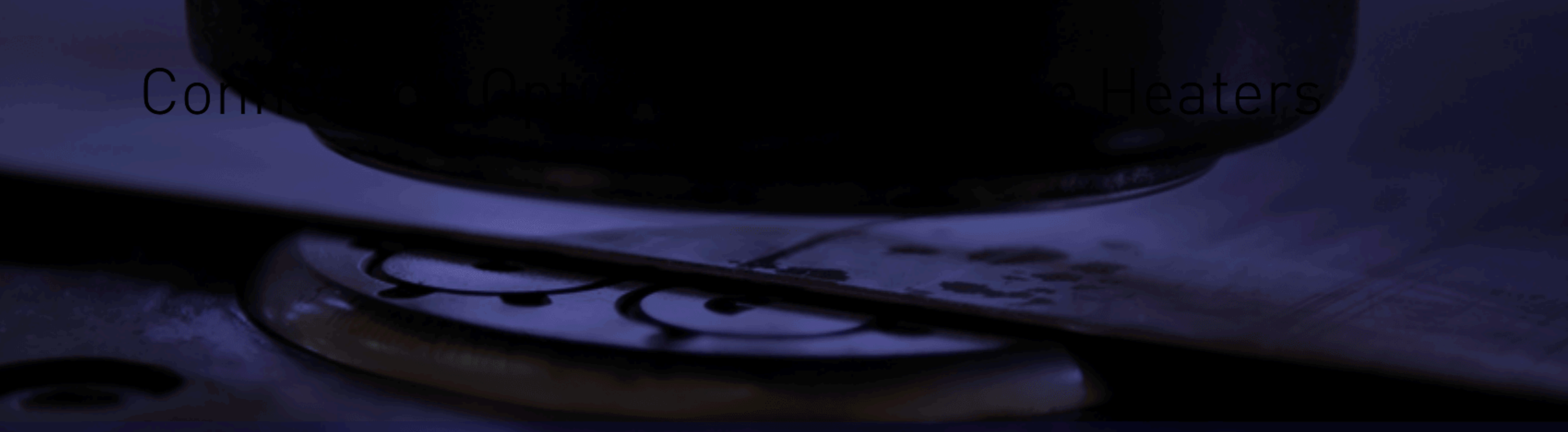
EISS®

Euro Industrial Supply & Solutions



Índex

High Density Cartridge Heater (RAC)	Heating Collar (RAB)
Low Density Cartridge Heater (RBC)	Flat Heater (RCH)
Low Density Cartridge Heater	Flat Ceramic Heater
Connection Options for Cartridge Heaters	High Temperature Sleeves
Coil Heaters (RCO)	Metal Hoses
Coil Heaters (RCO) Connection	Leads
Coil Heaters Flexible Connection (RFC CL) FLEX	Silicone Cable
Encapsulated Coil Heaters (CHB/CHI)	Curved Ceramic Emitters
Encapsulated Coil Heaters (CHI)	Flat Ceramic Emitters
Ceramic Heating Collar (RAB)	Quartz Radiator
Nozzle Heater (ABB)	

High Density Cartridge Heater (RAC)



The form of construction of these heating elements, allows its use in adverse conditions, such as vibration and high temperatures and that can reach over 500 ° on the surface of the cartridge

High Density Heaters (RAC), are ideal for the installation of a high power in minimal space.

General Specifications

- Flexible leads from inside in standard models.
- 250mm Fiberglass/Silicone leads in standard models.
- 1000mm Fiberglass/Silicone leads (with thermocouple FeCu / Ni (J), PTFE insulation), standard models.
- Standardized measures in metric diameters (mm).

6,50mm	8mm	12,50mm	16mm	20mm

Ø Tolerance:
Up to 300 mm: -0,02 -0,06
Up to 1.000 mm: -0,02 -0,10
Over 1.000mm: ± 0,10

- Standard diameters in inches (")

1/8"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
3,17	6,35	7,93	9,52	12,70	15,87	19,05

Ø Tolerance:
Up to 300 mm: -0,02 -0,06
Up to 1.000 mm: -0,02 -0,10
Over 1.000mm: ± 0,10

- Length tolerance:
Up to 130mm: +0 -2 mm
More than 130mm: ±1.5%.

Other Diameter

- We are able to supply any diameter between 3 mm and 25 mm.
- Other diameters on request.
- TIG welded stainless tube.
- Flexible □ber glass insulated nickel wires from inside (standard models).
- Core and insulation compacted magnesium oxide.
- Heating wire Ni/Cr80/20.
- Ø Tolerance for diameters from 25 mm ±0,10.

Quality control

- Insulation: 5 MOhm at 500 V DC Cold (minimum).
- Dielectric strength: 1500 V 1 second.
- Nominal Power: + 5% – 10%

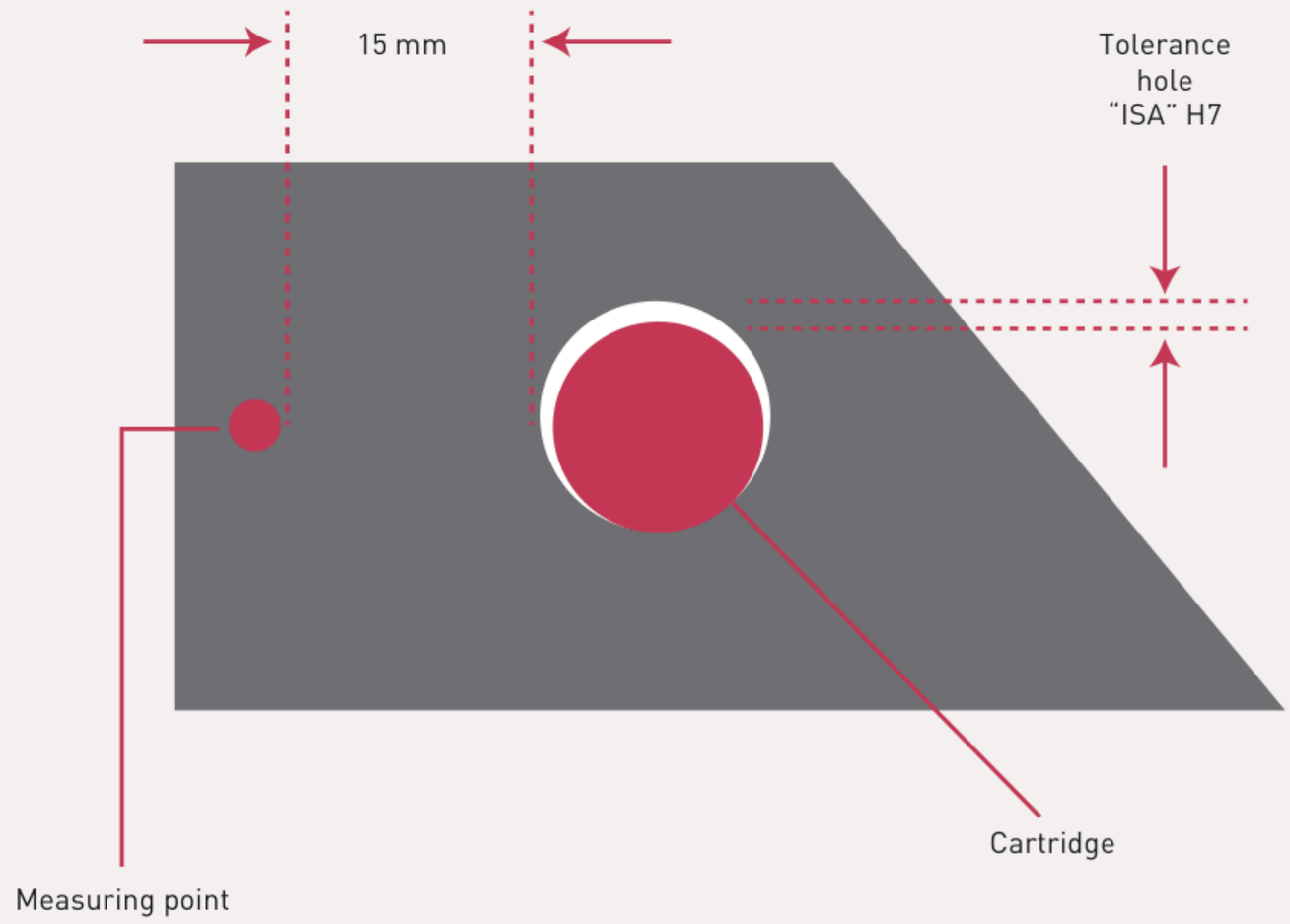
Instructions (for guidance) to place and mount

HOLE TOLERANCE CHART

More than	Till	Tolerance	Hole
3	6	-0	+0,012
6	10	-0	+0,015
10	18	-0	+0,018
18	30	-0	+0,021

The adjustment of the cartridge in the hole is very important for the proper functioning and performance.

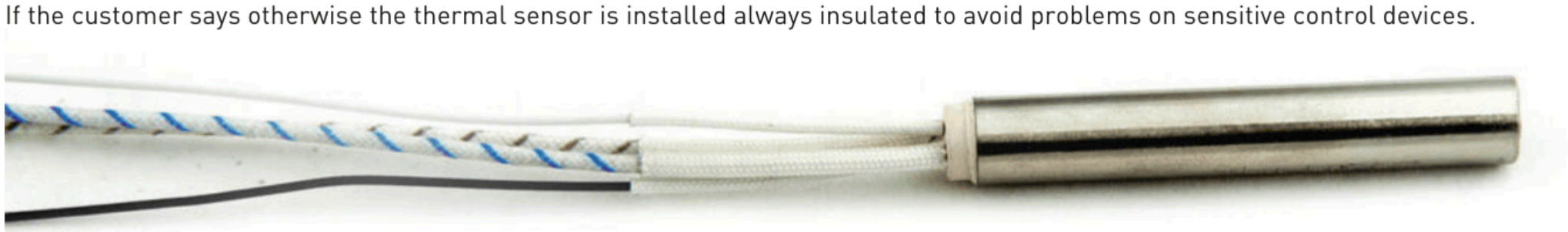
The regulation of the temperature is essential and for this we recommend to place the measuring point not more than 15mm separately from the cartridge.



Connection types for standard cartridges with built-in THERMOCOUPLE

We can place thermocouple type J (Fe Cu Ni), type K (Ni Cr Ni), type T (Cu Cu Ni)

If the customer says otherwise the thermal sensor is installed always insulated to avoid problems on sensitive control devices.



OPTION 1. THERMOCOUPLE ON THE CARTRIDGE BASE ISOLATED

STANDARD Placement of the thermocouple. Right choice to avoid problems sensitive control devices.



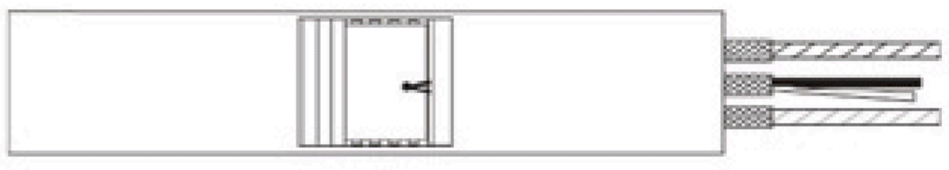
OPTION 2. THERMOCOUPLE ON THE CARTRIDGE BASE GROUNDED.

Option indicated when rapid measurement is required.
NOTE: This option is not valid for highly sensitive regulation devices



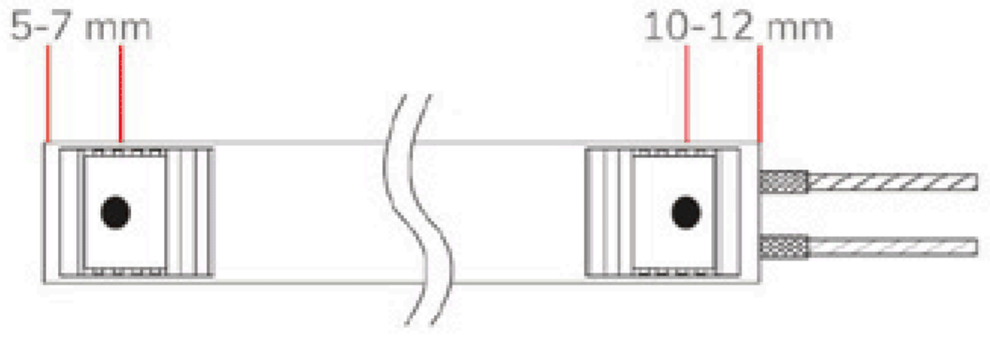
OPTION 3. THERMOCOUPLE ISOLATED AND CENTERED

This option can be performed on elements from 3/8 "(9,52) ø



CARTRIDGE HEATERS WITH PT-100 SENSOR

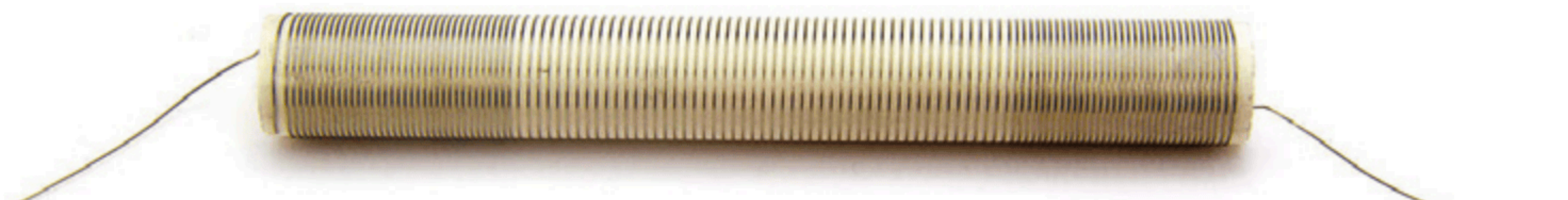
They can be manufactured as follows:
Position 1. Starting from 6.35 mm ø.
Position 2. Starting from 12.50 mm ø.



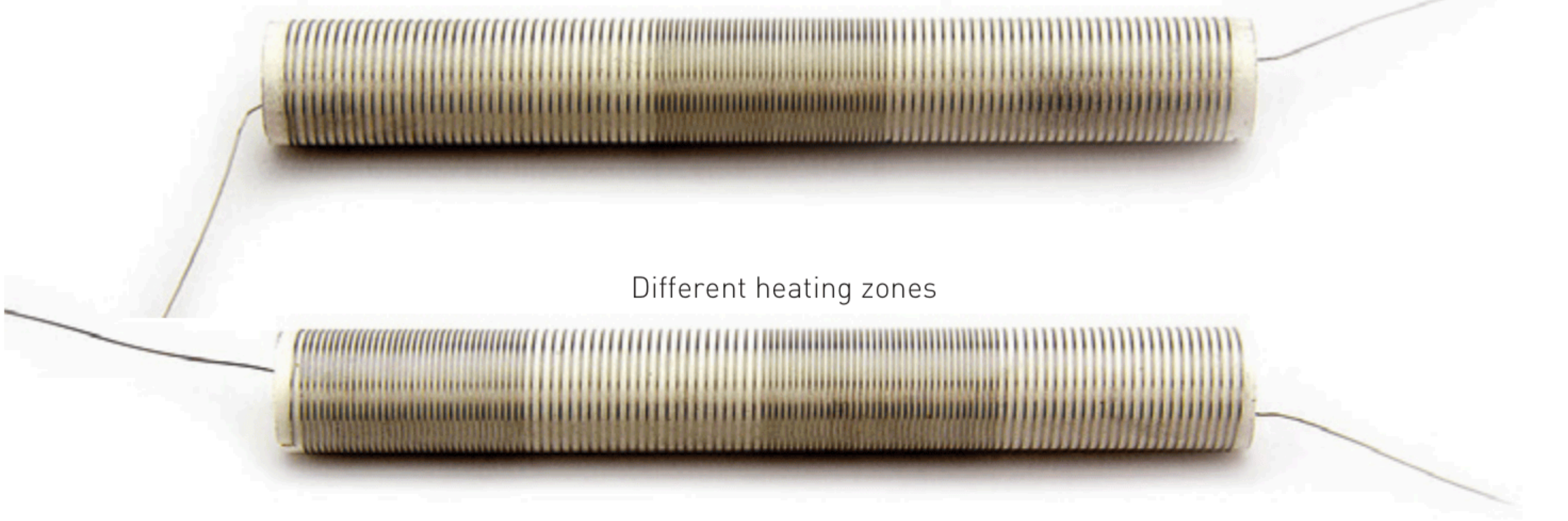
Cartridge heaters with power distribution

It is used where it is necessary to spread out a completely uniform temperature to a mass.
It can be made with any type of connection type.

More heat at the ends

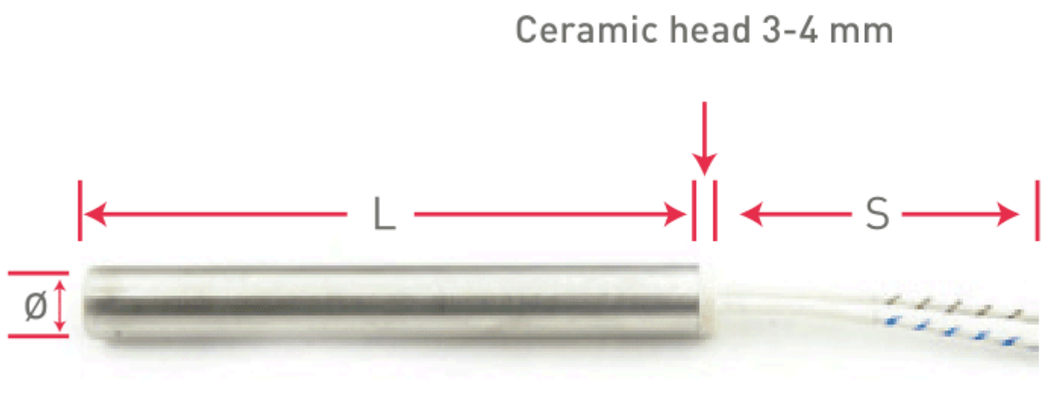


More heat in the middle



Different heating zones

Standard leads length: Without Thermocouple 250mm / With Thermocouple Tipo J (F-CON) 1000mm



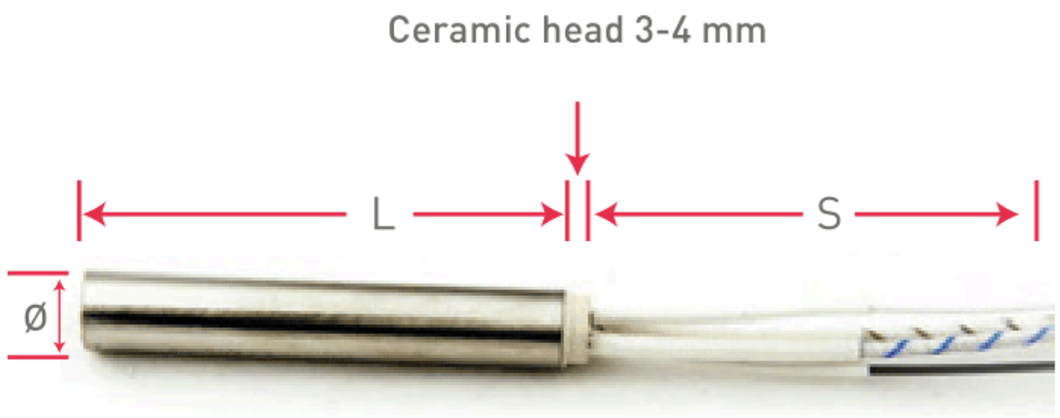


TABLE OF STANDARD CARTRIDGE HEATERS

DIAMETER ø MM.		LENGTH L. MM.		WATTAGE AT 230 V									
6.50	-0,02 -0,06	30	+0 -2	160	200	300							
		40		100	125	160	175	200					
		50		100	125	150	160	200	250				
		60		125	160	180	200	250	315				
		80		125	160	180	200	250	280	315	350		
		100		100	160	200	220	250	315	350	400		
		130		220	300	350	400						
		160	±1,5%	250	350	400							
		180		250	350	400							
		200		350	400	500							
		250		250	350	400	500						
8	-0,02 -0,06	40	+0 -2 mm	100	140	160	200	250					
		50		125	160	200	250	315					
		60		100	125	140	160	200	220	250	280	315	350
		80		160	180	200	250	280	315	350	400		
		100		180	200	250	280	315	400				
		130		250	315	400							
		160	±1,5%	200	315	400							
		180		250	300	400	500						
		200		300	400	500							
		250		300	400	500							
10	-0,02 -0,06	40	+0 -2 mm	100	125	160	175	200	250	315	400		
		50		100	125	160	175	200	250	315	400	500	
		60		125	160	180	200	250	315	350	400	450	500
		80		100	150	160	200	220	250	315	400	500	600
		100		125	150	220	250	315	350	400	500	560	630
		130		250	315	350	400	500	630	750	800	1000	
		160	±1,5%	160	315	400	500	600	630	750	800		
		180		300	500	600	800						
		200		250	300	400	500	600	630	1000			
		250		200	400	630	800	1000	1600				

TABLE OF STANDARD CARTRIDGE HEATERS

DIAMETER ø MM.		LENGTH L. MM.		WATTAGE AT 230 V									
12.50	-0,02 -0,06	40	+0 -2	100	160	200	250	315	400				
		50		100	150	160	200	250	315	400	500		
		60		125	160	200	250	315	400	500			
		80		150	200	250	315	400	500	630	800		
		100		250	315	400	500	630	800	1000			
		130		350	400	500	630	800	1000	1250			
		160	±1,5%	400	500	630	800	1000	1250				
		180		500	670	800	1000	1250					
		200		500	630	800	900	1000	1250	1500			
		250		630	800	900	1000	1500					
		300		600	1000	1250	1500	2000					
16	-0,02 -0,06	40	+0 -2 mm	100	160	200	250	315	400	500			
		50		160	200	250	315	400	500	630			
		60		160	200	250	315	400	500	630			
		80		250	280	315	400	500	630	800	850	1000	
		100		350	400	500	630	800	1000	1250			
		130		400	500	630	700	800	1000	1100	1400	1800	
		160	±1,5%	500	630	800	900	1000	1250	1600	1800		
		180		600	850	1000	1250	1500	1800				
		200		500	800	1000	1250	2000					
		250		500	800	1000	1250	1600	2000				
		300		800	1000	1250	1500	1800	2000				
20	-0,02 -0,06	50	+0 -2 mm	200	250	315	400						
		60		200	315	400	500	630	800				
		80		315	350	400	500	800	1000	1250			
		100		400	450	500	630	800	1000	1250	1400	1600	1800
		130		500	630	900	1000	1250	1400	1800	2200		
		160	±1,5%	800	1000	1100	1250	1800	2200				
		180		1000	1250	1600	1800						
		200		800	1000	1250	1600	2000	2500				
		250		1000	1250	1600	2000	2500					
		300		1000	1250	1600	2000	2500					

TABLE OF STANDARD CARTRIDGE HEATERS

DIAMETER ø MM.		LENGTH L. MM.		WATTAGE AT 230 V							
1/4" (6,35)	-0,02 -0,06	1 1/4"	31	+0 -2	160	200	300					
		1 1/2"	38		100	125	160	175	200			
		2"	50		100	125	150	160	200	250		
		2 1/2"	63		125	160	180	200	250	315		
		3"	76		125	160	180	200	250	280	315	350
		3 1/4"	82		125	160	180	200	250	280	300	350
		4"	101		100	160	200	220	250	315	350	400
		5"	127		220	300	350	400				
		5 1/4"	133		220	300	350	400				
		6"	152	±1,5%	220	350	400					
		6 1/2"	165		250	350	400					
		7"	177		250	350	400					
		8"	203		250	350	400					
		10"	254		250	350	400	450				

