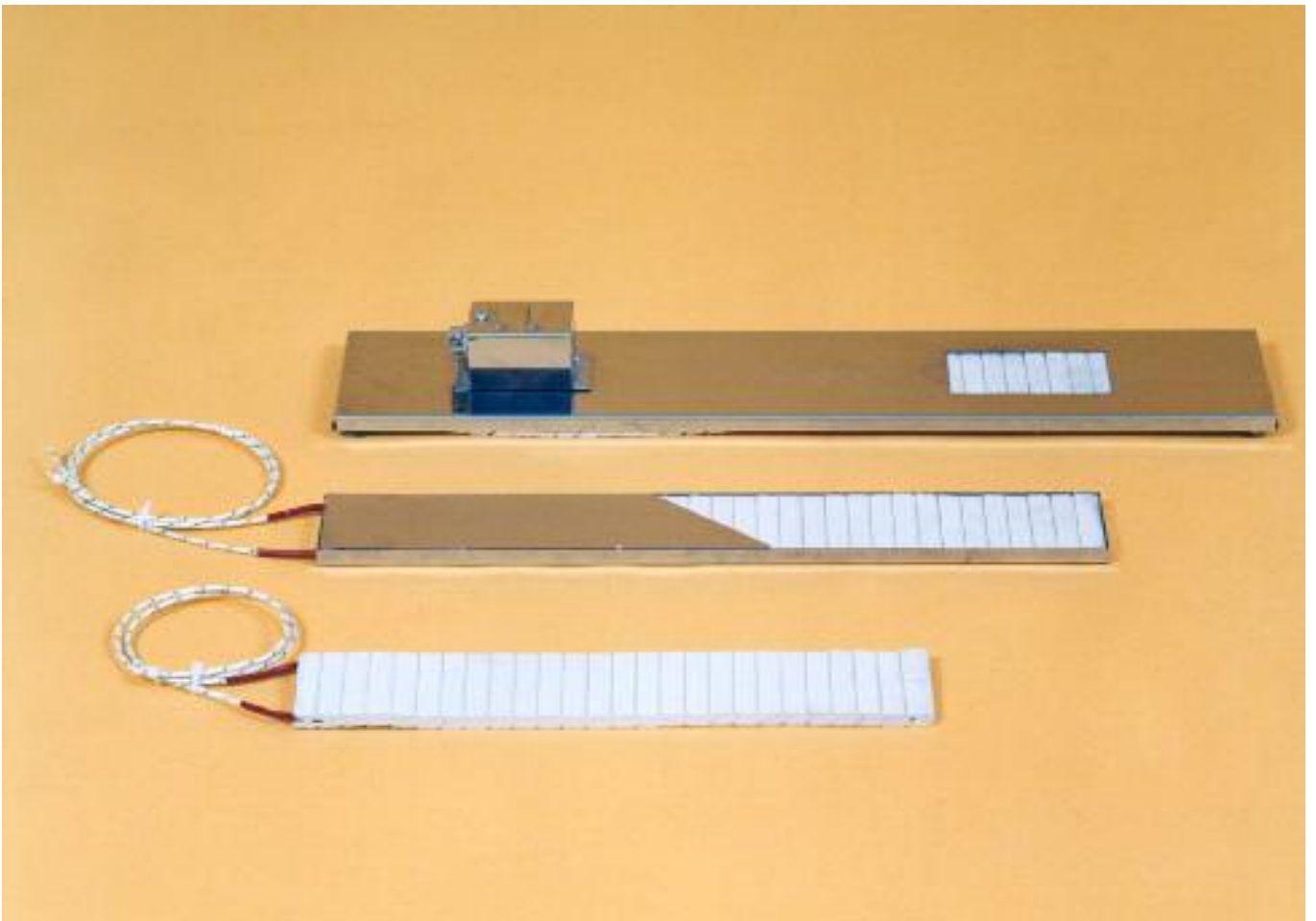
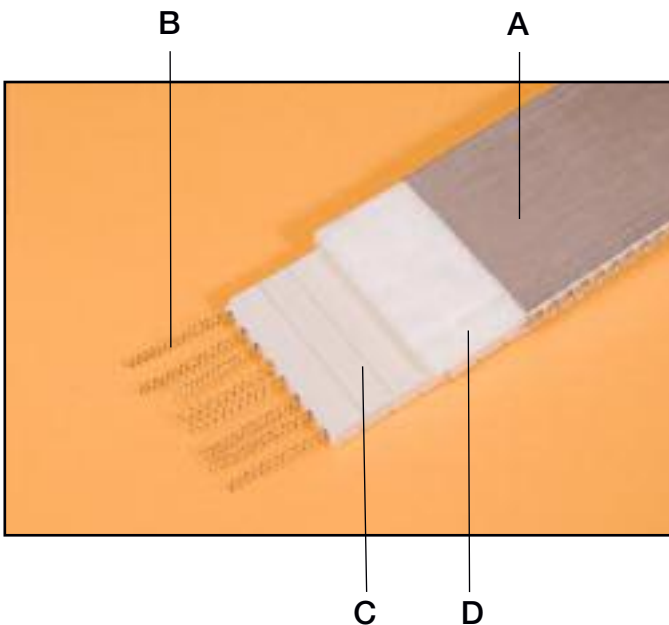


