VISHWESH HEATERS PVT. LTD.

MANUFACTURERS & EXPORTERS OF
INDUSTRIAL ELECTRIC HEATERS

AN ISO 9000 : 2001 COMPANY

WE TREAT WITH HEAT






VISHWESH HEATERS PVT. LTD.

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INTRODUCTION

We are pleased to introduce ourselves as a leading manufactures of heating elements viz Tubular air heaters, Immersition heaters, Ceramic band heaters, Mica band heaters, Cartridge heaters, Ceramic bobbin heaters, Furnace elements & D type heaters.
We are also manufactures of hot runner mould heaters such as Coil heaters, Manifolds heaters, Cast coil heaters, Micro tube heaters & High watt density cartridge heaters.
We are an organization of technical professionals having good relations with various reputed industries in India and rest of world. In this short period we have been able to generate good market reputation through our quality products with competitive prices and effective delivery service.
We have been in the business of Electrical Heaters for the last Ten years. We have been manufacturing Hot runner system heaters for the last Two years.

Features :

- Production guarantee for a complete system application
- Standardized wiring code
- Internal and external thermocouples
- Heaters with the optimal heat transmission and linear or progressive heat profile.

Directors Mr. Vidaydher Patil & Mr. Hrushikesh Patil have vast experience in the field of heating and products with heating elements. We are Manufacturers & Exporters of Every type of heater made as per customers 'specifications or as per sample'

We offer best competitive prices and after sales services. We also provide our expertise in Proper selection as per application.
We hope you enjoy our product catalog and look forward to working with you in future.

Some of Our Valued Customers :

- Tata Moters Ltd.
- Kinetic India Ltd.
- Bajaj Tempo Ltd.
- Century Enka Ltd.
- Finolex Industries Ltd.
- Finolex Wire Ltd.
- Indian Card Clothing Ltd.
- Tata Auto plastic Pvt. Ltd.
- Jindal Steel Ltd.
- The Indian Seamless Tube Ltd.

Some of Our Overseas Clients :

- Globle Micro tech (U.S.A.)
- Thermal Products (S.A.)
- Fabrimsa (PERU)
- Reliar Machinery (UK)
- Thanh Plastic (VIETNAM)

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COIL HEATERS

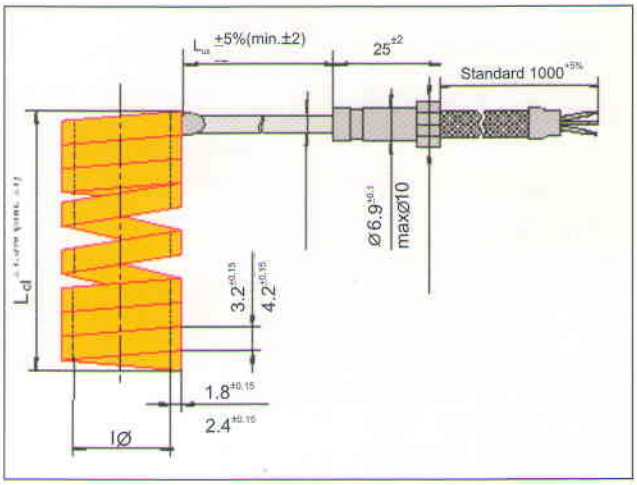
Descriptions & Applications

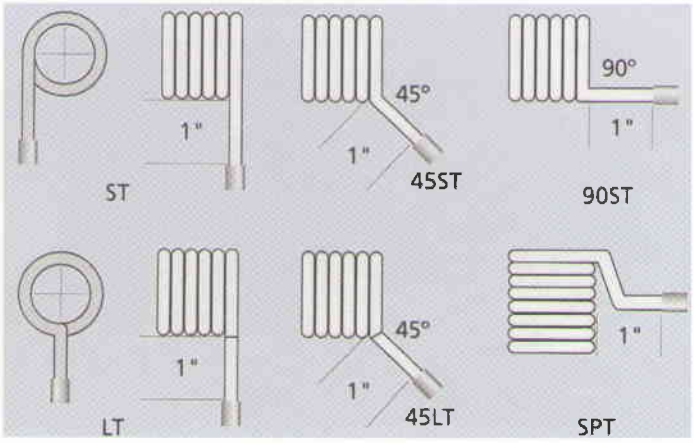
Coil heaters are an advanced concept of thermal engineering which have a construction similar to high watt density cartridge heaters. These heaters are also known as high performance tubular heaters or cable heaters. The basic construction of these heaters involves compacted MgO, high temperature resistance wire and stainless steel tube. These heaters can be constructed with or without built in thermocouples. They are usually installed where space available for heating is limited and are widely used on hot runner nozzles, and manifold, die cast nozzles, packaging, machines etc.

Fibreglass, Stainless Steel Armour & Stainless steel B Options
A wide range of length are available up to 2000mm
Wattages are available up to 1200W
Optional Built-In Type 'j' Thermocouple.
Flat. Square Or Round Profiles.

Technical Specifications

Sheath Material	High- Nicked Alloy
Heating Conductor	Nickel/Chromium
Insulation Material	Highly Compressed Magnesium Oxide (MgO)
Voltage Range	230V-250V ac
Leakage Current	<0.5mA
Insulation Resistence	Aprrox. 10MOhms
Wattage Tolerance	+/- 10%
Thermocouple	Type 'j'. Fe/CuNi
Standard Cold Length	2.4 x 4.2 = 75mm. 3.2x 3.2 = 75mm, 3mm dia = 75mm,
Max. Operating Temperature	750° C surface
Min. Forming Radius	Flat: 2.4 x 4.2 = 5.00mm, 1.8 x 3.2 = 4.00mm





Cross Sections of Coil heaters

Flat	2.4 x 4.2mm*	1.8 x 3.2mm
Square	3.0 x 3.0mm	3.2 x 3.2mm
Round 4.00mm diameter*	3.00 diameter*	

Note:
sizes marked with an '*' are the most popular and are kept in stock.
Most stocks are with integral thermocouples

VISHWESH HEATERS PVT. LTD.

MANUFACTURERS & EXPORTERS OF INDUSTRIAL ELECTRIC HEATERS

COIL HEATERS

Precautions & Installation

1) COIl Heaters are hygroscopic in nature due to Mgo contents. If kept unused for longer period, there is moisture deposition on the terminals. Therefore we recommend you to demoisturies the heaters prior to installation by heating them at 100-120 Degree Centigrade in an oven for approximately 1 to 2 hours or use controllers with soft start function. This will help evaporate any moisture present inside.

2) Lead ends (Non Heating) Once bent should not be rebent/de-colled. This could lead to breakage. Sharp edges lead to breakage. Sharp edges along the lead wire path should be avoided. Connection leads areas should be protected from combustable gases & liquid to avoid short-circuits.