TABLE OF STANDARD CARTRIDGE HEATERS

DIAMETER ø MM.		LENGTH L. MM.			WATTAGE AT 230 V											
5/16" (7,93)	-0,02 -0,06	1 1/2"	38	+0 -2 mm	100	140	160	200	250							
		2"	50		125	160	200	250	315							
		2 1/2"	63		100	125	140	160	180	200	220	250	280	315	350	
		3"	76		160	180	200	250	280	315	350	400				
		3 1/4"	82		160	200	315	400								
		4"	101		180	200	220	250	280	315	400					
		5"	127		250	315	400									
		5 1/4"	133		250	315	400									
		6"	152	±1,5%	200	315	400									
		6 1/2"	165		250	315	400									
		7"	177		250	315	400									
3/8" (9,52)	-0,02 -0,06	1 1/2"	38	+0 -2 mm	100	125	160	175	200	250	315	400				
		2"	50		100	125	160	175	200	250	315	400	500			
		2 1/2"	63		125	160	180	200	250	315	350	400	450	500		
		3"	76		100	150	160	200	220	250	315	400	500	600	630	
		3 1/4"	82		160	250	300	400	500	630						
		4"	101		125	150	220	250	315	350	400	500	560	630	700	850
		5"	127		250	300	315	350	400	500	630	750	800	1000		
		5 1/4"	133		315	400	500	600	800							
		6"	152	±1,5%	160	315	400	500	600	630	750	800				
		6 1/2"	165		400	500	630									
		7"	177		400	500	600	700	800							
		8"	203		250	300	400	500	600	630	1000					
		10"	254		200	400	630	800	1000	1600						
1/2" (12,70)	-0,02 -0,06	1 1/2"	38	+0 -2 mm	100	160	200	250	315	400						
		2"	50		100	150	160	200	250	315	400	500				
		2 1/2"	63		125	160	200	250	315	400	500					
		3"	76		150	200	250	315	400	500	630	800				
		3 1/4"	82		160	200	315	500	630	800						
		4"	101		250	315	400	500	630	800	1000					
		5"	127		350	400	500	630	800	1000	1250					
		5 1/4"	133	±1,5%	300	400	630	1000	1250							
		6"	152		400	500	630	800	1000	1250						
		6 1/2"	165		500	800	1250									
		7"	177		500	670	800	1000	1250							
		8"	203		500	630	800	900	1000	1500						
		10"	254		630	800	900	1000	1250	1500						
		12"	304		600	1000	1250	1500	2000							
5/8" (15,87)	-0,02 -0,06	1 1/2"	38	+0 -2 mm	100	160	200	250	315	400	500					
		2"	50		160	200	250	315	400	500	630					
		2 1/2"	63		160	200	250	315	400	500	630					
		3"	76		250	280	315	400	500	630	800	850	1000			
		3 1/4"	82		350	400	500	630	800							
		3 1/2"	88		280	300	400	630	800	1000						
		4"	101		350	400	500	630	800	1000	1250					
		5"	127		400	500	630	700	800	1000	1100	1400	1800			

TABLE OF STANDARD CARTRIDGE HEATERS

DIAMETER ø MM.		LENGTH L. MM.			WATTAGE AT 230 V								
5/8" (15,87)	-0,02 -0,06	5 1/4"	133	±1,5%	500	700	1100	1400	1800				
		6"	152		500	630	800	900	1000	1250	1600	1800	
		6 1/2"	165		630	900	1600	1800					
		7"	177		600	850	1000	1250	1500	1800			
		8"	203		500	800	1000	1250	2000				
		10"	254		800	1000	1250	1600	2000				
		12"	304		1000	1250	1500	1800	2000				
3/4" (19,05)	-0,02 -0,06	2"	50	+0 -2 mm	200	250	315	400					
		2 1/2"	63		200	315	400	500	630	800			
		3"	76		315	350	400	500	800	1000	1250		
		3 1/4"	82		315	350	400	500					
		4"	101		400	450	500	800	1000	1250	1400	1600	1800
		5"	127		500	630	900	1000	1250	1400	1800	2200	
		5 1/4"	133		500	630	900	1000					
		6"	152	±1,5%	800	1000	1100	1250	1800	2200			
		6 1/2"	165		800	1000	1100	1250					
		7"	177		800	1000	1250	1000	1250				
		8"	203		800	1000	1250	1600	2000	2500			
		10"	254		1000	1250	1600	2000	2500				
		12"	304			1250	1600	2200	2500				

RAC-Heater for Die CastingZ (ZAMAK)



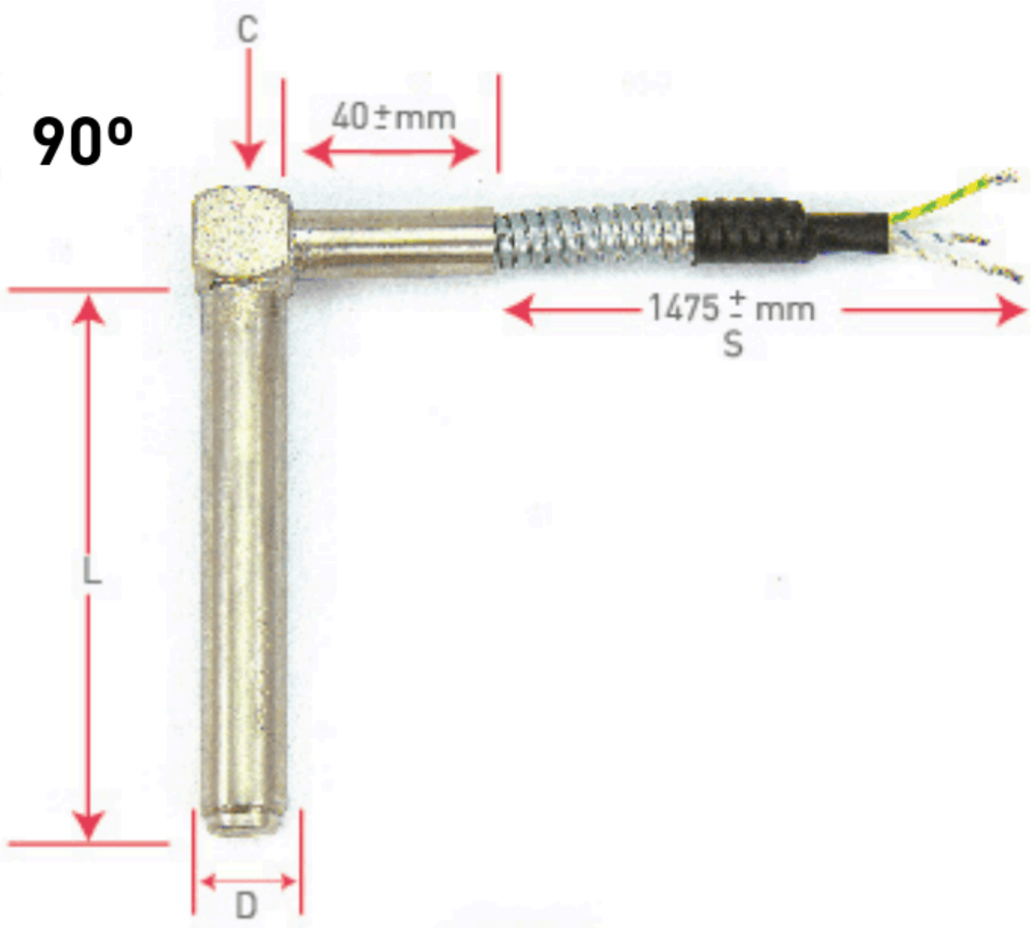
General Specifications

- Connection length 1475mm high temperature resistant.
- Stainless steel pipe and tightly welded.
- Cable protection with galvanized steel conduit.
- Isolation of compressed MgO.
- Rear pivot for extraction included in the length.
- The pivot diameter is 3 mm smaller than the diameter of the cartridge.
- On request we can make any modification.

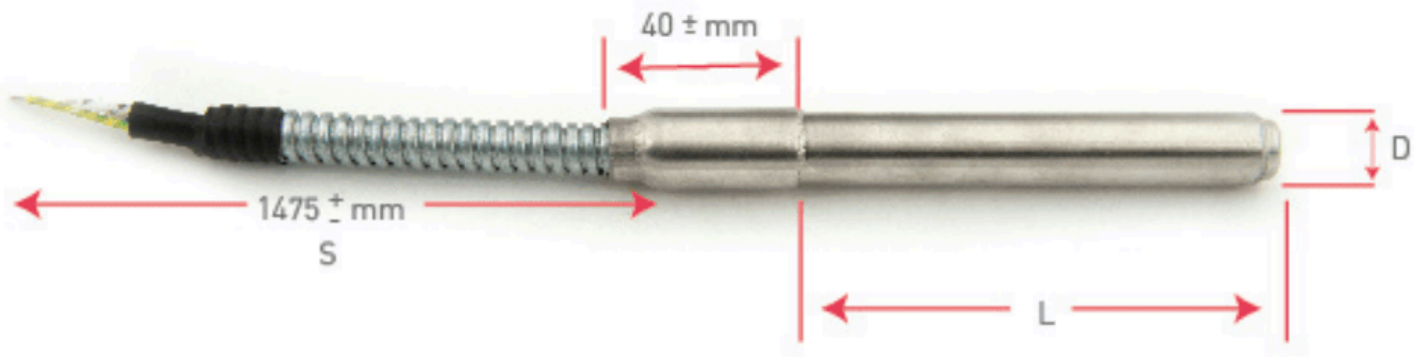
TABLE OF STANDARD CARTRIDGE HEATERS

ANGLE BLOCK C	DIAM. MM. D		LENGTH MM. L	WATTAGE AT 230V
10X10X10	6,5	-0,02 -0,06	80	180 - 200
14X14X14	10	-0,02 -0,06	80	250 - 315
15X15X15	12,5	-0,02 -0,06	60 80 90 100	200 - 315 250 - 500 350 - 400 300 - 500 - 800
18X18X18	16	-0,02 -0,06	80 100 130 160 180 200 250	315 - 500 - 630 500 - 630 - 800 600 - 1000 630 - 900 800 - 1000 800 - 1000 1000 - 1250
25X25X25	20	-0,02 -0,06	100 160	630 - 1000 800 - 1100

90°



STRAIGHT FORM



Low Density Cartridge Heater (RBC)



Low Density Cartridge Heaters, as opposed to High Density Cartridge Heaters, do not tolerate high frequencies of movement, sustained beatings or high operating temperatures above 300 ° C.

General Specifications

- Flexible connecting cables from the inside and protected with ceramic head according connection type nº 300 (Standard).

- Normalized diameter in metric (mm):

9,5	10	12	12,70	14	15	16	18	19	20
22	24	25	28	30	32				

Tolerance ø:
< 1.000 mm: -0,02 -0,10
+ 1000mm: ± 0,10

Length Tolerance:
Up to 130 m/m: ± 2 m/m
Up to 1.000 m/m: ± 2 m/m
Over 1.000 m/m: ±5 m/m.

*Other diameters and lengths available on request.

Quality control

- Insulation: 5 MOhm at 500 V DC Cold (minimum).
- Dielectric strength: 1500 V 1 second.
- Nominal Power: + 5% – 10%

Instrucciones (orientativas)

- The adjustment of the cartridge in the hole is very important for the proper functioning and performance.

- The regulation of the temperature is essential and for this we recommend to place the measuring point not more than 15mm separately from the cartridge.

Low Density Cartridge Heater
(Square and Rectangular)



These heaters are designed with the observed profile because with this system placement through a slot, is easier. NOT SUITABLE when there are constant shock, vibration, nor when the operating temperature exceeds 300 ° C.

General Specifications

- Tube: St Steel AISI-304
- Insulation: Cordierite + MgO
- Heating Wire: Ni/Cr 80/20
- Connections Leads: Nickel, Fiberglass + Silicone

Quality control

- Insulation: 5 MOhm at 500 V DC Cold (minimum).
- Dielectric strength: 1500 V 1 second.
- Nominal Power: + 5% – 10%

Instructions for installation and mounting

- The adjustment of the cartridge into the slot is very important for the proper functioning and performance.

- The regulation of the temperature is essential and for this we recommend to place the measuring point not more than 15mm separately from the cartridge.

Section Tolerance ± 1%

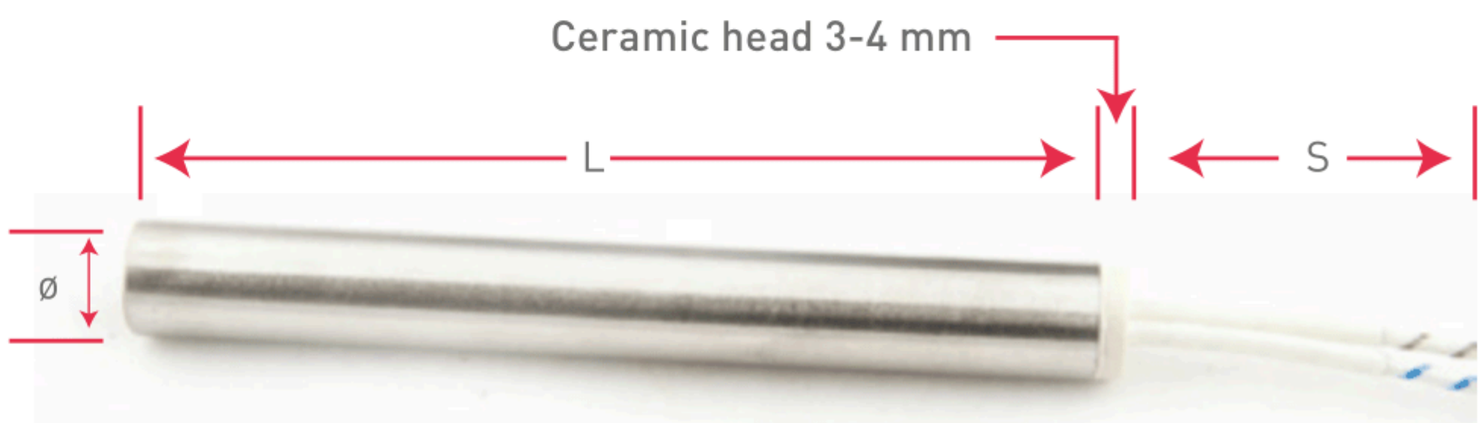
STANDARD PROFILES

10 x 10	20 x 10
15 x 15	20 x 15
20 x 20	30 x 10
25 x 25	30 x 15
	40 x 10
	40 x 20

Connection Options for Cartridge Heaters

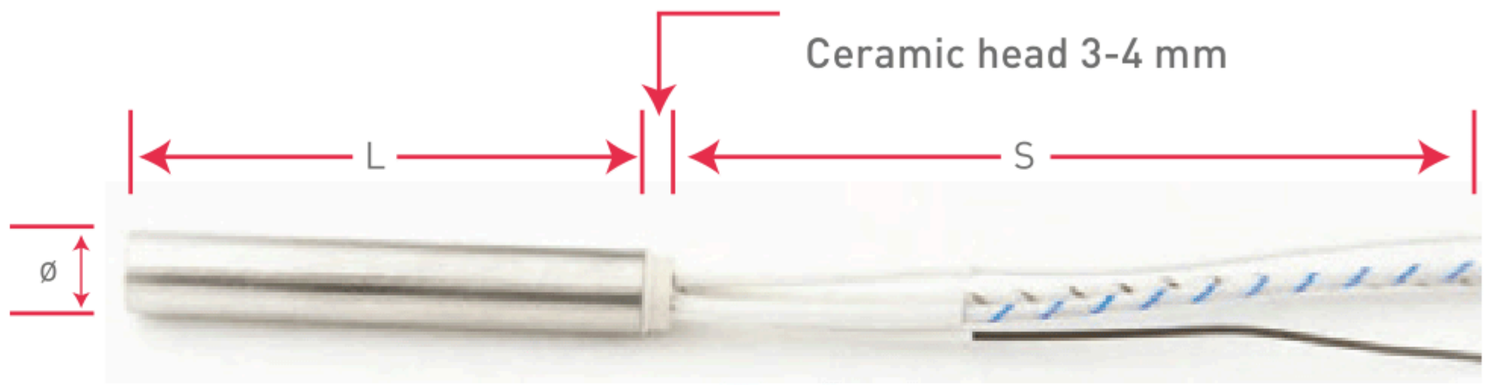
MODEL NR 10A

- Ceramic cap 3-4 mm.
- Flexible cables from the inside with fiberglass/silicone insulation + nickel conductor.
- STANDARD OPTION, HIGH DENSITY CH [RAC].



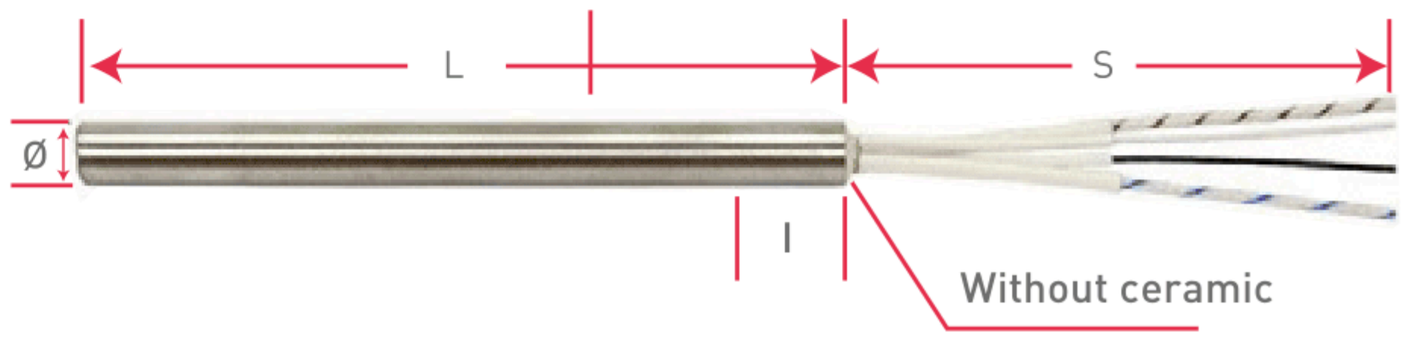
MODEL NR 20A

- Ceramic cap 3-4 mm.
- Flexible cables from the inside with fiberglass/silicone insulation + nickel conductor.
- Thermocouple Leads type J, PFA insulated.
- STANDARD FINISH WITH THERMOCOUPLE.



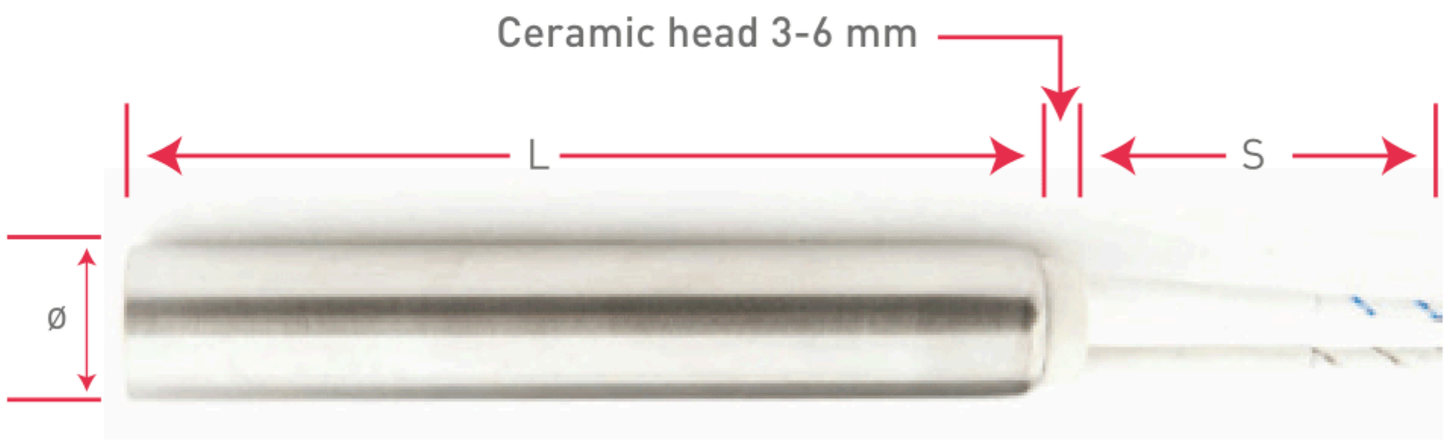
MODEL NR 20A5

- Without ceramic
- Nickel leads from inside
- various insulation: (glass fiber + silicone max. 350 ° C) - (silicone max.150 ° C) or (PTFE max.180 ° C)
- Sealing: (Silicone max.150°C) - (Epoxy max.180°C) - (cement> 300°C)
- Standard version for high density cartridge heaters (RAC): glass fiber silicone leads with cement.



MODEL NR 30A

- With ceramic cap length of 3-6 mm.
- Flexible cables from the inside.
- STANDARD FINISH, LOW DENSITY [RBC].



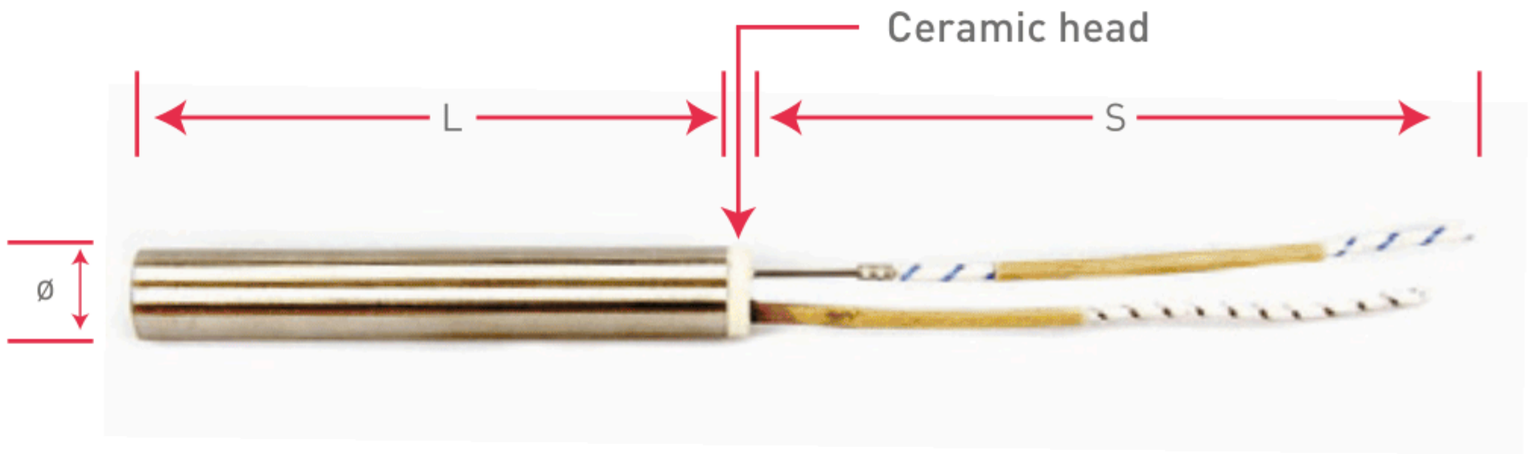
MODEL NR 40A

- Without ceramic cap.
- Sealed with cement.



