter: -2mm, Width: ± 2mm, Resistance: +10%, - 5%, Wattage: +5%, - 10%,
Std. gap:	:	5-10mm

Suggested Watt Density Guide Lines

Diameter	:	**Suggested watt density**
25mm-65 mm	:	20-35 watt / sq. in

Watt Density Formula for Mica Nozzle Heaters

$$\frac{\text{Wattage}}{(\text{Heater I.D.} \times 3.14) - 0.75 \times \text{Width}}$$

Note: Max Suggested Watt Density is 35 W / sq in

Nominal Unheated Area

One piece construction	:	3/4" x width
Holes and Cutout	:	size x ½"x width

Electrical Variations

Single Phase

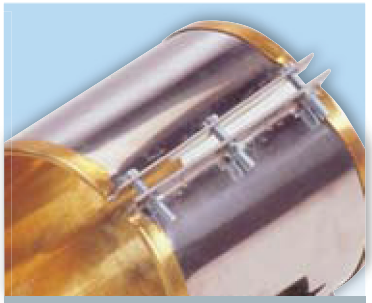
PHP Band Heaters are usually designed on 230 V single phase unless specified.

Dual Phase

Mica Nozzle Heaters can be designed with multiple circuits to operate in single or dual-phase circuits.

Clampings

Barrel Nut Std. M6 x 45mm



Flange Lock ½" Height

Terminal Connection

Chrome Nickel Steel braid exiting both sides of gap.

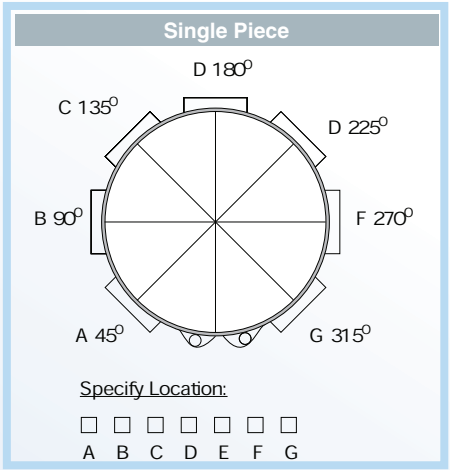
Nozzle Heaters below 40mm dia will have Direct cable terminal exits through edges on both sides of the gap as shown in figure.

Chrome Nickel Steel Terminal Box at 180° opposite to clamping

Electric Terminal Connections for Mica Nozzle Heaters above 40mm dia will be provided with Chrome Nickel Steel protection caps at center of width either at 180° opposite the Clamping or 90° from Clamping, unless specified.

Terminal Location

Single Piece



Note:
In all cases the Terminal Location will be at 180° opposite to Clamping unless specified.

Thermocouple Holes

All Thermocouple Holes for Mica Nozzle Heaters (if required) will be provided at center of width either at 180° opposite the Clamping or 90° from Clamping, unless specified along with drawing.

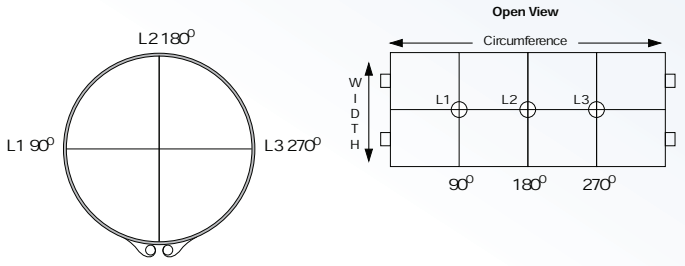
Note: As far as possible please avoid thermocouple holes in Nozzle Heaters. Try and locate them in the heater gap, since holes in the heater body complicates the internal wiring resulting in less heating area and also turns out to be more expensive.

Oversize Gap:

The nominal gap between the clamping is 5-10mm. If a larger gap is required for probes or thermocouples, specify when ordering.

Thermocouple Holes Location (if required)

T/C holes at center of width for single piece



Note:
Limitations for holes in nozzle heaters:
Minimum Heater width: 50mm
Minimum Dia: 40mm

Standard Sizes

Length / Diameter	25 mm Watts	30 mm Watts	35 mm Watts	40 mm Watts
25 mm	80	90	110	120
30 mm	90	110	130	150
35 mm	110	130	150	170
40 mm	120	150	170	190
45 mm	140	160	190	220
50 mm	150	180	210	240
55 mm	170	200	230	270
60 mm	180	220	260	290

Length / Diameter	65 mm Watts	70 mm Watts	75 mm Watts	80 mm Watts
25 mm	-	-	-	-
30 mm	-	-	-	-
35 mm	280	-	-	-
40 mm	320	340	370	-
45 mm	360	380	410	440
50 mm	400	430	460	490
55 mm	440	470	500	540
60 mm	480	510	550	580

Length / Diameter	40 mm Watts	50 mm Watts	55 mm Watts	60 mm Watts
25 mm	140	150	-	-
30 mm	160	180	-	-
35 mm	190	210	230	260
40 mm	220	240	270	290
45 mm	250	270	300	330
50 mm	270	300	330	370
55 mm	300	330	370	400
60 mm	330	370	400	440

Length / Diameter	85 mm Watts	90 mm Watts	95 mm Watts	100 mm Watts
25 mm	-	-	-	-
30 mm	-	-	-	-
35 mm	-	-	-	-
40 mm	-	-	-	-
45 mm	470	490	520	-
50 mm	520	550	580	-
55 mm	570	600	640	675
60 mm	620	660	690	730

Note : The above mentioned watts are maximum suggested watts in respective sizes. For watts and sizes other then above please contact us.

How to order

When ordering please specify the following

1. **Quantity**
2. **Inside diameter and width.**
   - Inside Dia should be same as outer Dia of the nozzle to be heated
   - Width is the length of band heater.
3. **Volts**
   All heaters designed in 230V AC unless specified
4. **Watts**
   Maximum suggested wattage calculated on basis of 25 Watts/sq. in . For special wattage please contact us
5. **Construction Style**
   - Single piece construction
6. **Construction Type**
   Eco-Heat/Premium Heat/Power Saver (Refer Pg 6)
7. **Terminal Connection** (Refer Pg 8)
8. **Terminal location**
   - Single piece construction
9. **Required Clamping** (Refer Pg 8)

You can also log on to www.phpheat.com and order online.

Precautions & Installation (refer Pg 5)