**Ceramic insulated  
flat heaters**



**MODEL Z.45 (FLAT CERAMIC)**

# Model Z.45 flat ceramic



- (A) External sheet
- (B) Resistive wire
- (C) Winding resistance
- (D) Insulating

How to order

Model Z.45

Application: .....

+ Article number (if known): .....

+ Length L (mm): .....

+ Width H (mm): .....

+ Feeding voltage: .....

+ Wattage: .....

+ Exit type (MP..): .....

+ Exit position: .....

+ Cable direction: .....

+ Cable Length: .....

+ Any holes or slots: .....

+ Position of the holes /slots: .....

+ Hole diameter in mm: .....

+ Any pressure plate: .....

## Technical data

### Use

For heating flat surfaces of any dimension, such as:

- Moulds for plastics
- Extrusion die drawplates
- Flat surfaces for presses
- Packaging machines
- Vacuum packaging machines
- Food industry machines
- Electrical motors and cabins, as anticondensation

### Advantages of the mica band heaters

- Excellent heat exchange to the cylinder
- Heating uniformity
- long life of the heater (when properly used)
- Easy to install
- High mechanical resistance
- Constant quality with time
- it is very important underlining that for this heater, the heat exchange takes place both for conduction and radiation.
- Energy saving is an important characteristic because the ceramic fibre layer, placed between the ceramic and the external casing, reduces of about 20% energy consumption, if compared to a normal mica heater.

### Dimensions

- Length from 112mm up to 1800mm - 11.5mm constant increasing Width are related to the distances between the axes of the holes of the ceramic block according to the standard width table on page 3

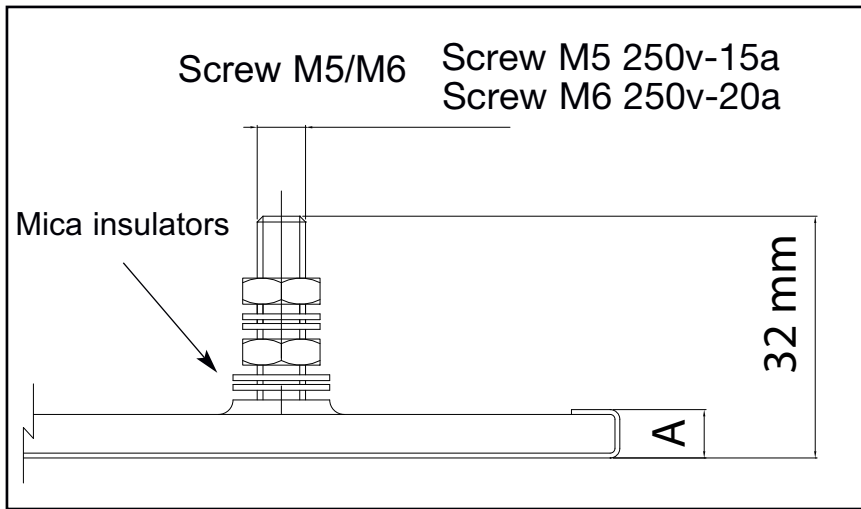
### Widths

- In this case, widths are determined by the distance between the holes inside the ceramic blocks, and, therefore, we have worked out the following table with the standard widths in mm.

### Technical features

- Specific Wattage up to 8W/cm<sup>2</sup> (see page 3)
- Working temperature up to 420°C
- External sheet made of stainless steel AISI 430 resistant to high temperatures
- Resistive ribbons made of NiCr 80/20 (C)
- Insulation made of pure Ceramic
- Heater's standard thickness 12 +/-1mm
- Fibreglass insulated feeding cable with pure Ni or CuNi conductor externally protected by a metal braiding (built in earth wire) – working temperature 320°C , peak 350°-
- Options:  
Pure Ni or CuNi conductors with silicon sleeve -max working Temperature 180°C, peak 200°-

# Model Z.45 flat ceramic



A= 12 +/- 1 mm

## Technical data

### Feasible electric connections

- All monophasic voltages
- Starting from 53mm width till 121mm, it is possible to use a star (Y) three phase feeding
- From width 121 mm is possible to use a star or delta three phase feeding  
una alimentazione trifase a Y o a Δ.