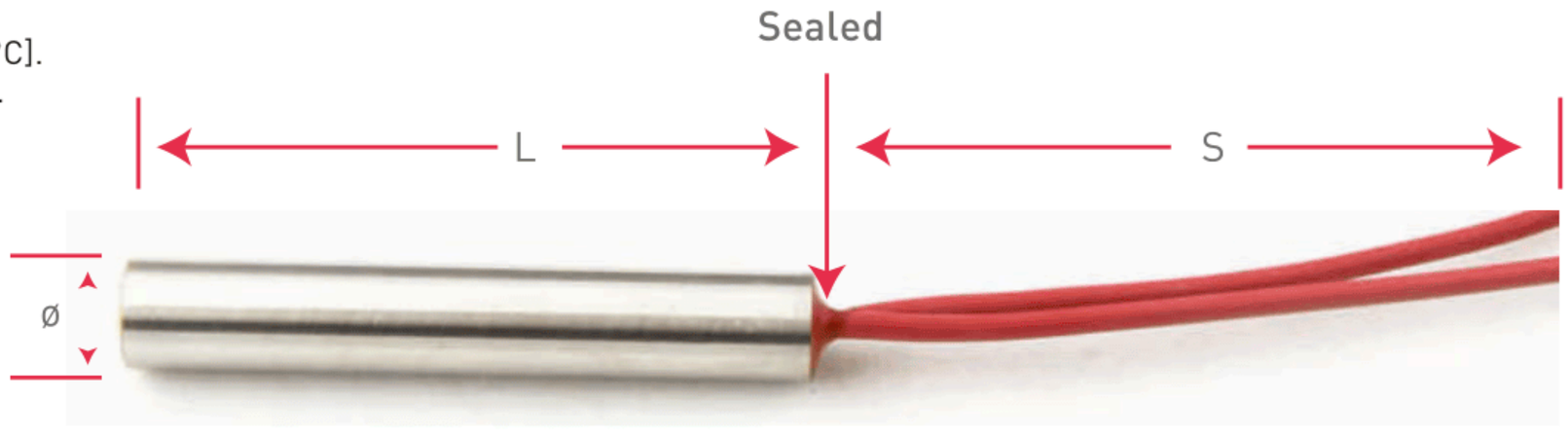
MODEL NR 50A

- With ceramic cap.
- Rigid and flexible cable output connection.
- Connection: welding or stapling.



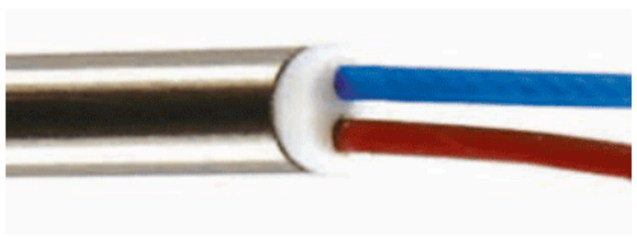
MODEL NR 60A

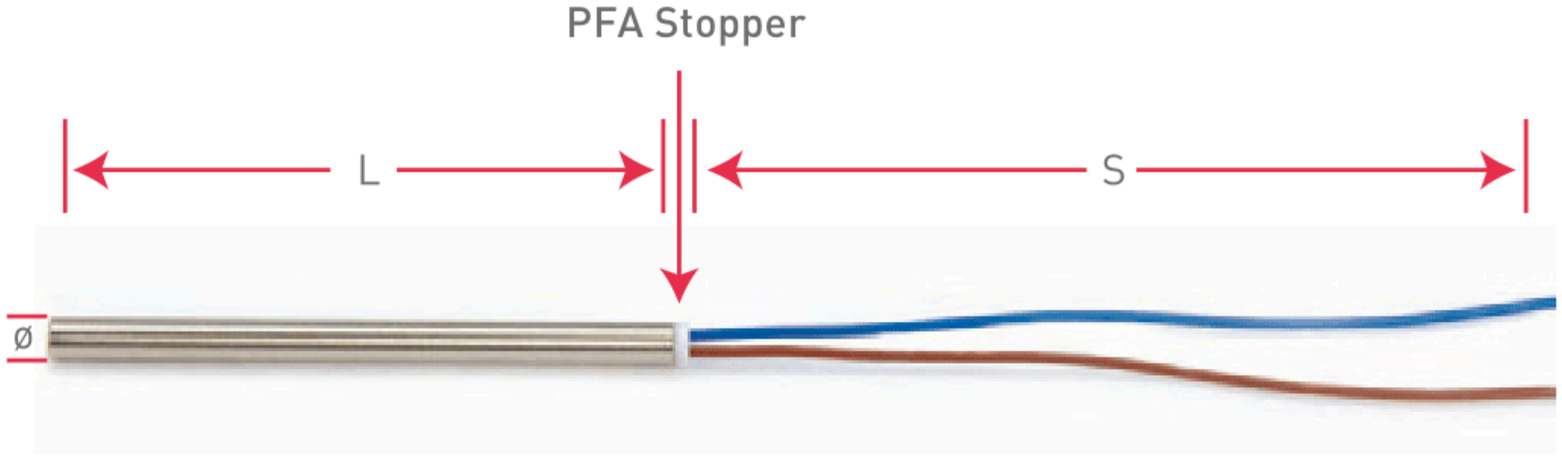
- Sealed moisture resistant.
- Cables PFA or SILICONE.
- Sealed with silicone [works up to 180°C].
- Sealed with resin [works up to 135°C).



MODEL NR 70A

- Resistant to moisture.
- PFA Cables.
- With PFA cap.
- From ø 4mm on.

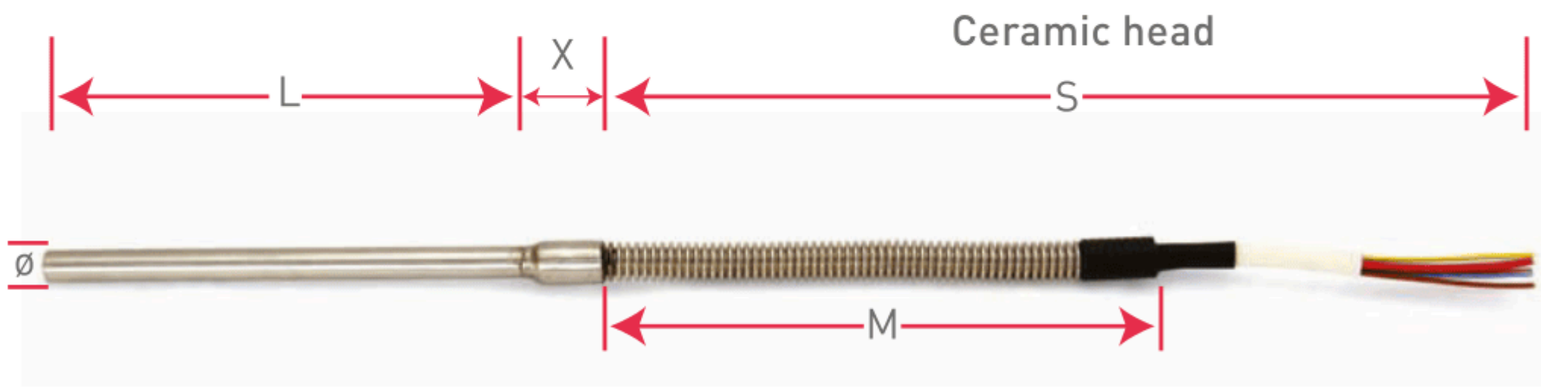




MODEL NR 80A

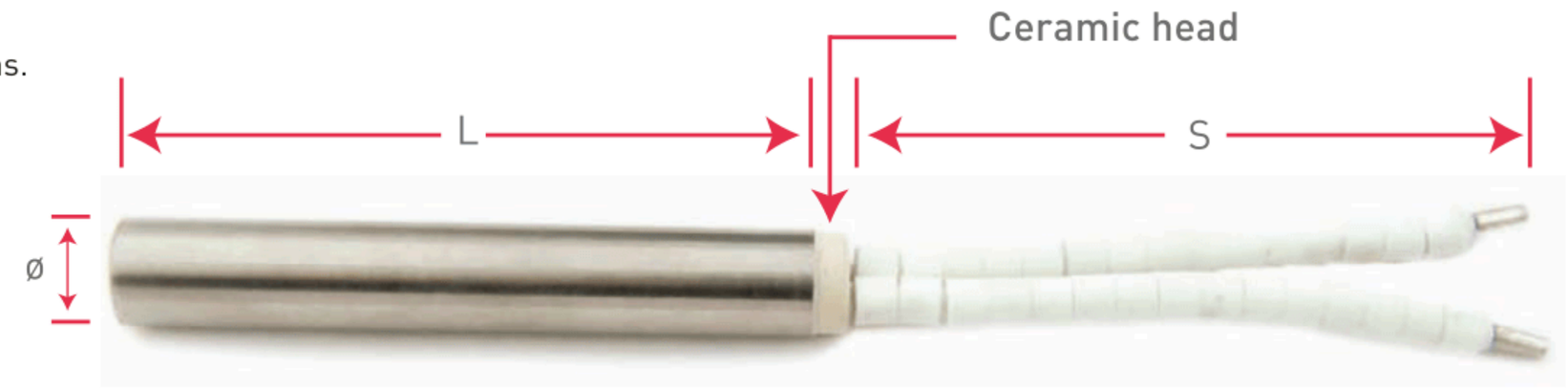
- Gas and watertight design with stainless steel corrugated hose.





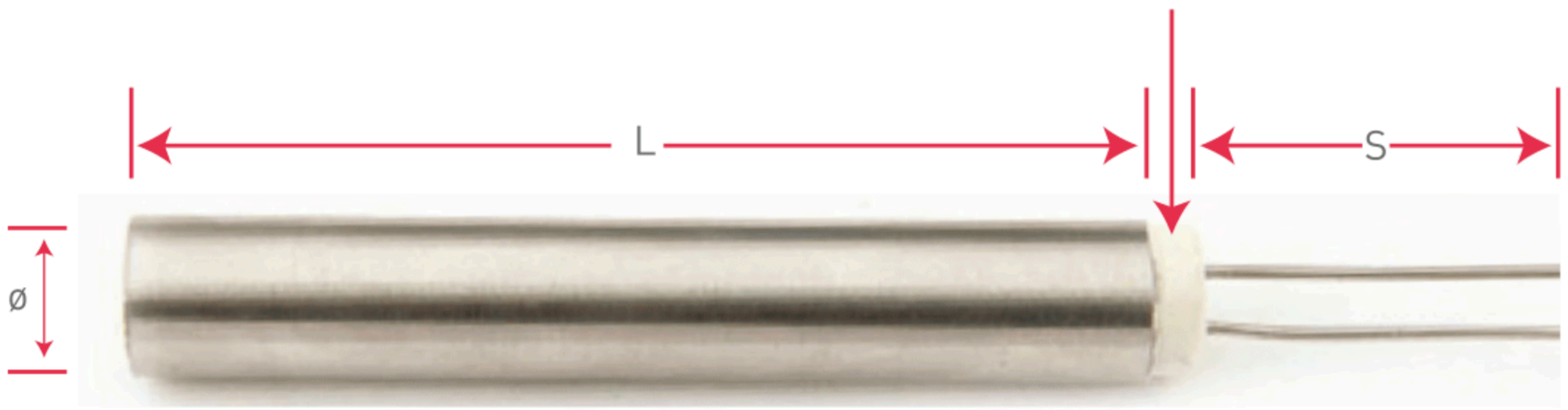
MODEL NR 90A

- Unions equipped with ceramic beads.
- Appropiate far high temperature areas.



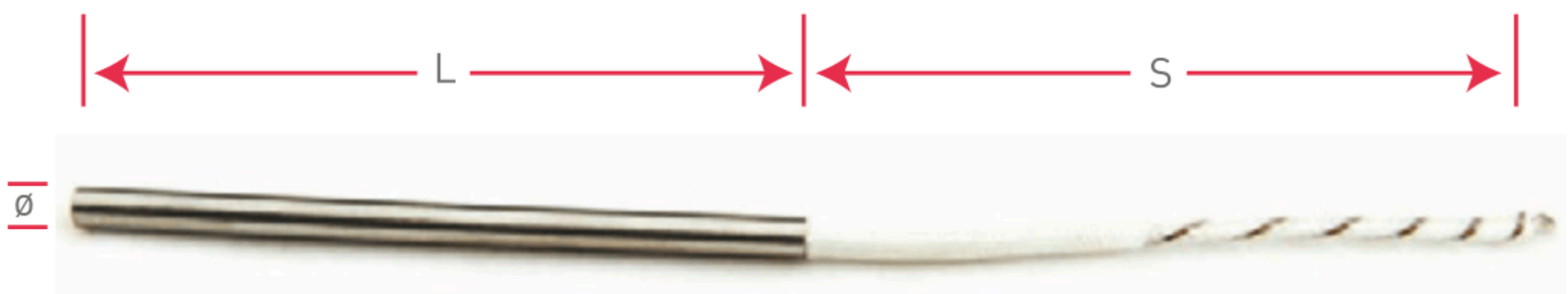
MODEL NR 100A

- Rigid exit with Nickel wire without protective sleeve.
- Appropriate far high temperature areas.



MODEL NR 110A

- A pole grounded.
- Low voltage, maximum 60V.
- Flexible Cable from inside fiberglass + silicone.

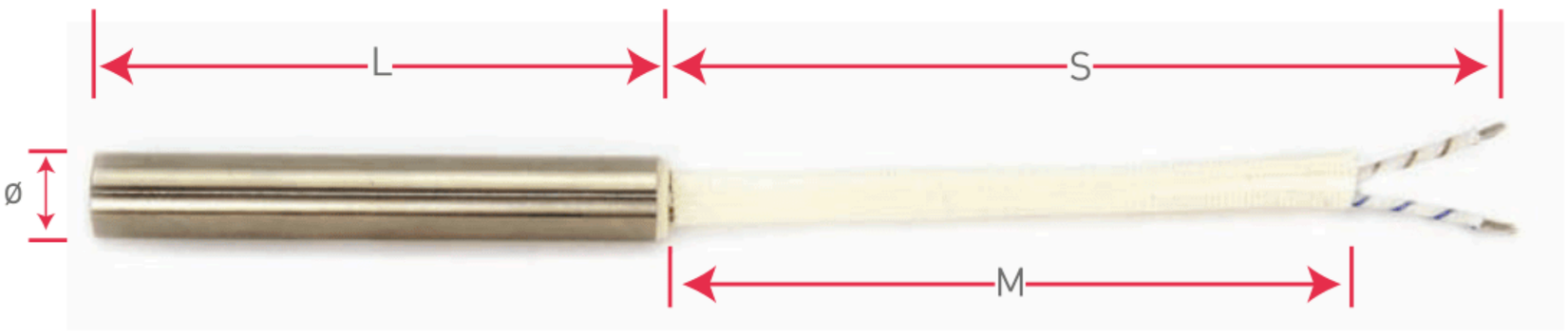


MODEL NR 120A

- A pole grounded.
- Low voltage, maximum 60V.
- Threaded pin grounded.

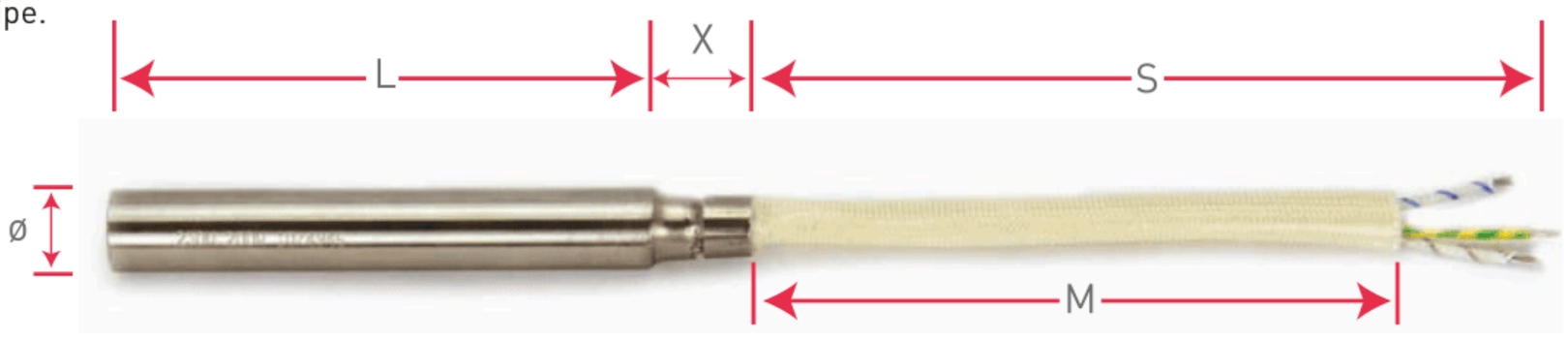
MODEL NR 130A

- Double Protection sleeve.
- Sleeve glass / silicone.
- Earth wire optional.



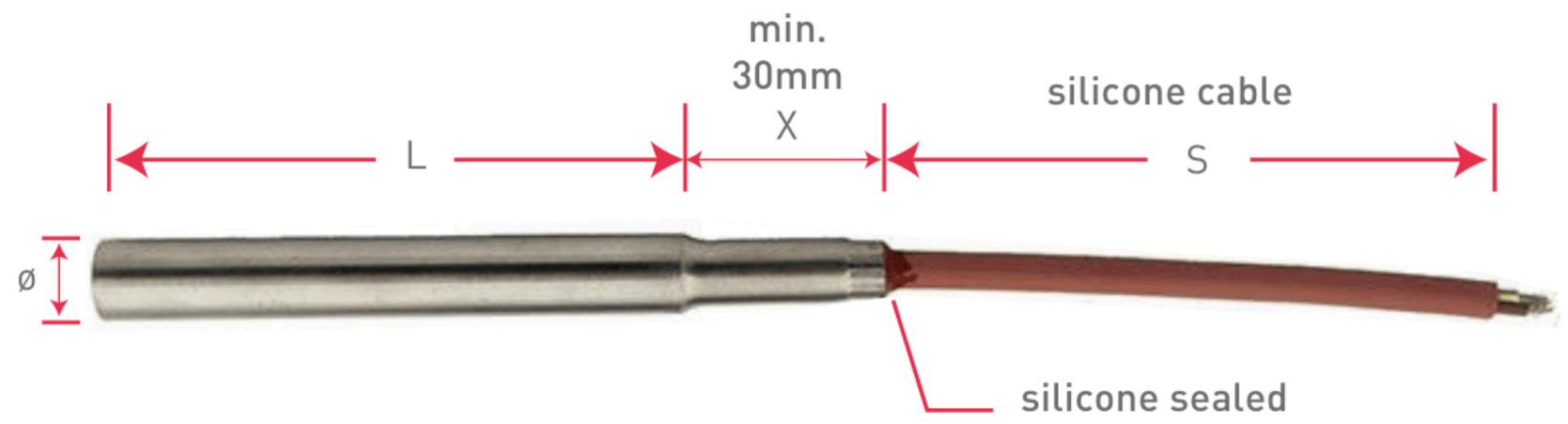
MODEL NR 140A

- Double Protection sleeve and reduced pipe.
- Sleeve glass / silicone.
- Earth wire optional.



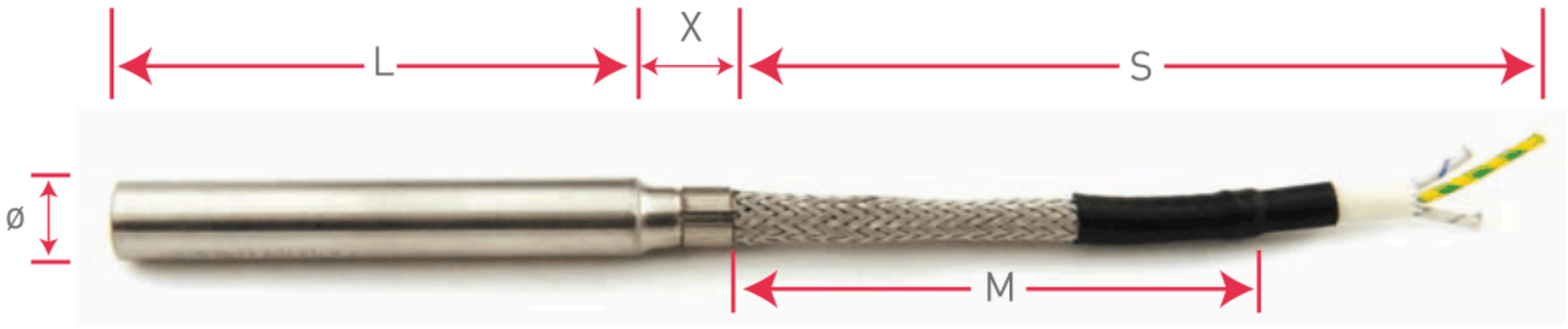
ACABADO Nº 145A

Silicone cable with pipe section
- Dimension "X" minimum length = 30mm.
- silicone cable (150ºC)
- Sealing: silicone sealed (max. 150ºC)



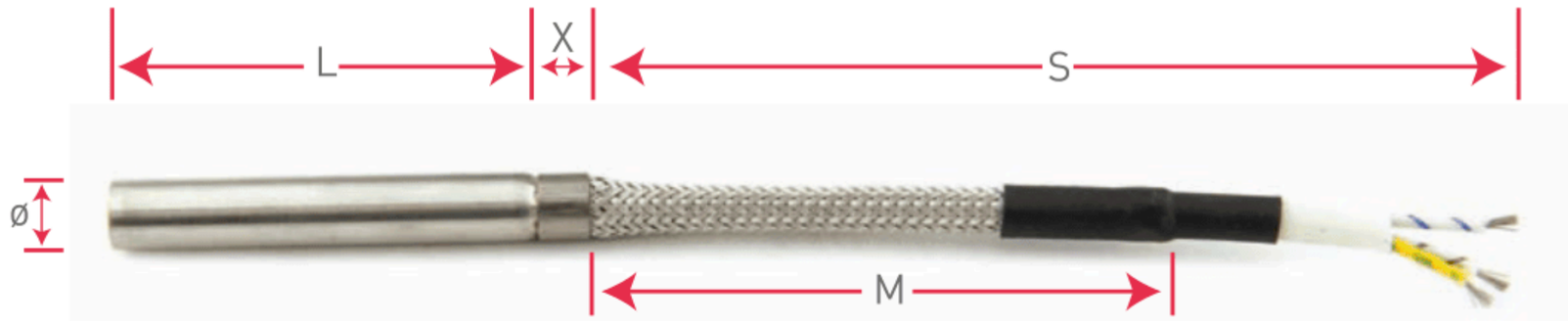
MODEL NR 150A

- Stainless braid hose from the inside with reduced pipe.
- Grounded.
- From ø 12.50mm on.