3) While installing Coll Heaters on to the nozzle care should be taken that they should be tight fit for even heat transfer. There should not be air gaps between the heater and the nozzle. Never open the ID of the heater by twisting as it will not fit tight which leads to premature heater failure.

4) Due to high watt densities per cm/sq. Coll & Cast Heaters requires precise temperature controllers.We strongly recommend to use good quality soft start Hot Runner controllers.

5) Adaptar area should be kept under 150 Degree Centigrade. (junction between Heater & Lead wires)

6) Stabilized Voltage supply increases the life of the heater as well as increases the wattage output.

Contact Area Between the Heater & Nozzle

	100 - 50%												100 - 45%		100 - 40%					
Available Watts from Ready Stock																				
	250		330		400		470		550		650		750		850		1000		1100		1200	
	100%	50%	100%	50%	100%	50%	100%	50%	100%	50%	100%	50%	100%	45%	100%	45%	100%	45%	100%	45%	100%	45%
Diameter All Dimension Mentioned below are in mm																						
12	32	63	43	86	55	110	65	125	75	150												
16	26	55	35	70	45	90	50	100	60	120	70	140										
18	24	50	32	65	40	80	47	95	55	110	65	130	77	175								
19	23	47	31	62	39	77	45	90	53	105	63	121	73	165	82	185						
20	22	45	30	60	37	75	43	86	51	101	58	117	70	157	78	175	94	235				
22	21	42	28	56	35	70	40	80	47	94	54	120	65	145	72	162	87	217	101	252		
25	19	38	25	50	31	62	36	72	42	84	48	97	58	130	65	145	78	195	91	226	99	245
27	18	36	24	48	30	60	34	68	40	80	46	92	55	123	61	138	74	184	86	215	93	233
30	17	34	22	45	27	55	31	63	37	73	42	84	50	113	56	126	67	168	78	196	85	212
32	16	32	21	42	26	52	29	59	35	70	39	79	47	105	52	118	63	157	73	183	80	199
35	15	30	20	40	24	48	28	55	32	65	37	74	44	99	49	110	59	147	69	171	75	186
38	14	28	19	38	23	45	26	52	30	60	34	69	41	92	46	102	55	136	64	159	69	172

Technical Data

Sheath material	:	SS304
Cross Section	:	2.4 x 4.2 (Flat)
Thermocouple	:	'j' type (Fe K)
T/C Location	:	Sensing point is 5mm away from the tip of the heater and is not in contact with the sheath
Lead Length	:	1000mm
Lead Connection	:	Black Colour PFTE Leads - Power Sipply White Colour PFTE Leads - (+) positive Red Colour PFTE Leads - (-) negative Green Colour PFTE Leads - Ground (Earth)
Lead Protection	:	Any of the three available options can be incorporated: 1) Silicon Coated Fibreglass Sleeve 2) Wire Braid 3) Stainless Steel Flexible Conduit

Watts	Heated Length	Cold Length	Volts	"J" type Thermocouple	W/cm2
250	280mm	50	230	yes	6.6
330	400mm	50	230	yes	6
400	510mm	50	230	yes	5.75
470	600mm	50	230	yes	5.75
550	720mm	50	230	yes	5.6
650	840mm	50	230	yes	5.7
750	1020mm	50	230	yes	5.4
850	1150mm	50	230	yes	5.4
1000	1400mm	50	230	yes	5.25
1100	1650mm	50	230	yes	4.9
1200	1800mm	50	230	yes	4.9

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E-mail : vhp100@gmail.com & vhpl100@yahoo.co.in **Web-site :** www.dattaindustries.com

CARTRIDGE HEATERS

We are committed to total customer satisfaction. Our goal is to supply the highest quality heaters with 100% on time deliveries and at competitive prices. Give us the opportunity to prove our commitment to you.

A superior swaged cartridge heater for use in application where high densities high temperature and long life are required

- Widely used through for the industry as a rugged dependable heat source.
- Finest material used, precision manufacturing methods and close quality control.
- Swaged construction produces a high compacted unit which resists shock and vibration and gives maximum element life through efficient heat transfer
- Temperature up to (820° C)
- Five diameters offered as standard
- Custom manufactured to specification
- Metric sizes also available
- Alloy sheath for high corrosion resistence Lasts as much as twenty times longer than uncompacted standard cartridge heaters.

Technical specifications

Outer sheath material	Stainless Steel 304, welded end disc washer of same material Maximum operating temperature 750°C. Sheath can be ground for precision tolerance
Heating Conductor	NiCr 80:20
Power Tolerance	+10%
Voltage	110 volts to 440 volts
Leakage Current	< 5 mA
High Voltage	800 V
Surface Loading	upto 50 watts/cm2

VISHWESH HEATERS PVT. LTD.

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CARTRIDGE HEATERS

Precautions & Installation

1. Cartridge units are made with special tubing which is a few thousandth under-size to ensure a free fit for easy installation. To install cartridge heaters, drill and ream holes to proper length and to nominal diameter +/- 0.001 inches maximum of the Cartridge Heater (3/8 Inch, 1/2 Inch, 5/8 Inch etc.) A hole should be drilled & reamed to 1/2 Inch diameter +/- 0.001 Inch to ensure a proper fit. Always finish ream, drilled or cast holes to ensure a smooth, uniform metal contact for efficient heat transfer. A knockout hole should be provided if possible to facilitate cartridge removal. For watt density over 150W/In2 we recommend press fit spilt bores. Elements that fit too loosely will have poor heat transfer and shortens life due to excessively high sheath temperature. They should be tight fit with minimum tolerance in reamed holes.

2. Prior to installation, the holes must be cleaned & should be free of all contamination that might liquefy under heat and penetrate into the heater thereby carbonizes & becomes conductive. The smallest amount of contamination can cause electrical shorts and results in heater failure. Raw material (polymers) spillage on the terminals & contamination (oil/grease) penetrating into the heaters results in failure of heaters. Combustible gases & vapours also leads to deposits of carbon on the terminals resulting in failure of heaters.

3. Overheating that leads the heater operate beyond the maximum capacity can be a cause for destroying an entire heating zone. The wattage should be calculated as close as possible to operating wattage to minimize on-off cycle resulting in power saving. Incase of heaters without In -Built thermocouple ensure that the tips of the sensors (External Thermocouples) are clean and free from any contamination and should be checked for good response to temperature changes. Defective temperature sensors and controllers also lead to heater failures.

4. Due to hygroscopic nature moisture absorption can occur when elements are exposed or stored in damp or wet climate. If kept unused for longer period, there is moisture deposition on the terminals which results in heater failure. It is recommended to de-moisturize the heaters prior to installation by heating them at 100 -120oC in an oven for approximately 1 to 2 hours or use controllers with soft start function . This will help evaporate any moisture present inside.

