

Tube resistances can be used for a wide variety of purposes. It is used for the purpose of heating water, oil, chemical and corrosive liquids, and for the heating of molds and different metals in industrial furnaces safely for many years.

Tube resistances are produced in various diameters. The standard diameter measures are 6.5 mm - 8.5 mm - 11.5 mm - 14.5 mm - 16.00 mm. Apart from these sizes, all sizes between diameter of 5mm to 20 mm can be produced easily as a tailor made production.

Our tube resistances can be used operatively up to 650 degrees operating temperature in line with current and the latest technological developments.

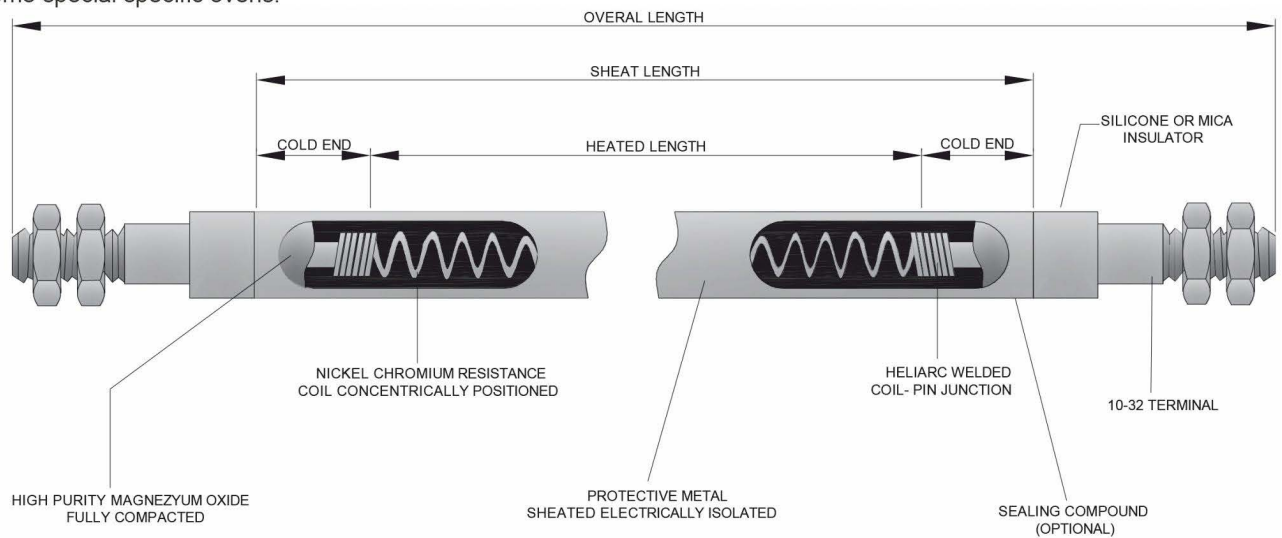
Stainless steel materials of various grades are used in the production of tube resistances. The main ones are; 304-321-316-310 S stainless steels. Apart from these, resistances can be produced using special alloy stainless pipes.

These materials are Alloy800 - Alloy825 and Alloy600.

Tube resistances can be produced in connection with the sleeve and flange, so that many resistances can be gathered together and higher powers can be generated in a limited area.

Tube type resistances can be produced as tailor-made according to demand in various ways. To give an example; flat Rod, U Type, M type are the most common forms of use for resistances.

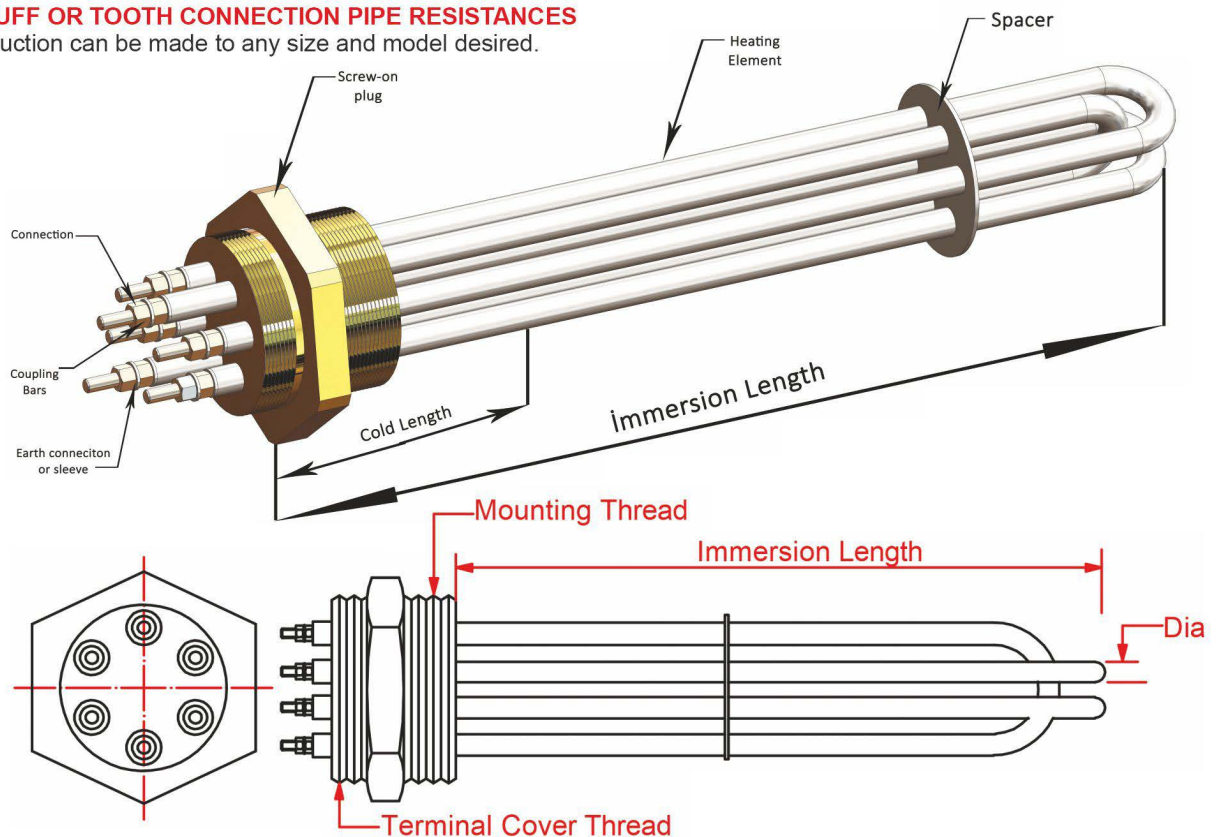
Our company can produce flat shaped tube resistances in addition to round tube type resistances. The most common uses of this flat type of tube resistances are shears heaters on railway tracks, oil heaters in industrial fryers and dry air heaters in some special specific ovens.



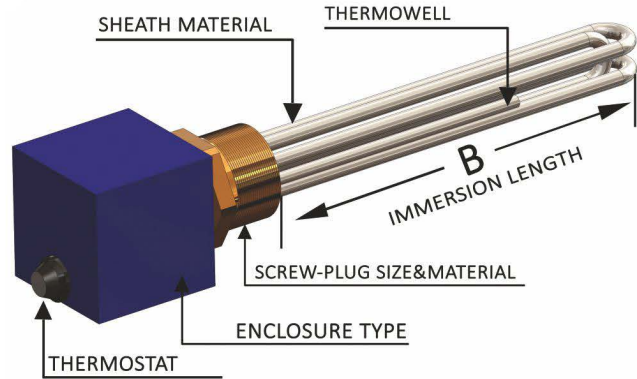
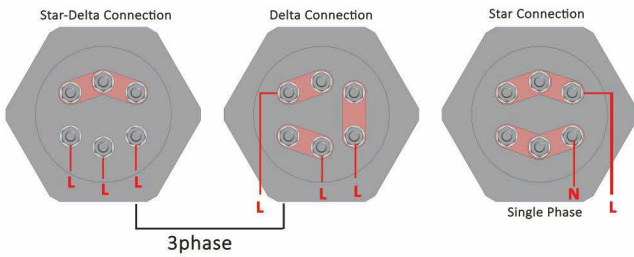
## PIPE RESISTANCE TYPES

### 1- CUFF OR TOOTH CONNECTION PIPE RESISTANCES

Production can be made to any size and model desired.

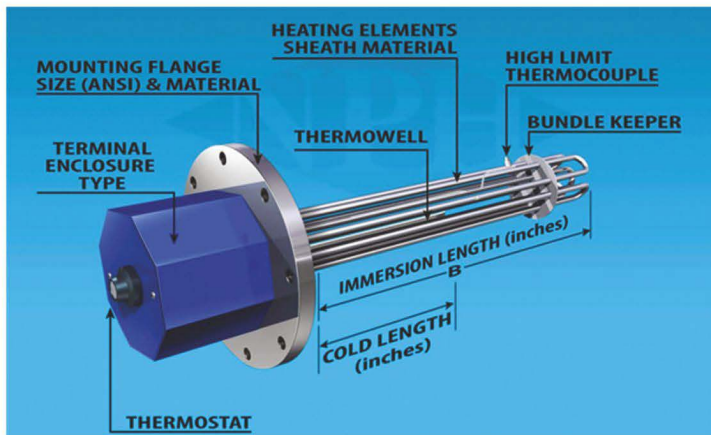


## 1- CUFF OR TOOTH CONNECTION TUBE RESISTANCES



## 2- FLANGE CONNECTED TUBE RESISTANCES

Production can be made to any size and model desired.



### Input Data

- Application
- Type of fluid
- Pressure
- Inlet and outlet temperature
- Flow rate (mass or volume)
- Ambiant area
- Voltage (V)
- ATEX/IECEX or not temperature class
- Max. immersed length
- Directives, standards construction codes
- Flow direction

### BAYKAL Thermal desing and after Design procedure to optimize your product

- Power
- Choice of techonology and product type
- Watt density (W/cm<sup>2</sup>)
- Number of heatin elements
- Material / Tube diameter
- Type and number of baffles/ bundle spider
- Type of flange
- Type of assembly (welding or brazing )
- Heating length (HL)
- Cold length (CL)
- Stand-off length (SOL)
- Cooling discs and heat shields
- Temperature control and safety, type of sensor
- Connecting box / Cable gland construction codes
- Qotation: roice and delivery time

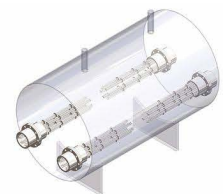
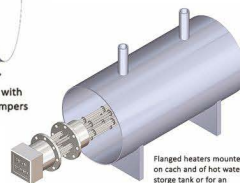
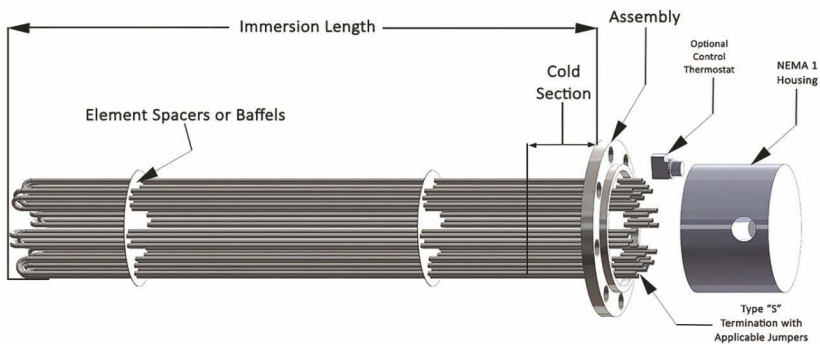
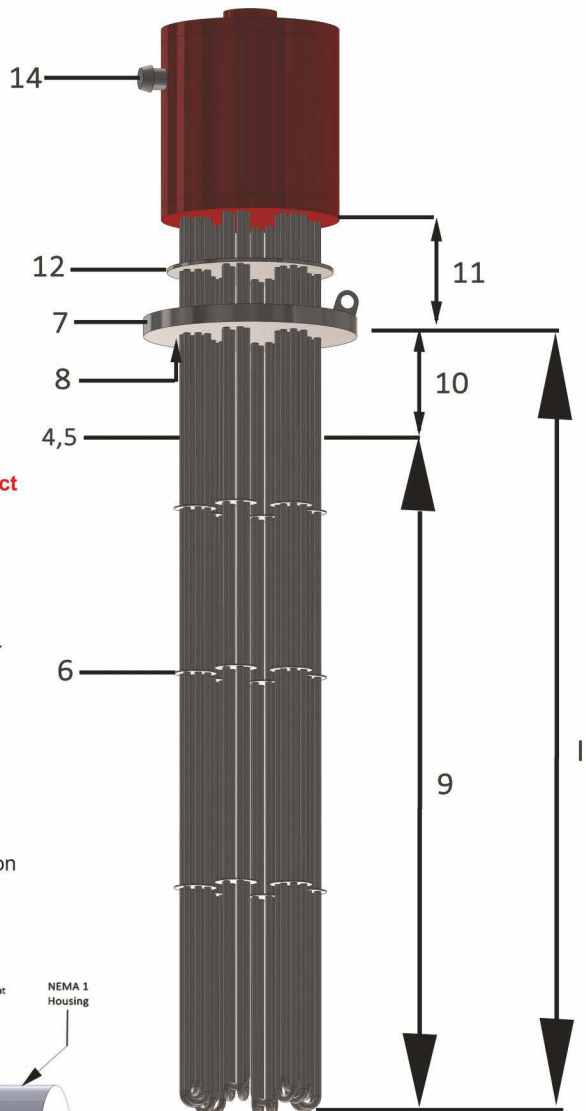
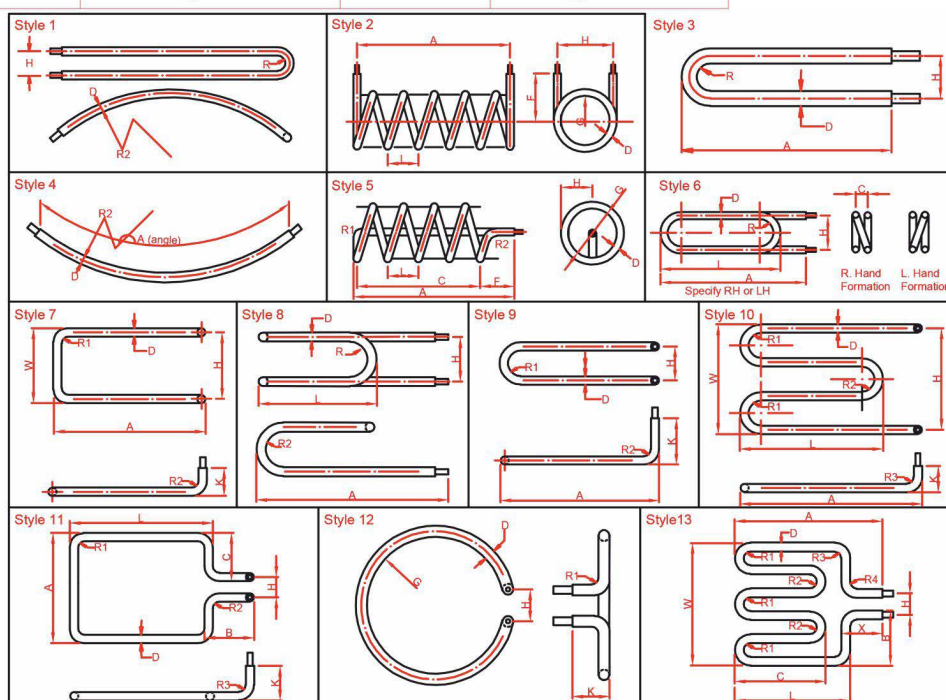
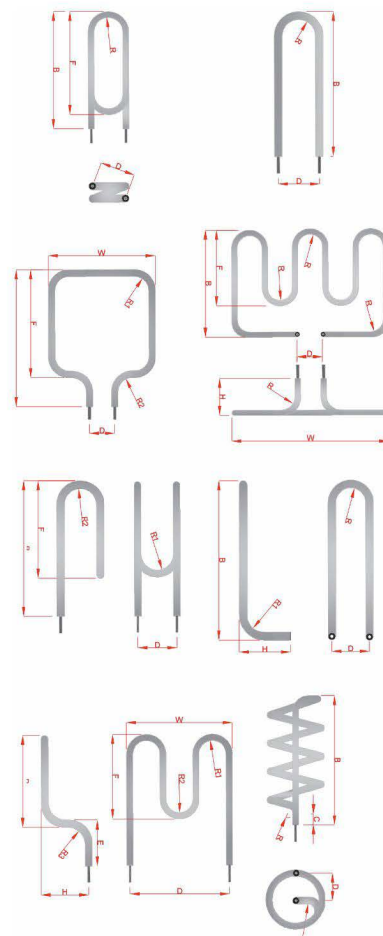
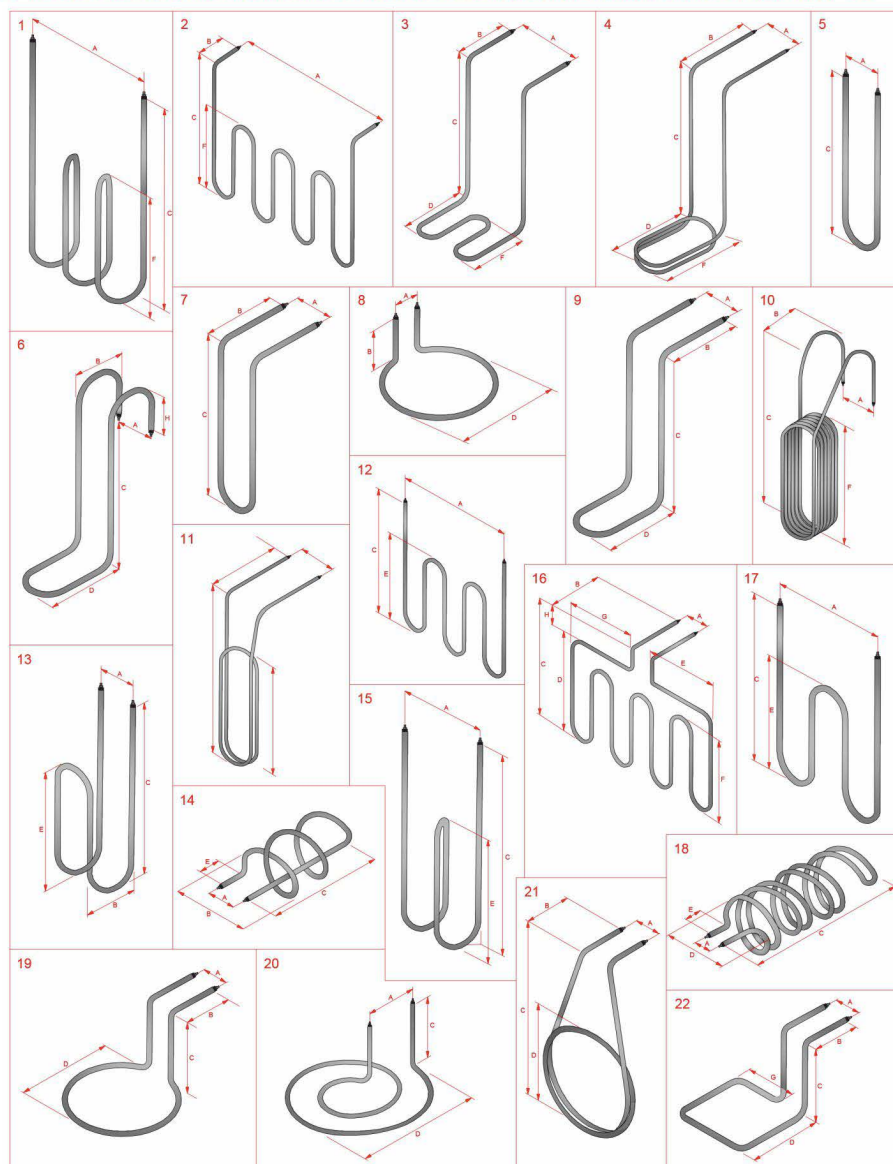