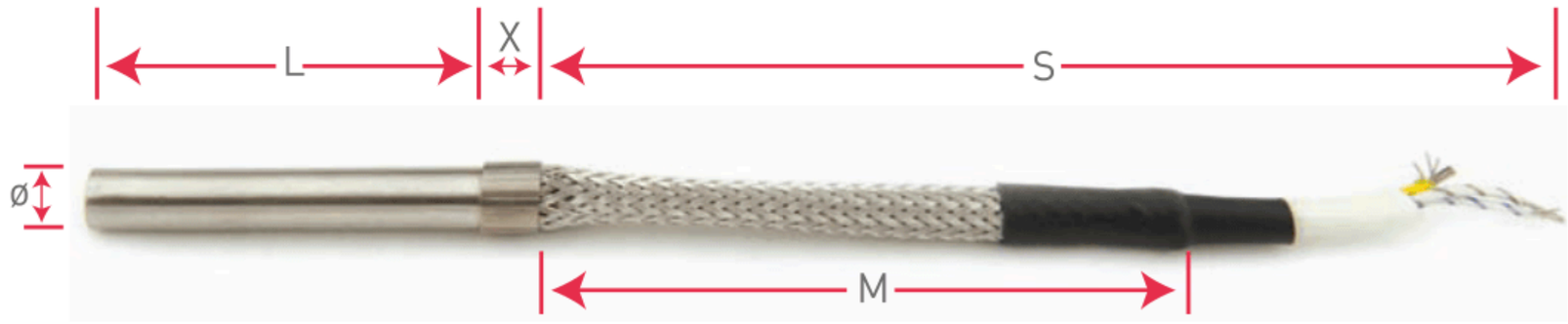
MODEL NR 160A

- Stainless Mesh from the inside.
- Grounded.
- From ø 9.46 to ø 12.61



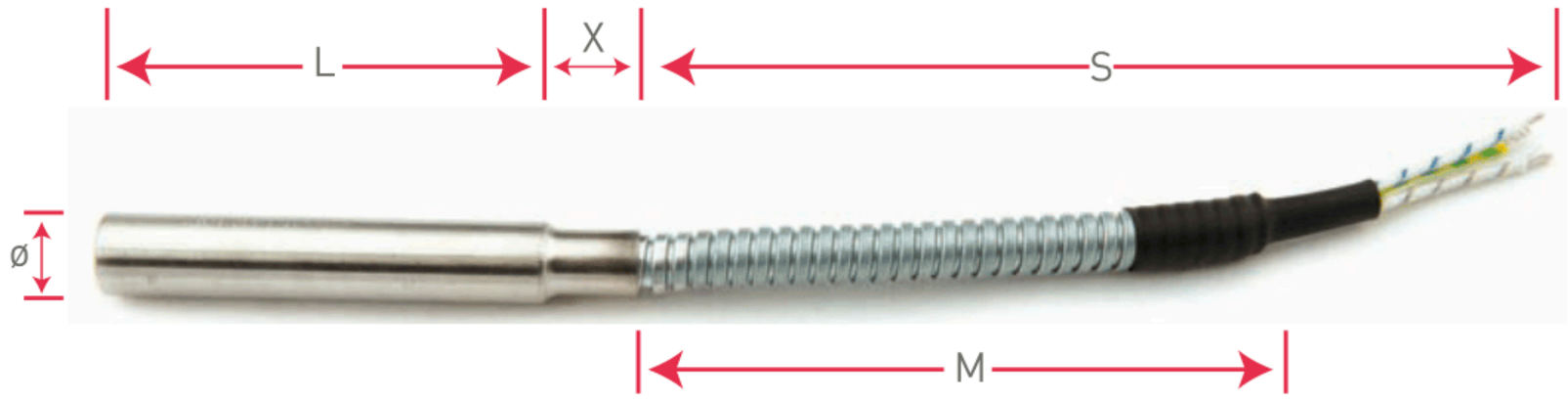
MODEL NR 170A

- Stainless braid hose from the outside.
- Grounded.
- From ø 3.00 to ø 9.00



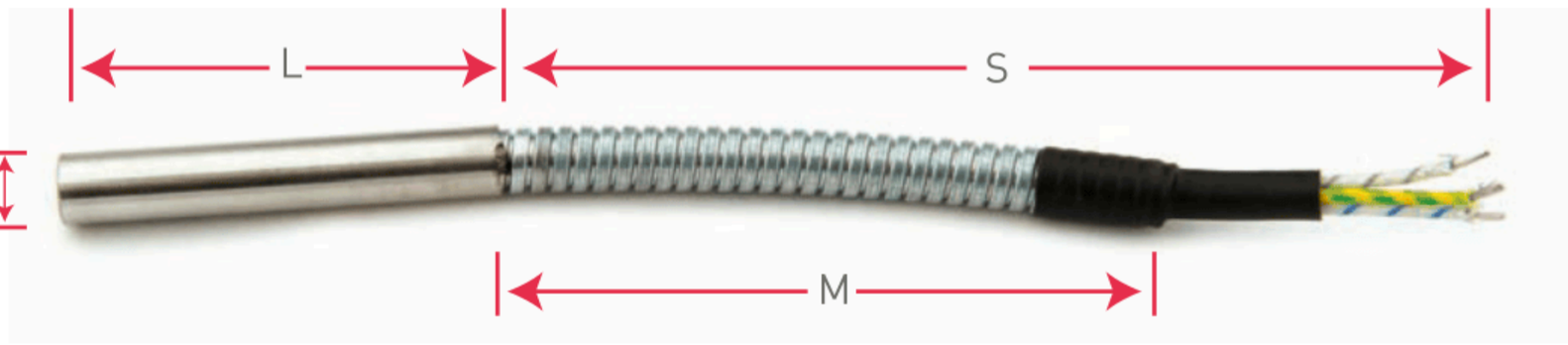
MODEL NR 180A

- Metal hose made from galvanized steel from inside with reduced pipe.
- Grounded.
- From ø 12.50mm on.



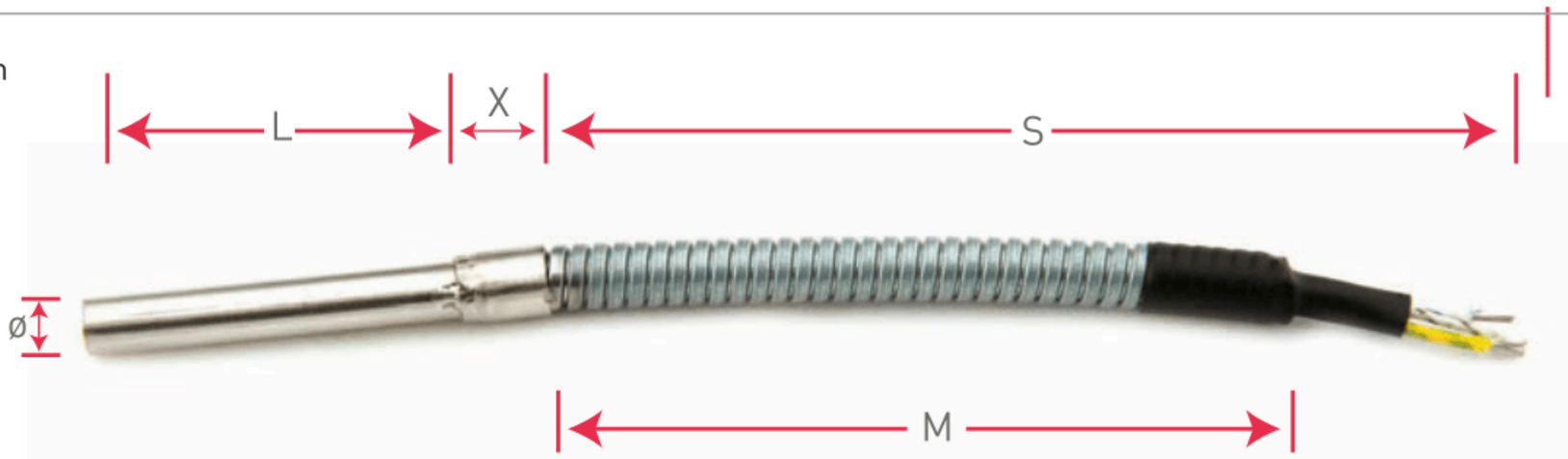
MODEL NR 190A

- Metal hose made from galvanized steel from inside.
- Grounded.
- From ø 9.46mm on.



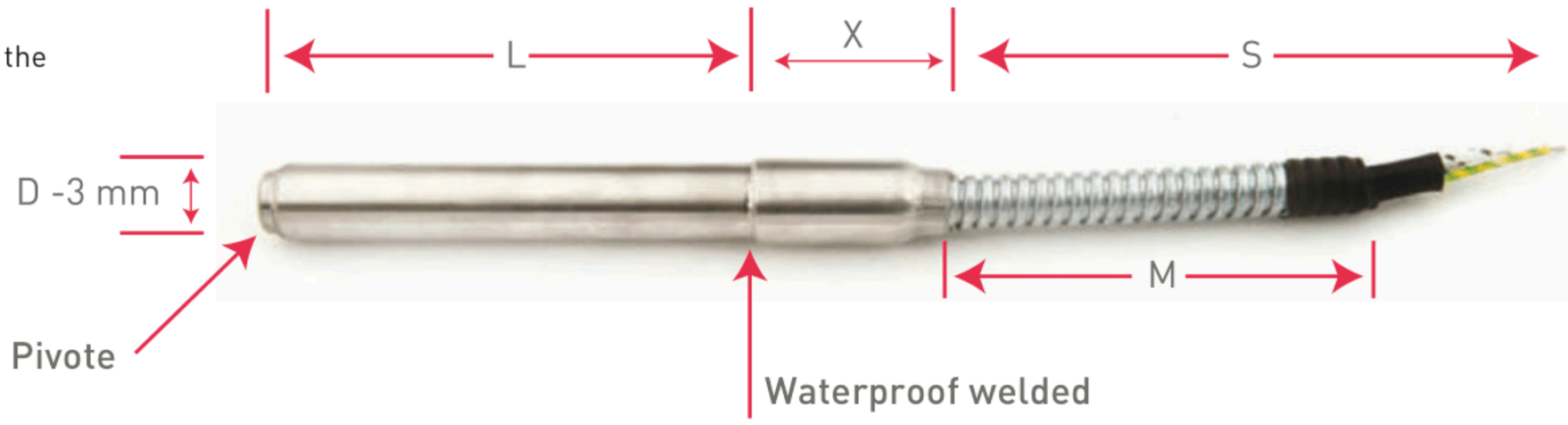
MODEL NR 200A

- Metal hose made from galvanized steel from outside with pipe.
- Grounded.
- From ø 5 to ø 11 mm.



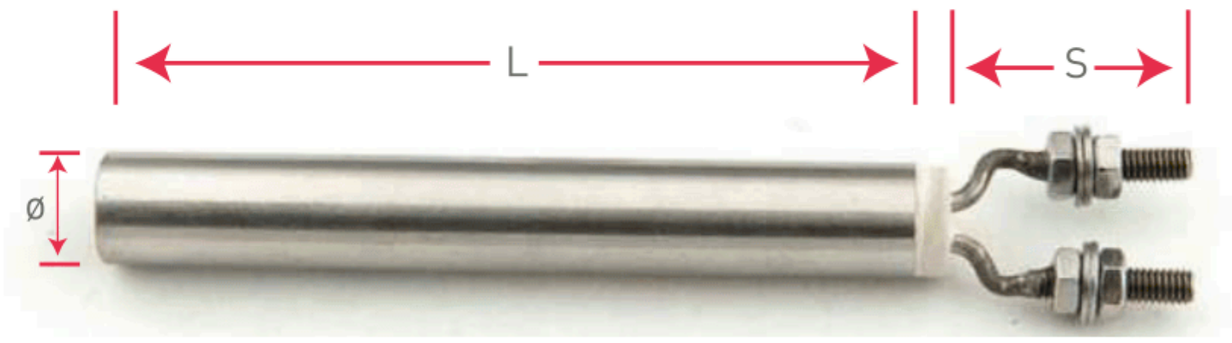
MODEL NR 210A

- Straight type far zamak.
- Metal hose made of galvanized steel.
- Waterproof welded.
- Pins on the bottom side to beat out the cartridge.



MODEL NR 220A

- Screw terminals.
- From ø 10 to ø 19 mm



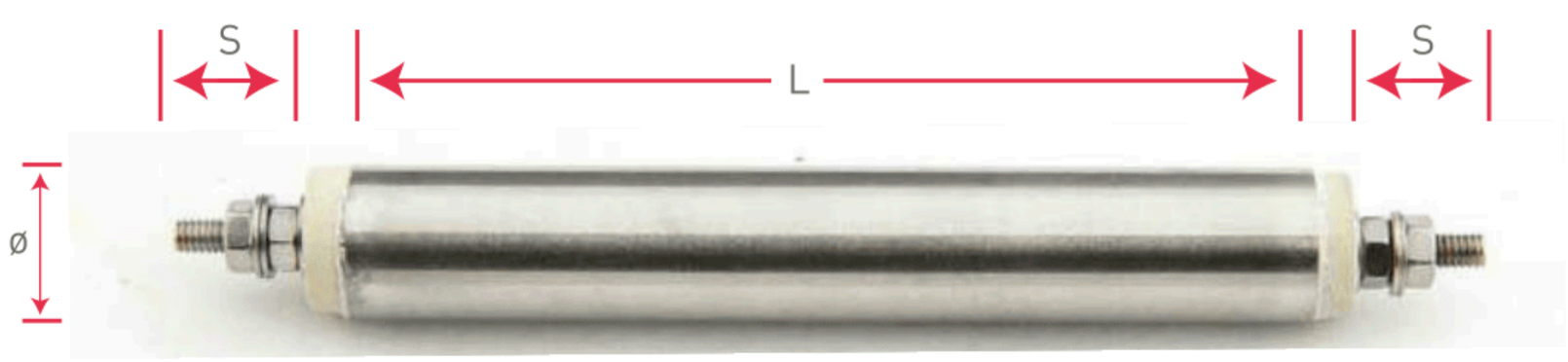
MODEL NR 230A

- Screw terminals.
- From ø 19 mm on



MODEL NR 240A

- Screw terminals on both sides.



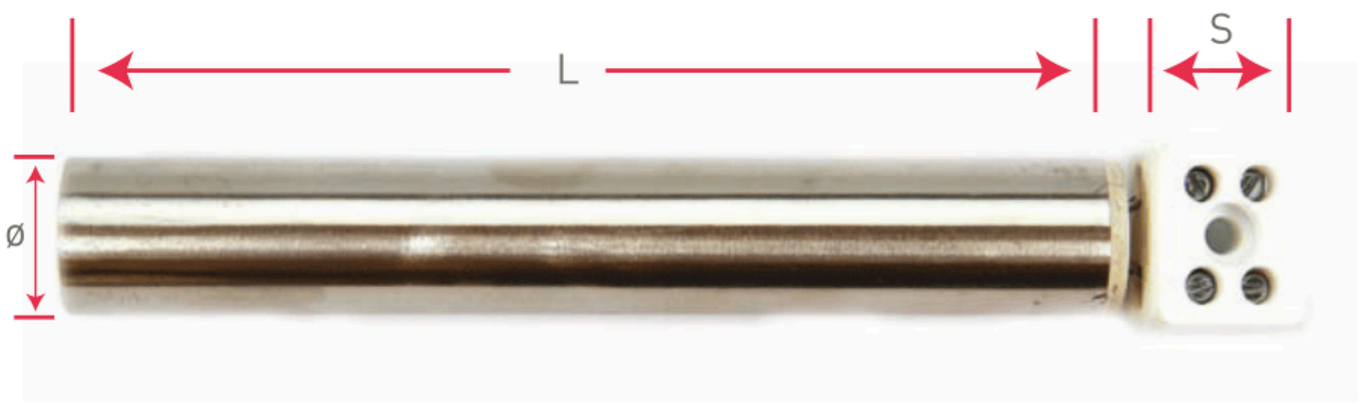
MODEL NR 250A

- Both sides
- Flexible cables from inside fiberglass + silicone.



MODEL NR 260A

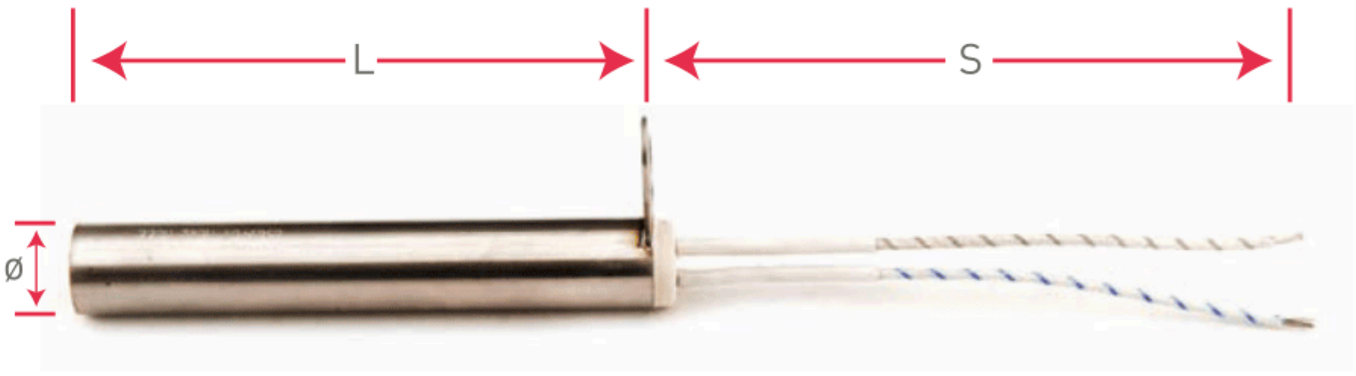
- Ceramic terminal block



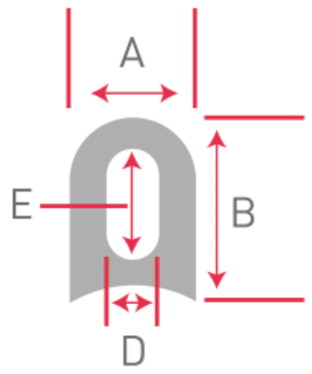
MODEL NR 270A

- Fastening tab one hole
- Flexible cables from the inside with fiberglass/silicone insulation + nickel conductor



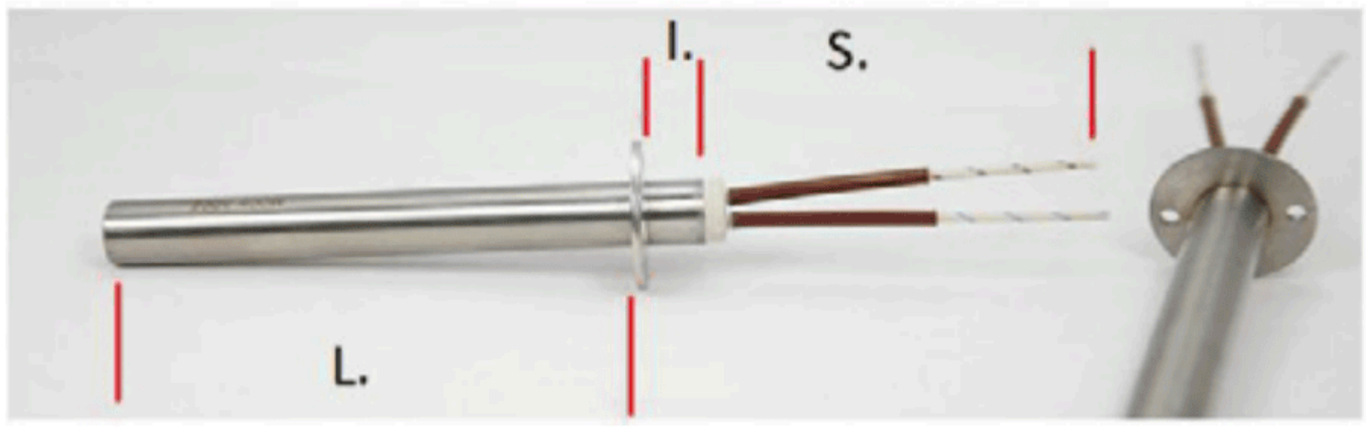


ø	6.30 - 6.50	7.90 - 8	9.46 - 10	12.50 - 12.61	15.81 - 16	19.05 - 20
A	8	8	10	12	12	12
B	12	12	12	20	20	20
D	4	4	4	6	6	6
E	6	6	6	14	14	14

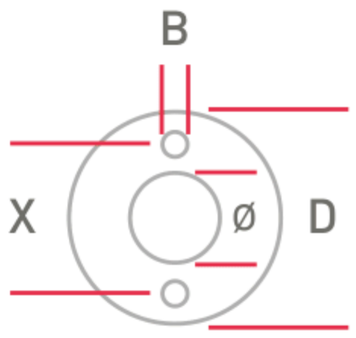


ACABADO Nº 275A

- Arandela sujeción dos taladros.
- Aislamiento cables: (Fibra de vidrio + silicona 350º) - (silicona 150º) o (PTFE 180º).
- Sellado: (Silicona 150º max.) - (Epoxi 130º max.) - (Cemento + 300º)



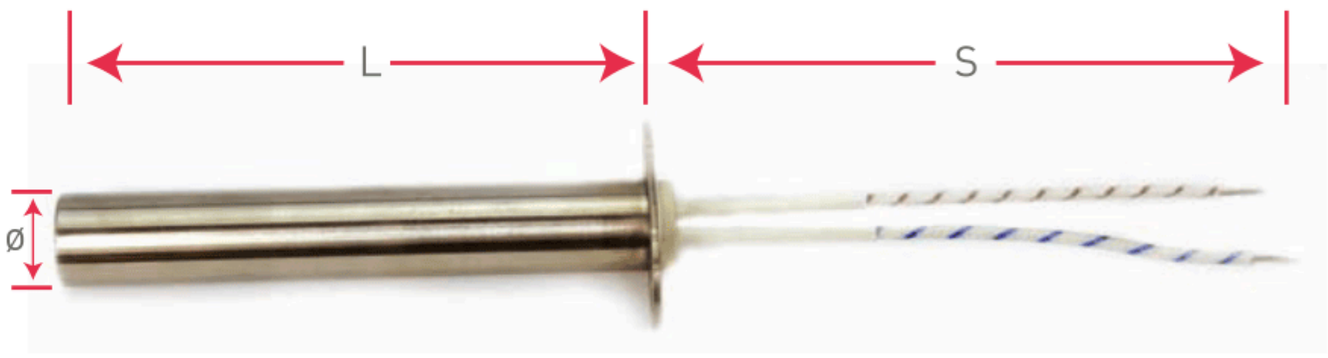
Ø	6,50 - 1/4"	8 - 5/16"	10 - 3/8"	12,50 - 1/2"	16 - 5/3"	20 - 3/4"	25 - 1"
D	19	20	27	28	33	37	44
X	13	14	20	21	26	30	36
B	3,1	3,1	3,1	3,1	4,1	4,1	5,1
E	1,5	1,5	1,5	1,5	1,5	1,5	1,5



MODEL NR 280A

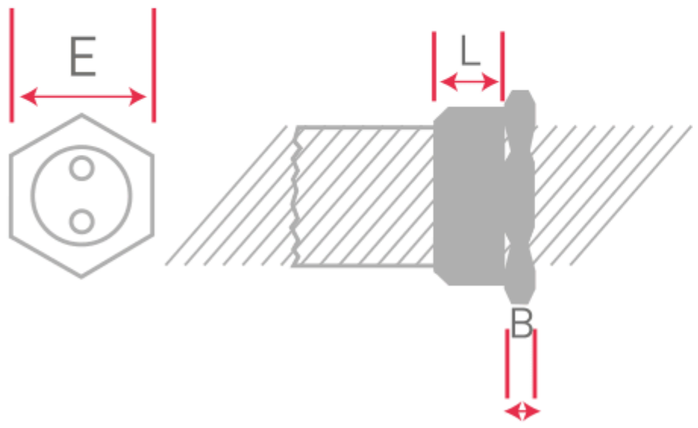
- Fastening tab two holes

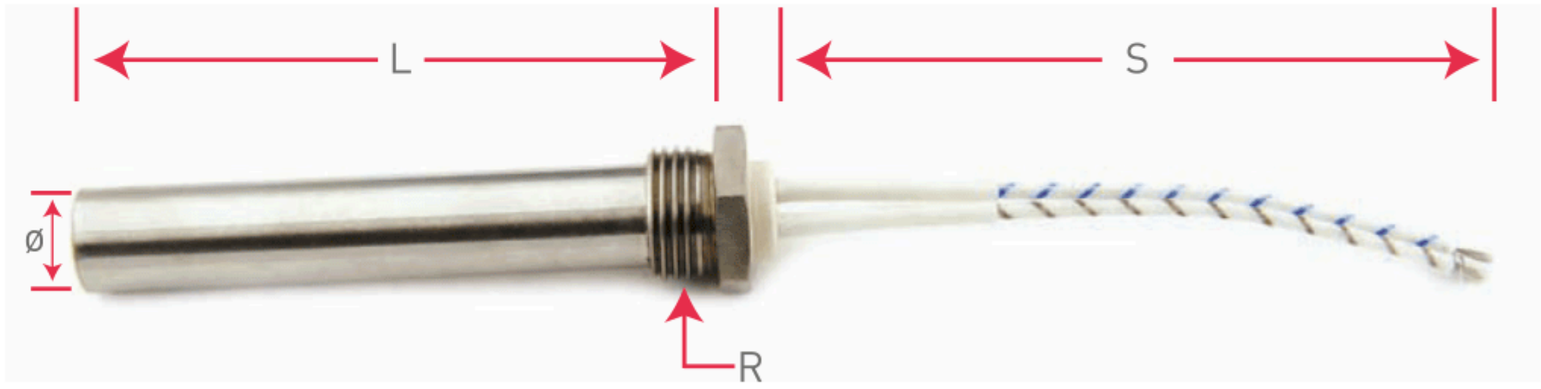




MODEL NR 290A

- Threaded nipple
- Normal mounting position

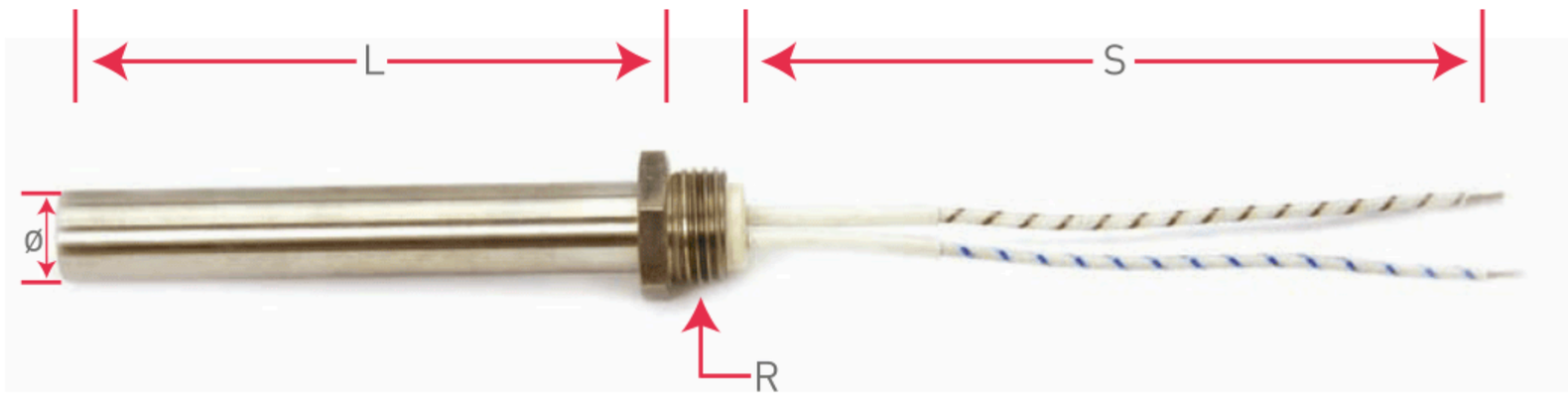




THREAD TABLE (R)							
Ø Cartridge		1/4" (6,30) 6,50	5/6" (7,90) 8	3/8" (9,46) 10	1/2" (12,61) 12,50	5/8" (15,81) 16	3/4" (19,05) 20
R=Thread Pitch	B.S.P.	1/8"	1/4"	1/4"	3/8"	1/2"	3/4"
	METRIC	M 10/100	M 12/100	M 14/150	M 16/150	M 20/150	M 24/150
L		6	6	8	8	8	10
B		4	4	4	5	5	6
E		12	12	17	19	24	27