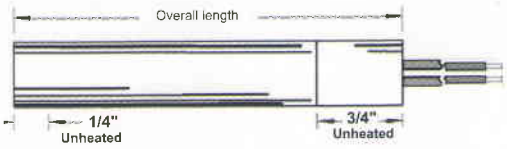
5. Physical or mechanical damage can also result in failure of heaters.

Dimensional Data

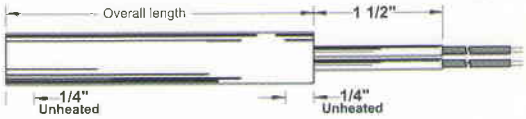
Nominal Diameter	1/4"	6.5	5/16"	8	3/8"	10	1/2"	12.5	5/8"	16	3/4"	19
Minimum Diameter	0.246	6.42	0.309	7.92	0.372	9.92	0.496	12.42	0.621	15.92	0.746	18.92
Maximum Diameter	0.249	6.48	0.311	7.98	0.374	9.98	0.499	12.48	0.624	15.98	0.749	18.98
Minimum Length	1½"	38	1½"	38	1½"	38	2"	50	2"	50	3"	75
Maximum Length	8"	200	8"	200	10"	250"	18"	450	24"	600	24"	600
Lead wires in mm2	5	5	75	75	75	75	11	1	51	5	2.5	2.5
Maximum Amperes	4	4	6	6	6	6	8	8	12	12	18	18

For options other than mentioned above, please consult.

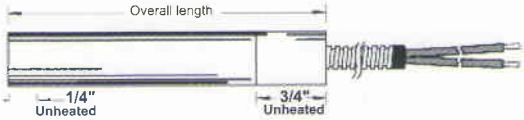
Crimped Leads Style VHP-CL1 Flexible stranded lead wire is crimped with a high temperature connector to the end of the solid conductor & electrically insulated with high temperature sleeving.



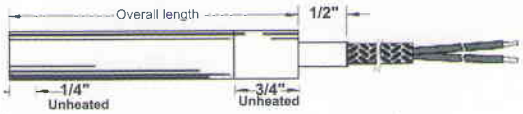
Internally Connected Leads (Swaged Leads) offer Style SL VHP-ICL 2 Internally connected leads offer maximum flexibility at point of entry to cap, allowing a high degree of flexing as well as the ability to bend the leads sharply adjacent to the cartridge heater.



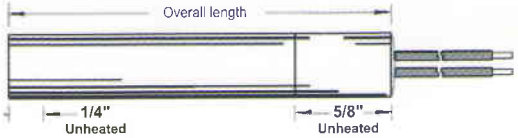
Straight Hose Style VHP- SSH4 Stainless steel hose protects leads from abrasion on sharp equipment while allowing flexibility.



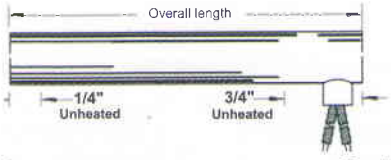
Straight Braid Style VHP - SB3 Stainless steel braid protects leads from abrasion or sharp equipment while allowing flexibility.



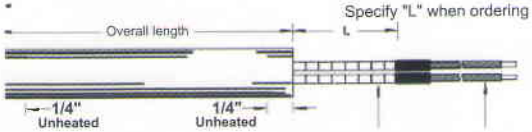
Teflon Leads Style VHP- TFL 5 Internally connected Teflon leads seal and resist moisture and oil in applications up tp 480oF. This option is available on 1/4" to 3/4" units. A minimum cold section of 5/8" at the end is required



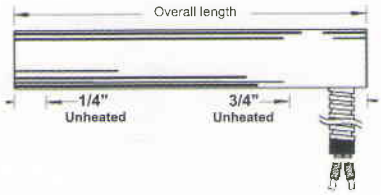
Right Angle Leads Style VHP-RAL9 Right angle leads offer high flexibility ans is often used when space limitations are critical. Not available with internal thermocouple.



Ceramic Bead Style VHP-CB8 Ceramic bead insulation protects the leads from high tempertaure environments (**500**°C.) The beads fir over the solid conductors which extend far enough to reach a cooler area where flexible wires can be attached.



Right Angle Hose Style. VHP-RAH 10 Right angles stainless steel hose protects leads from abrasion or sharp equipment and is often used when space limitations are critical.Not available with internal thermocouple



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E-mail : vhp100@gmail.com & vhpl100@yahoo.co.in **Web-site :** www.dattaindustries.com

CAST HEATERS

Coil Heaters Cast in Brass - Description & Applications

As the name indicates, this is a Coil Heater Cast in Brass having an outer casing of stainless steel tube. Available with an added feature of built in thermocouple, its applications are similar to coil heaters, such as Hot Runner Nozzles, Pressure Die Cast Nozzles, Tube Extrusion etc... but have some advantages over the, Coil Heaters.

The Advantages

- Highly non corrosive
- Maximum heat transfer due to more contact area
- Even temperature profile
- Precision fit on Hot Runner Nozzles.
- Higher watt density
- SS casing acts as a heat insulator
- Robust cast body can withstand pressure during

As these heaters have very specific applications they are made as per customers requirements. Inner diameter of these heaters are ground finished and can be provided with a tolerance of 0.02mm.

Minimum Wall Thickness

Units without Thermocouples	:	4.25mm
Units with Built-in Thermocouples	:	6mm
Units with Mineral Insulated Thermocouples	:	6.5mm

Coldzone :
Minimum 35mm + Adapter 35mm = Total 70mm
Inner Diameter & Length Dimensions:

10mm to 15mm	Maximum Length - 100mm
16mm to 19mm	Maximum Length - 150mm
20mm to 25mm	Maximum Length - 200mm

Tolerance

Inner Diameter	:	-0.02 to 0.05
Length	:	+ 1mm
Watts	:	+ 10%

CAST HEATERS

Precautions & Installation

1. Cast Heaters are hygroscopic in nature due to Mgo contents. If kept unused for longer period, there is moisture deposition on the terminals. Therefore we recommend you to demositurise the heaters prior to installation by heating them at 100 - 120° C In an oven for approx. 1 to 2 hrs. or use controllers with soft start function. This will help evaporate any moisture present inside.

2. While Installing Cast Heater on to the nozzle care should be taken that they should be tight fit for even heat transfer. There should not be air gaps between the heater and the nozzle. Never open the ID of the heater by twisting as it will not fit tight which leads to premature heater failure

3. Leads ends (Non Heating) once bent should not be rebent/de-coiled. This could lead to breakage. Sharp edges along the lead wire path should be avoided Connection lead areas should be protected from cumbustable gases & liquid to avoid short-circuits.