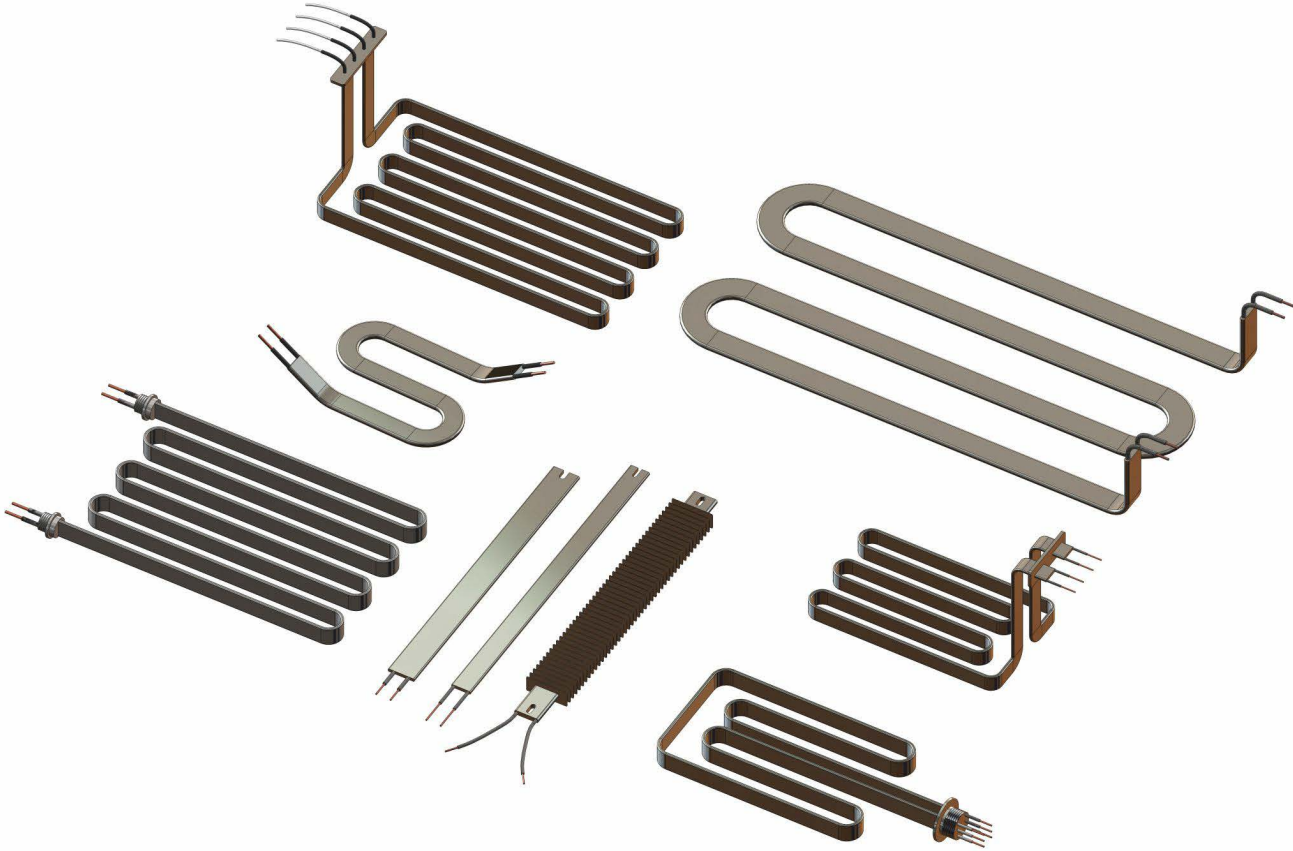
fig. Flange Immersion Heaters



## 3-TUBE RESISTANCES FOR SPECIAL USE IN DIFFERENT WAYS AND TYPES

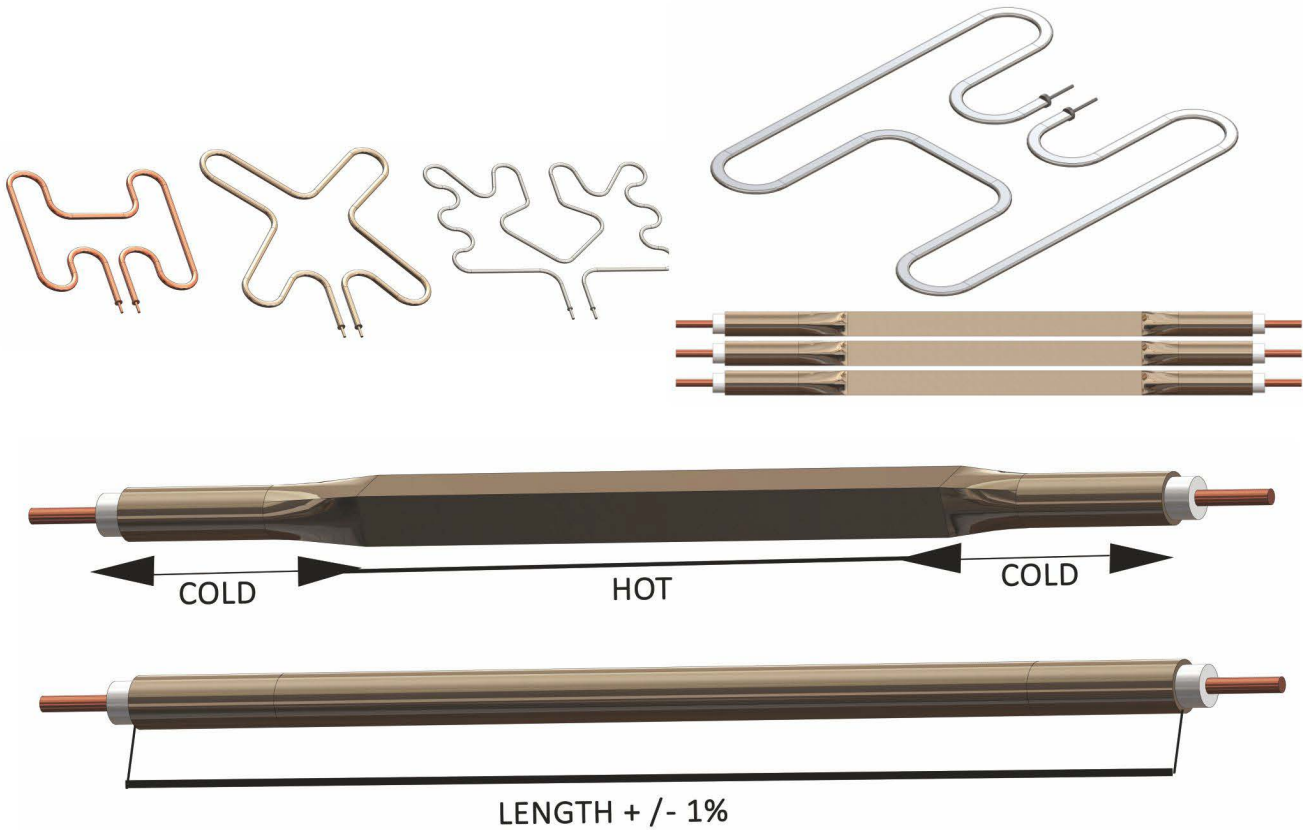


#### 4-FLAT TYPE TUBE RESISTANCES



#### 5-MANIFOLD RESISTANCES / SQUARE TYPE TUBE RESISTANCES

6\*6mm - 8\*8mm - 10 \* 10mm sizes can be produced in different voltages and powers of any size and extent desired.

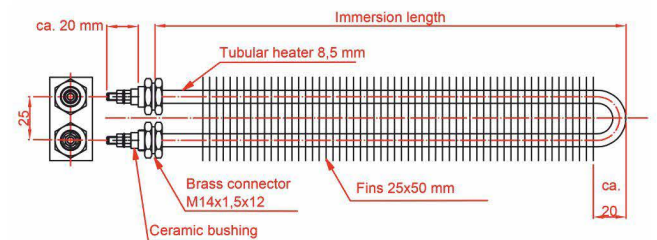
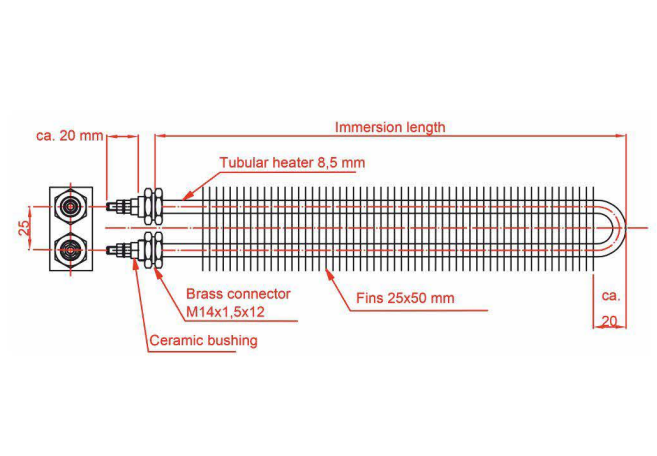
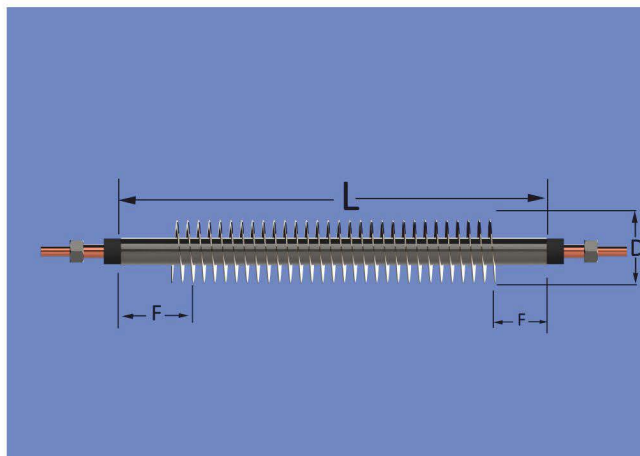
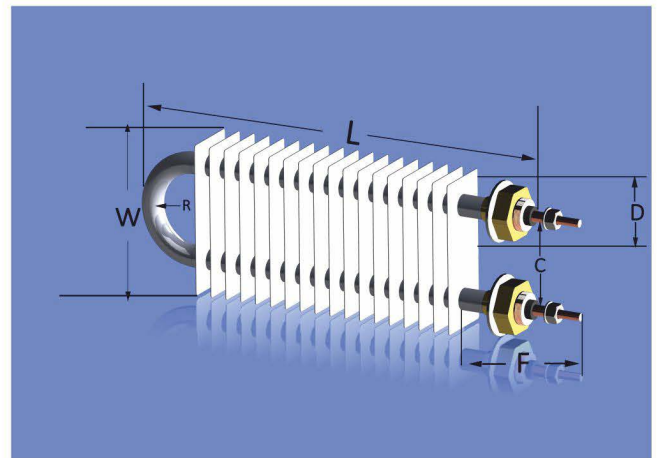
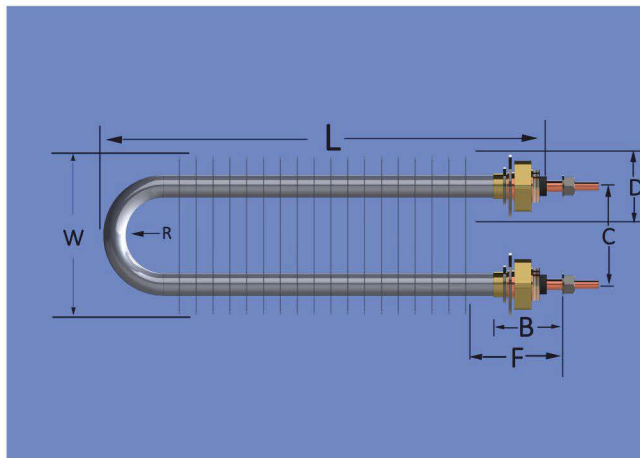
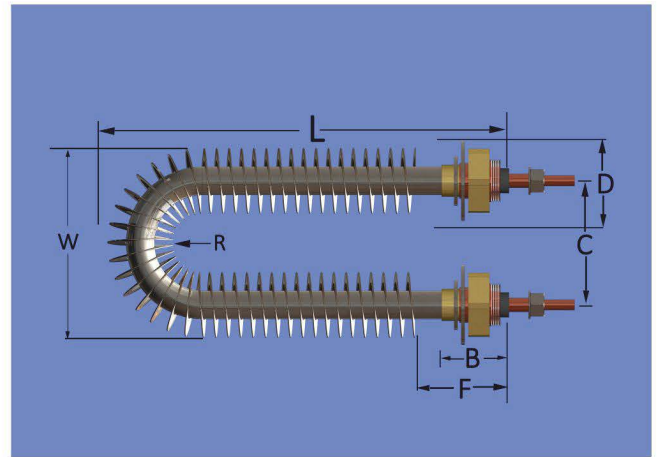
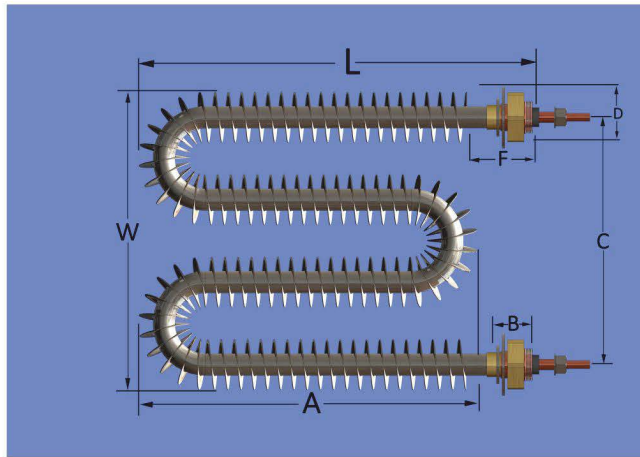




Serpentine resistances can be manufactured in different pipe and serpentine diameters according to the requirements in different power and forms. Pipe diameters can vary between 6.5 - 20 mm according to requirement and serpentine diameters can vary between 20 mm and 50 mm in direct proportion. Serpentine type resistances can be produced with supply voltages between 24 V - 500 V DC. The pipe material and serpentine material used in the production of these types of resistances are specially determined according to purpose of use of resistance. Accordingly, production can be made using 310 S and alloy800 - alloy600 type special stainless pipes and serpentine in high temperature environments. Furthermore, if corrosion is available in the environment where serpentine type resistances are used, pipe and serpentine material may be preferred as made of 316 L and Alloy825.

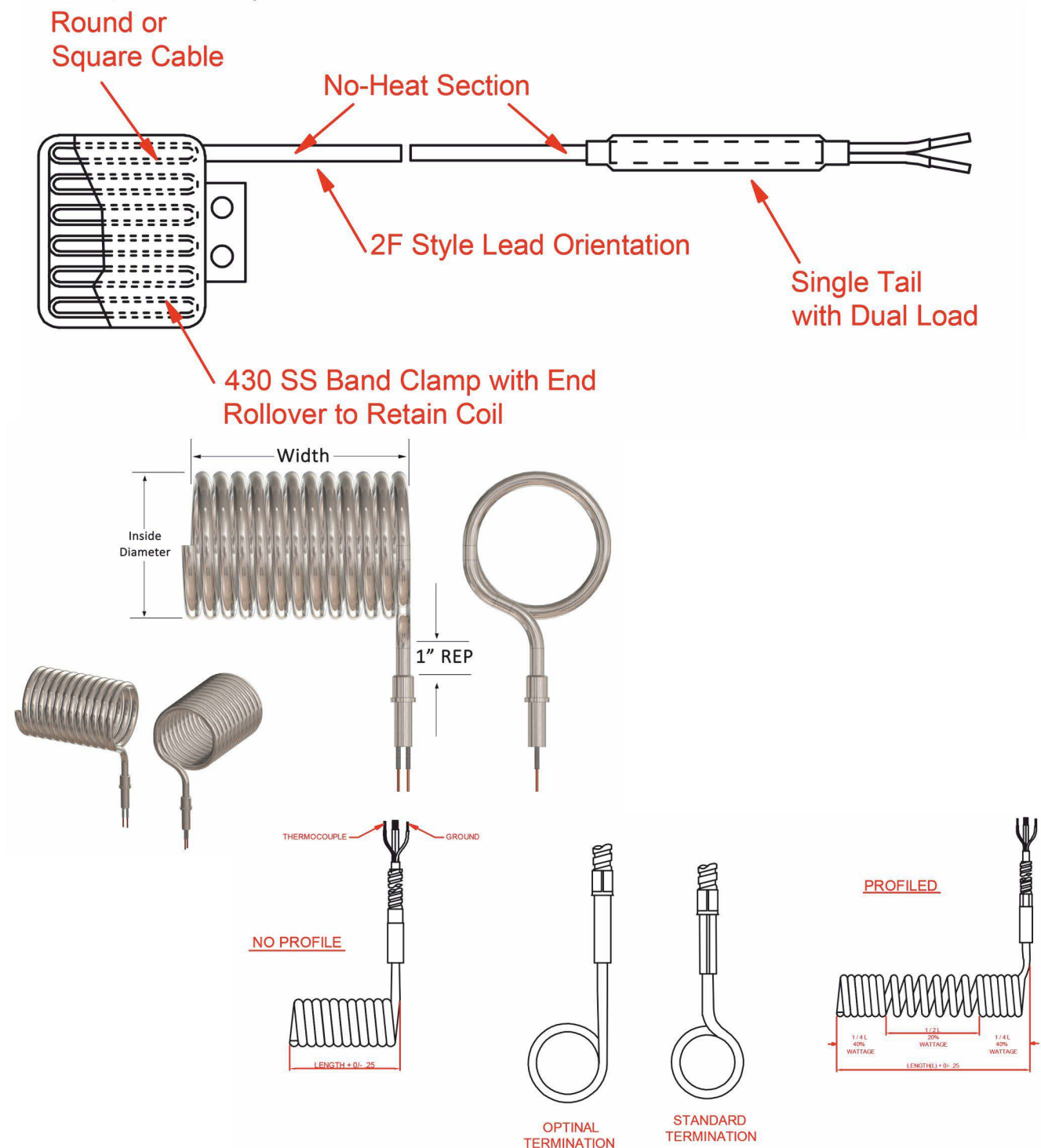
Serpentine resistances can be produced in different sizes and forms. For example, flat rod serpentine resistances can be produced at minimum 200mm and maximum 6600 mm lengths, while U type resistances can be produced at minimum 150mm and maximum 3200 mm lengths. In addition, M type and circular helical type serpentine resistances are produced by our company.

The main use area of serpentine resistances is air blown, fan type heating systems. In the construction sector, serpentine type resistances are commonly used in buildings, shopping malls, hospitals and hotels in order to heat the air coming out of the air ducts. Apart from these, it is produced in accordance with the environment in all processes requiring industrial drying in all industrial branches.



Spiral resistances also known as hot road nozzle resistances are used in plastic hot road systems to ensure the fluidity of the raw material in the nozzle. Outside of this common area of use, spiral type resistances can be used for heating pipelines with liquid or gas passing through them in various sizes for laboratory and special scientific projects. Our Spiral type resistances can be produced at different powers and at different supply voltages (24V, 48V, 110V, 220V, 400V). This type of resistance can be produced in different sections. The primary and most common are flat type spiral resistances with rectangular sections measuring 2.5 mm \* 4.55 mm. One of the other two models is the spiral resistance with a diameter of 1.8 mm round section; the second is the spiral type resistance with a diameter of 4mm round section. The maximum operating temperature of this type of spiral resistances is 500 degrees. It is made with three Teflon insulated cables as spiral ground. In addition, our spiral type resistances are produced as standard J Type thermocouples and cable sizes can be adjusted according to requirement. These types of resistances can be manufactured in different winding types and different output directions according to customer demand. Windings are generally requested clockwise and counterclockwise. According to the request, it can be manufactured in the direction passing from the center (Radial) and with a 90 degree vertical output - twist.

They are high-tech resistances that can be used for heating hot road nozzles and for many different purposes. It can be produced with round or square cross-section in required power and dimensions.





