

# Cartridge Heaters



**Cartridge heaters** are tubular formed industrial electrical resistance heating elements in different metric and imperial sizes. Heaters are manufactured to the customer's specific application to significantly boost process equipment efficiency.

## HIGH TEMPERATURE FLEXIBLE LEADS

High temperature fiberglass flexible leads are internally connected and swaged in place. Fully flexible from the exit of the sheath, the high temperature (850°F/450°C) lead wires are ideal where flexing occurs.



**Fiberglass (standard)**  
Temperature rating:  
482°F | 250 °C



**Silicone**  
Temperature rating :  
356 °F | 180 °C



**Silicone Cable**  
Temperature rating:  
356°F | 180 °C



**Teflon**  
Temperature rating :  
500 °F | 260 °C



**Teflon (High Amperage)**  
Temperature rating:  
500 °F | 260 °C



**Fiberglass (High Temp.)**  
Temperature rating :  
932 °F | 500 °C



DIA.	Standard Unheated Area
1/8"	3/8"
1/4"	1/2"
5/16"	1/2"
3/8"	9/16"
1/2"	5/8"
3/4"	7/8"
15/16"	7/8"
1"	7/8"
1-1/4"	7/8"

## STAINLESS STEEL ARMOR CABLE LEADS

Stainless steel armor cable is the best protection for use where lead wires experience abrasion. This termination configuration is available exiting straight or right angle. Please specify the overall sheath length when ordering. See chart for dimension and minimum unheated section information.



**Armor Cable**



**Armor Cable (Gas Proof)**



DIA.	Min. Unheated	Cable O.D.
1/4"	1-1/2"	1/4"
5/16"	1-1/2"	1/4"
3/8"	1-1/2"	3/8"
1/2"	1-1/2"	3/8"
5/8"	1-9/16"	1/2"
3/4"	1-7/8"	1/2"
15/16"	1-7/8"	1/2"
1"	1-7/8"	1/2"
1-1/4"	1-7/8"	1/2"

## STAINLESS STEEL BRAIDED LEADS

Swaged in double conductor stainless steel braid is internally connected for strength and full-length flexibility. Stainless steel braided leads are available exiting straight or right angle of the sheath. Please specify overall length when ordering. See chart for dimension and minimum unheated section information.



**Braided Metal Sleeve**



DIA.	Min. Unheated
1/8"	-
1/4"	1"
9/16"	1"
3/8"	1-1/2"
1/2"	1-1/2"
5/8"	1-9/16"
3/4"	1-7/8"
15-16"	1-7/8"
1"	1-7/8"
1-1/4"	1-7/8"

## WATTAGE DISTRIBUTION

Industry specific winding profiles to improve thermal profiles including packaging, rubber and injection molding. We have also successfully developed specific winding profiles to compensate for challenging cartridge heater placement.

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## RIGHT ANGLE LEADS

Right angle high temperature fiberglass leads (850°F/450°C) is used when specific requirements are limited. Please specify overall length when ordering. See chart for dimension and minimum unheated information.



## RIGHT ANGLE BLOCK

The Right Angle Block has flat sides and substantial materials to provide the strength needed for highly corrosive environments such as die casting- where the cartridge heater sheath can be bonded to the bore.

## Right Angle Flexible Leads

DIA.	Standard Un-heated Area
1/8"	-
1/4"	1"
5/16"	1-1/2"
3/8"	1-1/2"
1/2"	1-1/2"
5/8"	1-9/16"
3/4"	1-7/8"
15/16"	1-7/8"
1"	1-7/8"
1-1/4"	1-7/8"

## IMMERSION HEATERS WITH BUSHINGS

Available in brass, steel, or stainless steel pipe fitting which allows liquid tight installation through threaded openings. Fittings are brazed to the heater. Be certain the watt density and sheath material are compatible with the material being heated. (Available in both NPT and Straight thread with O-Ring) See chart for sizes available.