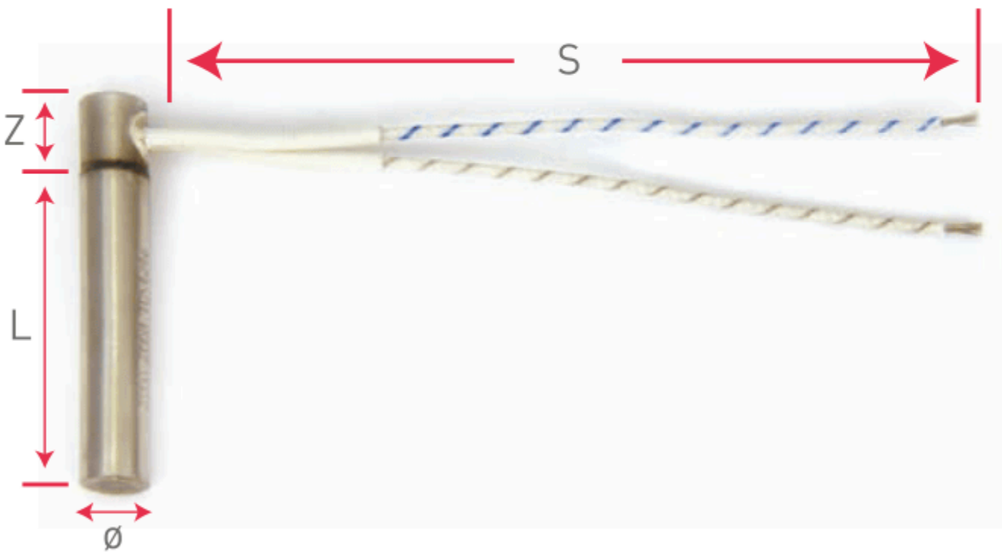
MODEL NR 300A

- Threaded nipple
- Reverse mounting position



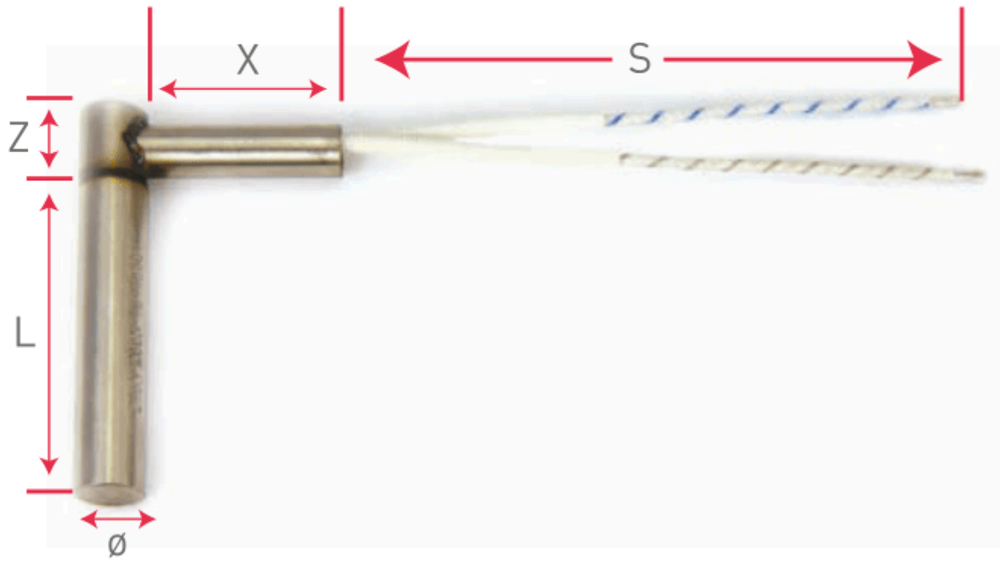
MODEL NR 310A

- 90º cylinder.
- Without leads protection.
- Flexible cables from the inside.
- Running from 6.30 ø.



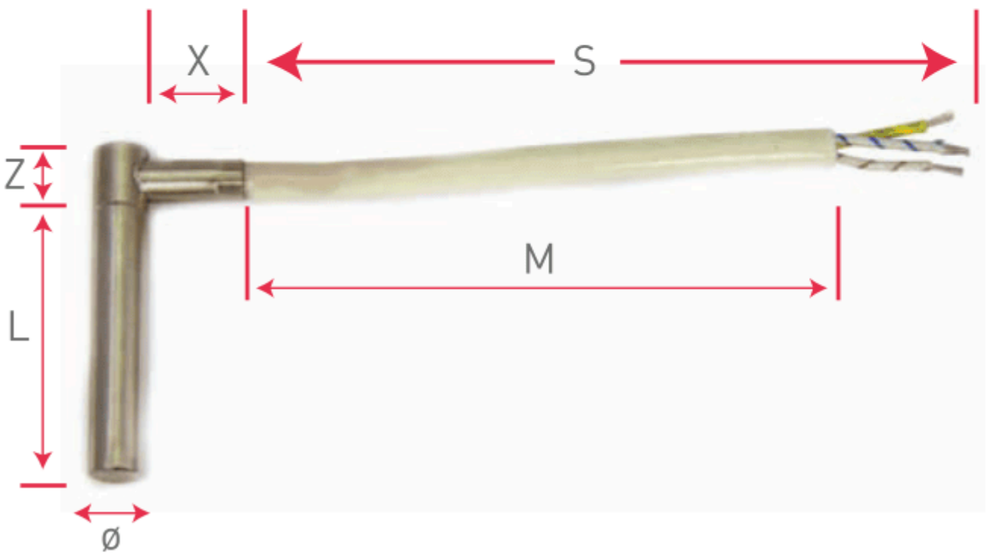
MODEL NR 320A

- 90º cylinder.
- Without leads protection.
- Flexible cables from the inside.
- Running from 9.46 ø.



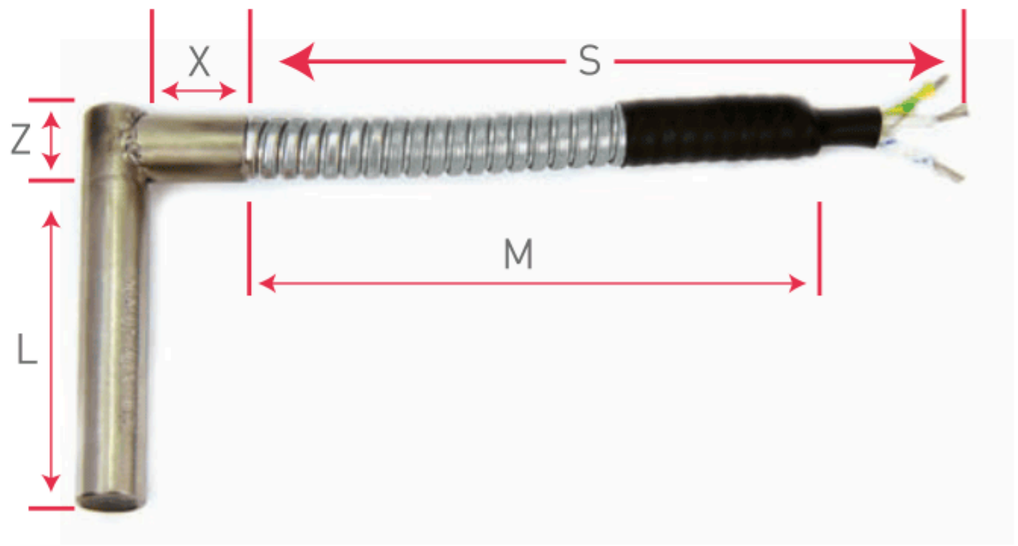
MODEL NR 330A

- 90° cylinder.
- Fiberglass-Silicone Sleeve.
- Grounded.
- Running from 9.46 ø.



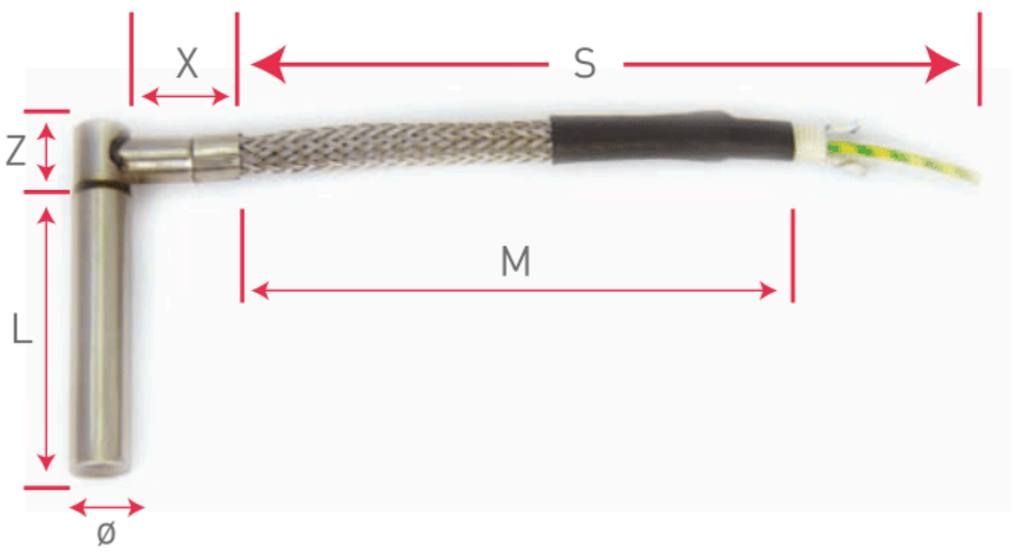
MODEL NR 340A

- 90° cylinder.
- Galvanized Metal Hose.
- Grounded.
- Running from 9.46 ø.



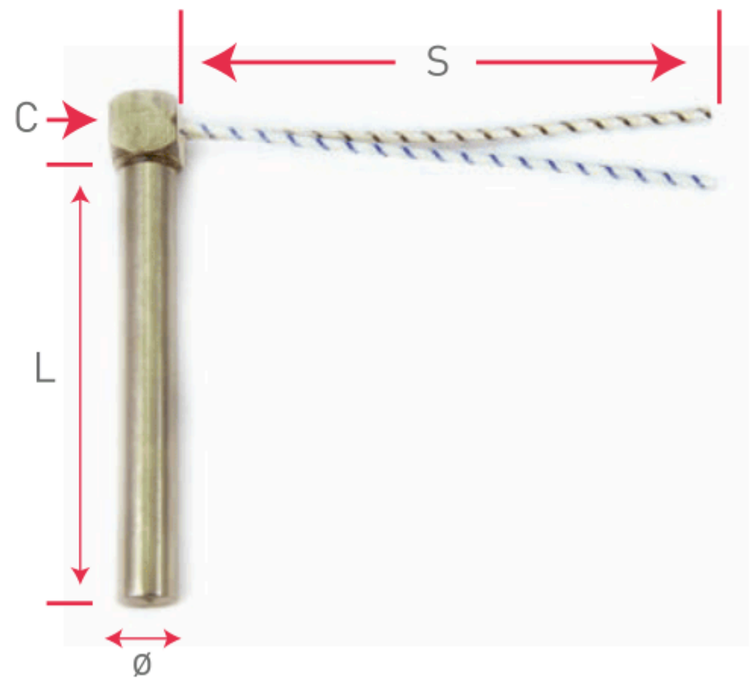
MODEL NR 350A

- 90° cylinder.
- Stainless steel braid.
- Grounded.
- Running from 9.46 ø.



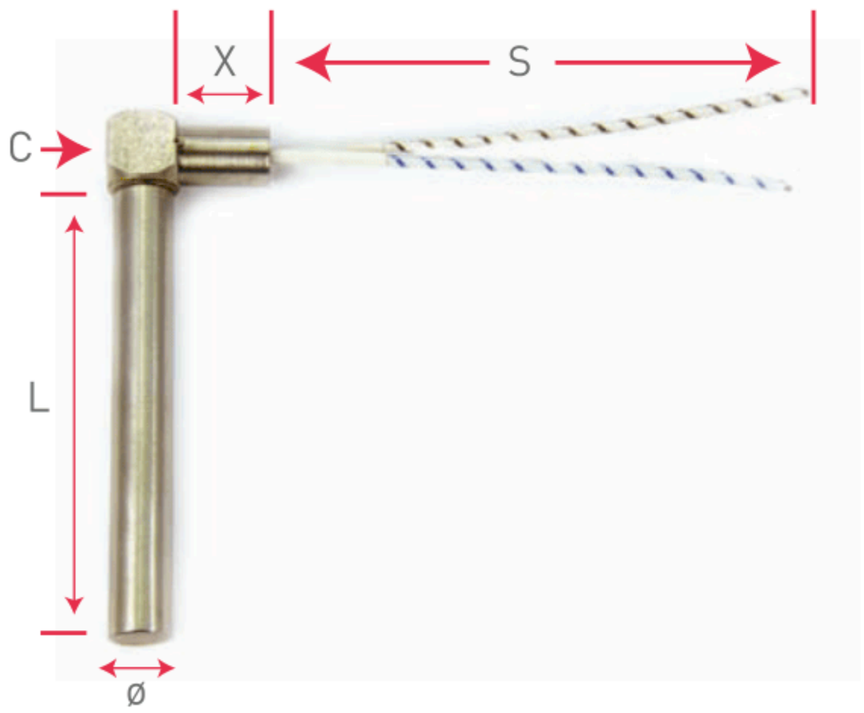
MODEL NR 400A

- 90° Angle Block.
- Without tube and protection.
- Flexible cables from the inside.



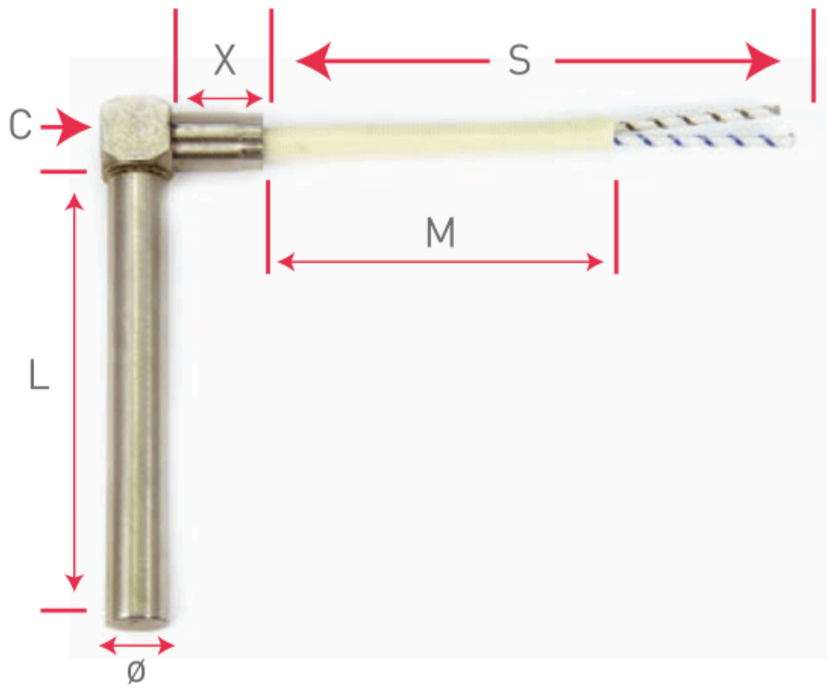
MODEL NR 410A

- 90° Angle Block.
- With pipe and without protection.
- Flexible cables from the inside.



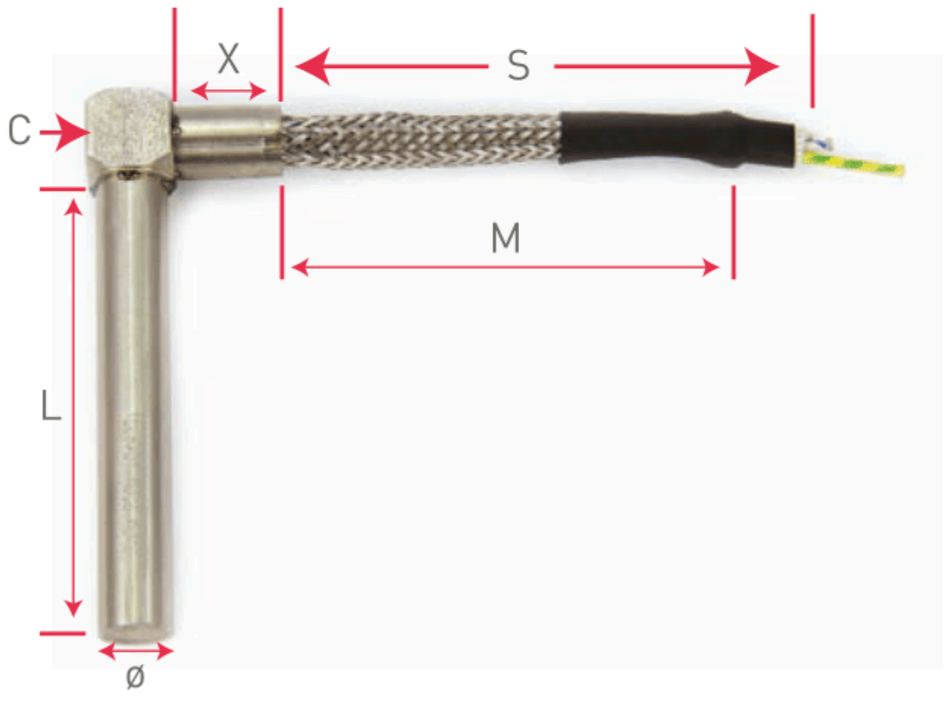
MODEL NR 420A

- 90° Angle Block.
- Pipe and Fiberglass-Silicone Sleeve.
- Grounded.



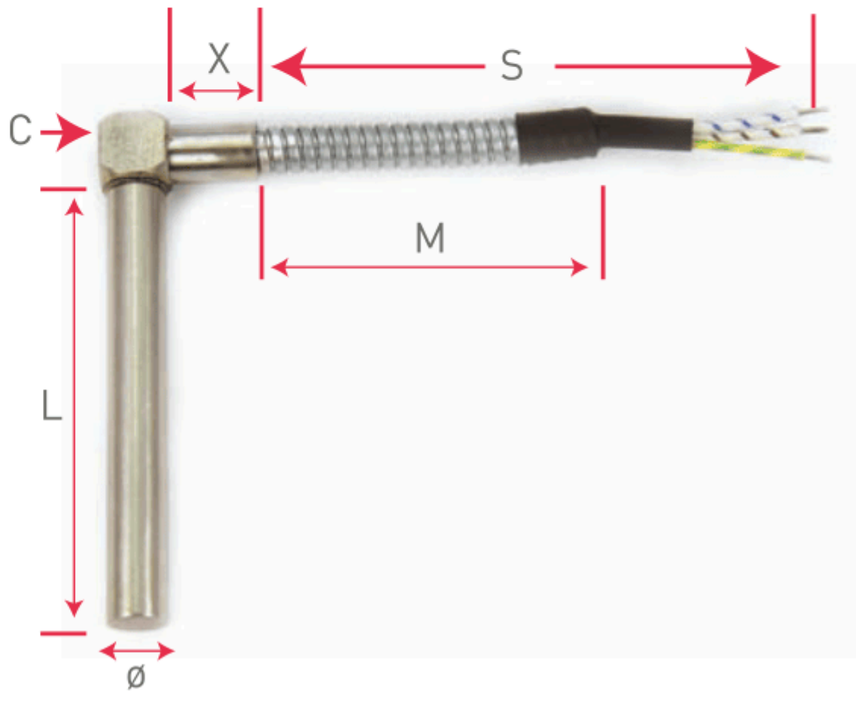
MODEL NR 430A

- 90° Angle Block.
- Stainless Steel Braid.
- Grounded.



MODEL NR 440A

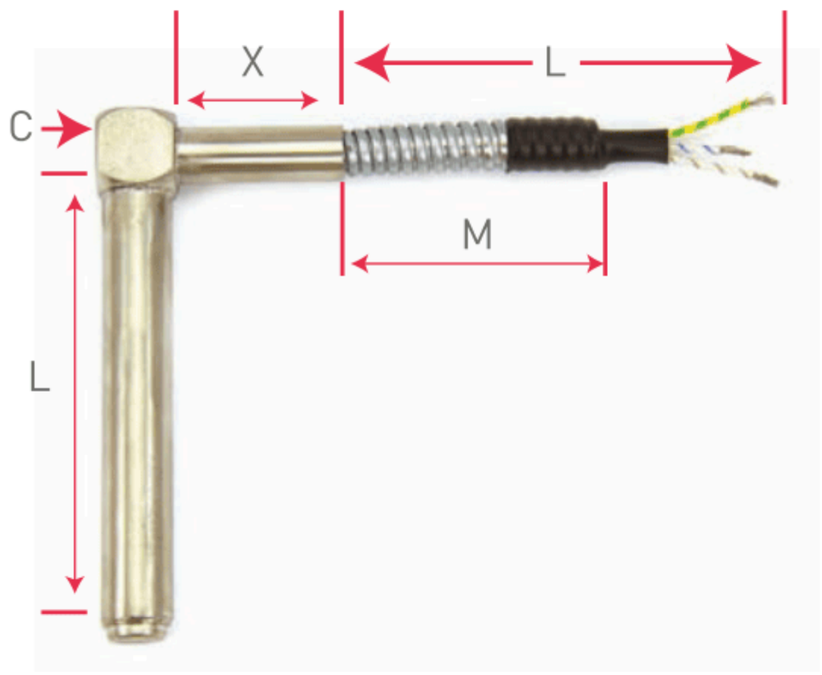
- 90° Angle Block.
- Galvanized Metal Hose.
- Grounded.