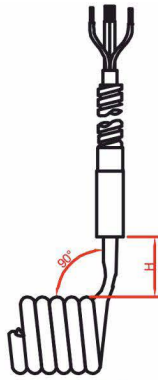
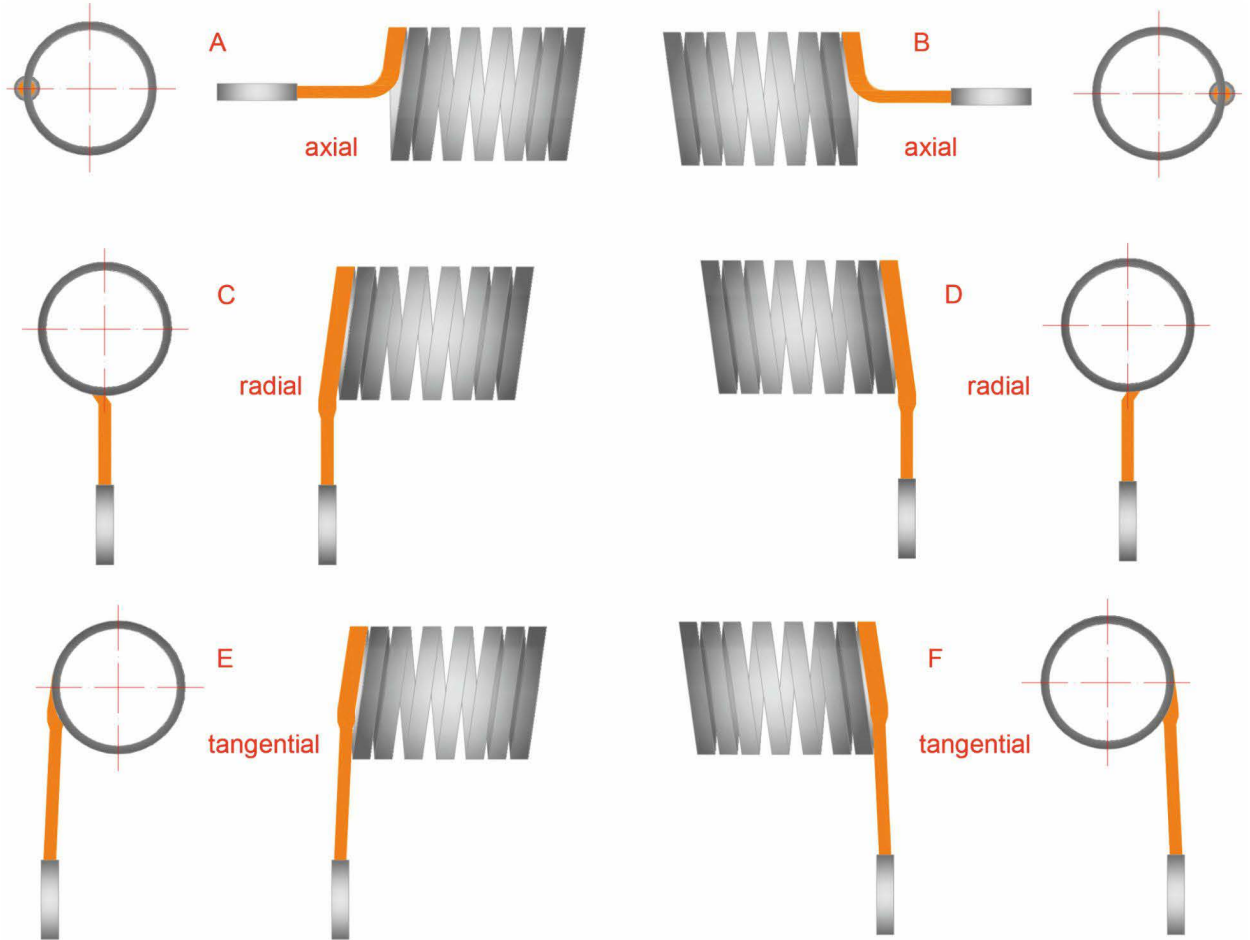


FIG. 1

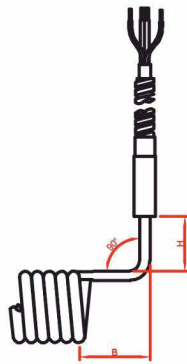


FIG. 2

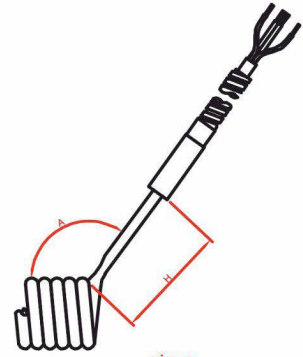


FIG. 3

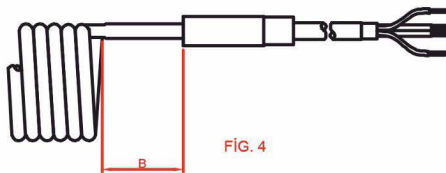


FIG. 4

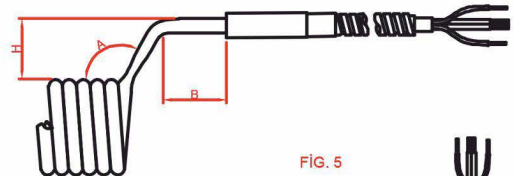


FIG. 5

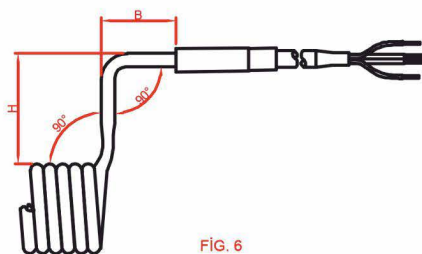


FIG. 6

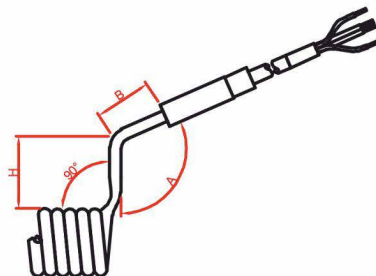


FIG. 7

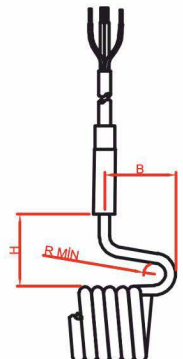


FIG. 8

Firecracker type resistances are widely used in many areas today. It is the most preferred type of resistance especially for heating molds and presses. In addition to these, it is the preferred high quality resistance type for the heating of the jaws of packaging and packaging machines and for the heating of water, oil and corrosive liquids.

Firecracker resistances can be produced for pipe diameters from 4mm to 31.5 mm. Length size can be adjusted from minimum 30mm up to maximum 500mm. In addition, it can be produced as L – type – bracket – Cube – bracket – steel braided Armor – Spiral Armor Protection – rack-flange-sleeve with 90 degree twist.

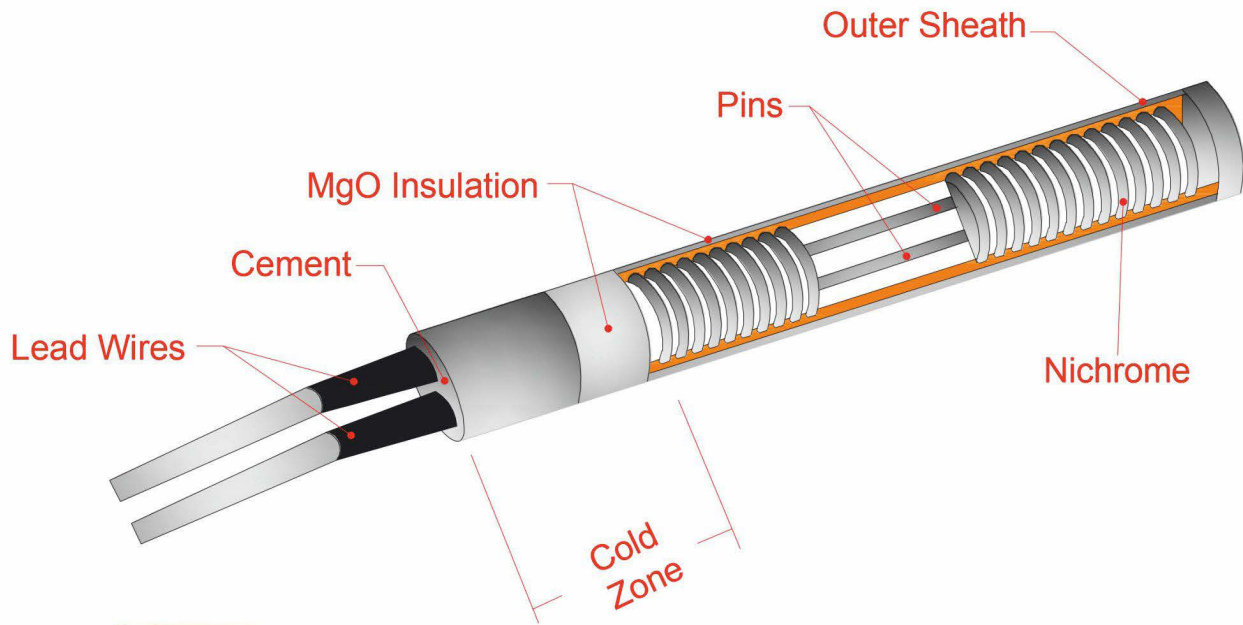
The production of firecracker resistances can be made using various types of stainless steel materials according to the application areas. The main ones are stainless steels such as 304-316-321-310 S. In addition, special alloy stainless steels can be produced. These Are Alloy800 – Alloy600.

With the latest developed technology, our company can now produce flat pipe firecracker type resistances. Flat-tube firecracker type resistances are commonly used for heating various liquids and horizontal plate VEV presses.

Other than the standard ones special size tailor-made resistances are also produced.

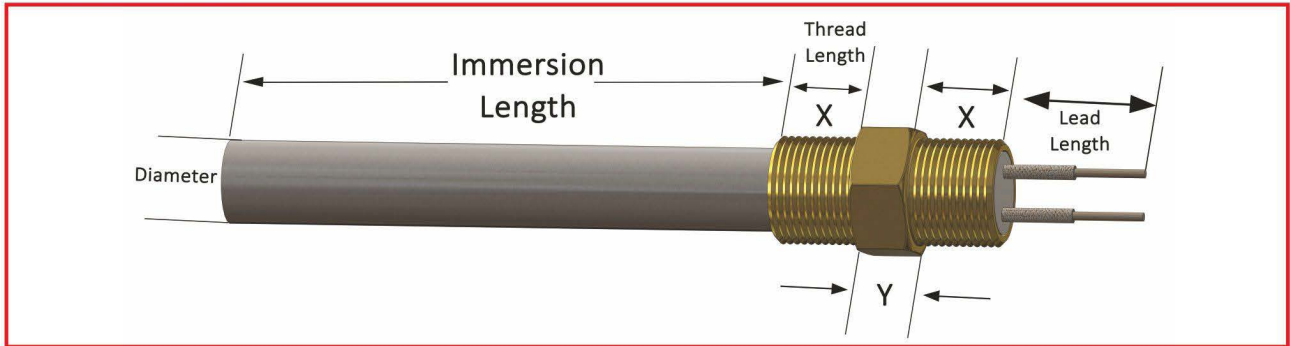
It is used in heating operations for various purposes in almost all areas of industry.

It can be produced in all sizes and diameter, at different power and voltages, in the desired type and model.

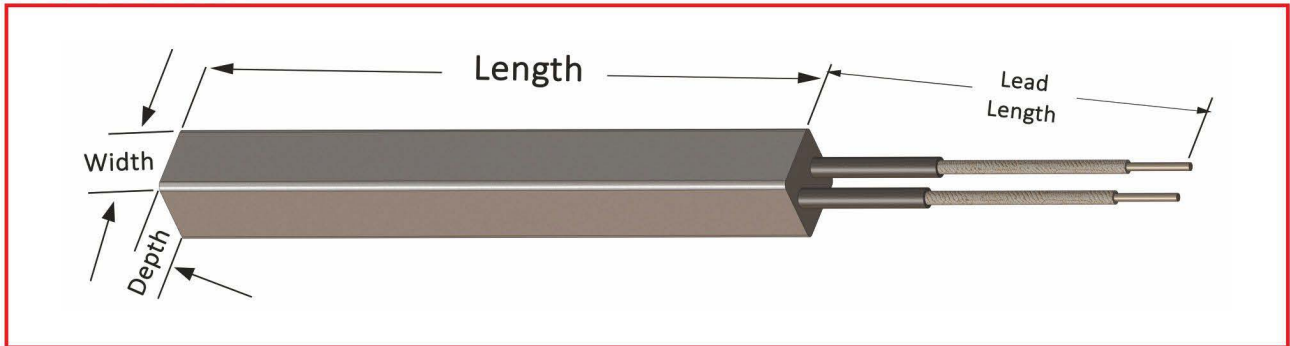




## 1- UNION MODEL



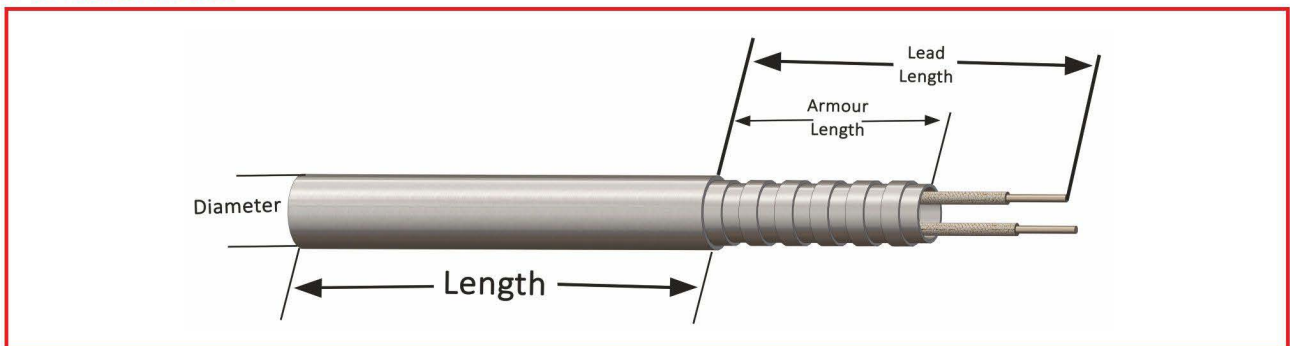
## 2- SQUARE MODEL



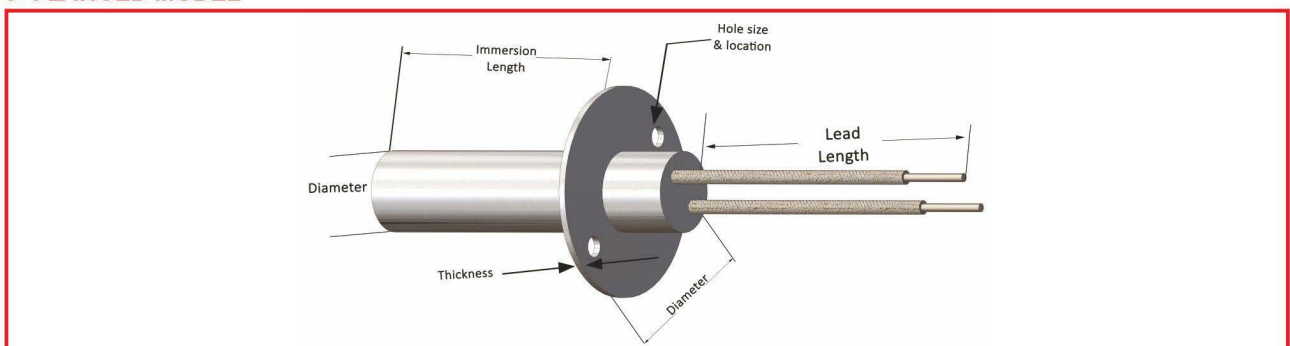
## 3- SLOTTED MODEL

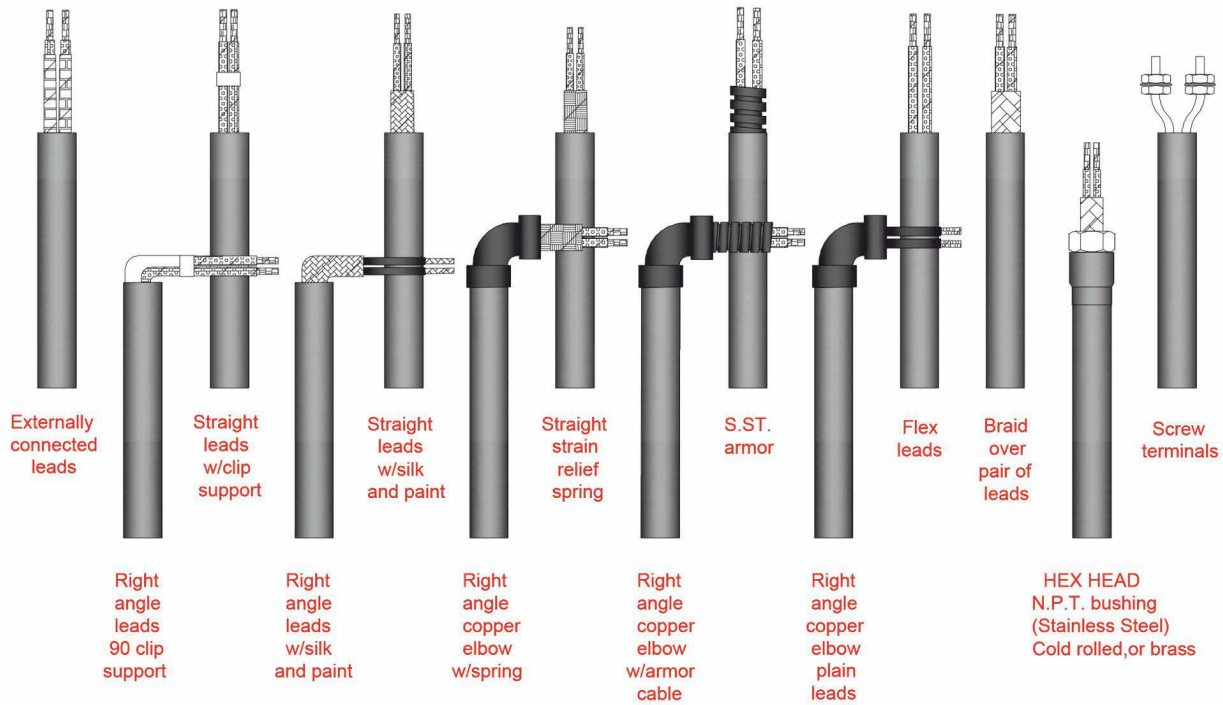


## 4- SPIRALLI MODEL

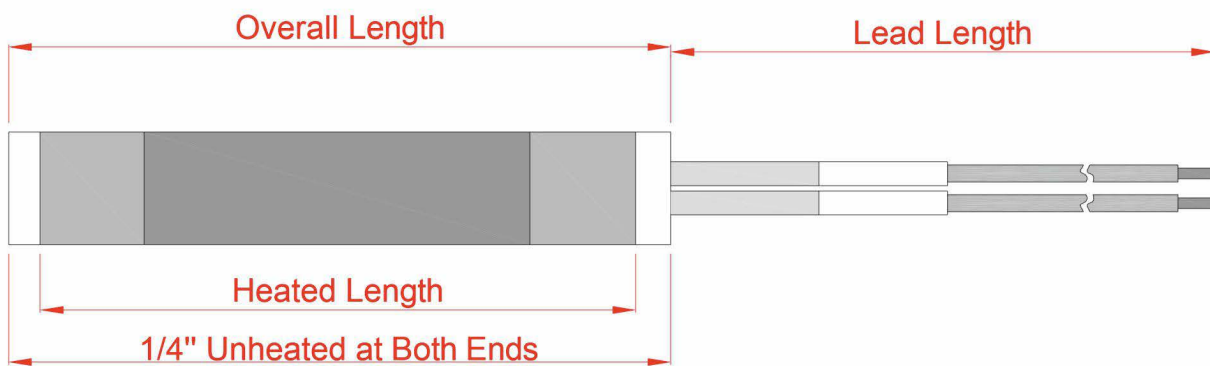


## 5- FLANGED MODEL

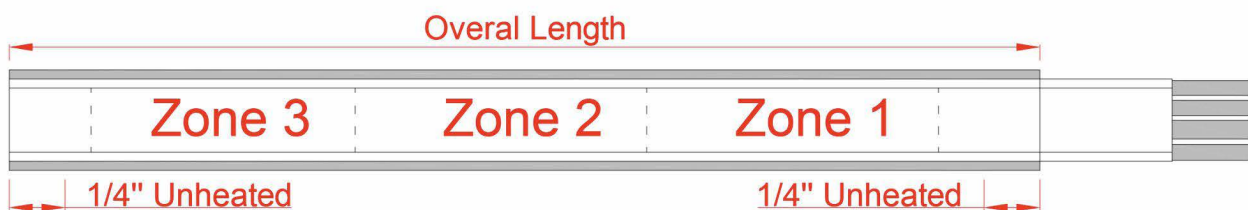




## Distributed Wattage



## Multi-Zone or Three Phase Cartridge Heater





Nozzle resistances are made of brass profile or stainless material. The only use area of nozzle type resistances is the nozzle outlets in plastic injection machines. Due to the closed circuit of the production method, the leakage of plastic raw material onto this resistance is not a big handicap, but the increased leakage and density is the number one factor affecting the life of the nozzle type resistance. In addition to plastic injection machines, nozzle type resistances can also be used in non-large diameter pipelines that need to be heated and for heating circular shaped molds.

