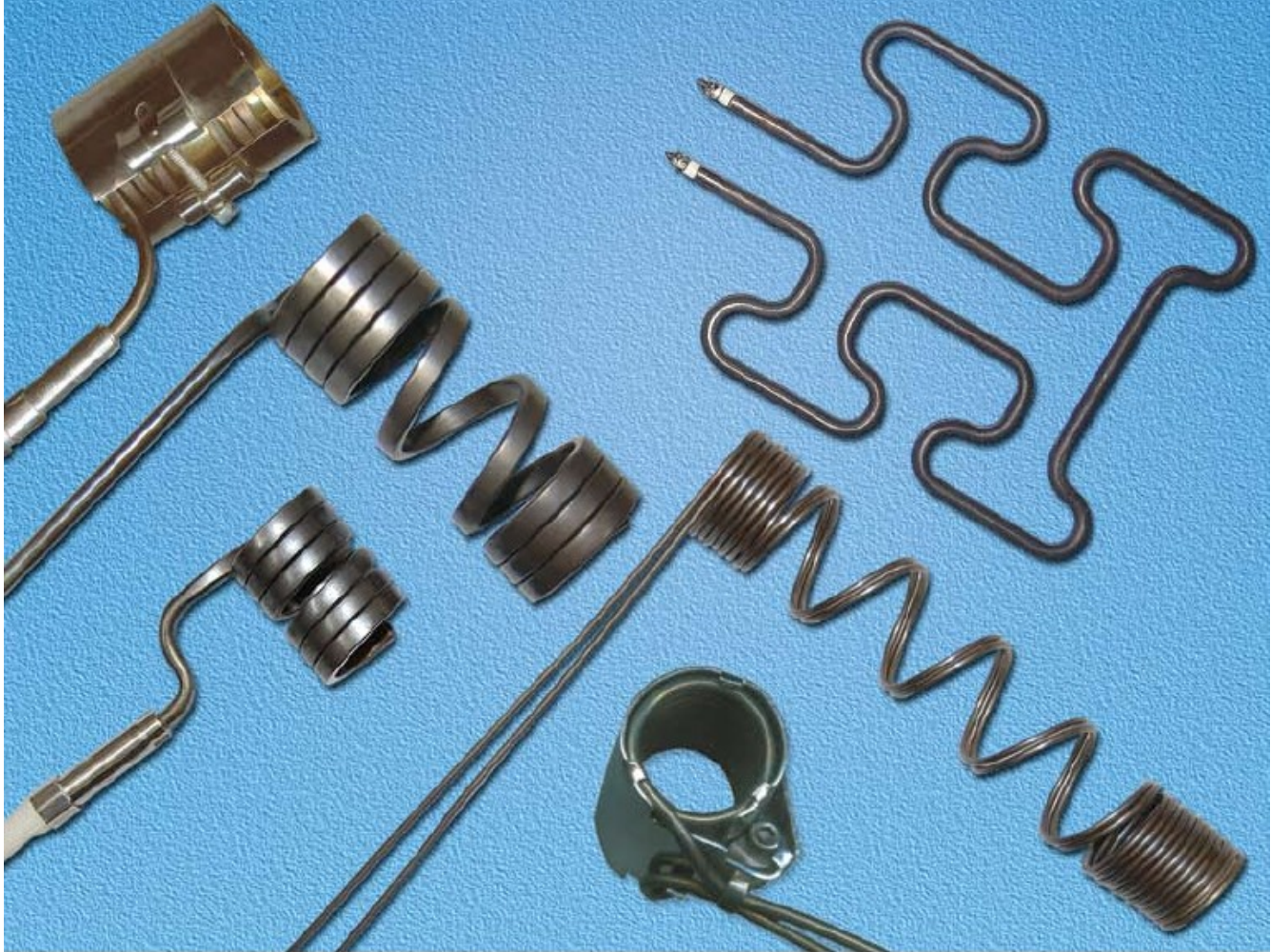


CE

Heaters for Hot Runner Systems

COIL HEATERS | MICRO TUBULAR COIL HEATERS |
HIGH PERFORMANCE HEATERS FOR MACHINE NOZZLES | TUBULAR HEATERS FOR MANIFOLDS



PRATIK HEAT PRODUCTS
PRIVATE LIMITED
MANUFACTURERS & EXPORTERS OF QUALITY INDUSTRIAL HEATING ELEMENTS

The first choice, to last...™



Coil Heaters

Coil heaters are an advance concept of thermal engineering which has 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 consist of compacted MgO, high temperature resistance wire and Chrome Nickel Steel tube. These heaters can be constructed with or without built in thermocouples.

Features

- Standard sizes available with various cross section
- Various Watt Density option available
- Designed for even heat profile
- Precision fit on Hot Runner Nozzles
- Highly Non-corrosive

Applications

- Hot Runner Nozzles & Bushings
- Tube Extrusion
- Pipe Forming

Technical Data

Sheath material	: Chrome Nickel Steel