4. Due to high watt densities per cm/sq. Coll & Cast Heater requires precise temperature controllers. We Strongly recommend to use good quality soft start Hot Runner controllers.

5.Stabilized Voltage supply Increase the life of the heater as well as increases the wattage output.

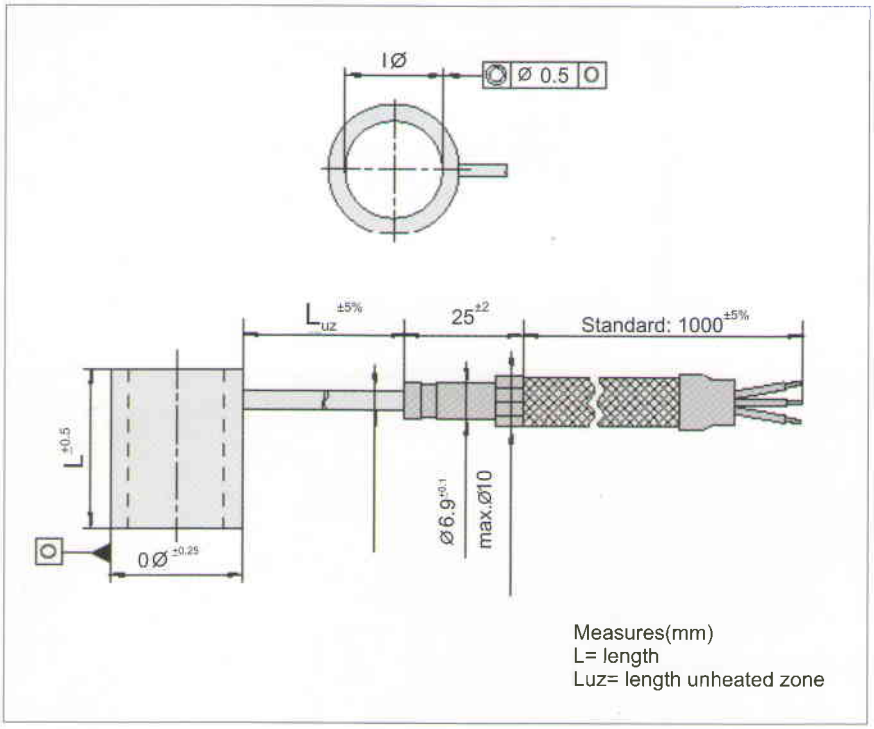
6. Adapter area should be kept under 150°C (Junction between Heater & Lead wires)

Technical Data

Outer Sheath material	: SS304
Coil heater Sheath material	: SS304
Insulation material	: High purity Magnesium Oxide
Heating elements	: NiCr 80 :20
Thermocouple	: 'J' type (Fe K)'K' type (Cr Al) grounded or ungrounded
Connection Wires	: PTFE coated Nickel wires
H.V Testing	: 800 V between sheath and resistance wire 500 V between T/C and resistance wire
Insulation Resistance	: > 5MW
Current Leakage	: < 0.5 mA
Max. Operating Temperature	: 450° C
Adapter Temperature	: 150° C max

Technical Data Required while placing an order

Inner Diameter	Length
Outer Diameter	Lead Length
Wattage	Built in Thermocouple or
Voltage	External Thermocouple



Measures(mm)
L= length
Luz= length unheated zone

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E-mail : vhp100@gmail.com & vhpl100@yahoo.co.in **Web-site :** www.dattaindustries.com

MICRO COIL HEATERS

Description

Tubular coil heaters are manufactured in two standard diameters, 1.5 mm and 1.8 mm (0.059" & 0.07").These heaters are swaged and compacted to these diameters and fitted into special clamps to tighten over circular parts for heating purpose. The Micro Heater's Hermetically sealed construction prevents moisture from entering the beater resulting in very long life. The element's nickel sheath is much more efficient for heating the stainless steel or Inconel sheaths used.

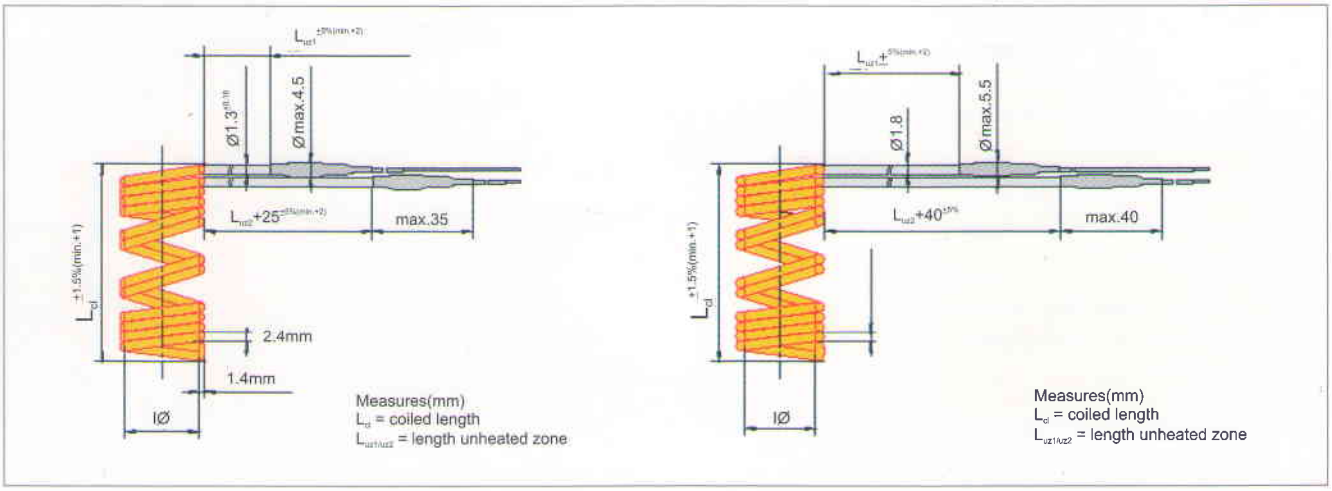
Axial Clamp

The 1.8mm diameter Micro Tubular Heater is formed into a coil of predefined dimension and equipped with a special cover for easy fitment. This special cover called Axial clamp allows front end loading and adjustability. Such easy handling saves hours of downtime in case of heaters failure in a Multi-Cavity mold. These heaters are offered with staggered cold leads of 5" & 7".

For faster heat up time we can offer similar heaters with a flat cross section of 1.4mm X 2.4mm. The cold leads have a diameter of 1.8mm whereas the heated area has a flat cross section for better contact area and faster heat transfer.