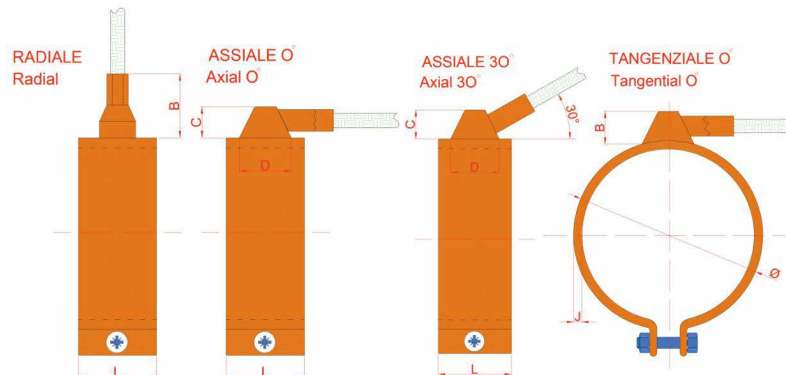
This type of resistance energy output can be wired or terminal or iron plug. The nozzle type resistances are mica insulated and the operating temperature is maximum 350/400 degrees. Such resistances can be manufactured as self-thermocouples upon request. The minimum diameter of the nozzle resistances is 25mm and maximum 100 mm. The minimum length measure is 25mm and the maximum is 100mm.

It is used in nozzle (tip) heating and various heating processes in plastic injection machines. It can be manufactured with isinglass insulation, ceramic insulation. It can be manufactured at various power and voltage in the desired diameter and length.



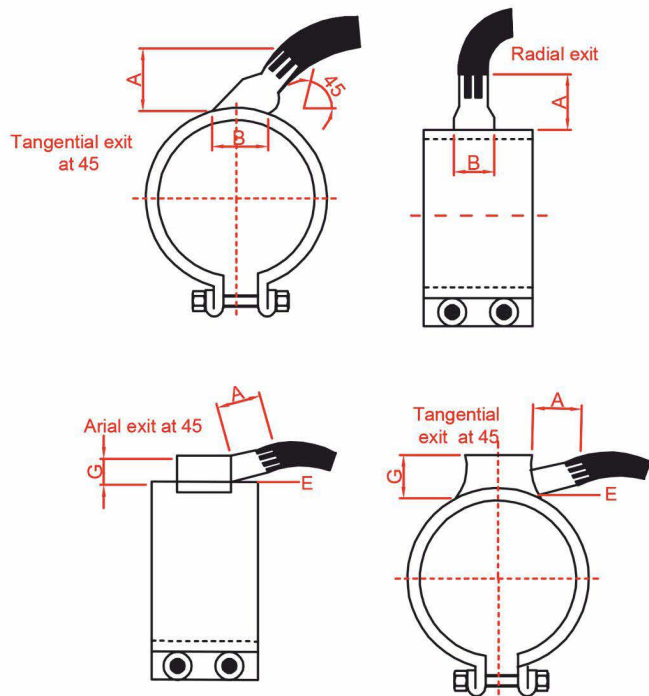
| Diam. (mm) | Length (mm) | Watt | Volt | Product No. |
|------------|-------------|------|------|-------------|
| 30         | 30          | 150  | 230  | PRMG000001  |
| 30         | 30          | 200  | 230  | PRMG000002  |
| 30         | 40          | 200  | 230  | PRMG000003  |
| 30         | 40          | 250  | 230  | PRMG000004  |
| 30         | 50          | 250  | 230  | PRMG000005  |
| 30         | 60          | 300  | 230  | PRMG000006  |
| 35         | 30          | 150  | 230  | PRMG000007  |
| 35         | 40          | 200  | 230  | PRMG000008  |
| 35         | 50          | 250  | 230  | PRMG000009  |
| 35         | 60          | 300  | 230  | PRMG000010  |
| 40         | 30          | 200  | 230  | PRMG000011  |
| 40         | 40          | 225  | 230  | PRMG000012  |
| 40         | 50          | 250  | 230  | PRMG000013  |
| 40         | 60          | 275  | 230  | PRMG000014  |
| 45         | 30          | 200  | 230  | PRMG000015  |
| 45         | 40          | 225  | 230  | PRMG000016  |
| 45         | 50          | 250  | 230  | PRMG000017  |
| 45         | 60          | 350  | 230  | PRMG000018  |

| Diam. (mm) | Length (mm) | Watt | Volt | Product No. |
|------------|-------------|------|------|-------------|
| 50         | 30          | 250  | 230  | PRMG000019  |
| 50         | 40          | 275  | 230  | PRMG000020  |
| 50         | 50          | 300  | 230  | PRMG000021  |
| 50         | 60          | 325  | 230  | PRMG000022  |
| 60         | 30          | 250  | 230  | PRMG000023  |
| 60         | 40          | 275  | 230  | PRMG000024  |
| 60         | 50          | 300  | 230  | PRMG000025  |
| 60         | 60          | 350  | 230  | PRMG000026  |
| 70         | 30          | 275  | 230  | PRMG000027  |
| 70         | 40          | 300  | 230  | PRMG000028  |
| 70         | 50          | 350  | 230  | PRMG000029  |
| 70         | 60          | 400  | 230  | PRMG000030  |
| 80         | 30          | 300  | 230  | PRMG000031  |
| 80         | 40          | 350  | 230  | PRMG000032  |
| 80         | 50          | 400  | 230  | PRMG000033  |
| 80         | 60          | 450  | 230  | PRMG000034  |



## Schematic construction of nozzle heater

### ALTERNATIVE EXIT



### STANDARD EXIT

Bipolar cable + earth flexible length 1000 mm

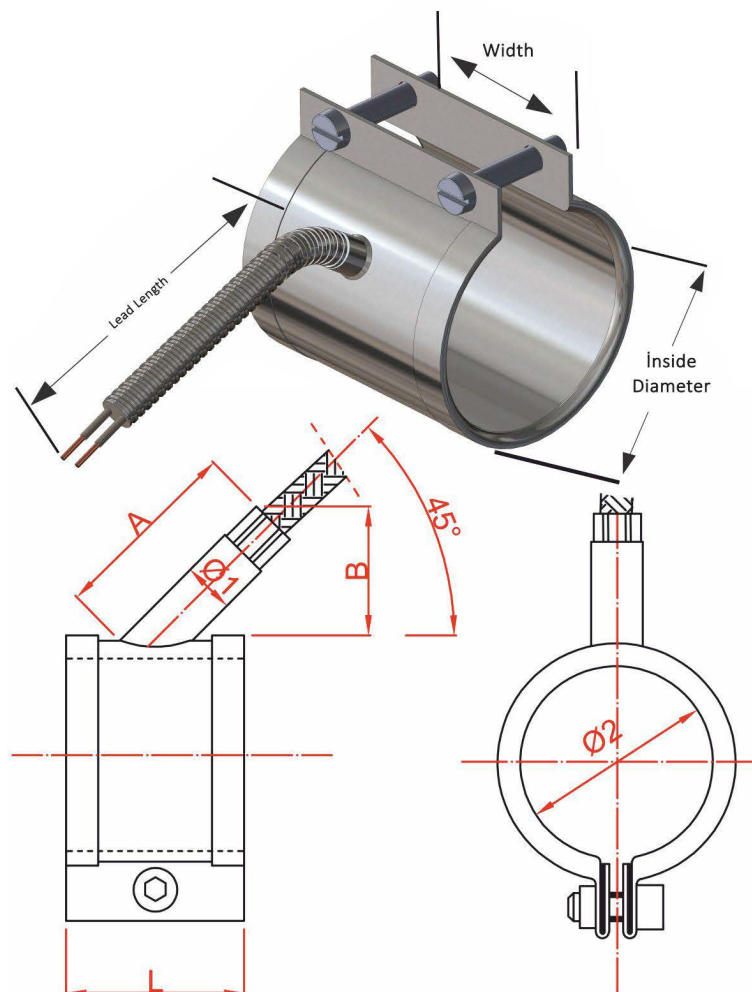
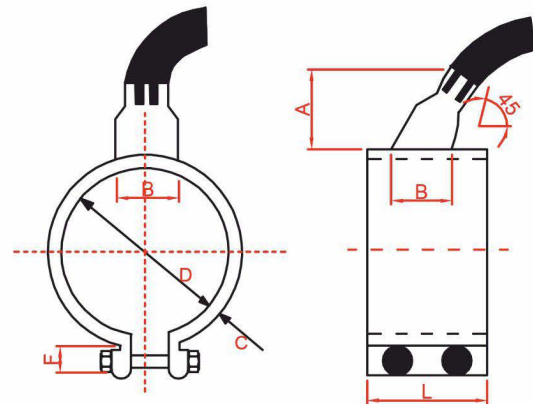


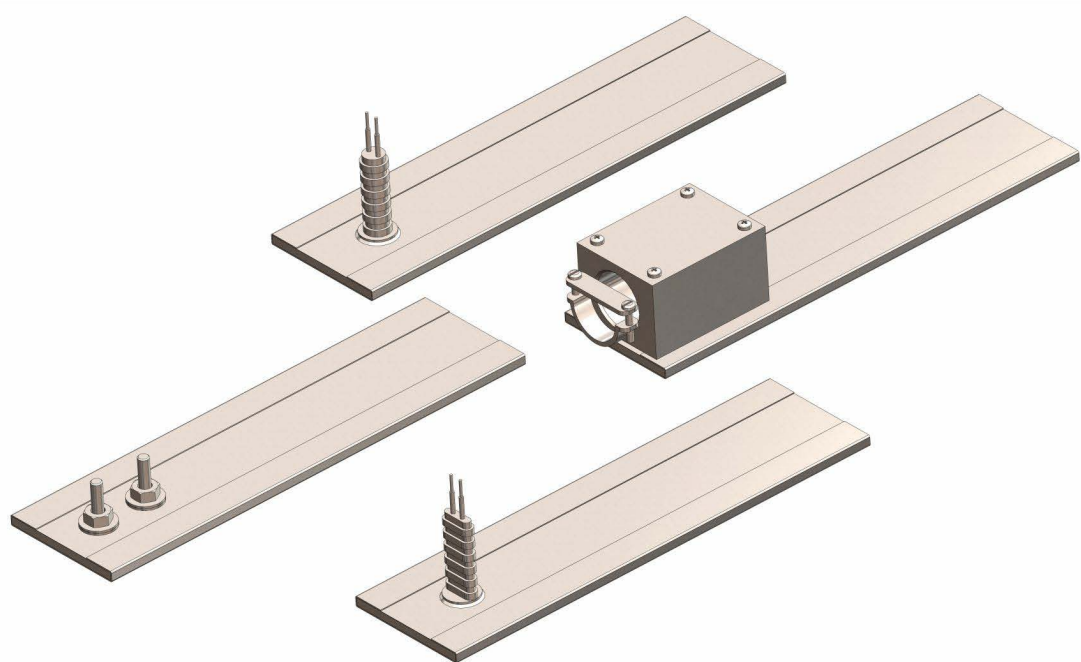
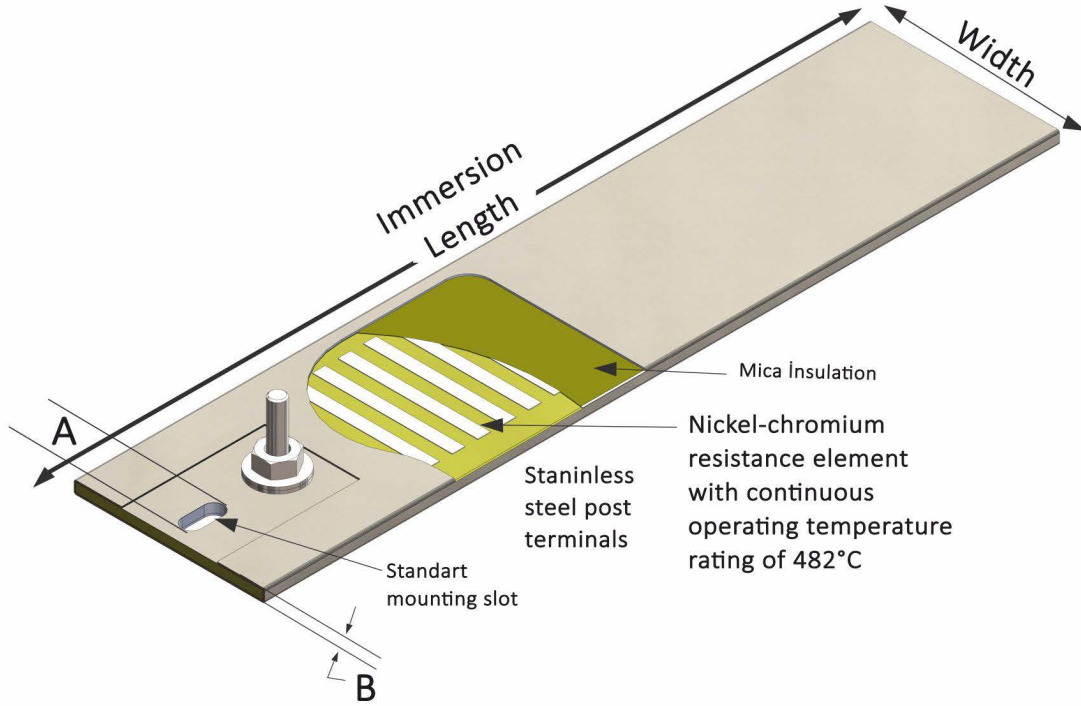


Plate resistances are widely used in the plastic, rubber and packaging industry mainly for the heating of presses of molds in our country and around the world.

The basic raw material in the production of plate type resistances are İsinglass plates with excellent thermal transfer capability with high level of electrical insulation. İsinglass plates in themselves are divided into Muscovite and phlogopite. Plate-type heating resistances made of Muscovite isinglass are used in applications that require of 250 degrees to 300 degrees temperature and plate type resistances made of phlogopite isinglass is usually used in applications that require temperatures above 300 celsius.

In plate type resistances, the basic principle is that the plate type resistances can transfer heat on both surfaces very well and do not accumulate heat on them. In order to prevent this situation, pressure sheet is usually used on a surface of plate type resistances.

Plate resistances can be produced in required ways. Some of these are straight, round, type I, type U. Apart from these; this type of resistance can be produced with many holes in the surface (connection etc.). Plate type resistances energy outputs can be screwed, wired, terminal and above plug output.

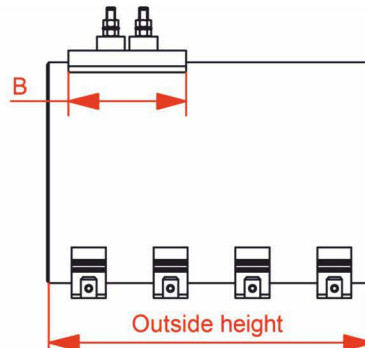
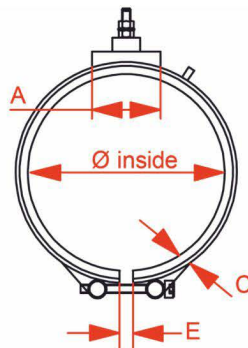
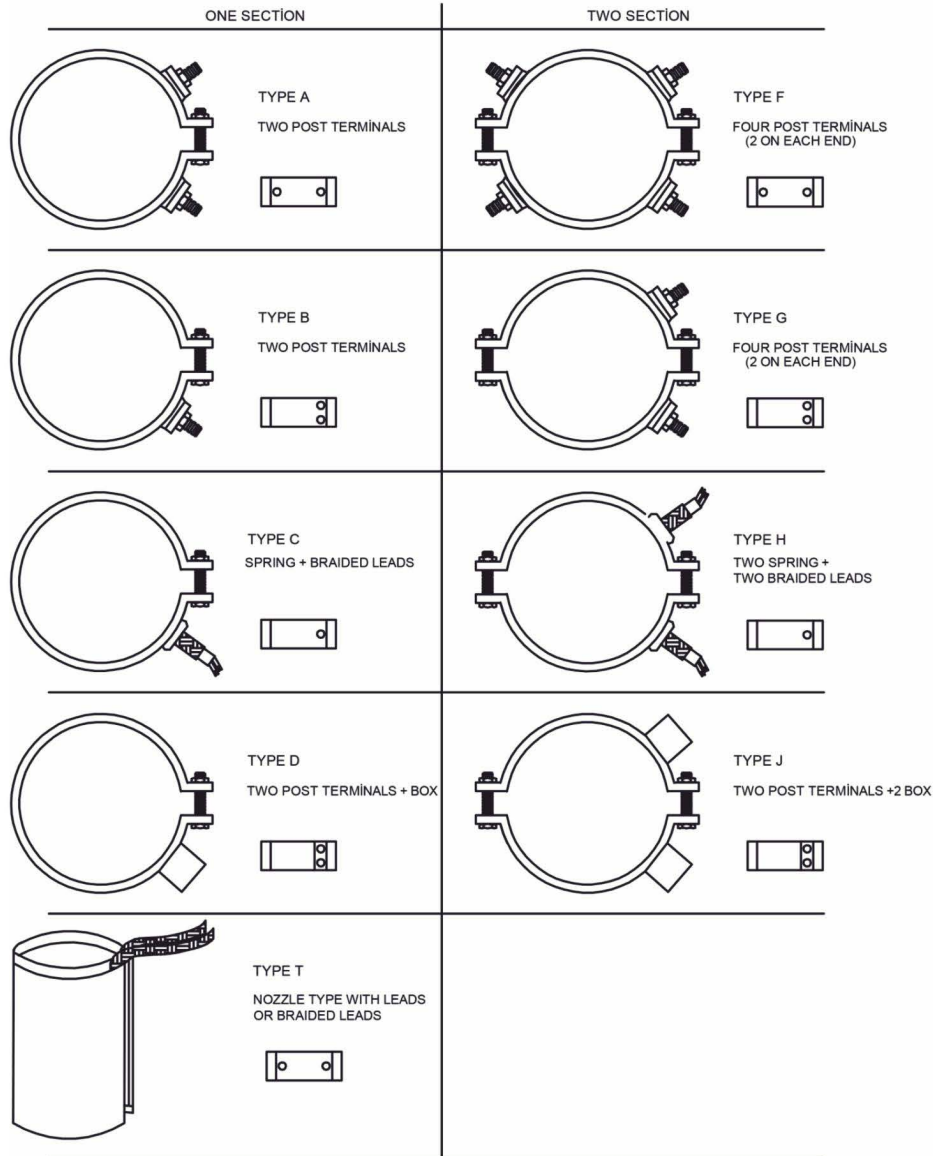




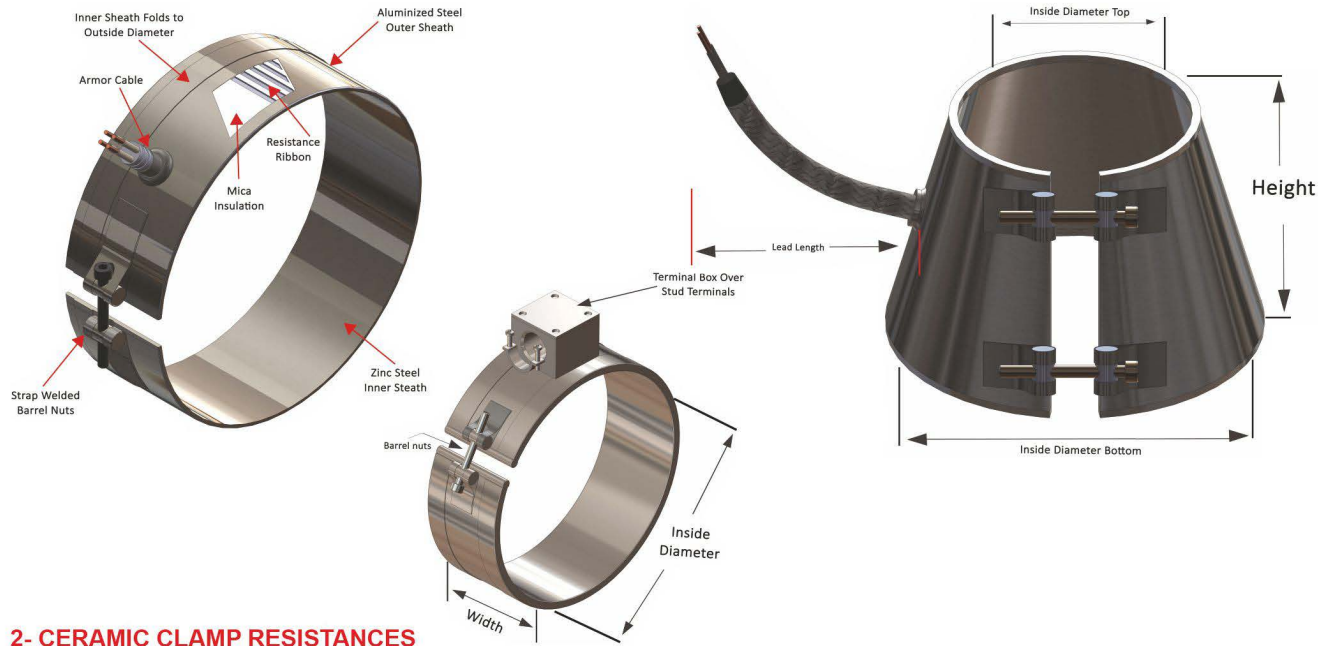
### 1- MICA CLAMP RESISTANCE

Isinglass insulated clamp resistances are used efficiently in the shaping and processing of plastic raw materials especially in extruder, injection type plastic machines in areas with operating temperature up to 300 celsius. In addition, it is also widely used for heating tanks of various sizes of many pipelines. Isinglass insulated clamp resistances have some disadvantages as well as advantageous aspects (cost effective). For example; it is a type of resistance cannot perform long-lasting service in places with high humidity, and vapor liquid and liquid and open circuit. The main reason for this is that the isinglass plate, which is the insulation material, cannot show resistance against the above mentioned handicaps. Despite this, it is still widely used throughout the world with its easy production logic, which does not require advanced technology at appropriate cost.