Insulation material	: High purity MgO
Heating element	: NiCr 80:20
Thermocouple	: 'J' type (Fe K) 'K' type (Cr Al) grounded or ungrounded
Connection Wires	: Stranded Nickel wires with PTFE coating
Voltage Range	: 24 to 250 volts
Power rating	: Depending on application
Power tolerance	: $\pm 10\%$
H. V Testing	: 800 V (Bent heater) 500 V between T/C and heating element
Insulation Resistance	: $> 5 \text{ M}\Omega$
Current Leakage	: $< 0.5 \text{ mA}$
Sheath Temperature	: 750°C max
Adapter Temperature	: 150°C max
Length Tolerance	: Heated length $\pm 2\%$
Unheated Length	: 5-10 mm on bottom end, 50 mm at the adapter end. Larger lengths available on request.

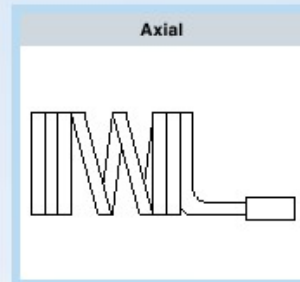
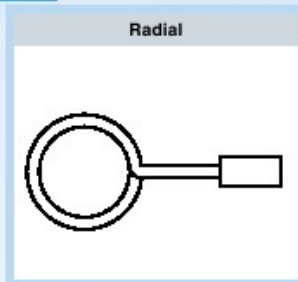
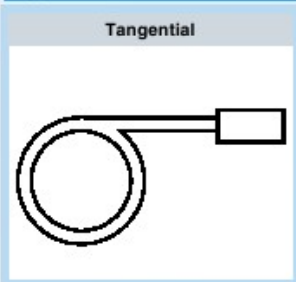
Standard Cross Sections Available

Round:	2.9mm	3.3mm	3.8mm
Square:	3mm x 3mm	3.3mm x 3.3mm	
Flat:	1.8x3.2	2.5 x 4.3	4 x 6.4

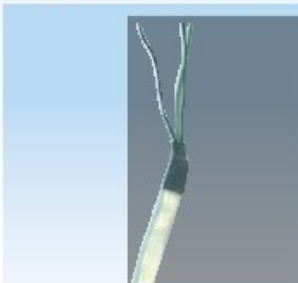
Tolerance on all dimensions $\pm 0.1\text{mm}$