MODEL NR 450A

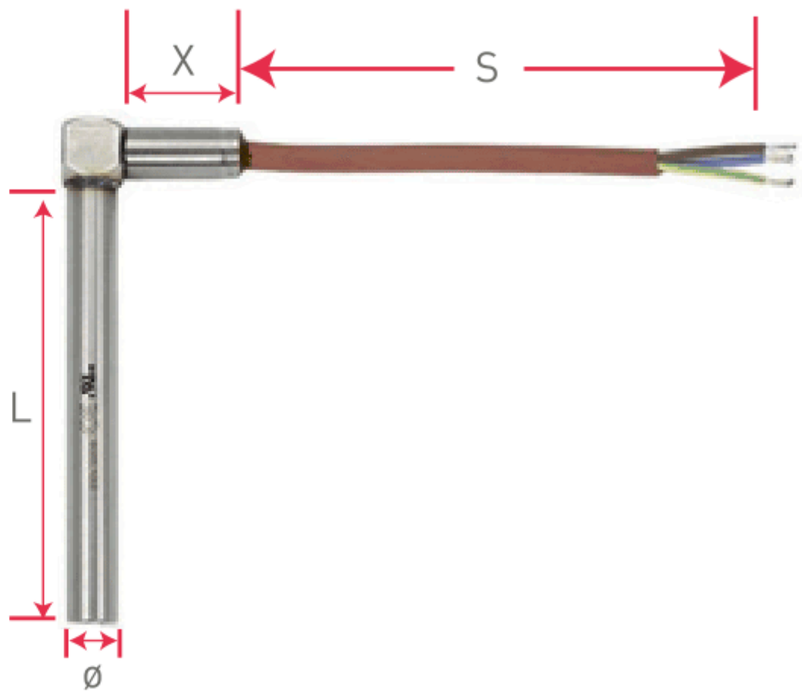
- 90° Angle Block type far zamak.
- Metal hose made of galvanized steel.
- Waterproof welded.
- Pins on the bottom side to beat out the cartridge.
- Heaters length includes pin.

ANGLE BLOCK TABLE (C)						
Ø Cartridge	1/4" (6,30) 6,50	5/6" (7,90) 8	3/8" (9,46) 10	1/2" (12,61) 12,50	5/81" (15,81) 16	3/4" (19,05) 20
C= Angle Block	10 x 10 x 10	10 x 10 x 10	14 x 14 x 14	15 x 15 x 15	18 x 18 x 18	25 x 25 x 25



MODEL Nº 460A

- 90º angle block.
- Silicone cable (150º)
- Sealed: (Silicone 150º max.)



Coil Heaters (RCO)



Aplications

- Nozzles
- Hot-Runner Systems
- Die Casting
- Etc.

Heaters details

- Stainless Pipe and TIG welding.
- Cables 1000mm (standard).
- Heating Wire NiCr80/20.
- Insulation compact MgO.

Production program and Quality control

ROUND PROFILES ∅	SQUARE PROFILES ☐	RECTANGULAR PROFILES ▭	SECTIONS TOLERANCE	LENGTH TOLERANCE	NOMINAL POWER TOLERANCE	INSULATION	DIELECTRIC STRENGTH	
							STRAIGHT	CURVED
1,80	1,8 x 1,8		± 0,10	±1,50	-10% +15%	5 MOhms mín	1250V	800V
2,50		2,2 x 4,2 -0.0 +0.15						
3	3 x 3 -0.0 +0.15							
3,50	3,50 x 3,50							
4								
4,50	4,5 x 4,5							
5		5 x 7					1250V	1250V
5,50		5,50 x 12 -0.15 +0.10						
6	6 x 6	6 x 16 -0.15 +0.10						
6,50								
7								
7,50	7,5 x 7,5							
8	8 x 8							
8,50								

· Other dimensions on request.

Connections Protection



Nº 1: PFA-strand without cable protection.



Nº 2: Stainless Steel Braid.



Nº 3: Galvanized Metal Hose.



Nº 3: Galvanized Metal Hose.

Different Connection Exit



Tangential



Axial



Radial

RCO 3 ø



RCO 4 ø



STANDARD MODELS WITH ANO WITHOUT THERMOCOUPLE FE/CUNI (J)"

DIAMETER	COLD ZONE	TOTAL LENGTH	230V W
3 Ø	90	400	180
		550	250
		650	315
		800	400
		950	500
		1.150	630
		1.500	800
		2.000	1.250
		2.500	1.350

* Other dimensions on request.

STANDARD MODELS WITH ANO WITHOUT THERMOCOUPLE FE/CUNI (J)

DIAMETER	COLD ZONE	TOTAL LENGTH	230V W
4 Ø	90	400	200
		550	315
		750	400
		950	500
		1.150	630
		1.350	750
		1.650	1.000
		2.000	1.250
		2.500	1.500

* Other dimensions on request.

RCO 3x3 ⊠



RCO 6x6 ⊠



STANDARD MODELS WITH ANO WITHOUT THERMOCOUPLE FE/CUNI [J)

SECTION	COLD ZONE	TOTAL LENGTH	230V W
3 x 3 ⊠ ± 0.10	90	200	175
		240	175
		300	225
		350	250
		390	215
		400	300
		450	350
		500	400
		540	325
		600	500
		650	400
		700	500
		740	470
		800	600
		900	700
		940	610
		1.000	800
		1.140	630
		1.200	900
		1.500	750
		1.800	1.100
		2.000	1.400
		2.500	1.500

* Other dimensions on request.

STANDARD MODELS WITH ANO WITHOUT THERMOCOUPLE FE/CUNI [J)

SECTION	COLD ZONE	TOTAL LENGTH	230V W
6 x 6 ⊠ ± 0.10	90	210	200
		250	250
		300	300
		400	400
		500	500
		600	600
		700	650
		800	750
		900	850
		1.000	950
		1.250	1.100
		1.500	1.250
		1.750	1.600
		2.000	1.750
		2.500	1.850
		3.000	2.000
		3.500	2.500
		3.750	3.500

* Other dimensions on request.

RCO 2,2 x 4,2



RCO 5 x 7



STANDARD MODELS WITH ANO WITHOUT THERMOCOUPLE FE/CUNI (J)

SECTION	COLD ZONE	TOTAL LENGTH	230V W
2,2 x 4,2 ± 0.10	90	200	175
		250	190
		330	200
		380	225
		430	250
		480	300
		560	350
		630	400
		700	450
		750	550
		860	625
		950	675
		1.000	700
		1.200	800
		1.400	950
		1.600	1.100
		1.800	1.200
		2.000	1.300
		2.250	1.400
		2.500	1.500

* Other dimensions on request.

STANDARD MODELS WITH ANO WITHOUT THERMOCOUPLE Fe-Cu Ni "J'

SECTION	COLD ZONE	TOTAL LENGTH	230V W
5 x 7 ± 0.10	90	210	200
		250	250
		300	300
		400	400
		500	500
		600	600
		700	650
		800	750
		900	850
		1000	950
		1250	1100
		1500	1250
		1750	1600
		2000	1750
		2500	1850
		3000	2000
		3500	2500

* Other dimensions on request.

Coil Heaters (RCO) mini

RCO 1,80 D Ø



DIAMETER	COLD ZONE	TOTAL LENGTH	230V W
1,80 Ø	90 EACH SIDE	800	130
		900	155
		1.000	175
		1.100	200
		1.200	220
		1.400	260
		1.600	300
		1.800	350
		2.000	400
		2.400	450

RCO 1,80 x 1,80 ⧄



SECTION	COLD ZONE	TOTAL LENGTH	230V W
1,80 x 1,80 ⧄	90 EACH SIDE	800	130
		900	155
		1.000	175
		1.100	200
		1.200	220
		1.400	260
		1.600	300
		1.800	350
		2.000	400
		2.400	450

RCO 1,80 x 3,60 ▱



1,80 x 3,60 PARALLEL EXIT



1,80 x 3,60 STAGGERED EXIT



1,80 x 3,60 PARALLEL EXIT



1,80 x 3,60 STAGGERED EXIT

SECTION	COLD ZONE	TOTAL LENGTH	230V W
1,80 x 3,60 ▱	90	400	130
		450	155
		500	175
		550	200
		600	220
		700	260
		800	300
		900	350
		1.000	400
		1.200	450

Coil Heaters (RC0) Connection on each end



General Specifications

- Stainless steel tube (ANNEALED).
- Connections on each side.
- Possibility to manufacture special measures

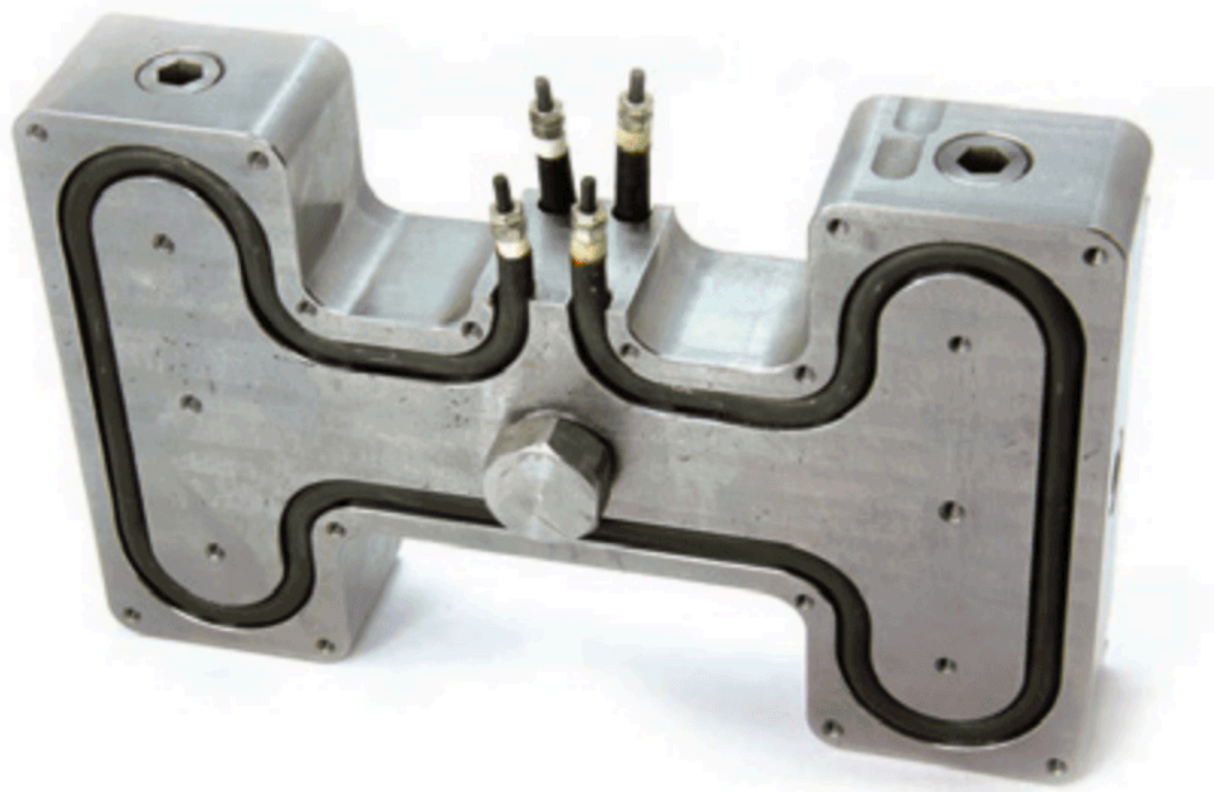
Quality control

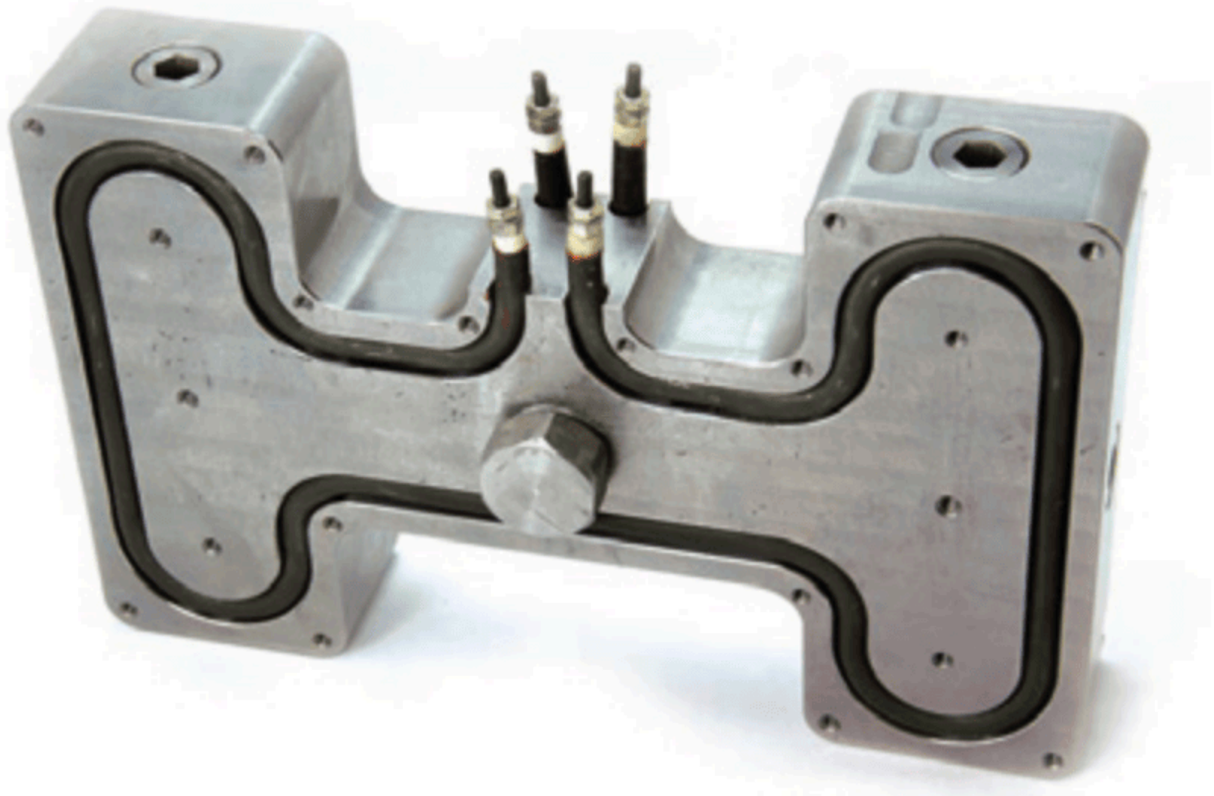
- Insulation: 5 MOhm at 500 V DC Cold (minimum).
- Dielectric strength: 1500 V 1 second.
- Nominal Power: + 5% – 10%

Manufacturing Program

5 Ø – 6,40 Ø – 8 Ø – 8,50 Ø

6 x 6 ⊠



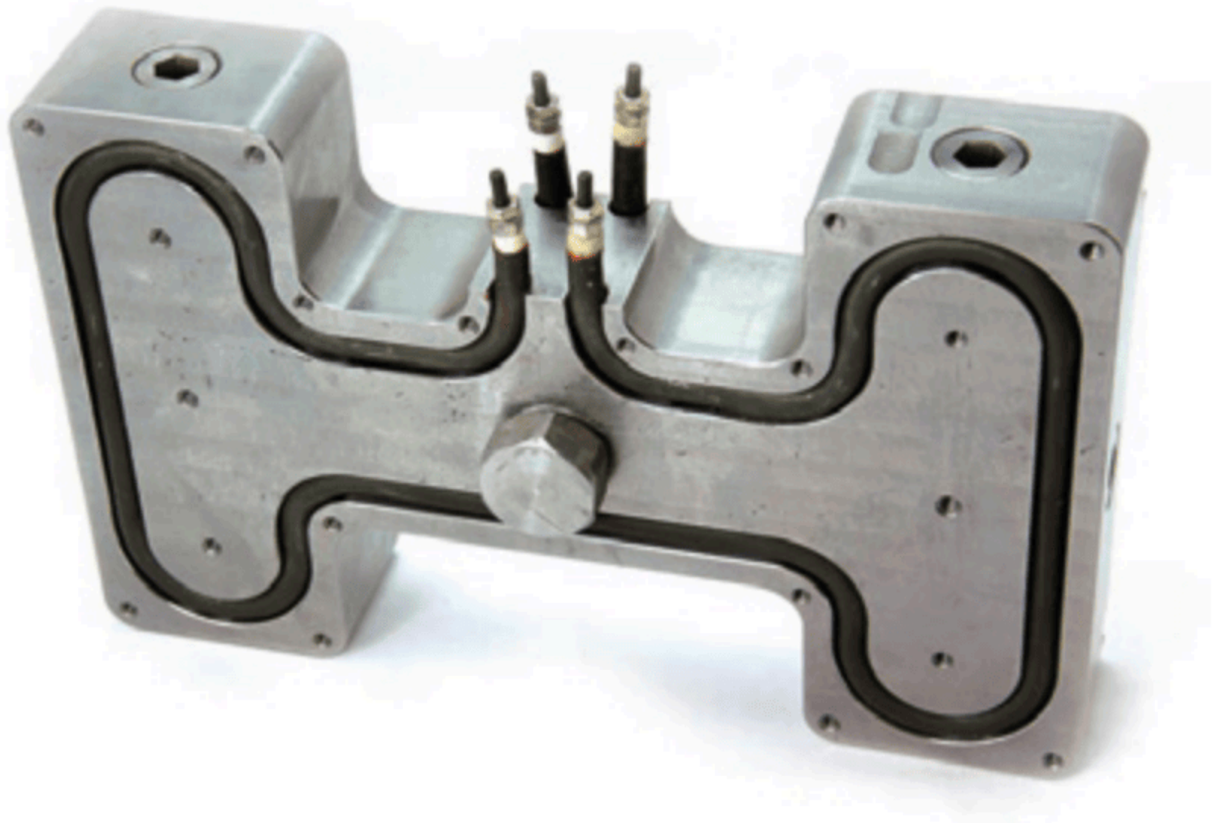


COLO ZONE 40mm EACH SIOE, CONNECTION RIGIO WIRE 1.6DOX2DL

OIAMETER	LENGTH	POWER 6 w/cm2	230 V 10 w/cm2
5 Ø ± 0.10	300	205	345
	350	255	425
	400	300	500
	450	350	581
	500	395	660
	550	445	740
	600	490	815
	650	535	895
	700	585	975
	750	635	1.055
	800	675	1.130
	850	725	1.20
	900	775	1.285
	950	820	1.365
	1.000	865	1.445
	1.050	915	1.525
	1.100	960	1.600
	1.150	1.010	1.680
	1.200	1.055	1.760
	1.250	1.105	1.835
	1.300	1.150	1.915
	1.350	1.195	1.995
	1.400	1.245	2.075
	1.450	1.290	2.150
	1.500	1.335	2.230

COLO ZONE 40mm EACH SIOE, CONNECTION RIGIO WIRE 2.5DOX15L

OIAMETER	LENGTH	POWER 220V 7 w/cm2
6,40 Ø ± 0.10	300	335
	350	405
	400	480
	450	560
	500	635
	550	710
	600	725
	650	860
	700	935
	750	1.010
	800	1.085
	850	1.160
	900	1.235
	950	1.310
	1.000	1.385
	1.050	1.460
	1.100	1.535
	1.150	1.615
	1.200	1.670
	1.250	1.765
	1.300	1.840
	1.350	1.915
	1.400	1.990
	1.450	2.065
	1.500	2.140

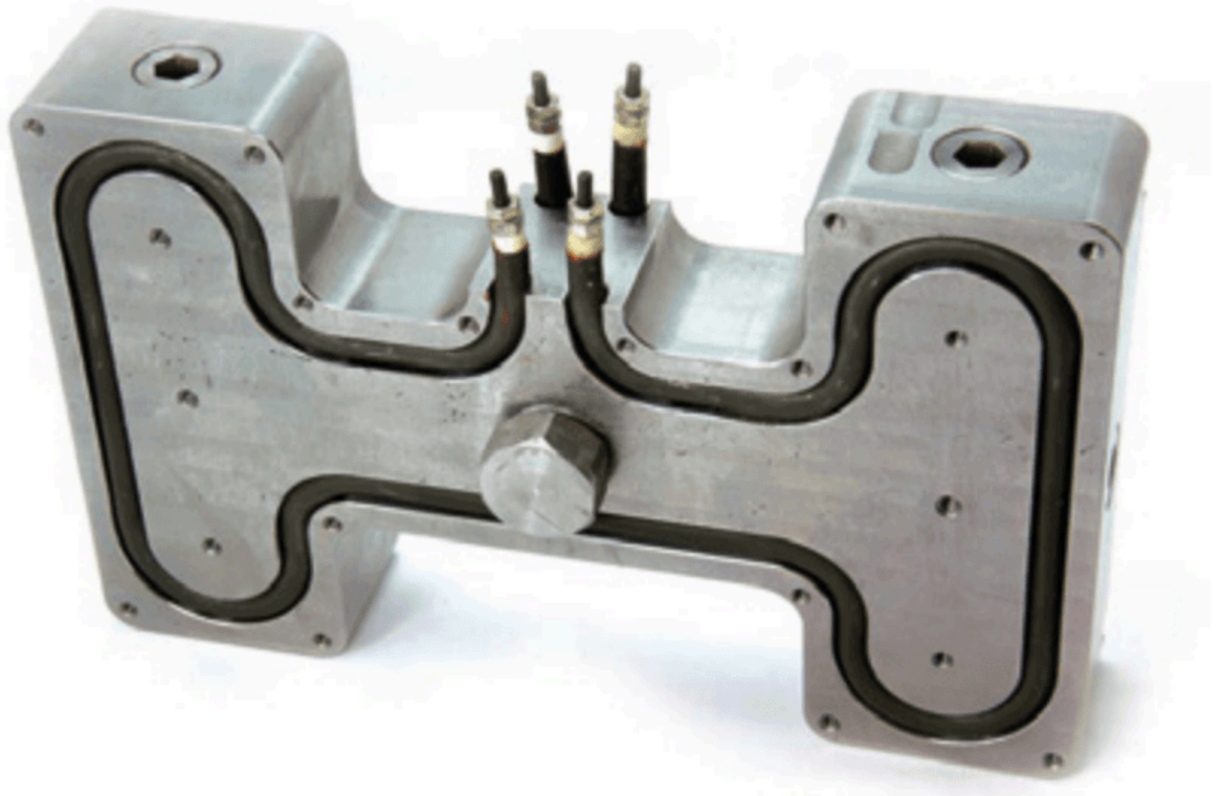


COLO ZONE 40mm EACH SIOE, CONNECTION THREAOEO STUO M3X15L

OIAMETER	LENGTH	POWER 6 w/cm2	230 V 10 w/cm2
8 Ø ± 0.10	300	335	555
	350	405	680
	400	480	805
	450	560	930
	500	635	1.055
	550	710	1.180
	600	785	1.305
	650	860	1.430
	700	935	1.555
	750	1.010	1.685
	800	1.085	1.810
	850	1.160	1.935
	900	1.235	2.060
	950	1.310	2.185
	1.000	1.385	2.310
	1.050	1.460	2.435
	1.100	1.535	2.565
	1.150	1.615	2.690
	1.200	1.690	2.815
	1.250	1.765	2.940
	1.300	1.840	3.065
	1.350	1.915	3.190
	1.400	1.990	3.315
	1.450	2.065	3.440
	1.500	2.140	3.565
	2.000	2.000	
	2.500	2.500	