MICA BAND HEATERS TYPES

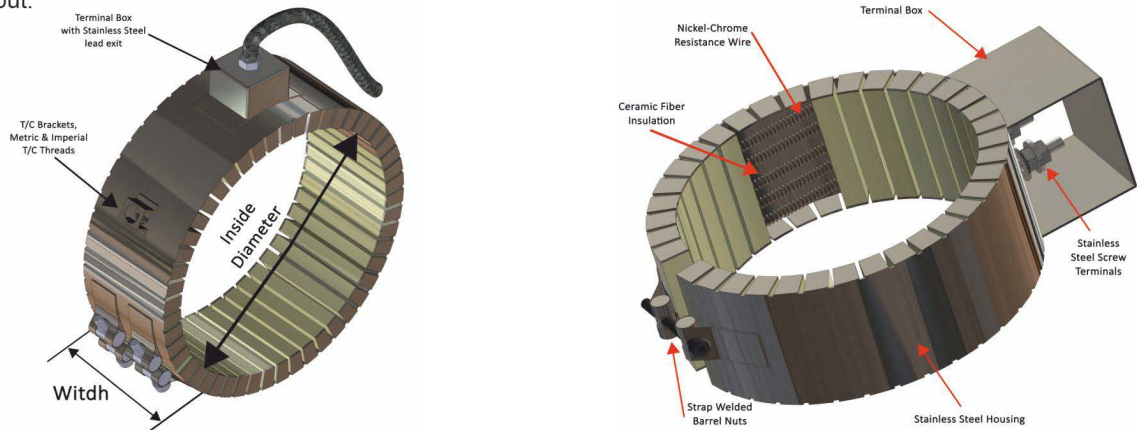


Position of the connection according  
specifications of the band heater



## 2- CERAMIC CLAMP RESISTANCES

Ceramic clamp resistances can be easily used in applications up to 650 celsius. The most important feature that allows ceramic resistances to reach such high temperature is the steatite alloy high heat resistant technical ceramics used to insulate the resistance wire. The main application areas of ceramic clamp resistances are extruder throat lines where plastic raw material is shaped and melting flow is provided. Apart from these, ceramic clamp resistances are widely used in heating pipelines, various tanks and special projects as external squeezing, which require high heat and require high power in minimal areas. The energy outputs of ceramic clamp resistances are manufactured with terminal – closed box terminal – wired – iron plug output.



## 3- CLOSED CIRCUIT CLAMP RESISTANCES

It can be manufactured by placing square type or flat rectangular Type tube heaters which are made with thin section closed circuit production logic applied inside stainless steel as outer sheath. Since this type of clamp heaters contains a closed circuit system, they can be used easily and safely in areas with moisture, steam, humidity and fluidity. These products are unlikely to fail due to the above handicap reasons. In addition, this type of clamp resistances can be used safely in areas with a maximum thermal environment of 500 degrees. This type of clamp resistances cannot be produced at an affordable cost due to the high technology which is the largest handicap. It is therefore still used in special specific projects today.



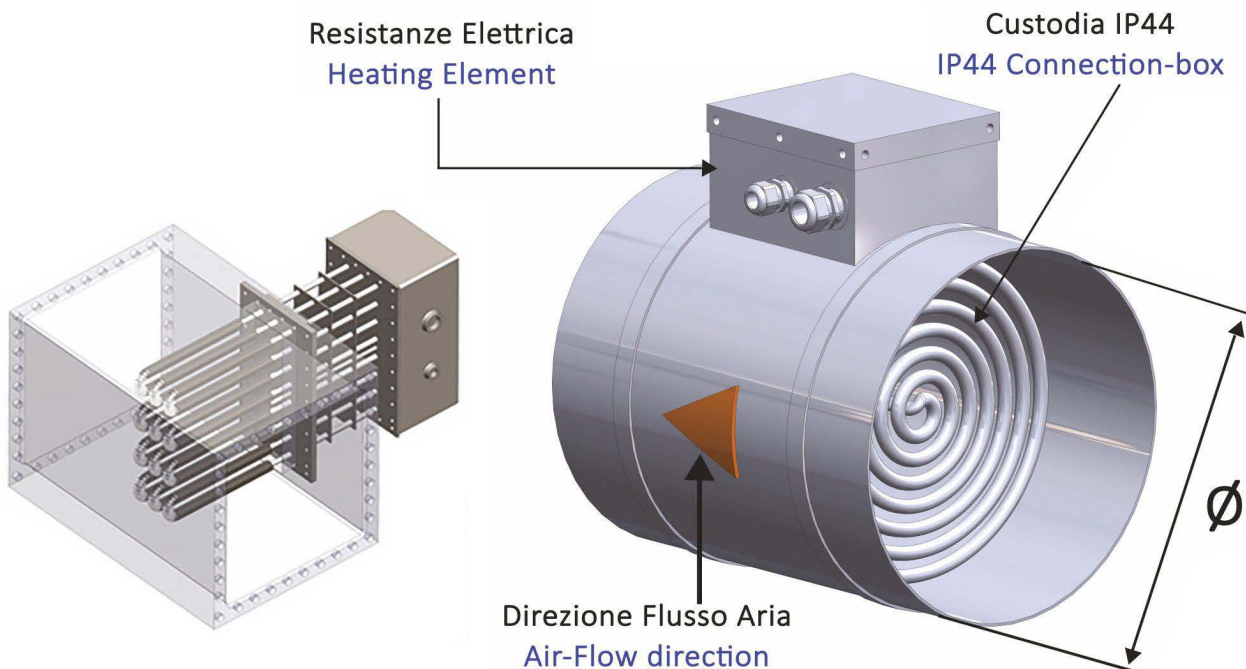
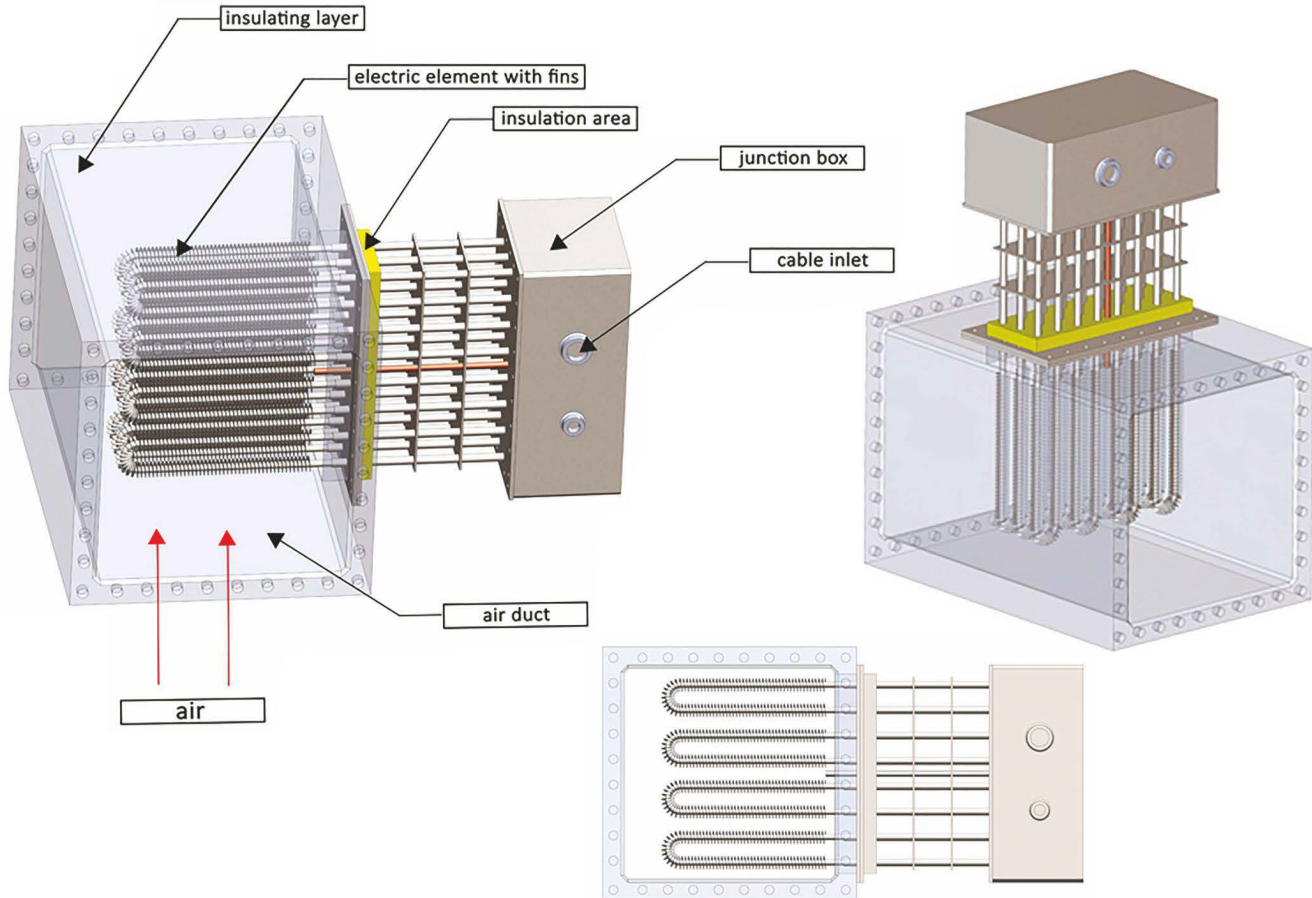


Air duct heaters are used as the final heater in the ventilation system or for heating outside air in fresh air systems. It can also be fitted to the fresh air blowing outlet to meet the need for additional heating in heat recovery devices. "Baykal air channel electric heaters" have CE and ISO certificates.

A -) rectangular duct type electric heaters

B -) round channel type electric heaters

Duct type electric heaters can be connected to the duct system without the use of any additional parts.

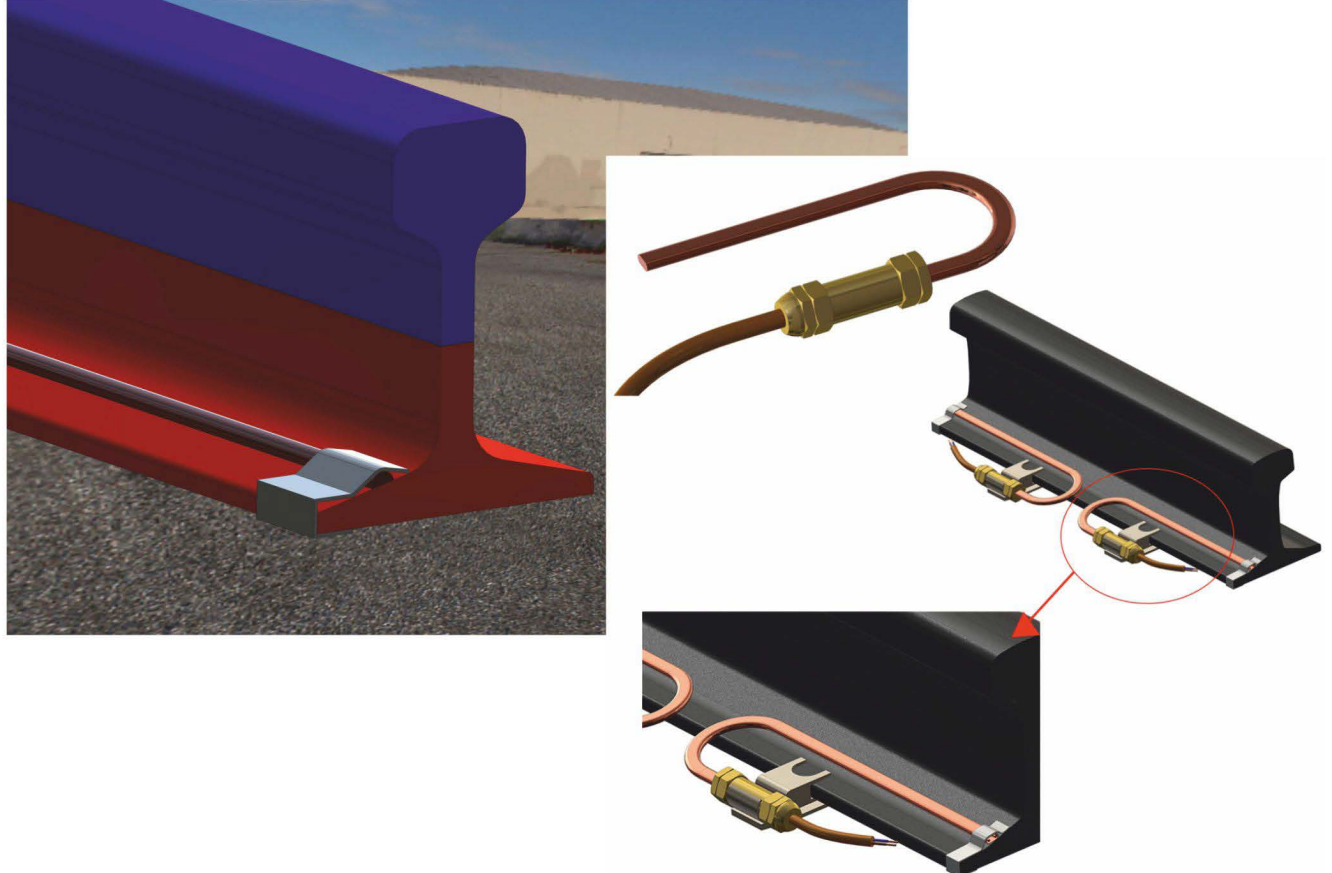




It is used to heat the shears on railway and tram lines and to prevent them from freezing. UIC 60, s 49, S54 can also be designed specifically for all kinds of rail systems except for the shear types. Heaters are provided with all connection equipment for fixing in rail profiles. This connection equipment is not worn for many years, especially in rail systems against vibration and bad weather conditions.

One of our products developed shear heaters system is used to prevent freezing of the moving parts of the shear and of filling the snow between the shears during low temperatures and snowfalls. Our systems are manufactured according to the number and strength of the resistances on the shears.

Automatic operation with PLC in the system in line with the desired rail temperature resistances are controlled linearly and output is given according to different temperature values.



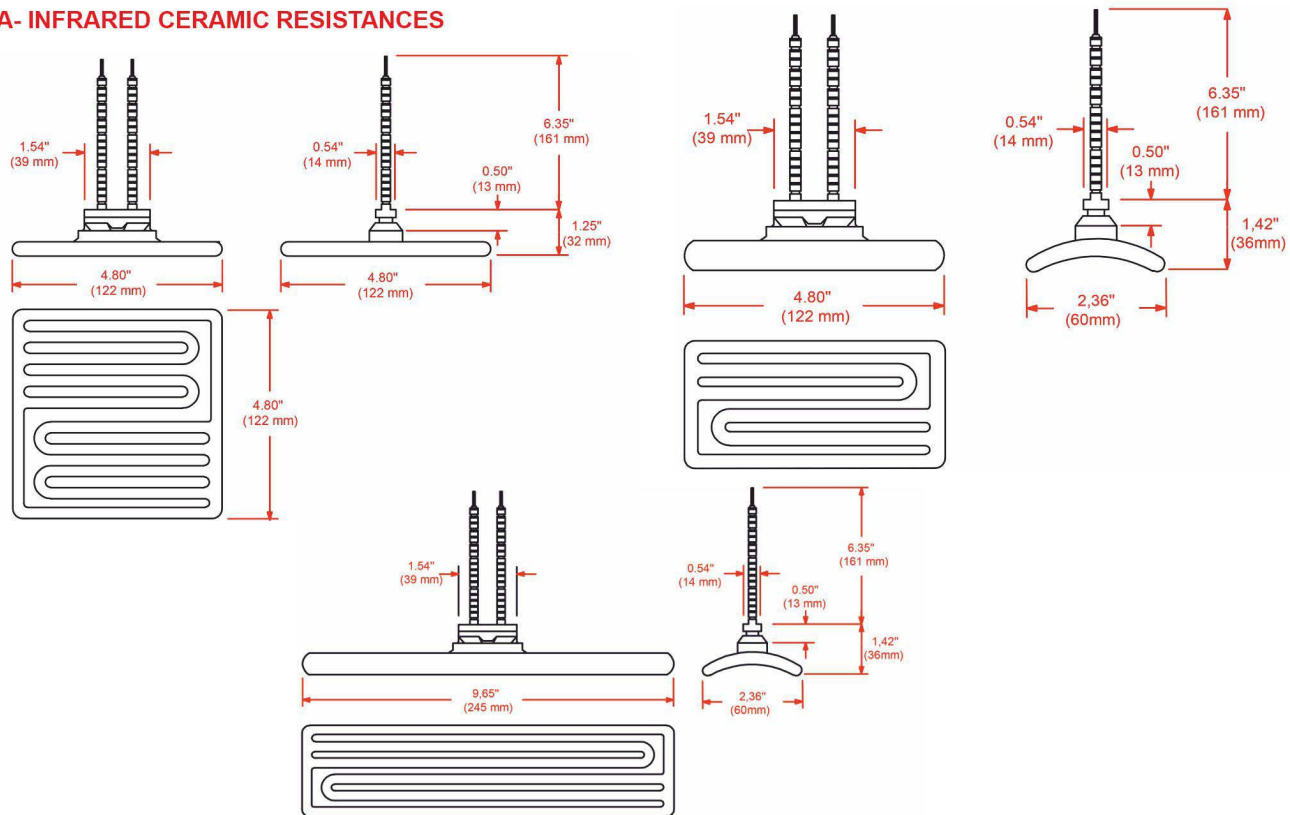
Ceramic resistances have been produced safely in our country in different sizes and forces for many years with infrared technology. Ceramic type resistances can be produced in 245\*60mm and 122\*60mm sizes. Other less preferred sizes are 245 \* 100 mm - 100 \* 100 mm – 122\*122 mm and 60\*60 mm

Ceramic type resistances are basically produced in two different ways. The most common and best known model is half size curved. Another form is the less preferred flat shaped and flat surface ceramic resistances.