## Cartridge Immersion Heaters Straight Thread

DIA.	S.A.E. O-Ring Boss	Pipe Fitting Length
1/2"	08 3/4-16 THD	3/4"
1/2"	10 7/8-14 THD	3/4"
5/8"	10 7/8-14 THD	3/4"



## Cartridge NPT Immersion Heaters

DIA.	Pipe Size NPT	Pipe Fitting Length
1/4"	1/8-27	5/8"
3/8"	1/4-18	5/8"
1/2"	3/8-18	3/4"
5/8"	1/2-14	13/16"
3/4"	3/4-14	15/16"

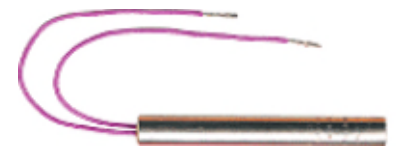
## Moisture and Contamination Resistant

DIA.	Min. Unheated
1/4"	1"
3/8"	1"
1/2"	1"



If your application requires wash down, has high amounts of humidity in the ambient air, or has machining oil nearby, then STS has a wide range of options to deliver moisture resistance at your operating temperature.

Swaged in Teflon seal and leads resist oil and water up to (482°F/250°C) maximum application temperature.

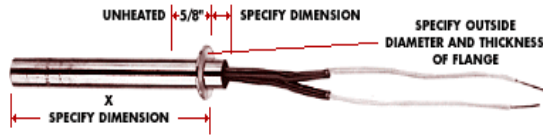


# Cartridge Heaters



## FLANGES

Cartridge Heater can be manufactured with flange located at any point along sheath with adequate unheated area.



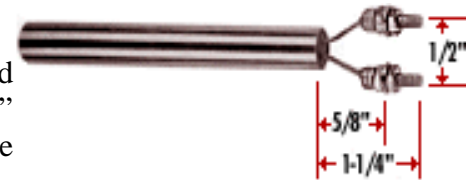
## MOUNTING TABS

Mounting tabs can be used if your application calls for the heater to have a specific insertion depth, or to be held in place.



## THREADED TERMINALS

Screw terminals facilitate ease of connection using lug terminals, standard leads or bus bar. Available in 1/2", 5/8", 3/4", 15/16", 1", and 1-1/4" diameters. Standard terminals are 8-32 x 5/8". Other terminal sizes are available. Please consult with Southeast Thermal.



## POTTING OPTIONS



**Ceramic**  
Temperature rating  
1000 °F | 538 °C



**Epoxy**  
Temperature rating  
600 °F | 315 °C



**Teflon Plug**  
Temperature rating  
450 °F | 232 °C



**Silicone**  
Temperature rating  
500 °F | 260 °C



**Silicone (High Temp.)**  
Temperature rating  
650 °F | 343 °C



## SPECIFICATIONS

**Resistance Tolerance:** +10%, -5%

**Wattage Tolerance:** +5%, -10%

**Cold Resistance:** 3% Lower than Hot Resistance

**Length Tolerance:** ±3/32", up to 4 1/2", long, above 4 1/2", ±2%

**Camber Tolerance:** .0016" per inch of length, in longer heaters larger camber may occur.

**Standard Unheated Section:** 3/8" cold top and bottom of 3/8" diameter heaters. Slightly longer cold sections in larger heaters. See corresponding description for cold sections at lead end for all lead variations. Cold sections can be reduced or increased.

NOM. DIA. IN.	Actual DIA. IN.
1/8	.121
1/4	.246
5/16	.308
3/8	.371
1/2	.496
5/8	.621
3/4	.746
1	.996
1-1/4	1.245

TOL ± .002

NOM DIA mm	ACTUAL DIA mm
6.2mm	6.16mm
6.5mm	6.46mm
7.0mm	6.96mm
8.0mm	7.96mm
9.0mm	8.96mm
9.5mm	9.46mm
10.0mm	9.96mm
11.0mm	10.96mm
12.0mm	11.96mm
12.5mm	12.46mm
13.0mm	12.96mm
14.0mm	13.96mm
15.0mm	14.96mm
16.0mm	15.96mm
17.5mm	17.46mm
18.0mm	17.96mm
19.0mm	18.96mm
20.0mm	19.96mm
22.0mm	21.96mm
TOL ± 0.02mm	

## METRIC CARTRIDGE HEATERS

**Length Tolerance:** ± 2.4mm up to 115mm and above 115mm ± 2%

**Camber Tolerance:** .16mm per 100mm of length and in longer heaters larger camber may occur.