COLO ZONE 40mm EACH SIOE, CONNECTION THREAOEO STUO M3X15L

OIAMETER	LENGTH	POWER 6 w/cm2	230 V 10 w/cm2
8,50 Ø ± 0.10	300	385	640
	350	465	775
	400	545	910
	450	625	1.040
	500	705	1.175
	550	785	1.310
	600	865	1.445
	650	945	1.575
	700	1.025	1.710
	750	1.105	1.845
	800	1.185	1.975
	850	1.265	2.110
	900	1.345	2.245
	950	1.425	2.375
	1.000	1.505	2.510
	1.050	1.585	2.645
	1.100	1.665	2.775
	1.150	1.745	2.910
	1.200	1.825	3.045
	1.250	1.905	3.180
	1.300	1.985	3.310
	1.350	2.065	3.445
	1.400	2.145	3.580
	1.450	2.225	3.710
	1.500	2.310	3.845



COLO ZONE 40mm EACH SIDE, CONNECTION RIGID WIRE 2.5X15L

SECTION	LENGTH	POWER 6 w/cm2	230 V 10 w/cm2	230 V 10 w/cm2
6 x 6 ⊠ ± 0.10	300	345		580
	350	420	550	700
	400	490	650	820
	450	565	750	940
	500	635	800	1060
	550	705	900	1180
	600	780	1000	1300
	650	850	1100	1420
	700	925	1200	1540
	750	995	1300	1660
	800	1065	1350	1780
	850	1140	1450	1900
	900	1210	1650	2020
	950	1285	1650	2140
	1.000	1355	1750	2260
	1.050	1425	1850	2380
	1.100	1500	1950	2500
	1.150	1570	2050	2620
	1.200	1645	2100	2740
	1.250	1715	2200	2860
	1.300	1785	2300	2980
	1.350	1860	2400	3100
	1.400	1930	2500	3220
	1.450	2005	2600	3340
	1.500	2075	2700	3460

Coil Heaters Flexible Connection on each end (RFC CL) FLEX



General Specifications

- Stainless steel tube (ANNEALED).
- Connections on each side
- Possibility to manufacture special measures

Quality control

- Insulation: 5 MOhm at 500 V DC Cold (minimum).
- Dielectric strength:
  6x6 – 6.50Ø – 1000V
  8x8 – 8Ø – 8.50Ø – 1250V
- Nominal Power: + 10% – 10%

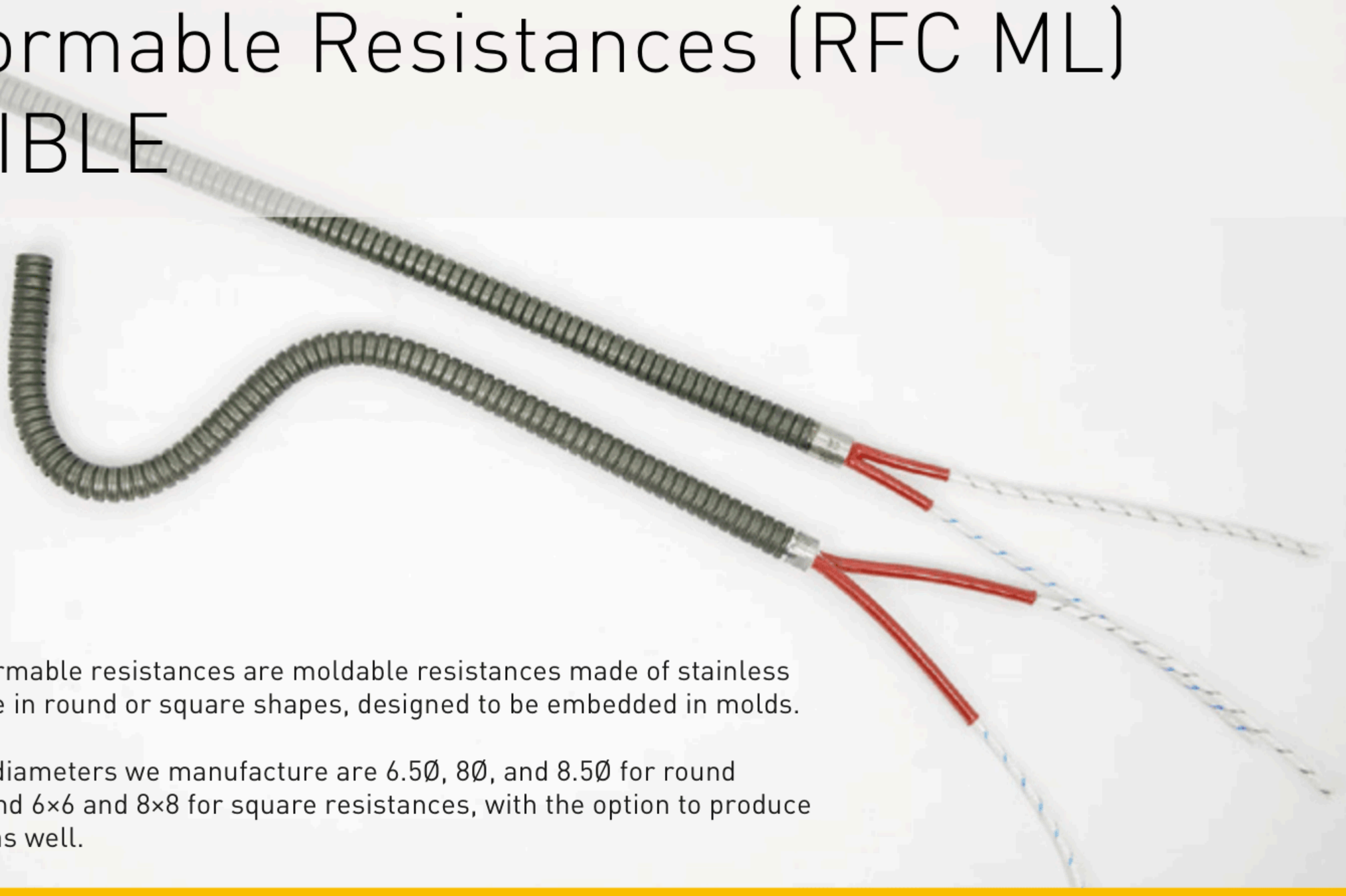
Production Program

6,50 Ø - 8 Ø - 8,50 Ø
6x6 – 8x8

COLO ZONE 40mm EACH SIDE

DIAMETER	LENGTH ± 1,5%	POWER 230 V	DIAMETER	LENGTH ± 1,5%	POWER 230 V	DIAMETER	LENGTH ± 1,5%	POWER 230 V
	300	315		300	615		300	615
	350	385		350	755		350	755
	400	455		400	895		400	895
	450	530		450	1.035		450	1.035
	500	600		500	695 1.175		500	695 1.175
	550	670		550	775 1.315		550	775 1.315
	600	745		600	860 1.455		600	860 1.455
	650	815		650	940 1.595		650	940 1.595
	700	885		700	1.025 1.735		700	1.025 1.735
6 Ø ± 0.10	750	995	8 Ø ± 0.10	750	1.105 1.875		750	1.105 1.875
	800	1.030		800	1.190 2.015		800	1.190 2.015
SECTION 6x6 ± 0.10	850	1.100	SECTION 8x8 ± 0.10	850	1.270 2.155	8,5 Ø ± 0.10	850	1.270 2.155
	900	1.170		900	1.350 2.295		900	1.350 2.295
	950	1.245		950	1.435 2.435		950	1.435 2.435
	1.000	1.315		1.000	1.520 2.570		1.000	1.520 2.570
	1.050	1.385		1.050	1.600 2.710		1.050	1.600 2.710
	1.100	1.455		1.100	1.680 2.850		1.100	1.680 2.850
	1.150	1.530		1.150	1.765 2.990		1.150	1.765 2.990
	1.200	1.600		1.200	1.845 3.130		1.200	1.845 3.130
	1.250	1.670		1.250	1.930 3.270		1.250	1.930 3.270
	1.300	1.745		1.300	2.010 3.400		1.300	2.010 3.400
	1.350	1.815		1.350	2.095 3.550		1.350	2.095 3.550
	1.400	1.885		1.400	2.175 3.690		1.400	2.175 3.690
	1.450	1.955		1.450	2.260 3.830		1.450	2.260 3.830
	1.500	2.030		1.500	2.340 3.970		1.500	2.340 3.970

Conformable Resistances (RFC ML) FLEXIBLE



Flexible conformable resistances are moldable resistances made of stainless steel, available in round or square shapes, designed to be embedded in molds.

The standard diameters we manufacture are 6.5Ø, 8Ø, and 8.5Ø for round resistances, and 6×6 and 8×8 for square resistances, with the option to produce custom sizes as well.

General Specifications

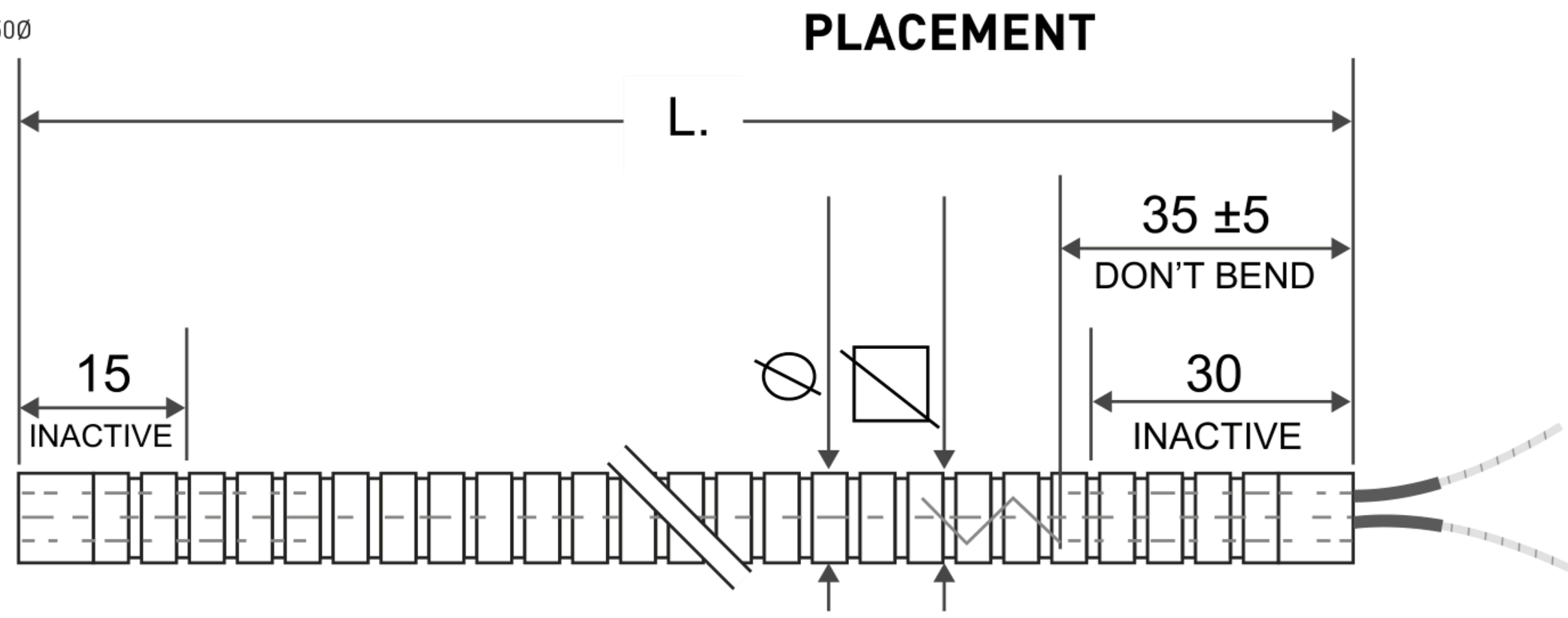
- Connections on one side: 1000mm (STANDARD)
- Corrugated stainless steel tube (ANNEALED)
- Option to manufacture TCJ – TCK
- Minimum length: 200mm
- Maximum length: 3000mm
- Maximum intensity:
  - 6.5Ø – 6×6: 5.45 Amperes
  - 8Ø – 8.50Ø – 8×8: 9.10 Amperes
- Length tolerance: ± 1.5%

Quality Control

- Insulation: 5 Megaohms at 500 V DC when cold (minimum).
- Dielectric Strength:
  - 6.50Ø – 6×6: 1000V
  - 8Ø – 8.50Ø – 8×8: 1250V
- Nominal Power Tolerance: ± 10%

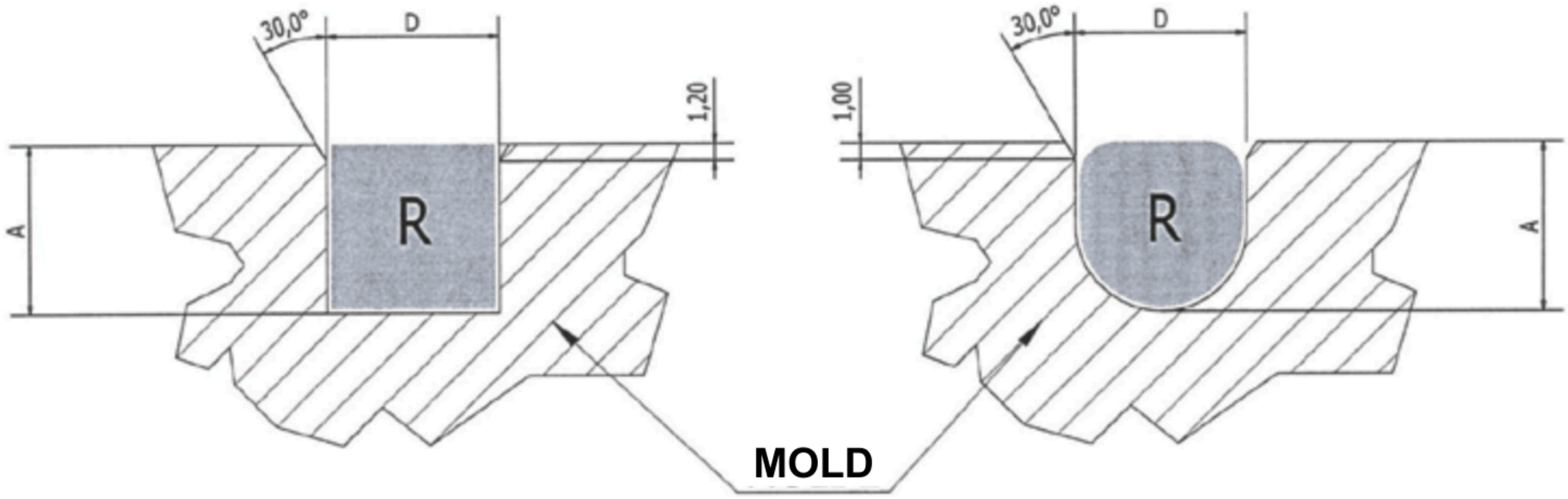
Production Program

- 6.50Ø – 8Ø – 8.50Ø
- 6×6 [/]- 8×8 [/]



RECOMMENDED SLOT GEOMETRY			
TYPE ☐	A	D	MIN. BENDING RADIUS (MM)
☐ 6X6 ±0.10	6.10 +0.10	7.10 +0.10	6.5
☐ 8X8 ±0.10	8.10 +0.10	9.10 +0.10	10

RECOMMENDED SLOT GEOMETRY			
TYPE Ø	A	D	MIN. BENDING RADIUS (MM)
Ø 6.50 ±0.10	6.00 +0.10	6.50 +0.10	6.5
Ø 8.00 ±0.10	7.70 +0.10	8.00 +0.10	10
Ø 8.50 ±0.10	8.20 +0.10	8.50 +0.10	10



FLEXIBLE RESISTANCES 6.5Ø

TECHNICAL DATA



Diameter	6.5Ø
Diameter Tolerance	± 0.1%
Minimum Length	200mm
Maximum Length	3000mm
Length Tolerance	± 1.5%
Maximum Load	10W/cm2
Power Tolerance	± 10%
Dielectric Strength	1000V
Cold Insulation	5MΩ at 500V
Inactive Zone	30mm (cable area)
Non-conformable Zone (do not bend)	35mm (cable area)
Connections	cable

FLEXIBLE RESISTANCES 8Ø and 8.5Ø

TECHNICAL DATA



Diameter	8Ø or 8.5Ø
Diameter Tolerance	± 0.1%
Minimum Length	200mm
Maximum Length	3000mm
Length Tolerance	± 1.5%
Maximum Load	15W/cm2
Power Tolerance	± 10%
Dielectric Strength	1250V
Cold Insulation	5MΩ at 500V
Inactive Zone	30mm (cable area)
Non-conformable Zone (do not bend)	35mm (cable area)
Connections	cables

30 mm INACTIVE ZONE - CABLE AREA 1000 mmt

DIAMETER	LENGTH ± 1,5%	POWER 230 V	DIAMETER	LENGTH ± 1,5%	POWER 230 V	DIAMETER	LENGTH ± 1,5%	POWER 230 V
	200	150		200	180		200	180
	250	210		250	255		250	255
	300	270		300	330		300	615
	350	330		350	405		350	755
	400	390		400	480		400	895
	450	450		450	555		450	1.035
	500	515		500	630		500	1.175
	550	575		550	705		550	1.315
	600	635		600	780		600	1.455
	650	695		650	860		650	1.595
	700	760		700	935		700	1.735
	750	820		750	1.010		750	1.875
6.5 Ø ± 0.10	800	880	8 Ø ± 0.10	800	1.085	8,5 Ø ± 0.10	800	2.015
	850	940		850	1.160		850	2.155
	900	1.000		900	1.235		900	2.295
	950	1.065		950	1.310		950	2.435
	1.000	1.130		1.000	1.385		1.000	2.570
	1.050	1.185		1.050	1.460		1.050	2.710
	1.100	1.250		1.100	1.535		1.100	2.850
	1.150	1.250		1.150	1.610		1.150	2.990
	1.200	1.250		1.200	1.685		1.200	3.130
	1.250	1.250		1.250	1.765		1.250	3.270
	1.300	1.250		1.300	1.840		1.300	3.400
	1.350	1.250		1.350	1.915		1.350	3.550
	1.400	1.250		1.400	1.990		1.400	3.690
	1.450	1.250		1.450	2.065		1.450	3.830
	1.500	1.250		1.500	2.095		1.500	3.970



For Special Fabrications:

Diameter 6.5Ø mm / Section 6×6 mm:

- Maximum Amperage: 5.45
- Maximum Length: 4.000mm

Diameter 8 – 8.5Ø mm / Section 8×8 mm:

- Maximum Amperage: 9.10
- Maximum Length: 4.000mm

SECTION	LENGTH ± 1,5%	POWER 230 V	SECTION	LENGTH ± 1,5%	POWER 230 V
6X6 ± 0.10	200	150	8X8 ± 0.10	200	180
	250	210		250	255
	300	270		300	330
	350	330		350	405
	400	390		400	480
	450	450		450	555
	500	515		500	630
	550	575		550	705
	600	635		600	780
	650	695		650	860
	700	760		700	935
	750	820		750	1.010
	800	880		800	1.085
	850	940		850	1.160
	900	1.000		900	1.235
	950	1.065		950	1.310
	1.000	1.130		1.000	1.385
	1.050	1.185		1.050	1.460
	1.100	1.250		1.100	1.535
	1.150	1.250		1.150	1.610
	1.200	1.250		1.200	1.685
	1.250	1.250		1.250	1.765
	1.300	1.250		1.300	1.840
	1.350	1.250		1.350	1.915
	1.400	1.250		1.400	1.990
	1.450	1.250		1.450	2.065
	1.500	1.250		1.500	2.095

Encapsulated Coil Heaters (CHB/CHI)



CHB ENCAPSULATED IN BRONZE

- Injection Nozzles.
- Hot Runner Systems.
- The advantages of these elements is the corrosion protection and uniformity of heat to allow a better fit to the nozzle.
- For manufacturing, are used the type RCO Heaters with a stainless steel outer casing and inner encapsulated in bronze.
- Connections standard 1000 mm with protective fiberglass-silicone sleeve.
- They are made with or without Fe-Cu Ni (J), thermocouple depending on the section of the element

Encapsulated Coil Heaters (CHB/CHI)



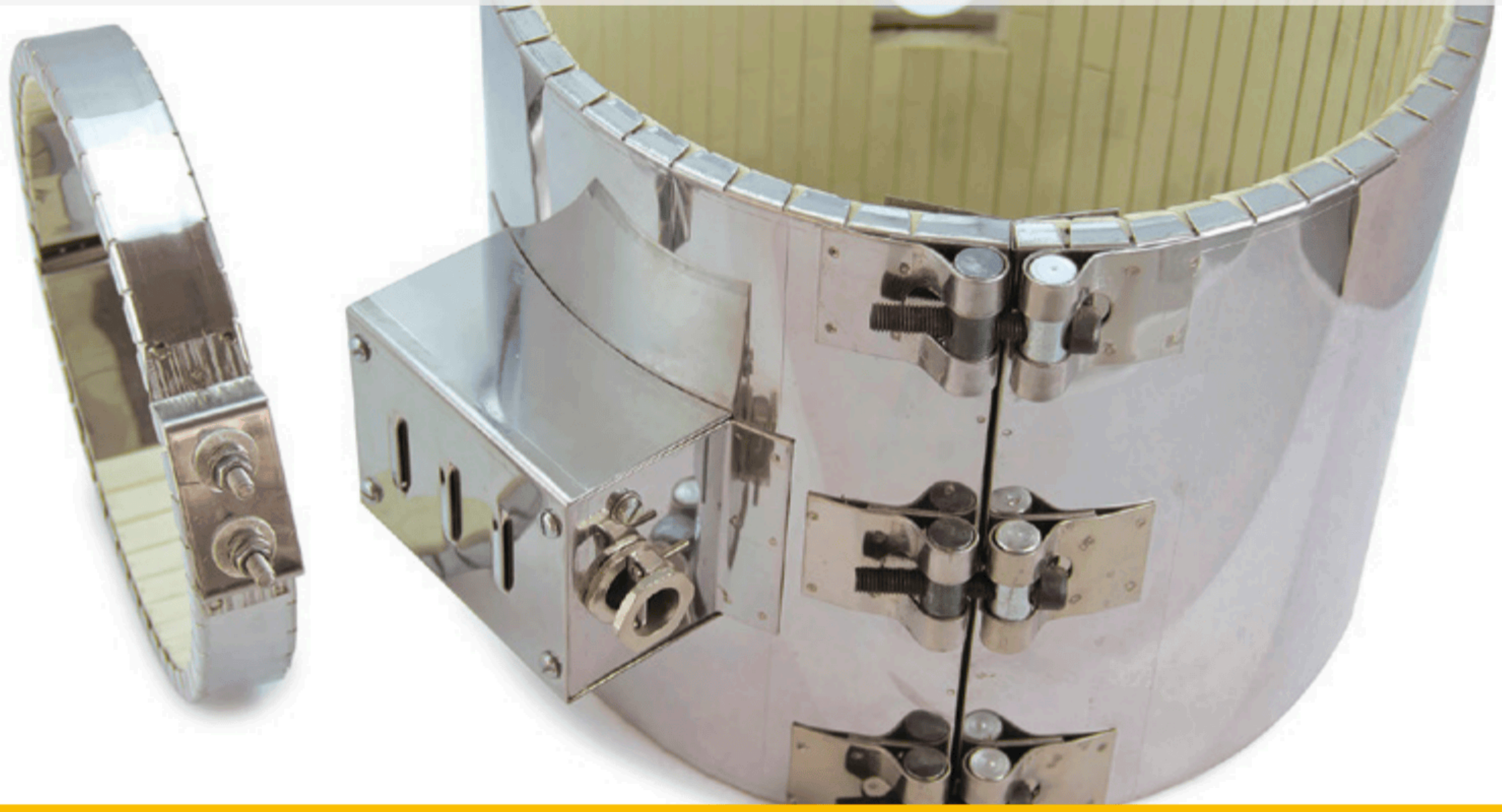
ELECTRIFICATION OF NOZZLES CHI [DIE CASTING]

- High temperature cables protected by flexible metal tube having a length of 1,750 mm.
- Threaded point to place thermocouple if necessary.
- Fully sealed up in stainless steel.
- Working temperature up to 450°C.



There does exist the possibility to electrify directly the nozzle [always customer supplied].