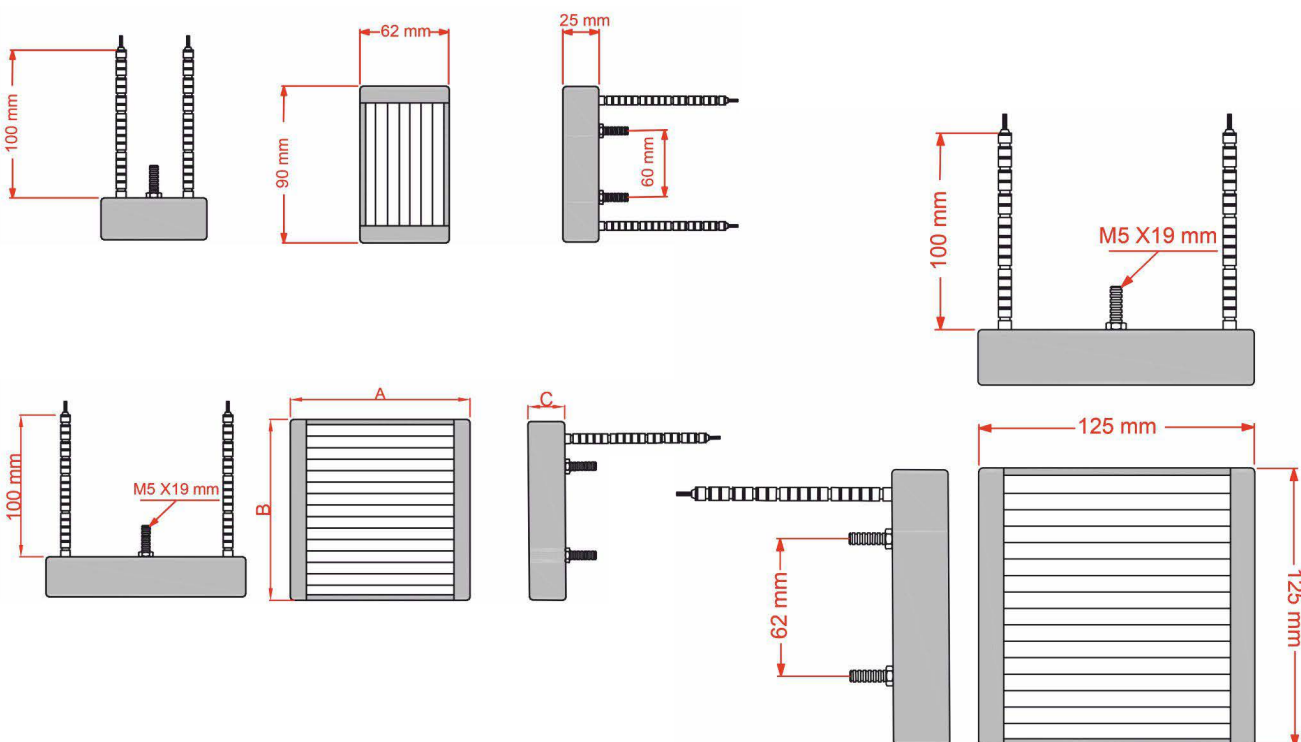
Ceramic resistances can be produced between 125 W and 1000 W depending on their size. Supply voltages are commonly 230 V and 400 V.

The main areas of use are; sugar cube machines, plastic vacuum packaging machines, thermoforming machines, textile, printing and paint drying, auto paint drying systems, industrial ovens and IR drying panels.

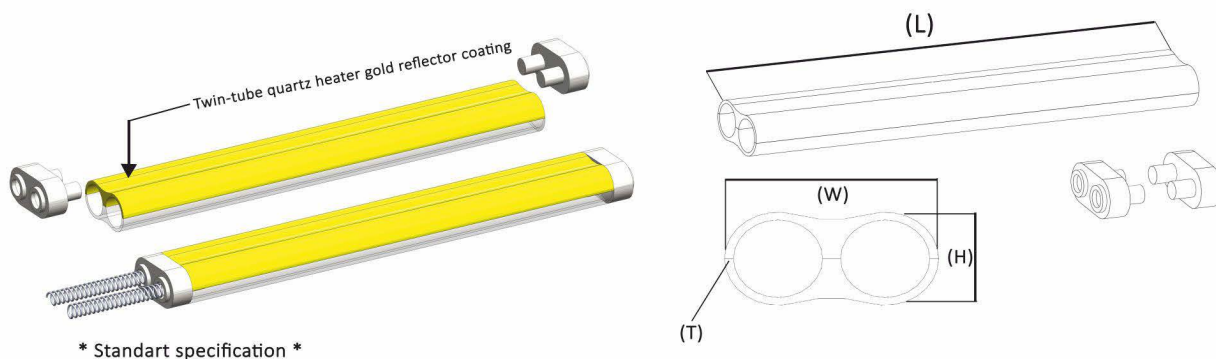
#### A- INFRARED CERAMIC RESISTANCES



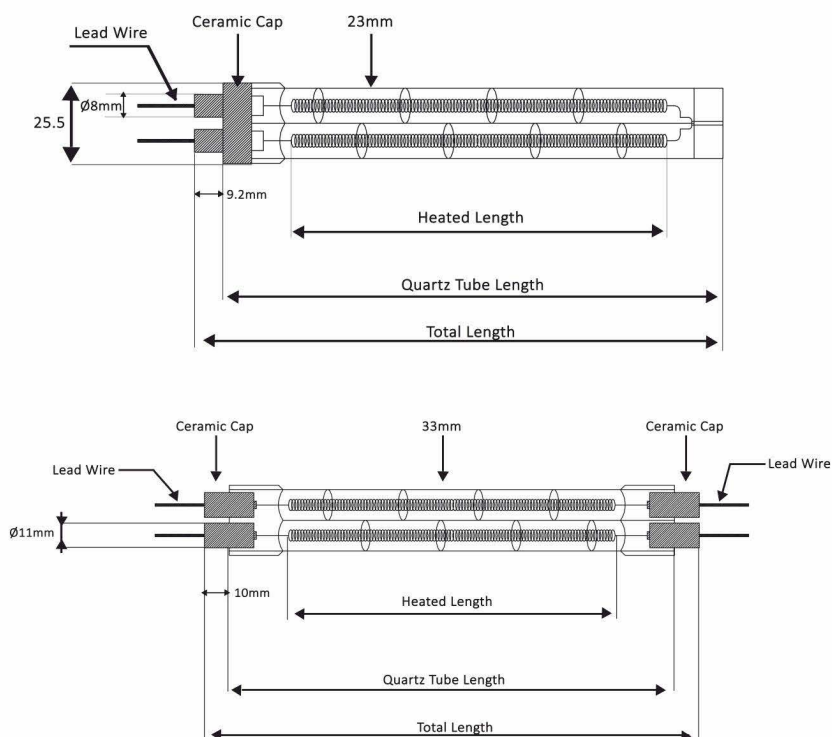
#### B- INFRARED QUARTZ CASSETTE RESISTANCES



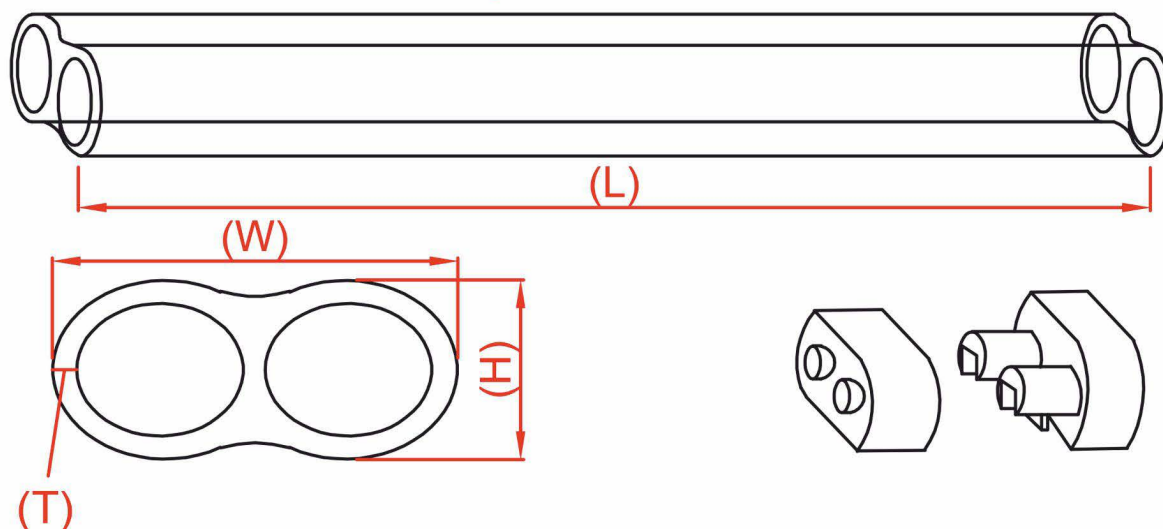




\* Standart specification \*

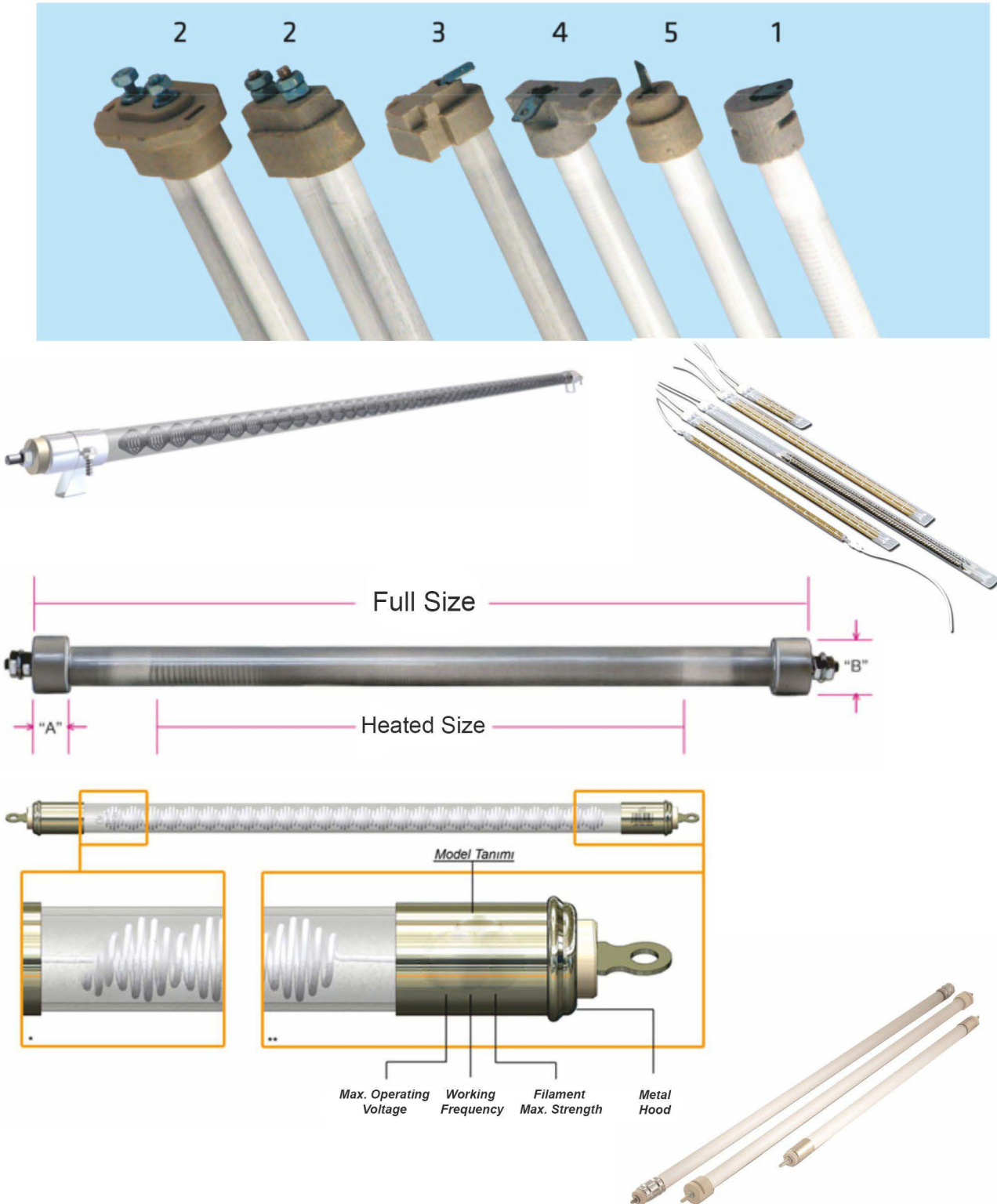


## Twin - tube quartz heater



Quartz glass tube resistances are produced in different diameters and lengths in accordance with different usage purposes. Standard production diameters are 8 – 10 – 16 – 18 – 23 – 25 mm. The standard production lengths are minimum 250 mm and maximum 3500 mm. Quartz glass tube type resistances can be produced between minimum 24 V and maximum 500 V DC supply voltages. Although the requested power varies, it can be produced between a minimum of 250W and a maximum of 10000W. These types of resistances are used extensively in all branches of industry, industrial drying systems, food sector, textile printing paint drying area, automotive sector and electrical appliances, stove manufacturing.

Energy outputs of quartz glass tube resistances can be manufactured according to quartz glass pipe diameter with screw, socket and cable output. In addition, extraordinary production is carried out with advanced technology our company has developed for double tube quartz glass pipes. These resistances can be produced at minimum 200 mm and maximum 3000 mm lengths. The power outputs can be screw or wired type. Flat section size is 15 \* 33mm.



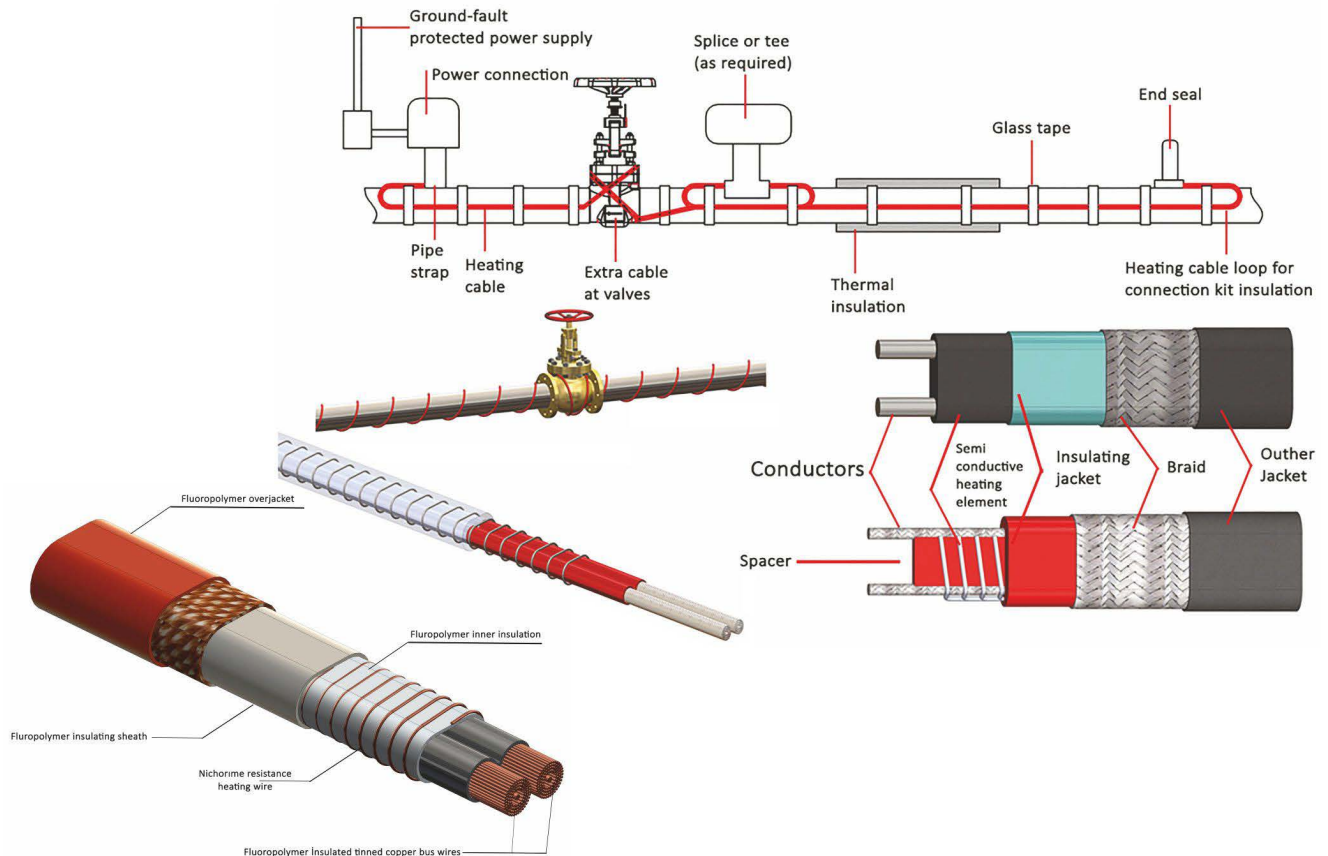


Cable resistances (cable heaters) are the type of resistance used widely today in the heating of pipelines that pass liquid or gas through various branches of industry, circular or square, rectangular tanks for different use purposes. It is used in different models and types in order to prevent freezing according to application form and place of use or to reach a certain temperature of the material it heats. Insulation classes of cable type resistances vary according to their location and temperature. Our company has silicon insulated, Teflon insulated, glass fiber insulated and thermoplastic insulated cable resistances in its stocks.

Cable type resistances can be produced between 12 V and 500 V supply voltages. The strength of the meter is variable between 10 W and 150 W. The only factor that determines the power of the meter is the purpose of the use of cable resistance. This type of resistance can be divided into two different categories, parallel and serial resistances. Apart from these models, there are also self-regulated cable resistances which are very expensive due to the high technology content that only 4-5 countries can produce today. Our company also has inventory of such cable resistances.

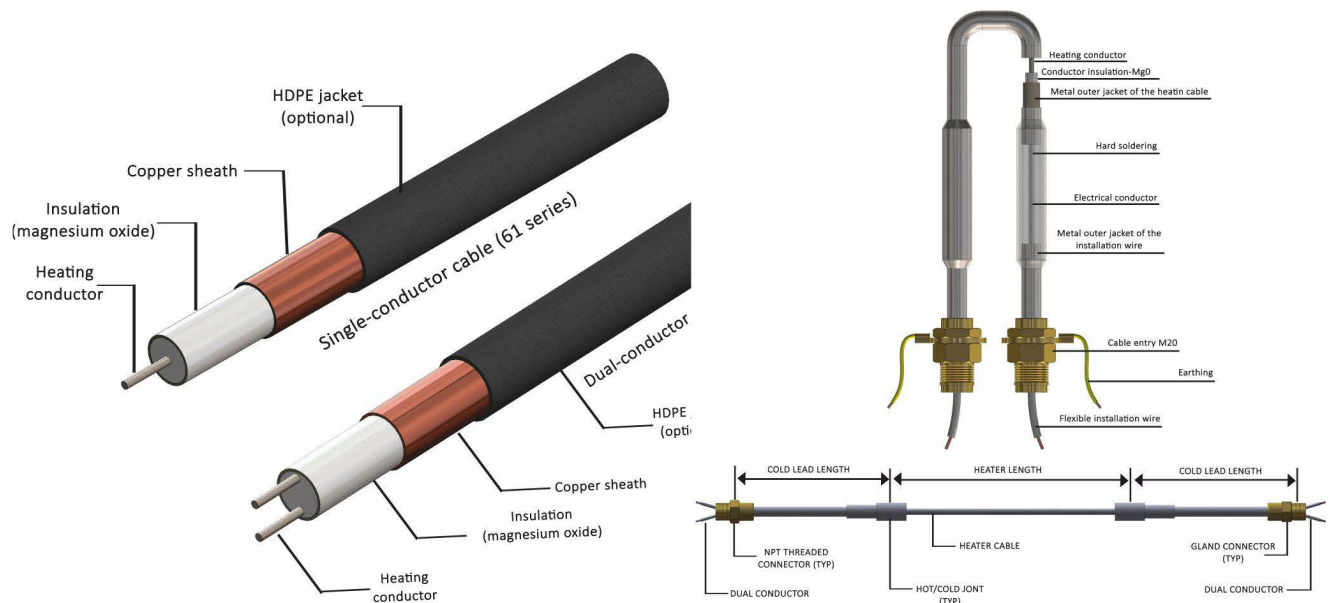
Areas of use:

It is used in many areas for surface heating of irregular geometric shapes.