Features

- 149 Watt & 268 Watt, 240V ac, Other Ratings Available
- Compatible with other manufacturer Heaters
- 1.83m (72") PTFE Leads as standard
- Hermetically Sealed Constructions
- Cam Operated Axial Clamp.
- Radial Clamp As Standard



MICRO COIL HEATERS

Precautions & Installation

1. Microtubular Heaters are hygroscopic in nature due to Mgo contents. If kept unused for longer period, there is moisture deposition on the terminals. Therefore we recommend you to demoisturise the heaters prior to installation by heating them at 100 degree Centigrade in an oven for Approximately 1 to 2 hours or use controllers with soft start function. This will help evaporate any moisture present inside.

2. While installing Microtubular Heaters on the nozzie care should be taken that they should be tight fit for even heat transfer. There should not be air gaps between the heater and the nozzie. Never open the ID of the heater by twisting as it will not fit tight which leads to premature heater failure.

3. Lead ends (Non Heating) once bent should not be rebent. This could lead to breakage. Sharp edges along the lead wire path should be avoided. Connection lead areas should be protected from combustible gases & liquid to avoid short-circuits.

4.Due to high watt densities per cm/sq, Microtubular Heaters require precise temperature controllers, we strongly recommend to use good quality soft start Hot Runner controllers.

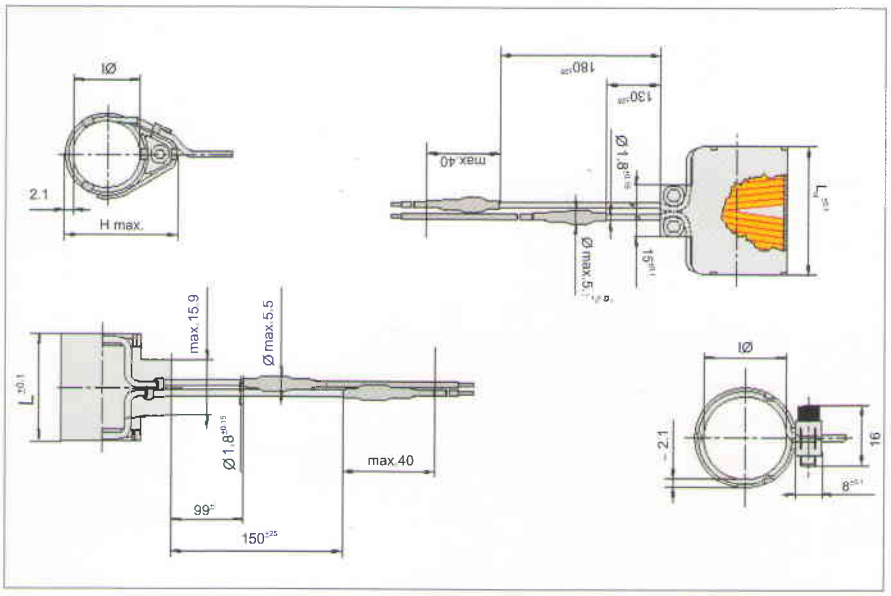
5. Adapter area should be kept under 100 Degree Centigrade. (Junction between Heater & Lead wires)

6. Stabilized voltage supply increases the life of the heater as well as increases the wattage output.

Technical Data

Cross section	:	1.5mm, 1.8mm, 1.3 x 2.3mm
Sheath material	:	SS304
Insulation material	:	high purity MgO
Heating material	:	NiCr 80:20
Connection Wires	:	Stranded Nickel wires with PTFE coating
Voltage Range	:	Maximum 250 volts, standard 230 volts
Power rating	:	Depending on application
Power tolerance	:	+ 10%
H.V Testing	:	800 V
Insulation resistance	:	>5 M ohms
Current Leakage	:	<0.5 mA
Sheath Temperature	:	750° C max
Adapter Temperature	:	150° C max
Length Tolerance	:	+ 2%
Unheated Length	:	Minimum 25 mm plus adapter connection.
Inner Diameter Tolerance	:	Without reflection tube -0.10 to -0.30mm with reflection tube +0.05 to +0.15mm
Minimum bending diameter	:	6mm

Other dimensions and product variation available on request.



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E-mail : vhp100@gmail.com & vhpl100@yahoo.co.in **Web-site :** www.dattaindustries.com

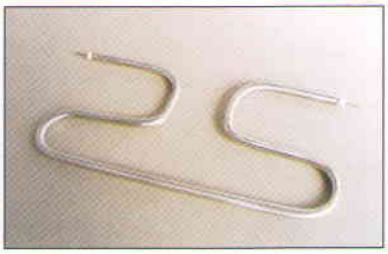
TUBULAR HEATERS

Versatile Tubular heaters are custom-formed in a wide range of shapes to your requirements.

Incoloy stainless steel or steel sheath materials are available, as well as a large selection termination styles. Magnesium Oxide insulation ensures superior heat tranfer and the wire is precision-wound for long heater life.

Tubular heaters can be used in almost any application. Straight tubulars can be clamped on surfaces or inserted in machined groves for conductive heat transfer or use a formed provide consistent heat in any type of special application.

During the Transient heat-up phase the hot runner manifold block together with the solidified melt is brought up to processing temperature (melt temperature) during time t. After reaching this temperature (quasi-satationery phase), the heat only compensates energy losses due to conduction, convection, and radiation.



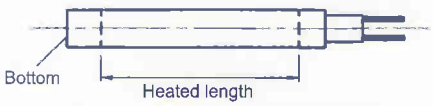
There are a number of different designs for heating elements. The hot runner manifold block as a heat source for indirectly heated hot runners nozzles or torpedoes. Optimum heating conditions are required to achieve thermal homogeneity, which means uniform temperature in every part of the hot runner mangold block. Heat losses are the reason why this goal is hard to reach; although they can be minimized, the cannot be totally eliminated. It is essential to control the temperature of the hot runner manifold block

Two designs of hot runner manifold blocks are available, distinguished by the type of heater:

- External heating
- Internal heating

With external heating, the heat sources is placed outside of the melt channel; with internal heating it is inside the melt channel. When using internally heated systems, the flow cross section is reduced by the cross section of the heating element and in addition by insulating layer of solidified melt.

Figure 1: Cylindrical cartridge heater



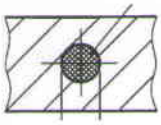
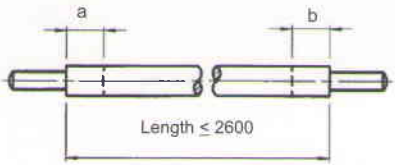


Figure 2: Cartridge heater mounted into solid bore; with precision workmanship efficient heat transfer is accomplished

Figure 3: Tubular heater
a and b: Unheated zones



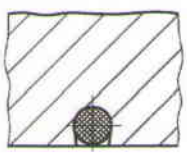


Figure 4: Mounting of tubular heater with tight chamfered groove

VISHWESH HEATERS PVT. LTD.