### Testing

- A sophisticated testing equipment (TPC 2000) allows us to guarantee the entire product, because all heaters are hot tested, applying their actual working voltage.
- TPC 2000 is complete with a printer certifying testing results
- Testing certificate for each single heater, upon request

### Standard measurements

- Ohmic Value
- Dielectric strength
- Current loss
- Insulation resistance
- Earth wire efficiency

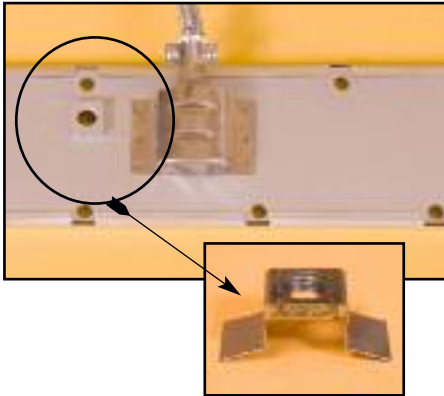
For further information please contact our technical dep.

We reserve the right to change technical details.

## Standard width table

| Widths (mm) |     |     |     |     |     |     |     |     |     |     |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 23          | 68  | 113 | 158 | 203 | 248 | 293 | 338 | 383 | 428 | 473 |
| 31          | 76  | 121 | 166 | 211 | 256 | 301 | 346 | 391 | 436 | 481 |
| 38          | 83  | 128 | 173 | 218 | 263 | 308 | 353 | 398 | 443 | 488 |
| 46          | 91  | 136 | 181 | 226 | 271 | 316 | 361 | 406 | 451 | 496 |
| 53          | 98  | 143 | 188 | 233 | 278 | 323 | 368 | 413 | 458 | 503 |
| 61          | 106 | 151 | 196 | 241 | 286 | 331 | 376 | 421 | 466 | 511 |

## Holes or slots



From width 30mm is possible to supply heaters with external thermocouple holes or slots. It's also possible to provide a threaded connector as showed in the picture.

## Standard threads

|                    |                     |                   |                      |                     |                   |
|--------------------|---------------------|-------------------|----------------------|---------------------|-------------------|
| M8 x 1,25<br>(8MA) | M10 x 1,5<br>(10MA) | M10 x 1<br>(10MB) | M12 x 1,75<br>(12MA) | M12 x 1,5<br>(12MB) | M12 x 1<br>(12MC) |
| 1/8" GAS           |                     | 1/4" GAS          |                      | 3/8" GAS            |                   |

## Special Executions



### Model Z.47

Flat ceramic heater with overall thickness 6mm



### Model Z.45H

Flat ceramic heater with stainless steel pressure plate with fixing holes (overall thickness approx 20mm)



### Model Z.45P

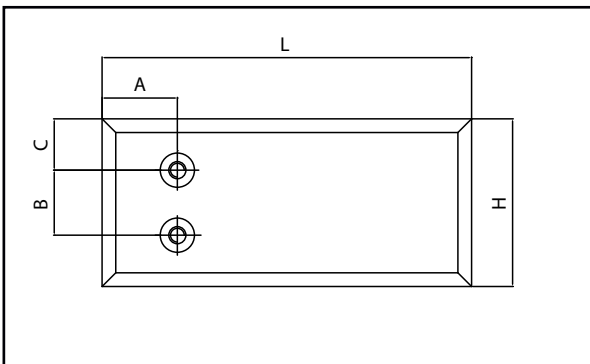
Flat ceramic heaters with single carter with fixing holes

# Connection Option

- Electric connections are reported as follow
- For further requests, ask our technical department