### MINERAL INSULATED HEATING CABLES

- It is a high-tech cable heater type applied in specific areas requiring high temperature.



THEY ARE SPECIAL RESISTANCES USED IN HEATING OF VARIOUS CORROSIVE LIQUIDS. TEFLON, TITANIUM, 316 STAINLESS STEEL, QUARTZ GLASS TUBE, CERAMIC TUBE ARE HEATERS MANUFACTURED USING SPECIAL PROTECTIVE CASES RESISTANT TO ACIDIC ENVIRONMENTS.



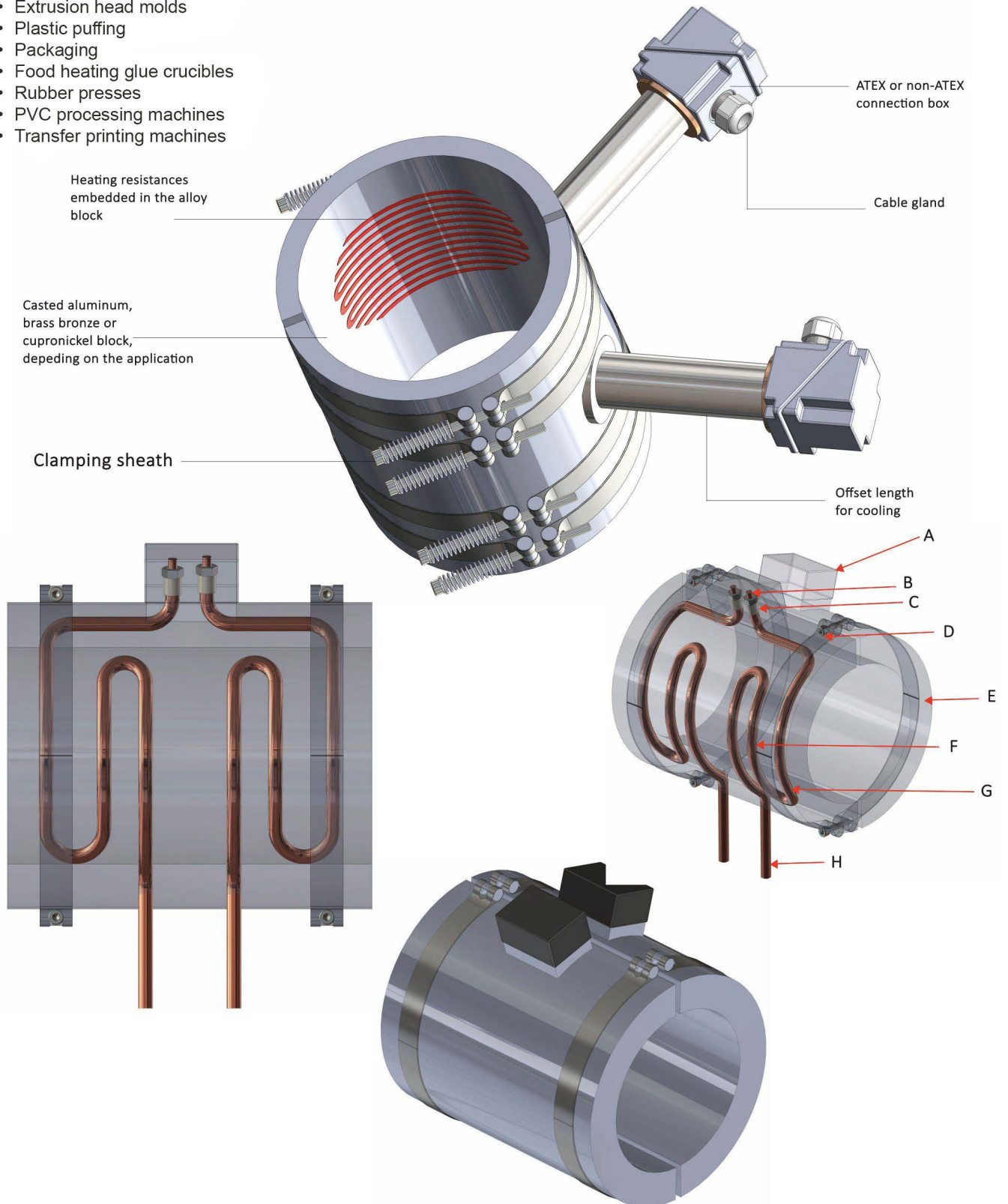


This type of resistance provides a homogeneous and stable perfect temperature transfer to the surface to be heated together as aluminum cast or bronze. These heaters are specially manufactured according to the demand of the users and designed to last for many years.

There are various types of cable out options are available: high temperature resistant cables, plugs and sockets can be used. Water/oil cooled or air cooled options can be made in cast heaters.

#### Usage Areas:

- Extruder hives
- Extrusion head molds
- Plastic puffing
- Packaging
- Food heating glue crucibles
- Rubber presses
- PVC processing machines
- Transfer printing machines





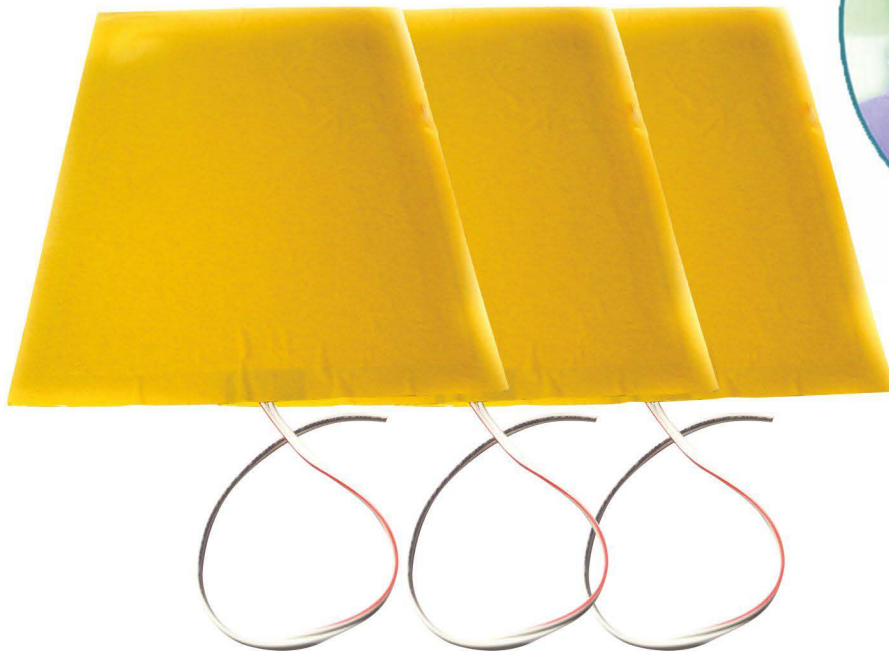
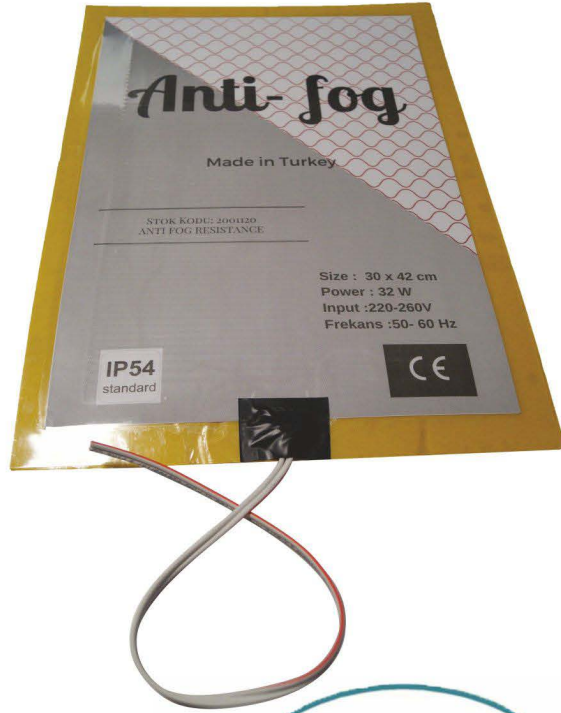
Our anti-mist mirror resistances are manufactured with the world's latest technology standard using electric heating elements that provide heat balance resistant to moisture, vibration, shock, and dust and wearing. The mirror resistances produced by our company are a heating system that gives a temperature of 35-40 C and keeps the temperature constant during the working period. No matter how much steam density there is in the environment, the mirror does not hold steam.

Our high-tech mirror resistances are applied directly to the back of the mirror. It is attached to the sconce after being glued to the back of the mirror. The resistance dissolves the 35C mist when the sconce is activated. Resistance thickness is approximately 50-60 µm. Therefore, it does not pot between mirror and chipboard during installation in bathroom furniture.

As our mirror resistance, a new invention, prevents moisture behind the mirror as long as it works, it partially prevents blackouts that occur over time. Our mirror resistance provides a clear image in the mirror and your mirror is easily cleaned.

**MAIN AREAS OF USE:**

- Hotel Bathroom Mirrors
- Private Residences And Villas
- Bathroom Mirror And Bathroom Furniture Manufacturers



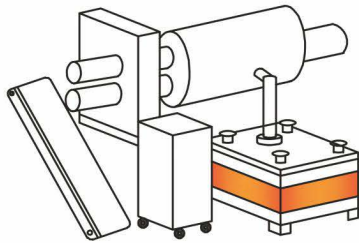
These types of resistances are used as bonding over the material that needs to be heated. It is prepared in desired sizes and diameter and is available in our stocks as imported and domestic goods. Upon special request, geometric, curvy and perforated shapes can be made. There are also thermocouples and thermostats.

#### USAGE AREAS:

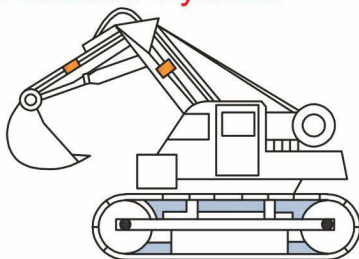
- Bench Heating
- In Machine Molds
- It Is Used In Heating Cement Silo And In Hot Holding Systems By Adjusting Its Degree.



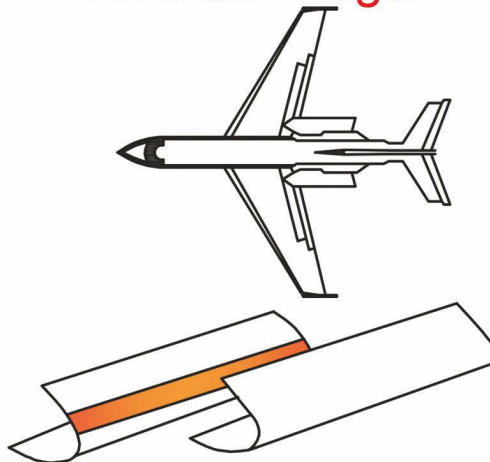
Heating for Machine's  
Oil Pressure Unit



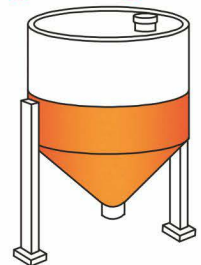
Anti-freezing for  
Oil Pressure Cylinder



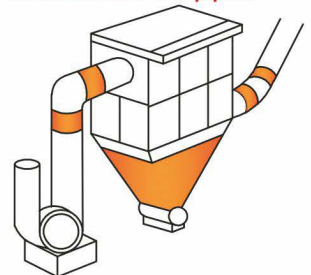
Heating for  
Aircraft Wings



Moistureproof and  
Heating of Large Silos

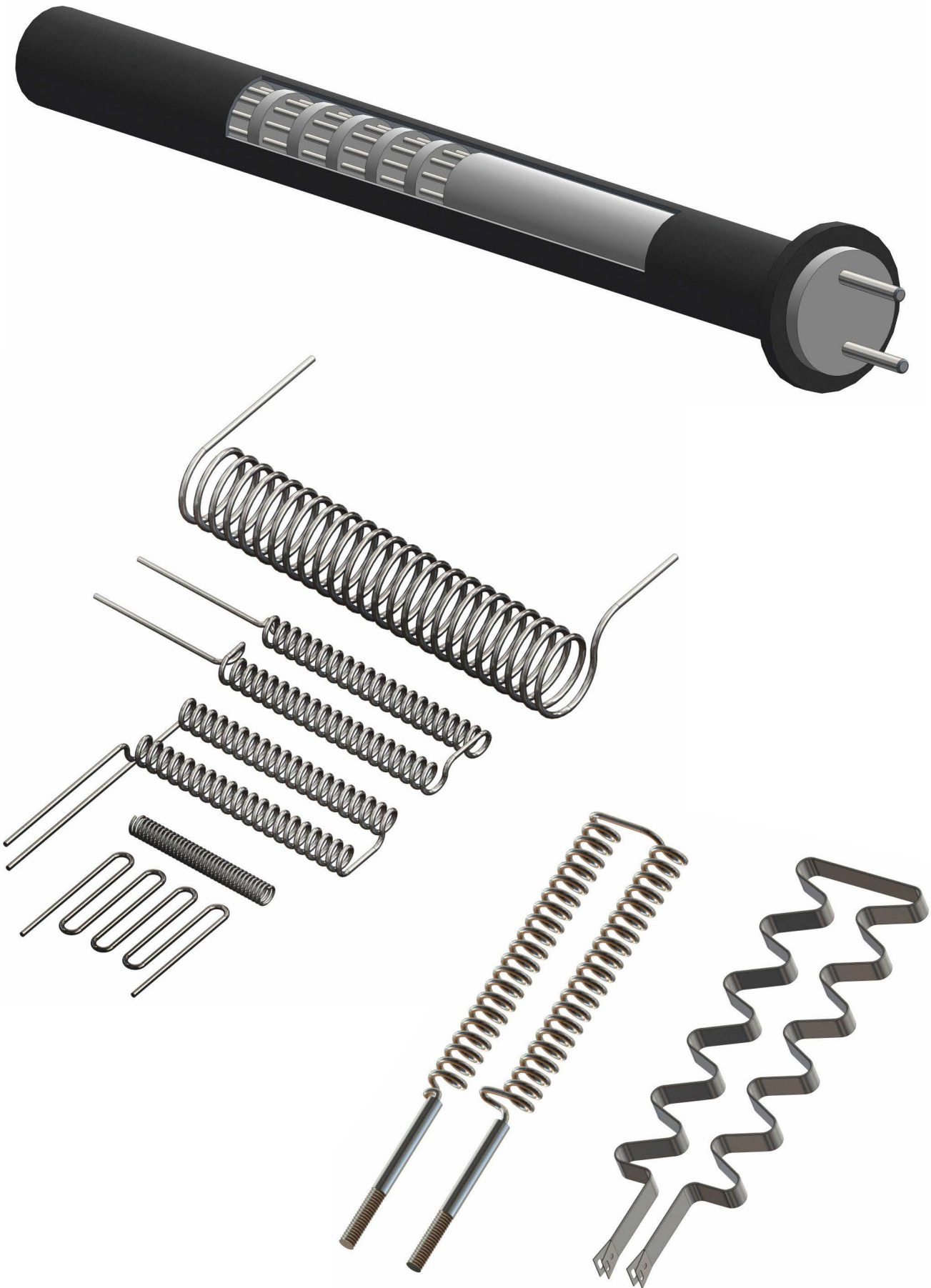


Heating of dust  
Collector Hopper





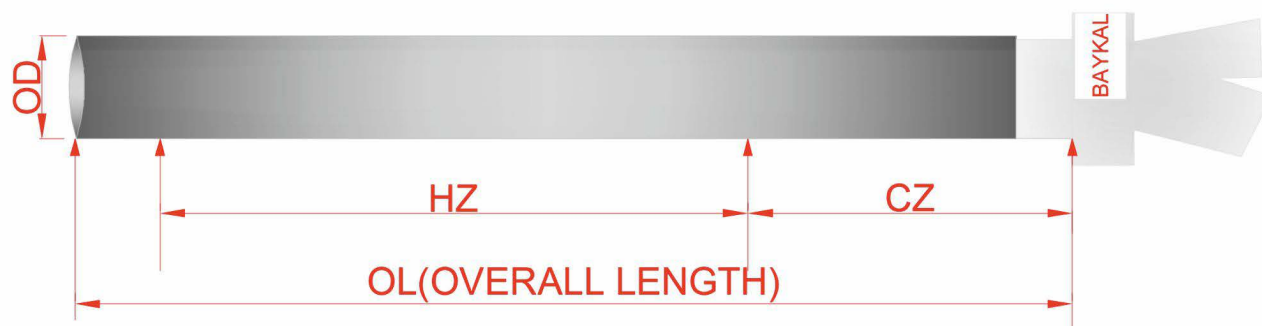
They are specially developed electrical heater resistances used in high temperature oven applications in all branches of heavy industry.



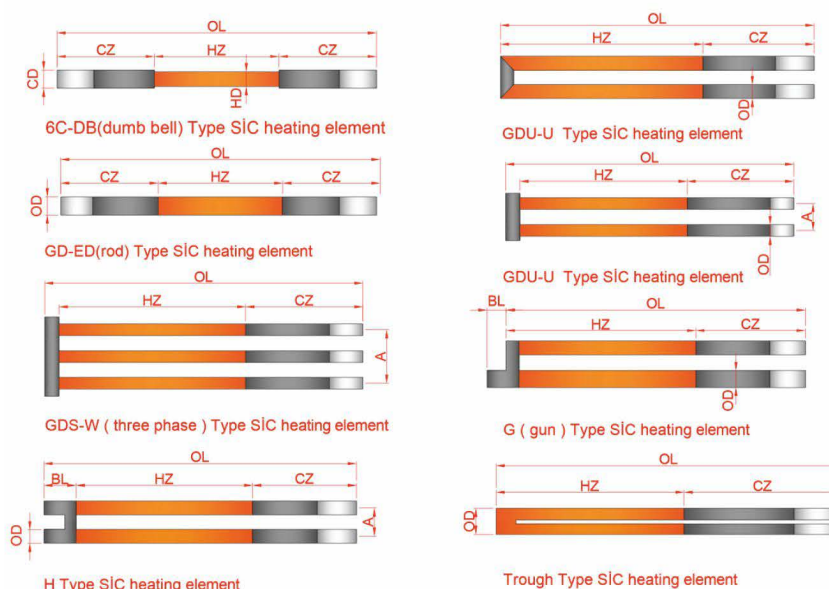


## SILICON CARBIDE RESISTANCES

It is used in applications up to 1400 celsius in electric furnaces used in heavy industry.

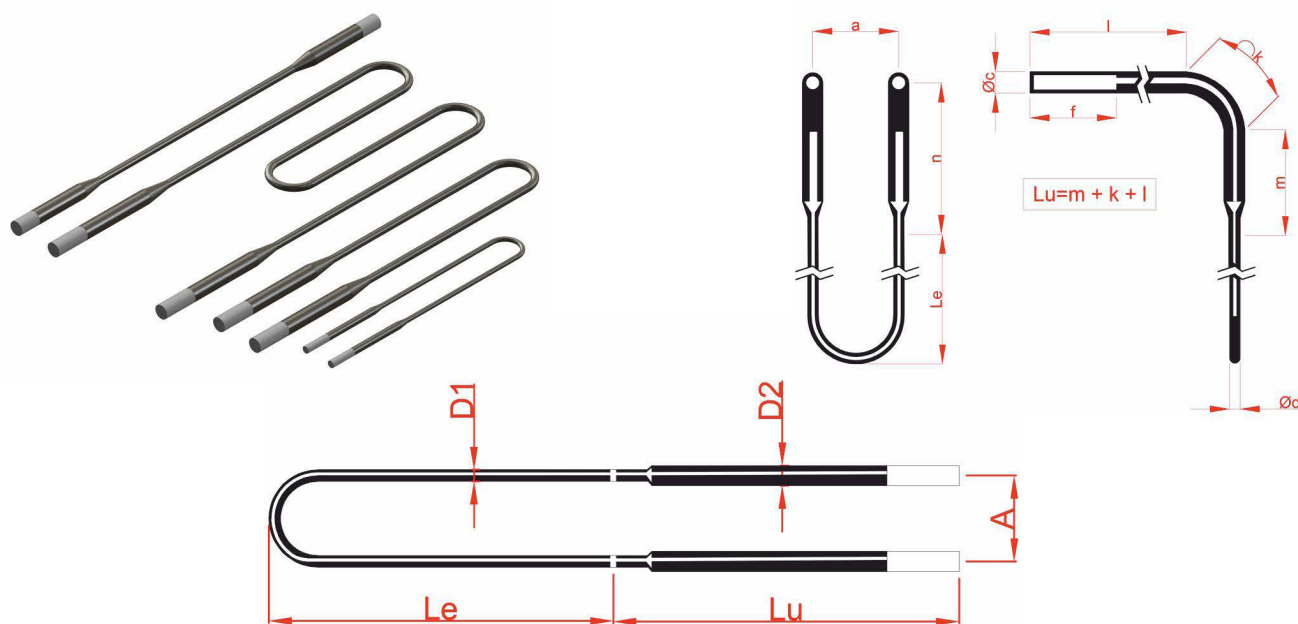


Dimensional drawing of SIC electric rod



## MOSI2 RESISTANCES

Molybdenum alloy heaters that can be used up to 2000 celsius in specially developed ovens (dental, laboratory etc.).