Types Of Termination Exits



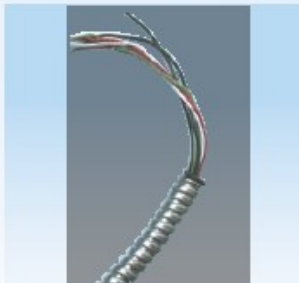
Types Of Protection Hoses



Silicone Coated Fibreglass Sleeve



Wire Braid Hose



Stainless Steel Flexible Conduit

Dimensional Data

Size (in mm)	2.9	3.3	3.8	3x3	3.3x3.3	1.8x3.2	2.5x4.3	4x6.4
Cross Section								
Cold Zone (in mm)	2.9	3.3	3.8	3.3	3.8	2.9	3.8	6
Adapter Dia. (in mm)	5.5	7	7	7	7	5.5	7	10
Adapter Length (in mm)	22	27	27	27	27	22	27	35
Crimp Dia. (in mm)	7.5	9.5	9.5	9.5	9.5	7.5	9.5	11
Max. Length (in mm)	2000	2000	3000	2000	3000	2000	3000	3000
Max. Current (in mm)	2.5A	5A	5A	5A	5A	2.5A	5A	10A
Min. Coiling Dia. (in mm)	8	10	12	10	10	8	10	30
Built-in TC	No	Yes	Yes	Yes	Yes	No	Yes	Yes

Ready Stock Coil Heaters

A wide range of Coil Heaters with built in Thermocouple are stocked in straight length with an intention to save our customers in the hour of need. As these heaters are in straight length and annealed condition they can be coiled as per requested dimension at a very nominal cost and dispatched within 48 hrs.

Caution: Once a heater is bent or coiled it is not advised to de-coil or re-bend the same.



Technical Data For Ready Stock Coil Heaters

Sheath material	:	Chrome Nickel Steel
Cross Section	:	2.5 x 4.3 (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 Supply 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 (Refer Pg 3 for figures): 1) Silicon Coated Fibreglass Sleeve 2) Wire Braid 3) Stainless Steel Flexible Conduit

Watts	Heated Length (in mm)	Cold Length (in mm)	Volts	"J" type Thermocouple	W/cm ²
250	280	50	230	Yes	6.6
330	400	50	230	Yes	6
400	510	50	230	Yes	5.75
470	600	50	230	Yes	5.75
550	720	50	230	Yes	5.6
650	840	50	230	Yes	5.7
750	1020	50	230	Yes	5.4
850	1150	50	230	Yes	5.4
1000	1400	50	230	Yes	5.25
1100	1650	50	230	Yes	4.9
1200	1800	50	230	Yes	4.9



Coiling Guidelines

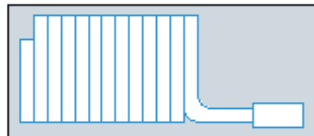
Contact Area between the Heater & Nozzle

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%	40%	100%	40%	100%	40%

Diameter	All dimensions mentioned below are in mm																					
12 (½")	32	63	43	86	55	110	65	125	75	150	.	.	.	.	.	.	.	.	.	.	.
16 (5/8")	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 (¾")	23	47	31	62	39	77	45	90	53	105	61	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 (7/8")	21	42	28	56	35	70	40	80	47	94	54	120	65	145	72	162	87	217	101	252	.	
25 (1")	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 (1.25")	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 (1.5")	14	28	19	38	23	45	26	52	30	60	34	69	41	92	46	102	55	136	64	159	69	172

Note:

Above mentioned heaters are designed at 230 volts
 100% = Closely wound length (Unstretched)
 50%, 45%, 40% = Recommended Stretchable Length
 Tolerance = Length +/- 1mm, Inner Diameter - 0.2mm to - 0.5mm, Watts +/- 10%
 All the above heaters have a cross section of 2.5mm x 4.3mm



Close Wound



Stretched

Technical Data Required while placing customised orders

- Inner Diameter ● Cross Section ● Wattage ● Voltage ● Coil Length ● Lead Length ● Lead Exit (Termination)
- Thermocouple if required 'J' or 'K'

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 de-moisturise 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 While installing Coil 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.
- 3 Due to high watt densities per cm/sq, Coil & Cast Heaters require precise temperature controllers. PHP strongly recommends to use good quality soft start Hot Runner controllers.
- 4 Lead ends (Non Heating) once bent should not be re-bent / de-coiled. 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.
- 5 Adapter 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.