MANUFACTURERS & EXPORTERS OF INDUSTRIAL ELECTRIC HEATERS

TUBULAR HEATERS

Precautions & Installation

1.Overheating that leads the heater to operate beyond the maximum capacity can be a cause for destroying an entire heating zone defect temperature sensors and controllers. The wattage should be calculated as close as possible to operating wattage to minimize on-off cycle resulting in power saving. Ensure that the tips of the sensors (thermocouples) are clean and free from any contamination and should be checked for good response to temperature changes.

2. Avoid raw materials (polymers) spilling on the terminals & contamination (oil/grease) penetrating the heaters. Prior to installation, the area must be cleaned & should be free of all contamination that might liquefy under heat and penetrate into the heaters hereby carbonizes & becomes conductive. The smallest amount of contamination can cause electrical shorts and result in heater failure.

3. Ensure that the terminal junction is technically engineered to withstand the ampere load as well as the shocks and jerks due to movements. Appropriate connection leads (insulated) to withstand the required ampere load also reduce the risk of heater failure.

4. Ensure that the terminals are well insulated and protected since the heater terminals are prone to attracting moisture. Combustible gases & vapours also lead to deposits of carbon on the terminals resulting in failure of heaters.

5. Incorrect wiring and loose contacts leads to sparks resulting in fire or heaters failure. Keep all electrical connections properly to avoid electrical hazards to machine operators.

6. In case of immersion heaters we recommend you to clean (descale) the heaters at regular intervals. This helps increase life of heaters as well as optimum achievement of temperature in a shorter period, there by saves power.

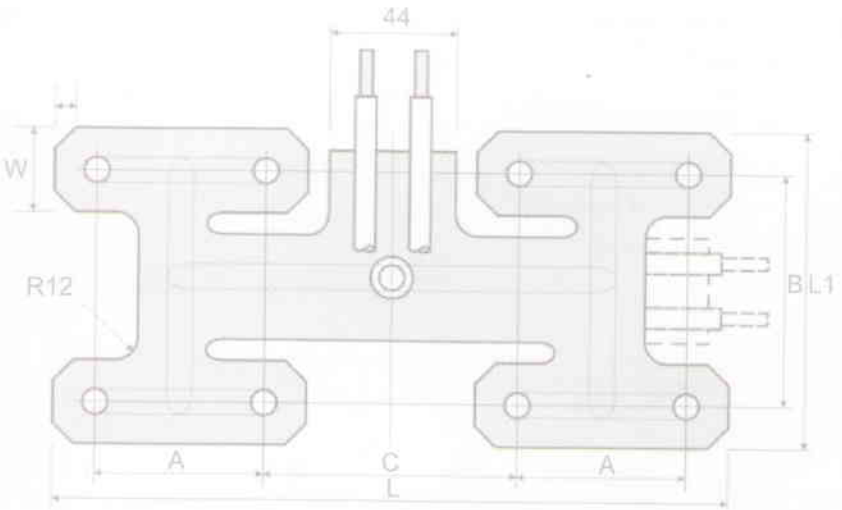
7. Use of voltage stabilizers and circuit breakers ensures smooth supply of voltage to heaters resulting a longer life.

8. Use of substandard raw materials & manufacturing defects is also one of the causes of failures

Technical Specification	
Wattage Tolerance	+5%, -10%
Resistance Tolerance	+10%, -5%
Length Tolerance	+1%
Max Sheath Temp.	Stainless Steel 650°c , Incoloy 950°C
Available diameters	6.6mm, 8.0mm, 10mm 07 10.9mm (.430"), (.490")
Available seals	silicone resin - tubular heaters are sealed at the ends to restric penetration. silicone rubber - seal for moisture protection and accidental fl splashing
cold length	38mm (1.5inches) typical
Max. Watt density	7 W/mm^2 (45W/in^2)

Technical Data

	6.60mm	8.00mm	10.00mm
Length	300 -1000mm	300 - 3000mm	300 - 3000mm
Maximum Current	8A	15A	15A
Nominal Voltage	<230V	<400V	<400V
Wattage	+10%	+10%	+10%
Insulation M ohms	5 - 100	5 - 100	5 - 100
Minimum Unheated	35mm	35mm	50mm
Terminal Pins	M3 x .50mm	M3 x .50mm/M4x.70mm	M4x.70mm



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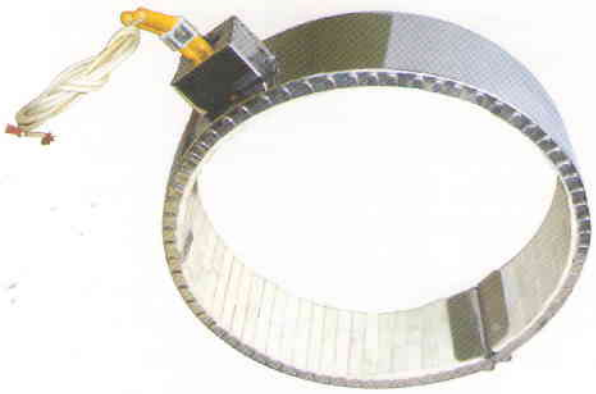
VISHWESH HEATERS PVT. LTD.

MANUFACTURERS & EXPORTERS OF INDUSTRIAL ELECTRIC HEATERS

CERAMIC BAND HEATERS

- **Injection molding machines**
- **Plastic extruders**
- **Blow-molding machines**
- **Container, pipe or tank heating**
- **Other process applications**



Construction and features

- Reduce power consumption
- Conserve heat
- High degree of flexibility
- Uniform heat distribution
- Various termination styles

In a heater, nickel-chrome wire is embedded in a flexible outer wall made of special, interlocking ceramic tiles, which are assembled like a brick wall. A ceramic fibre insulating mat and a stainless steel jacket cover this assembly. This construction prevents heat loss and reduces electrical consumption by 20%.

An energized heater will have a temperature of 150°C- 200°C on its outside shell when the inside temperature is maintained at 650°C. To improve the conservation of energy, different thicknesses of ceramic fibre insulation mats are available.

Technical Specification

Wattage tolerance	+5%, -10%
Resistance tolerance	+10%, -5%
Voltages available	240V, 220V, 480V, 3-phase and dual voltage available on request.
Max operating temperature	482°C
Max watt density	5.5W/cm^2 (34W/in^2) recommended
Gap Tolerance	12.5mm (½ inch) unless otherwise specified.

VISHWESH HEATERS PVT. LTD.