Please check all our connection option at the following link

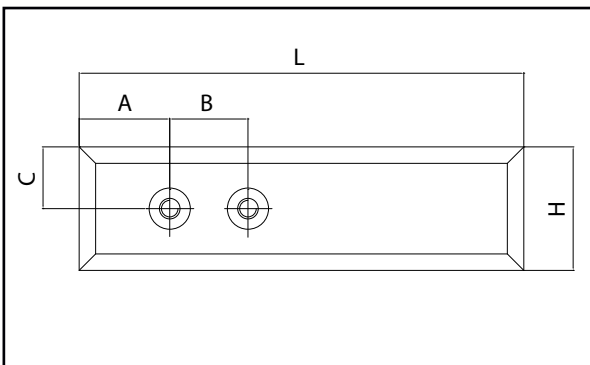


**Output type CP 207**

| Ø Screw | H min. [mm] | A min. [mm] | B min. [mm] | C min. [mm] |
|---------|-------------|-------------|-------------|-------------|
| M5      | 49          | 22          | 19          | 15          |
| M6      | 60          | 27          | 25          | 17,5        |

When ordering, specify

- L** = in mm      **B** = in mm  
**H** = in mm      **C** = in mm  
**A** = in mm

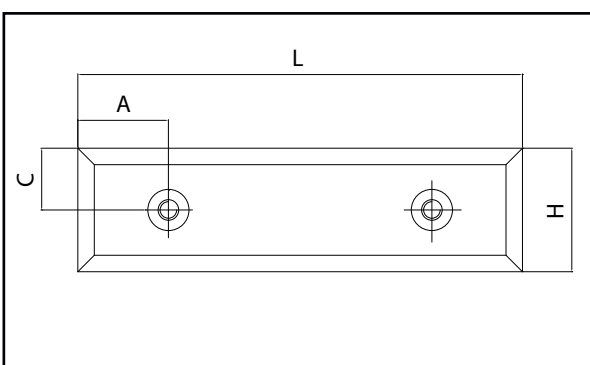


**Output type CP 211**

| Ø Screw | H min. [mm] | A min. [mm] | B min. [mm] | C min. [mm] |
|---------|-------------|-------------|-------------|-------------|
| M5      | 30          | 22          | 19          | 15          |
| M6      | 35          | 27          | 25          | 17,5        |

When ordering, specify

- L** = in mm      **B** = in mm  
**H** = in mm      **C** = in mm  
**A** = in mm

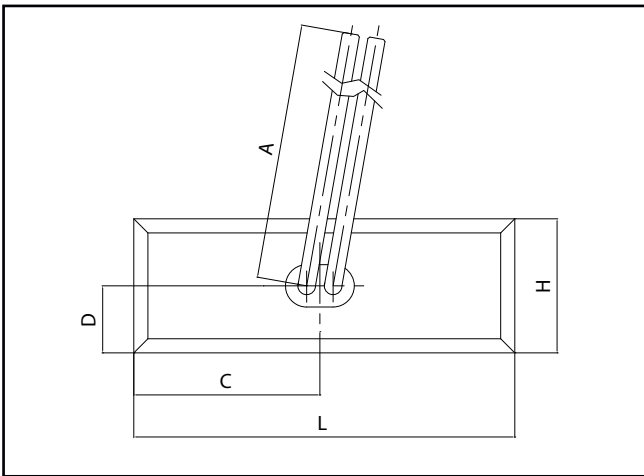


**Output type CP 215**

| Ø Screw | H min. [mm] | A min. [mm] | C min. [mm] |
|---------|-------------|-------------|-------------|
| M5      | 30          | 22          | 15          |
| M6      | 35          | 27          | 17,5        |