Ceramic Heating Collar (RAB)



General Specifications

- Sheet: AISl-430.
- Heating Wire: NiCr
- Ceramics: Steatite.
- They can carry loads of up to 1 OW/cm2. Are u sed in places where a higher temperature is required and with the mica heaters can not be achieved.

Quality control

- Insulation: 5 MOhm at 500 V DC Cold (minimum).
- Dielectric strength: 1500 V 1 second.
- Nominal Power: + 5% – 10%

Nozzle Heater (ABB)



These elements are the ones that are used for heating the injection nozzle of plastic.
Some measures can be manufactured with thermocouple Fe-Cu Ni (J) Incorporated.

General Specifications

- Jacket made of brass or stainless steel.
- Core and insulation of mica.
- Heating conductor NCr80/20.
- Pigtails with wire mesh tube.

Quality control

- Insulation: 5 MOhm at 500 V DC Cold (minimum).
- Dielectric strength: 1500 V 1 second.
- Nominal Power: + 5% – 10%



BRASS

- 500m braided leads + Earth Wire.
- Axial 45°.

INNER	20	25	30	35	40	45	50	60
DIAMETER	WATIOS							
25	80	100	120	135	155	150	195	
30	95	125	140	125	150		235	
32			150					
35	110	130	165	190	175		275	
40	100	155	190	220	250			
45			210		280			
50		150	200	275	300		390	
55			200				430	
60								565
65			220					525
75			250					
80					500	500		

240 V.



STAINLESS STEEL

- 500m braided leads + Earth Wire.
- Axial 45°.

INNER	20	25	30	35	40
DIAMETER	WATIOS				
25					
30			140	160	
32					
35				190	
40			190	220	250
45					
50					
55					
60					
65					
75					
80					

240 V.

Heating Collar (RAB)



This type of heating is used mainly in the plastics industry (injection) for heating the spindles.

These collars, as well as the flat heating plates must fully rest fixed on the spindle, so that the heat dissipation is as perfect as possible.

The surface charge may not exceed 4 W/cm2. They are manufactured according to the specifications of each customer.

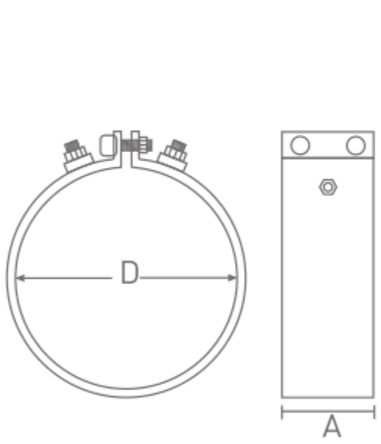
General Specifications

- Sheath material stainless steel AISI-430.
- Core and insulation of mica.
- Heating conductor from NCr80/20
- Holes for thermocouple possible

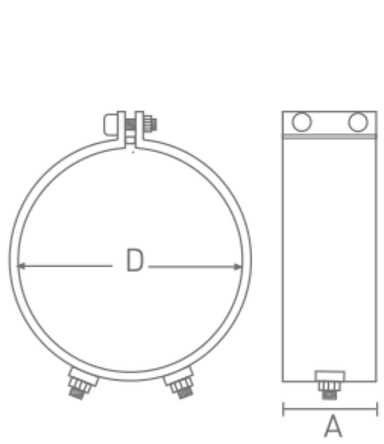
Quality control

- Insulation: 5 MOhm at 500 V DC Cold (minimum).
- Dielectric strength: 1500 V 1 second.
- Nominal Power: + 5% – 10%

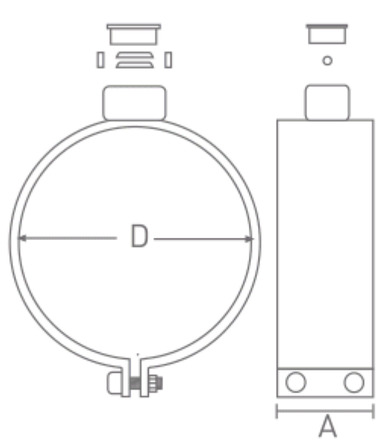
Connection options



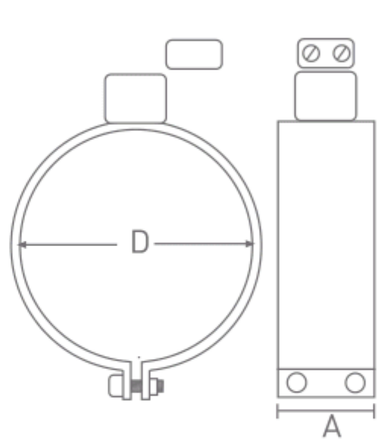
Threaded pins



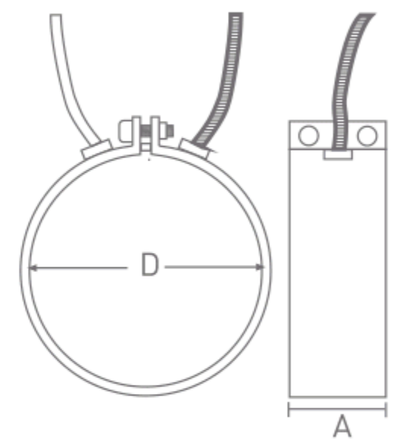
Threaded pins



Connector straight (C/R)



Angled connector (C/C) 90°



Cables

Flat Heater (RCH)



These hot plates are used for completely uniform heating because the heating wire (tape), is uniformly wound.

They are suitable for heating of workpieces that do not allow the use of cartridges due to their strength.

To ensure proper operation of the heating plates, they must fully rest on the workpiece to be heated.

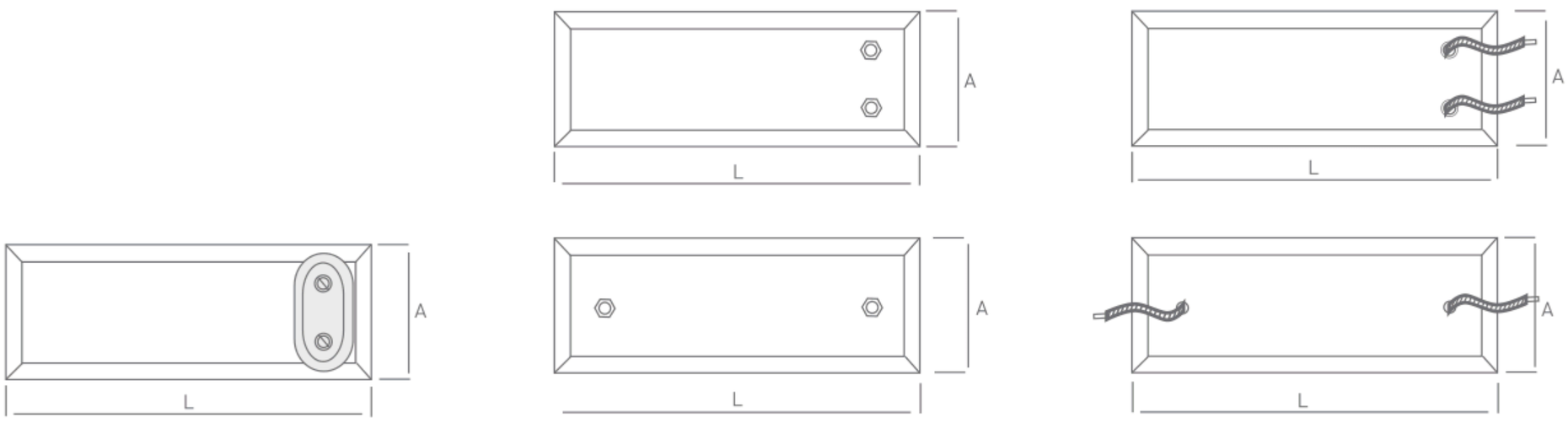
General Specifications

- Sheath material stainless steel AISI-430.
- Core and insulation of mica.
- Heating conductor from NCr80/20
- Holes for thermocouple possible
- Surface load must not exceed 4W/cm2.
- Are manufactured according to customer specifications

Quality control

- Insulation: 5 MOhm at 500 V DC Cold (minimum).
- Dielectric strength: 1500 V 1 second.
- Nominal Power: + 5% – 10%

Connection options



Flat Ceramic Heater



General Specifications

- Cover: stainless steel AISI-304
- Ceramic: Steatite
- Heating conductor: NiCr80/20
- Minimum height: 11mm
- There will always be made under customer's specifications

Flat Ceramic Heater



General Specifications

- Ceramic: Steatite
- Heating conductor: NiCr80/20
- There will always be made under customer's specifications

High Temperature Sleeves



SPECIAL PRODUCTION POSSIBLE

	TYPE	MAXIMUM OPERATING TEMPERATURE	INNER DIAMETER																
1	FIBER GLASS	400°	0.5	1	1.5	2	2.5	3	3.5	4	5	6	7	8	9	10	12	14	16
2	SILICONE	200°						3			5	6	7	8					
3	FIBER GLASS + SILICONE	220°	0.5	1	1.5	2	2.5	3	3.5	4	5	6	7	8	9	10	12	14	16



1

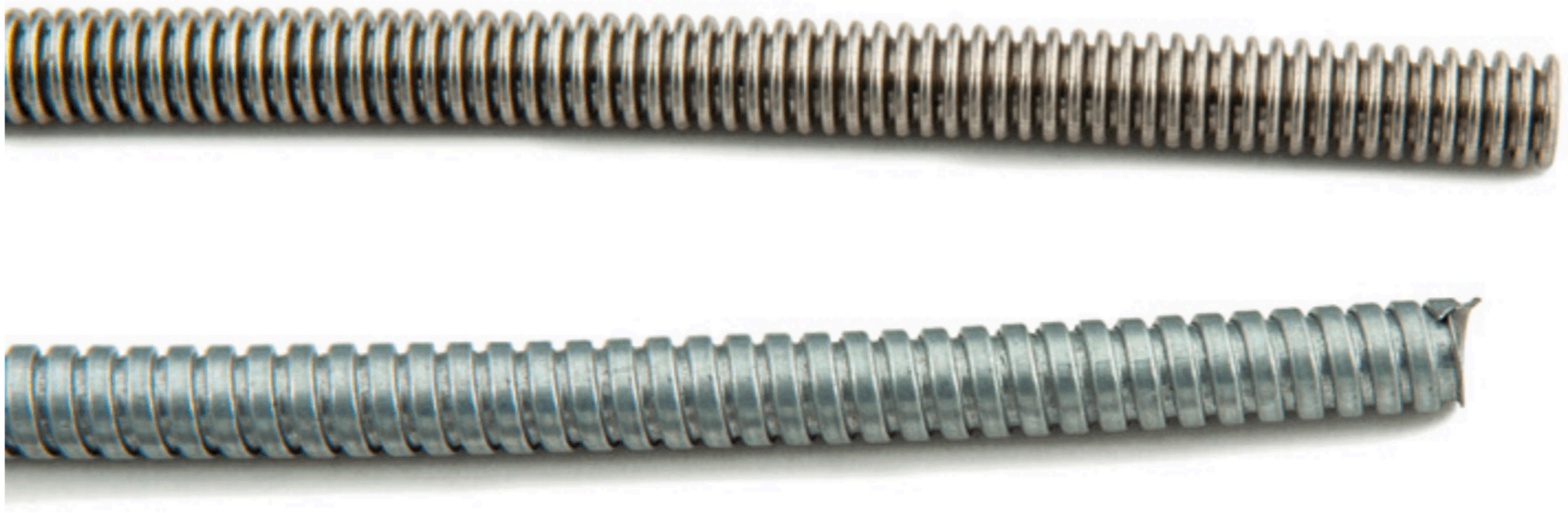


2



3

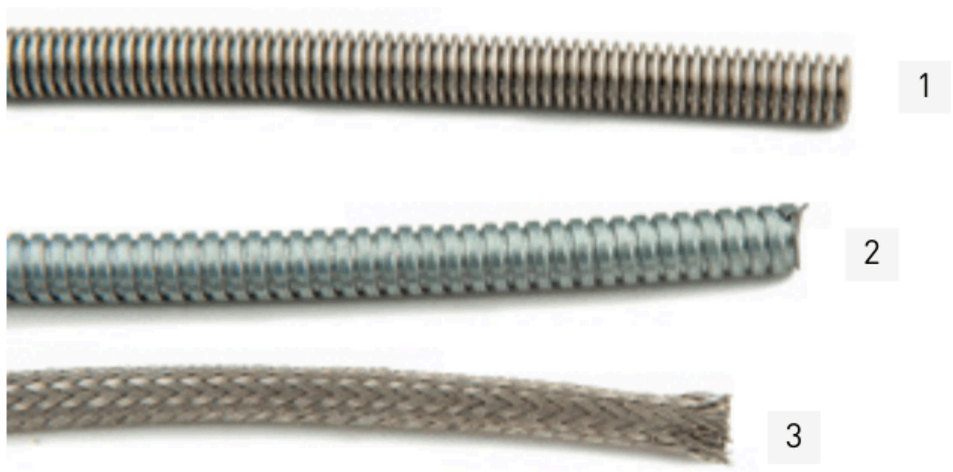
Metal Hoses





SPECIAL PRODUCTION POSSIBLE

	TYPE	MATERIAL	INNER DIAMETER
1	GAS-TIGHT CORRUGATED HOSE	INOX	7.1 9.7 10.5
2	METAL SLEEVING	GALVANIED STEEL	3 4 5 6 7 8 9 10 11
3	BRAIDED HOSE	INOX	4 6



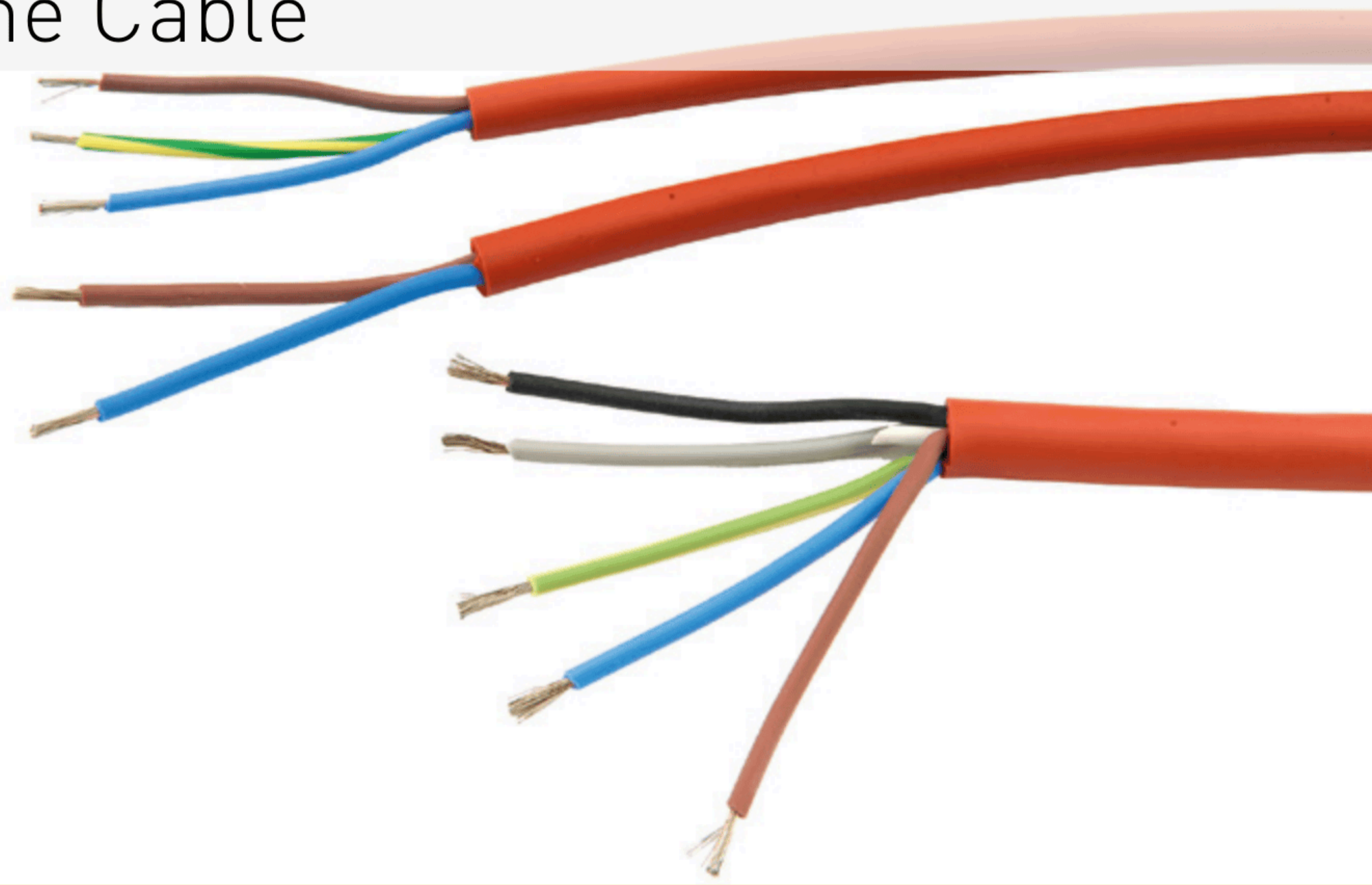
Leads



SPECIAL PRODUCTION POSSIBLE

CONDUCTOR	COVER	MAXIMUM OPERATING TEMPERATURE	SECTION MM²								
			0.5	0.75	1	1.5	2.5	4	6	10	16
PURE NICKEL	FIBER GLASS + SILICONE	350°	●	●	●	●	●	●	●	●	●
COPPER	FIBER GLASS + SILICONE	280°	●	●	●	●	●	●	●	●	●
COPPER	SILICONE	200°	●	●	●	●	●	●	●		

Silicone Cable



SPECIAL PRODUCTION POSSIBLE

CONDUCTOR	MAXIMUM OPERATING TEMPERATURE	SECTION MM²					
		2x0.5	2x0.75	2x1	2x1.5	2x2.5	2x4
COPPER	200º	●	●	●	●	●	●
COPPER	200º	3x0.5	3x0.75	3x1	3x1.5	3x2.5	3x4
		●	●	●	●	●	●

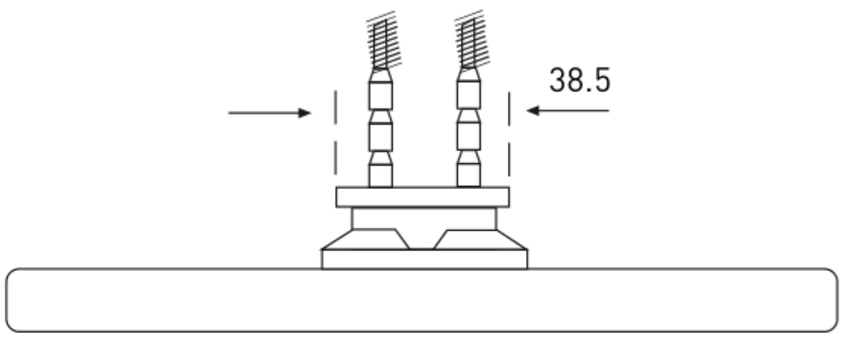
Curved Ceramic Emitters





60x245 230V

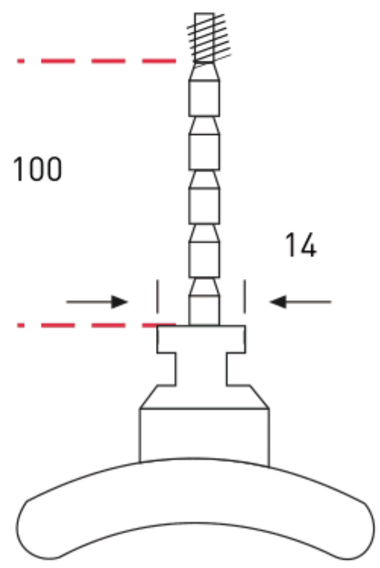
150W - 250W - 300W - 400W - 500W
650W - 750W - 800W - 1000W





60x122 230V

125W - 150W - 200W - 250W - 325W
400W - 500W





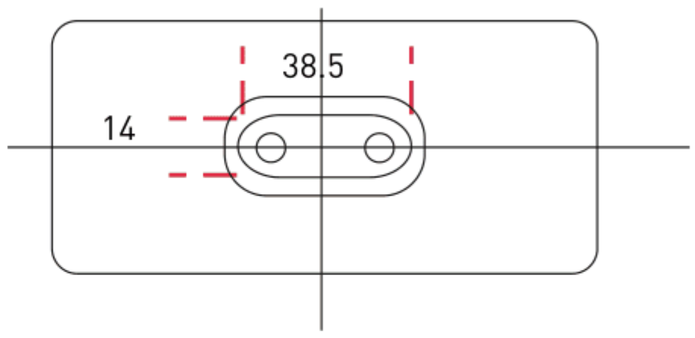
60x60 230V

125W - 250W



110x245 230V

1000W - 1200W - 1300W - 1400W - 1500W



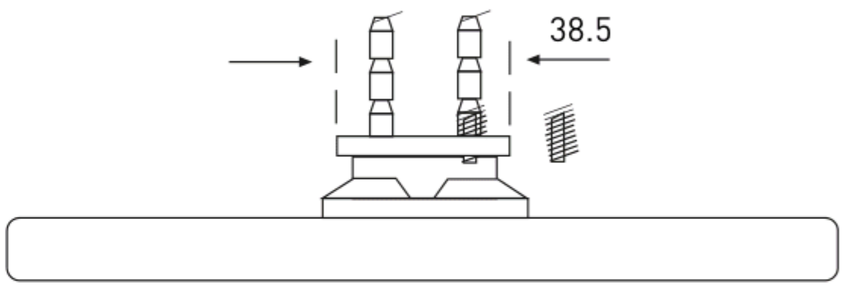
Flat Ceramic Emitters





60x245 230V

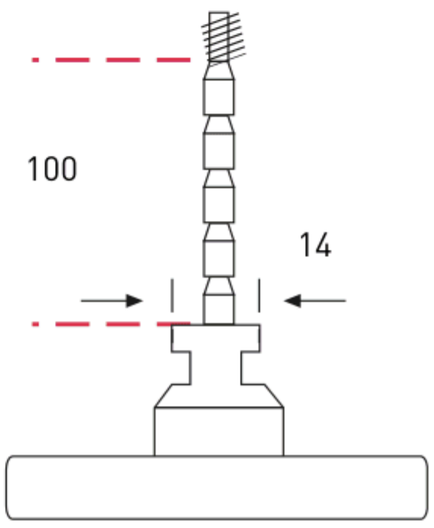
150W - 250W - 300W - 400W - 500W
650W - 750W - 800W - 1000W





60x122 230V

125W - 150W - 200W - 250W - 325W
400W - 500W





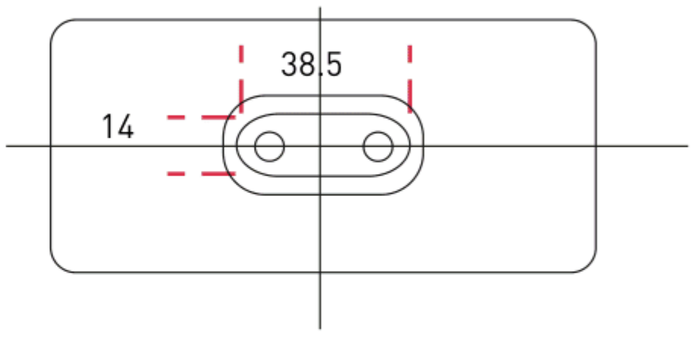
60x60 230V

125W - 250W



95x245 230V

650W - 750W - 1000W





122x122 230V

150W - 250W - 300W - 350W - 400W
500W - 650W - 750W

Quartz Radiator



22x62.5x245 230V

150W - 250W - 400W - 500W
650W - 750W - 1000W



22x62.5x62.5 230V

150W - 250W



22x62.5x124 230V

150W - 250W - 325W - 400W - 500W



22x124x124 230V

150W - 250W - 400W - 500W
650W - 750W - 1000W