MANUFACTURERS & EXPORTERS OF INDUSTRIAL ELECTRIC HEATERS

MICA BAND HEATER

- **Injection molding machines**
- **Plastic extruders**
- **The food industry**
- **Blow - molding machines**
- **Container, pipe or tank heating**
- **The pharmaceutical industry**

Construction and Features

- Economical
- Dependable and efficient
- High quality mica and resistance wire
- Versatile design

Vishwesh utilize different types of top grade mica. The thickness of each mica layer is carefully selected to balance between the insulating characteristics of Mica and the ease of heat transfer from the resistance ribbon to the machine barrel.

The resistance ribbon used in a ***Vishwesh heaters*** is not restricted to the capabilities of Nichrome wire. Different alloys are considered for different applications. The internal winding is carefully designed to ensure uniform heat distribution throughout the heater.

To maximize the surface-to-surface contact, **BANDS** are carefully rounded and formed to optimize the grip on a machine barrel. The external metallic protective sheath of a **BAND** is made of a special alloy, which expands less than the barrel when heated. This difference in thermal expansion makes the heater grip the barrel firmly once it is energized, and this improves heat transfer. Poor heat transfer acts like a throttle and makes the resistance element inside the heater function at elevated temperatures, which eventually leads to the premature failure of the heater.

BANDs are made in different construction styles, clamping mechanisms, and terminal types. Holes, cutouts, slots, thermocouple or mounting brackets can be accommodated in the design.



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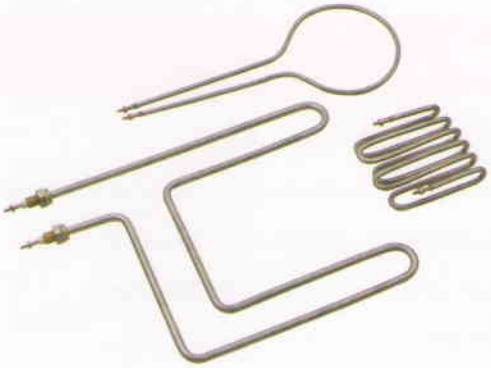
VISHWESH HEATERS PVT. LTD.

SPLIT SHEATH CARTRIDGE HEATERS (D TYPE) MAXIMIZE HEAT TRANSFER

Tubular Heaters

Vishwesh Heaters Pvt. Ltd. has one factory dedicated to the production of the highest quality tubular heating elements. We use only the best commercially available materials and we use design parameters proven to maximize elements life expectancy.

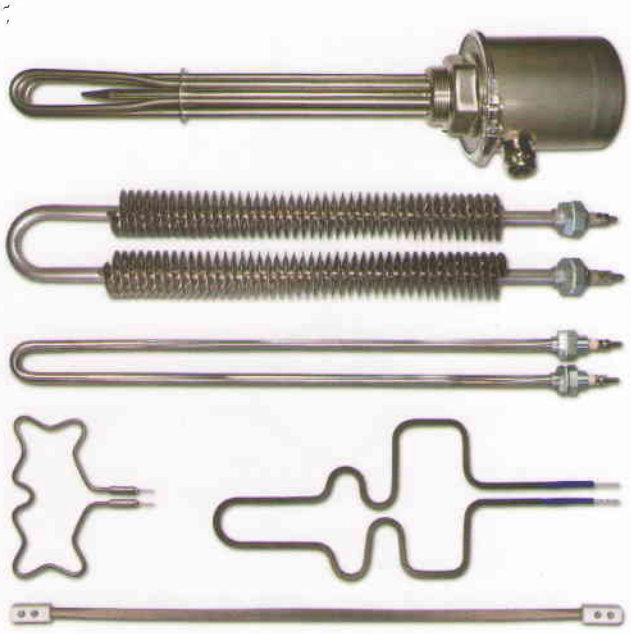


Watt density

Watt density is defined as the watt per unit of surface area of the heated section of the heating element. The selection is the most important parameter affecting heating element service life

Sheath Materials

The sheath must withstand the corrosive and temperature effects of its environment. For instance elements designed for operation in water will generally fail if operated in air.
Fortunately, many different sheath materials are available making the tubular heater suitable for the vast majority of heating application.



Size and Shapes

We offer a broad selection of element size and shapes to suit most any requirement. Larger diameter elements must be use for high voltage applications.
In most applications, the elements are formed at the factory in a series of loops or coils. Elements require furnace annealing prior to bending.

Sheath Materials

Sheath material selection ranks next to watt density in importance. The sheath must withstand the corrosive and temperature effects of its environment. For instance, elements designed for operation in water will generally fail if operated in air.
Fortunately, many different sheath materials are available, making the tubular heater suitable for the vast majority of heating applications.

VISHWESH HEATERS PVT. LTD.

MANUFACTURERS & EXPORTERS OF INDUSTRIAL ELECTRIC HEATERS

Features

- Easy to install
- Available in a wide variety of sheaths, diameters and ratings
- Heat can be located exactly where required
- Can be formed to practically any shape
- Compact
- Easy to control to provide heat only when required
- Low maintenance and long life
- Excellent internal electrical insulation and heat conduction
- Electrically isolated sheath

Applications

Tubular elements of proper rating, material and shape can be used in most heating applications requiring process temperatures to 750°C (1382°F)
Many of the heaters listed in this catalog utilize tubular elements can also be positioned in ducts or vessels for heating air or other gases.

Typical Shapes

Factory Bending
Tubular heater can be factory formed to virtually any shape. Inside bending diameters as small as one element diameter are sometimes possible. Figures 1 to 11 illustrate some of the most commonly used element shapes. If your application can be satisfied with one of these shapes, you may wish to refer to these figures when ordering or requesting pricing information.

Figure 1

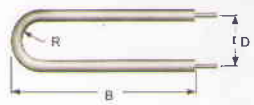


Figure 2

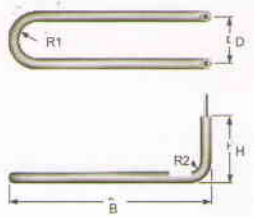


Figure 3

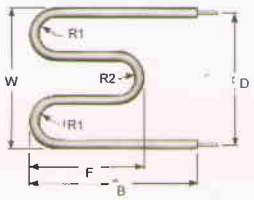


Figure 4

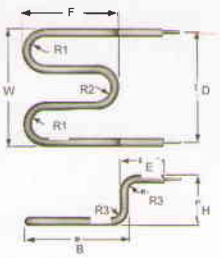


Figure 5

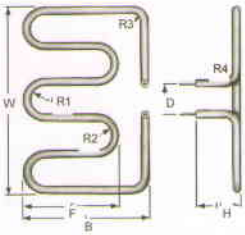


Figure 6

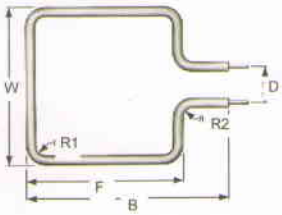


Figure 7

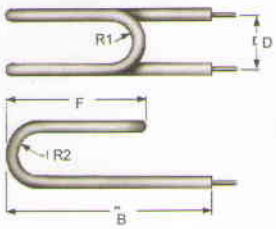


Figure 8

Figure 9

Figure 10

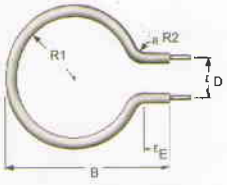
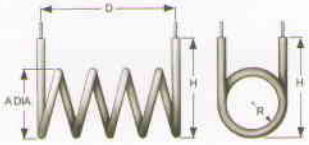