When ordering, specify

- L** = in mm      **C** = in mm  
**H** = in mm  
**A** = in mm



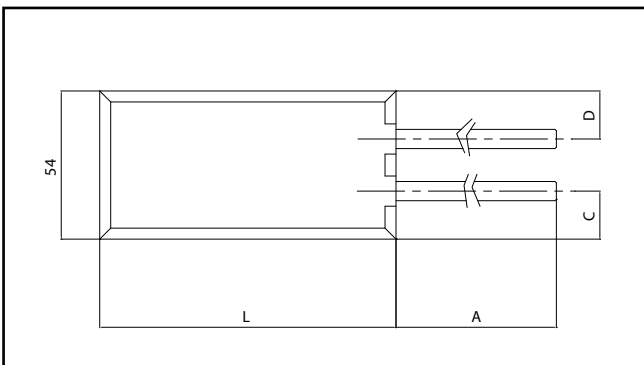
**Output type CP 219**

Min H= 20mm

Teflon-fibreglass insulated nickel feeding cables

When ordering, specify

L = in mm      C = in mm  
 H = in mm      D = in mm  
 A = in mm



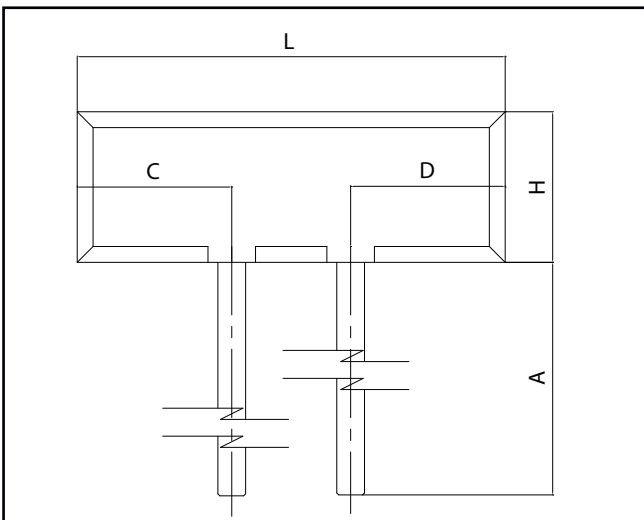
**Output type CP 223**

Min H= 20mm

Teflon-fibreglass insulated nickel feeding cables

When ordering, specify

L = in mm      C = in mm  
 H = in mm      D = in mm  
 A = in mm



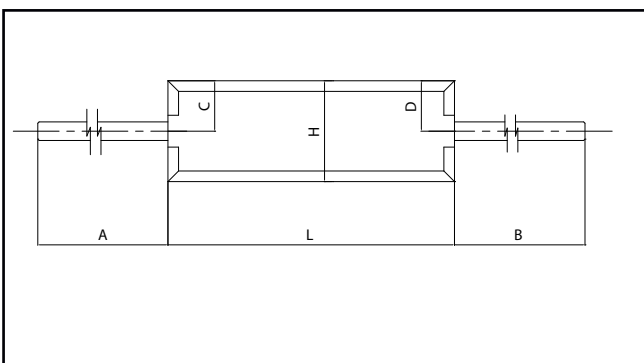
**Output type CP 227**

Min H= 20mm

Teflon-fibreglass insulated nickel feeding cables

When ordering, specify

L = in mm      C = in mm  
 H = in mm      D = in mm  
 A = in mm



**Output type CP 231**

Min H= 20mm

Teflon-fibreglass insulated nickel feeding cables

When ordering, specify

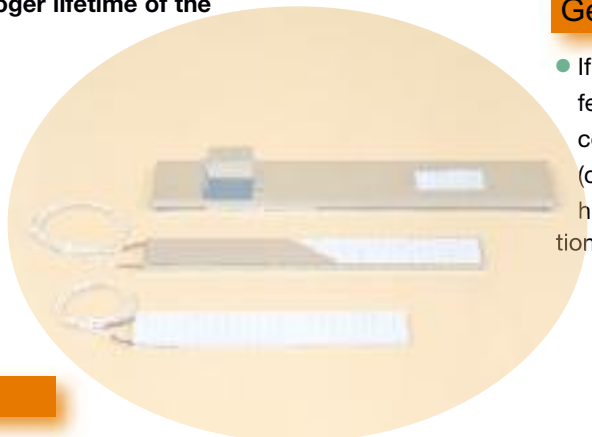
L = in mm      B = in mm  
 H = in mm      C = in mm  
 A = in mm      D = in mm

# Installation and storage instruction

## Installation

- When installing the ceramic flat heater , please make sure to hold it tightly screwing up to the plate.  
When reached the working temperature or after 30 min. heating screw it up still further. Do the same after few hours in order to compensate the thermal linear expansion of the heater.  
Not doing the operation described above may cause the over heating of the parts of the heater that are not perfectly in contact with the nozzle pointed out by a colour change purple - black and consequently the resistive filament may burn.

**It's very important to follow these advices in order to have a longer lifetime of the heater.**



## Connections

- Protect connections against the ingress of liquids and gases to avoid short circuits
- Install the connections away from sharp edges or parts since this may also cause short circuits
- Protect connection leads against the effects of temperature and lay them in a proper way
- Pay attention to the connection voltage

## Storage

- Store at room temperature in a dry place.

## Operation

- Security procedures for the handling of electrical items and applications must be followed
- Do not touch nozzle heater bands while in use because they can get very hot
- Please make sure that the heating elements can not touch flammable material while in use

## General information

- If our ceramic flat heaters are delivered with feeding cables without insulation (naked connection) or with removable insulation (covered with glass-sleeving) the customer himself has to take care about the protection

## Temperature control

- Temperature controllers have to match the power consumption and the used temperature sensor.
- Only install temperature controllers with automatic soft start function so that any moisture which may have entered the heating element will escape slowly