It is used in the research and quality control laboratories of glass, food, pharmaceutical, paint, textile and similar sectors for heating liquids in various volumes of glass balloons. The chrome nickel resistance of the devices has soft and flexible in structure, which are woven with special knitting technique by passing through the fiber glass mesh mantle.

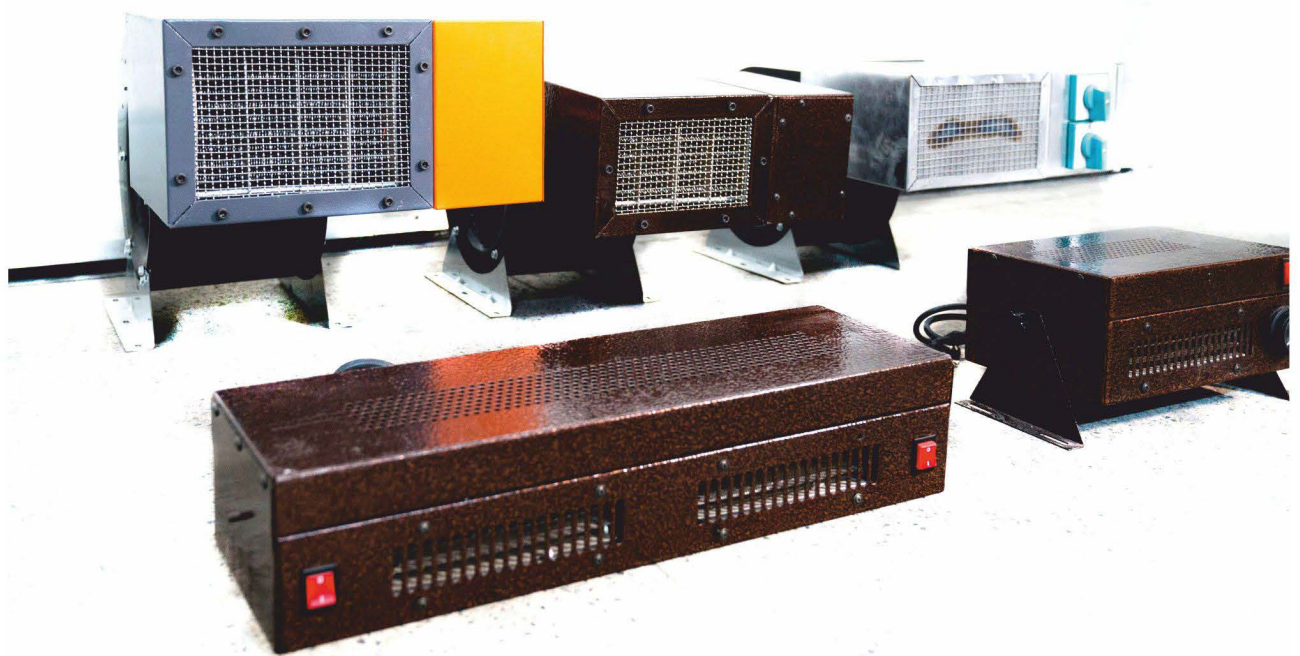
The temperature setting of the devices is done with an electronic analog thermostat up to a maximum of 400 C. The heat probe of the thermostat is placed inside the heater housing, thus ensuring maximum temperature sensitivity. At the back of the devices there is a stative rod which is used to support heated balloons when necessary.





Hot air devices are electrical, 100% thermal efficiency working, mobile fan heaters. It is very practical and useful with the handle or the air router chassis on which it is mounted. It converts all of the energy it consumes into heat energy. Suitable for commercial and industrial use. It does not require refueling; it is only powered by electricity. In particular, flue gas is an effective solution for heating places where there is no outlet possibility and gas or liquid refueling is a problem. The silent structure and standard ambient thermostat is a fast and efficient heating solution for all small and large businesses, offices, shops, showrooms, construction sites, paint- varnish-drying epoxy works, shipyards, yacht factories, workshops, mills, tents, various social organizations.

- Provides instant hot air
- Practical with handle or air router chassis
- Fast and economical installation cost
- Dual-stage operation
- No waste gas, no chimney connection required
- Efficient with 100% thermal efficiency
- Does not consume ambient air
- Thermal insulated panel
- Automatic temperature control with standard ambient thermostat
- Safe with safety thermostat
- High flow rate and silent axial fan
- Direct hot air blowing



### MELTING FURNACES

They are used for melting all kinds of industrial raw materials such as aluminum, tin, copper, brass, etc.

#### USAGE AREAS:

It is used in casting annealing and heat treatment applications.

#### Features:

- It can reach a maximum of 1200 celsius.
- Its insulation is provided with ceramic wool and isolated brick.
- The door of the furnace is opened and closed with rope up and down by motor reducer drive or hydraulic unit.
- Recorder (with recorder) automatic control Proportional controlled heating with PID



### SOLDERING CRUCIBLES

Solder crucibles are made of special type steel with high surface resistance. Therefore, solder crucibles are protected against solder and flux abrasions, and they do not need to be covered. Heat elements and solder crucibles have superior conductivity.

The Ni-Cr-Ni-K Type heat sensor for electronic adjustment is inside the open top surface of the solder pot. The proximity between the heater, sensor and solder surface provides a constant heat control.

Solder crucibles are intended to bring ease and speed to the soldering process. It has round cross-section and four-pointed models. The measures are prepared according to the customer's request.

#### USAGE AREAS

It is used in many parts of the industry for soldering large surfaces quickly and with high quality.

#### TECHNICAL SPECIFICATIONS

**Operating voltage:** 220V - 380V (optional)

**Dimensions:** Round or square section (optional)

**Power:** It is directly proportional to the volume to be processed.

**Control system:** On - Off

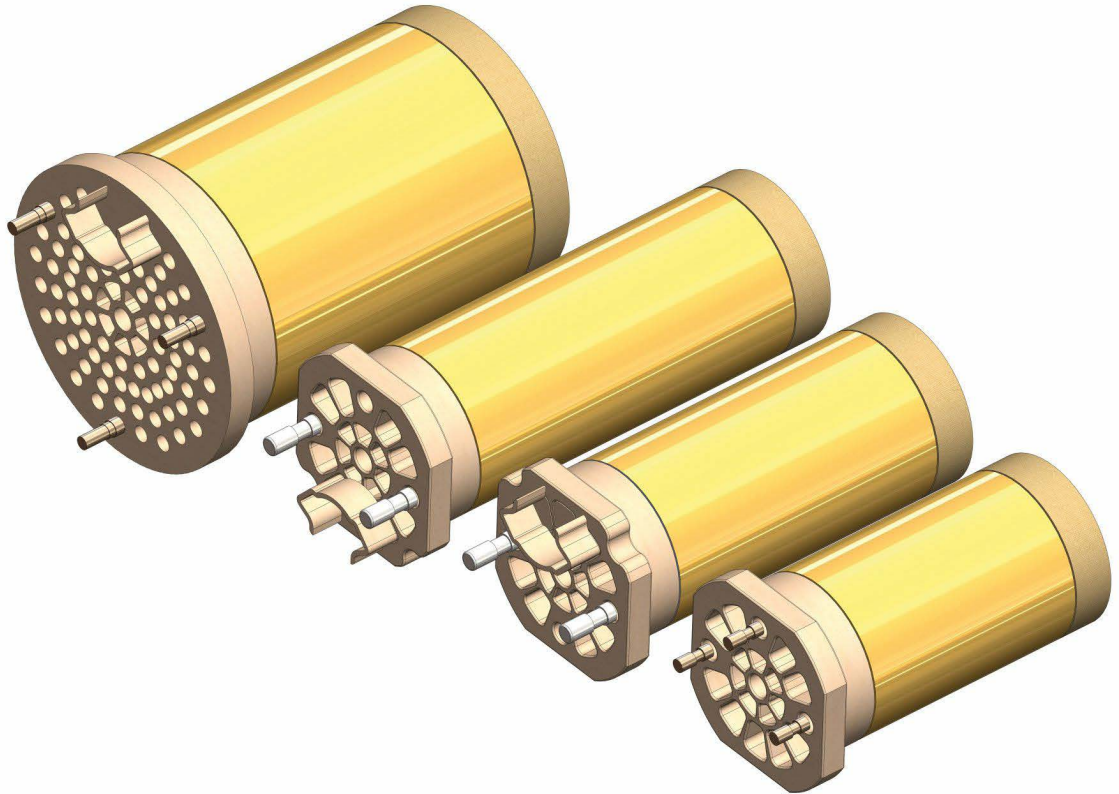
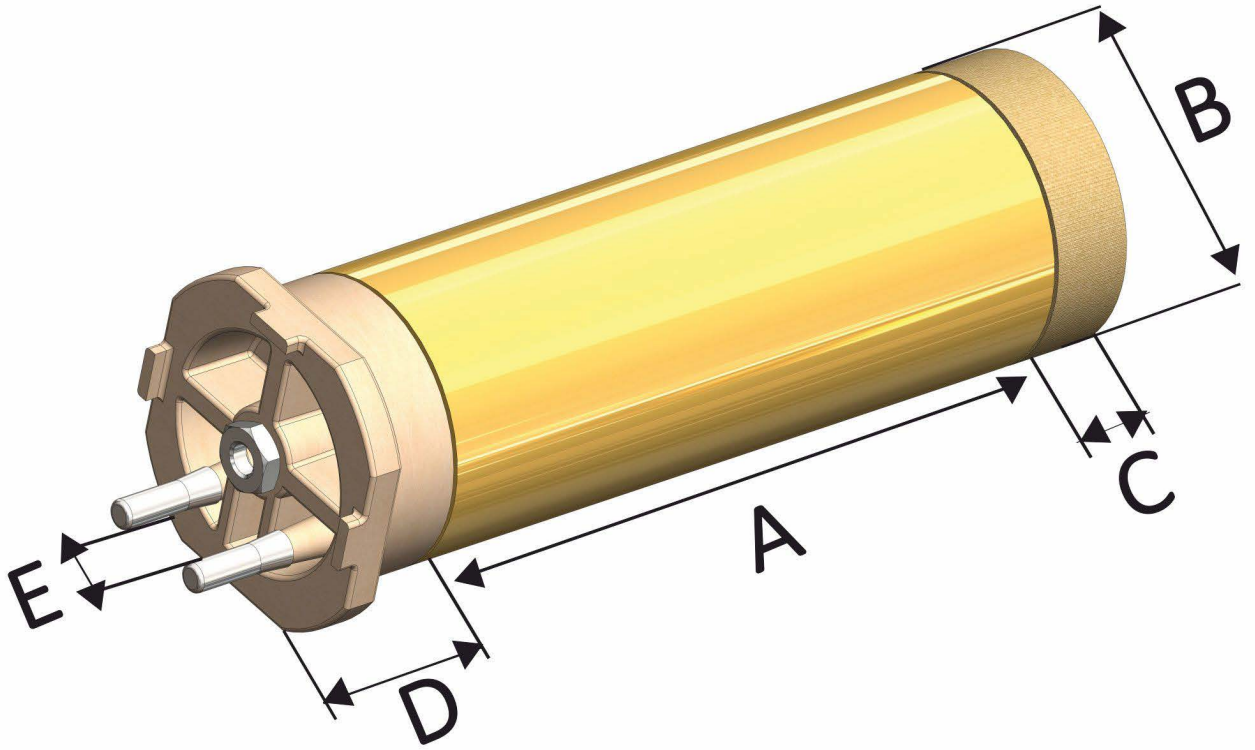
**Operating temperature:** Max 400 C

**Ladle types:** It is manufactured as cast or stainless.





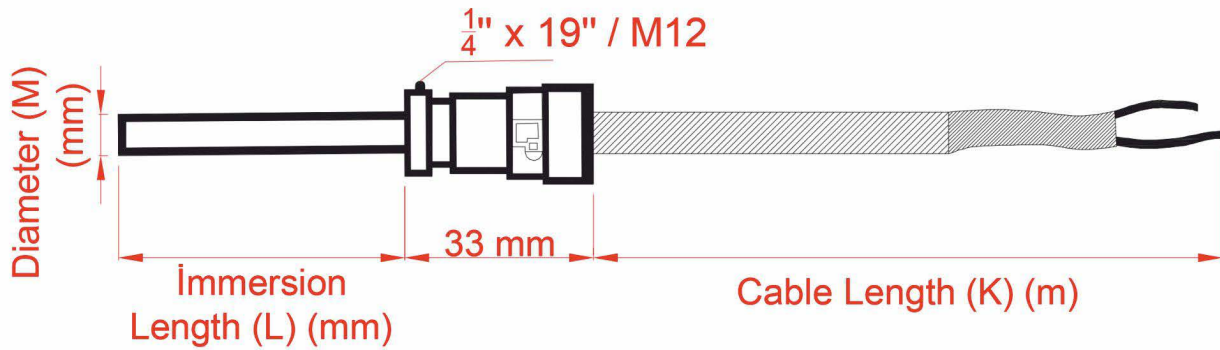
It is the resistance used in hot air guns. Available in our stocks.



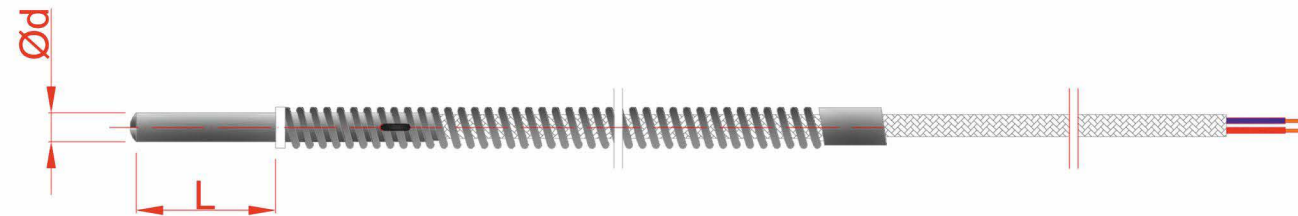
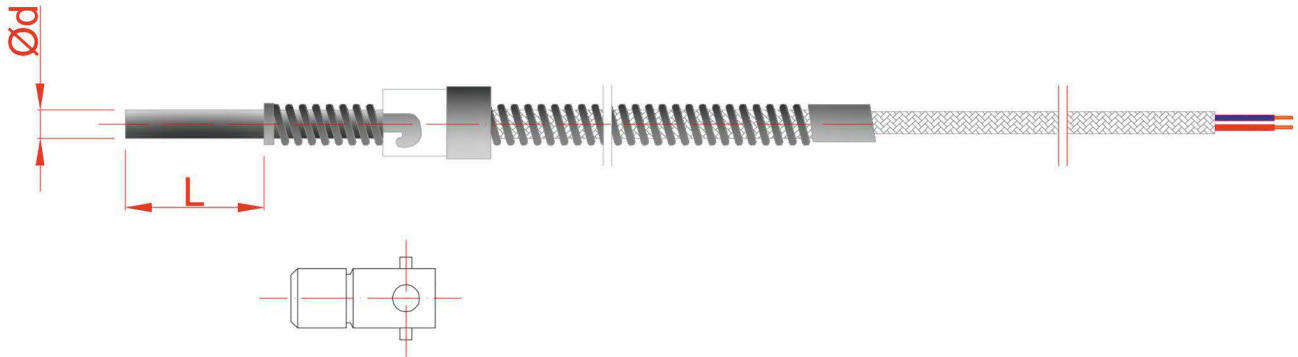
## THERMOCOUPLES

They are the elements used in temperature elimination. Mantel, bayonet, head type (knob head) thermocouples are available in our stock. It can be manufactured in different diameters, sizes and properties according to the request. In addition, ceramic tube can be designed for use in bathrooms containing acidic and corrosive materials with protective sheath, quartz tube protective sheath, Teflon protective sheath.

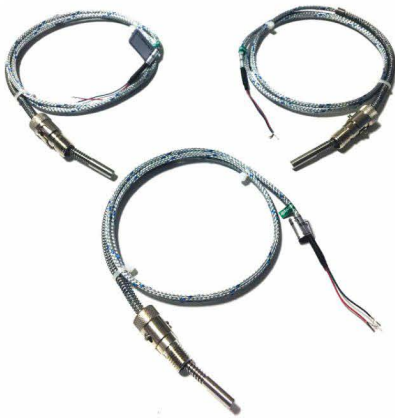
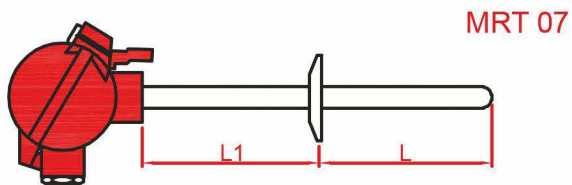
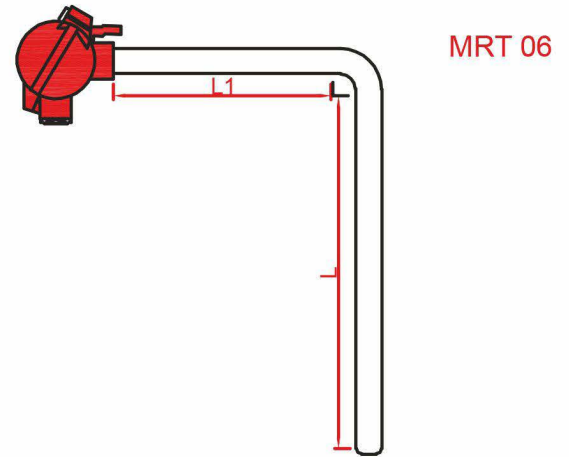
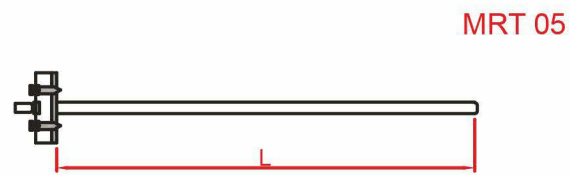
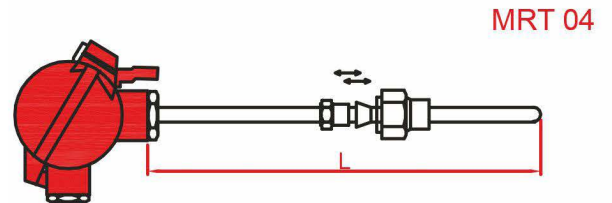
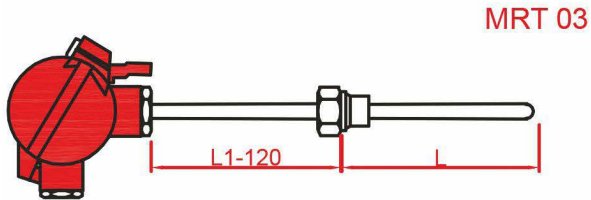
- PT-100 - J type - K type - L Type - PTC 1000 - Mantel Type Thermocouples
- Thermocouples



TC - M   - L    - K   . E







## THERMOSTATS

Heating, cooling, ventilation devices are used to keep the temperature degree at a certain value. There are various devices used with Bimetal thermostat from 0 celsius to 300 celsius and types used digitally from -40 C to 1200 C.

- Thermostats



## TEMPERATURE CONTROL PANELS