Figure 10



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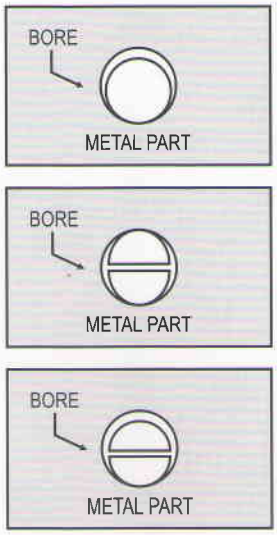
VISHWESH HEATERS PVT. LTD.

SPLIT SHEATH CARTRIDGE HEATERS (D TYPE) MAXIMIZE HEAT TRANSFER

The unique split-sheath design of the VHP Cartridge Heater allows the independent, bilateral expansion of each half of the heater outward against the walls of the surrounding bore.



VHP Cartridge Heaters Last Longer

Cartridge heater life is directly related to its internal operating temperature. VHP cartridge run substantially cooler and have a more uniform temperature profile than conventional heaters. The result is VHP heaters that last up to 3 times longer, have less downtime and lower operating costs than conventional cartridge heaters.

Efficient Heat Transfer

The high purity MgO dielectric in VHP heaters is compacted to extreme density, ensuring maximum heat transfer away from the core to the heater sheath. As the energized split-sheath expands, it creates intimate contact with the bore wall, efficiently transferring heater sheath to the host metal

VHP Temperature Profiles

Unlike conventional cartridge heaters, VHP heaters use a continuous heating coil that allows for a more uniform temperature profile. By varying the watt-density, VHP heaters can also be configured for customized temperature profiles with varying zones os heat along the heater. The unique bi-lateral expansion of VHP cartridge heaters eliminates the need for tight fits and makes them well-suited for use in oversized bores where conventional cartridge heaters cannot be used effectively.

Heaters are available with round cross section the dimensions are as follows.

12.5 mm OD minimum length 150 mm & max 760 mm

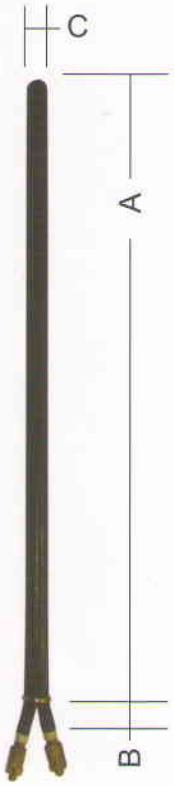
14 mm OD minimum length 150 mm & max 1000 mm

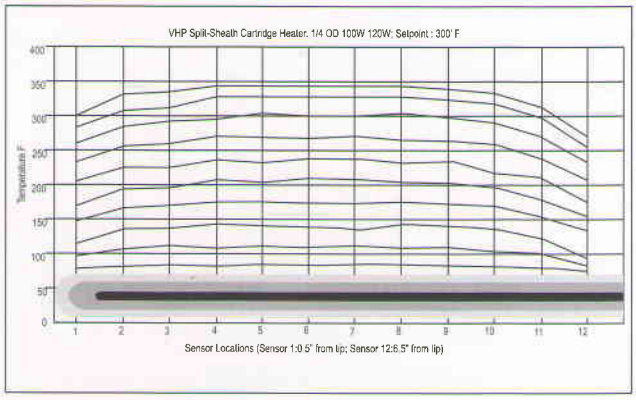
16 mm OD minimum length 200 mm & max 1000 mm

19 mm OD minimum length 200 mm & max 1000 mm

Split Sheath Cartridge Heaters

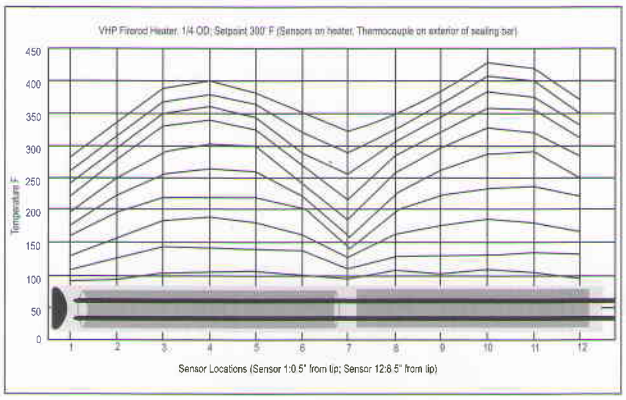
SR.NO.	PART CODE NO	WATTAGE (W) AT 240 VOLTS	DIMENSION		
			A [inch]	B [mm]	C [mm]
1	D6/500	500	6	15	14
2	D8/600	600	8	15	14
3	D9/500	500	9	15	14
4	D10/600	600	10	15	14
5	D10/1000	1000	10	15	14
6	D12/750	750	12	15	14
7	D12/750	750	12	15	14
8	D13/1000	1000	13	15	14
10	D15/750	750	15	15	14
11	D16/1000	1000	16	15	14
13	D18/1000	1000	18	15	14
15	D20/1000	1000	20	15	14
16	D21/1000	1000	21	15	14
17	D22/1200	1200	22	15	14
18	D24/1000	1000	24	15	14
19	D24/1500	1500	24	15	14
21	D27/1500	1500	27	15	14
22	D29/2000	2000	29	15	14
23	D30/2000	2000	30	15	14
24	D31/2000	2000	31	15	14
25	D36/2000	2000	36	15	14





VHP Continuous Coil Produces Uniform Temperature Profile

The continuous coil in the cartridge heater produces an even temperature along the length of the sheath (unless otherwised specified by the customer.)



Competitor's Sectional Heater Results In Cold Spots and Uneven Temperature Profile

This heat profile of a Firerod cartridge heater was generated by a customer. Note that the two cores in this heater produce about 75' F, height temperatures than the cold junction between them.

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