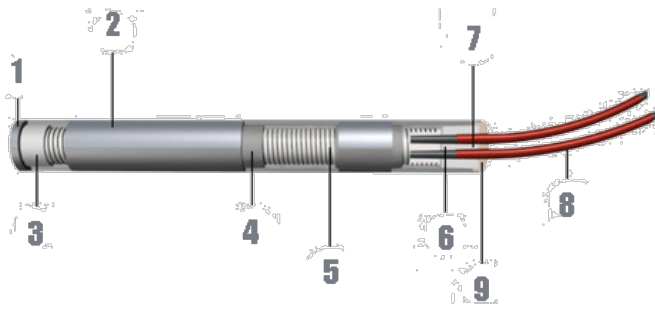


## High density cartridge heaters 750°C

A high density cartridge heater delivers a very high power in relation to its size and gives a uniform heat spread over the entire casing of the heater. IHPs high density cartridge heaters are built to withstand really tough working conditions such as process temperatures up to 750°C, vibrations, shocks and frequent expanding/contraction.

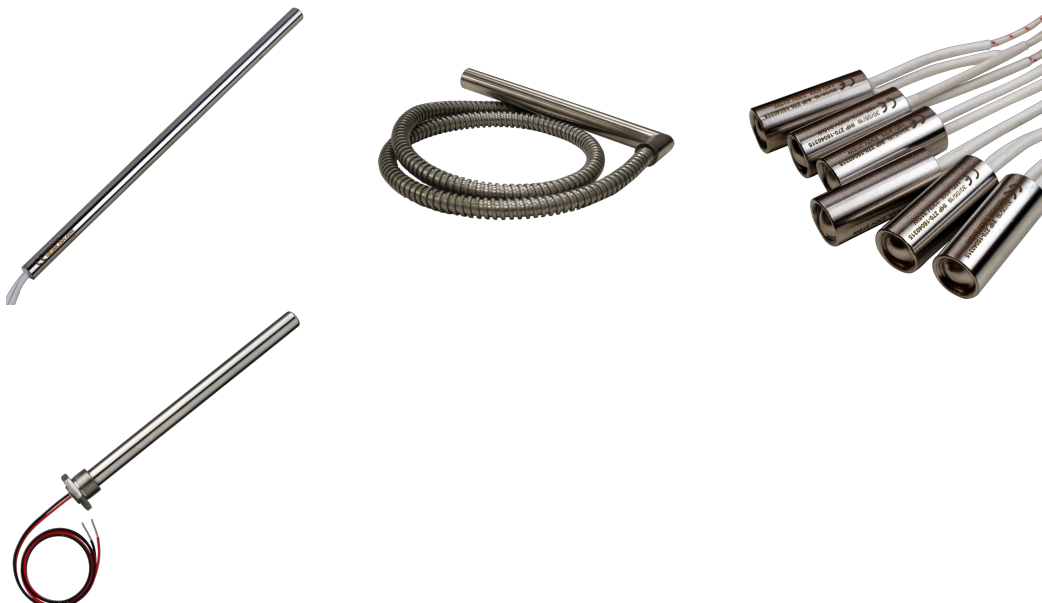
Examples of industrial application is tool heating, solid body heating, liquid heating, casting, melting curing, soldering and heating medical and laboratory equipment.

IHPs high density cartridge heaters are manufactured by tightly coiled resistance wire around a cylindrical ceramic holder. The resistance wire can be placed so that the cartridge heater can have one or more power zones. The entire heating unit is then placed in a metal tube and carefully packed with pure magnesium oxide as an insulator between the resistance wire and casing. Then the cartridge heater is compressed to the correct end diameter and tolerance.



1. Welded waterproof top
2. Casing of stainless steel
3. Insulation disc of ceramic
4. Pure compressed magnesium oxide isolator
5. Resistance wire of nickel/chrome 80/20
6. Ceramic holder
7. Ceramic fixing head
8. Leads
9. Ceramic sealing paste

All high density cartridge heaters can be adapted with sensors/thermocouples and manufactured dust-proof and water resistant.



## Technical specification

Surface load up to 60W/cm<sup>2</sup>

Working temperature up to 750°C

Supply as desired

Casing of stainless steel AISI304, AISI316, AISI321 or Incoloy®

Tig-welded casing for pressure up to 60kg/cm<sup>2</sup>

Resistance wire of nickel/chrome 80/20

Diameter tolerance -0,02 to -0,06mm

Length tolerance ±1,5%

Power tolerance +5% -10%

Hole fitting tolerance H7





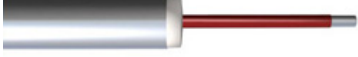





Dielectric strength 1500V 1/sec




Current leakage ≤ 0,1mA vid 242V











Built in sensor/thermocouple type TCJ, TCK or PT100 (optional)

Safety class IP67 (optional)

## Connections

Standard version (T1)	High density cartridge heaters are sealed with heat resistant ceramic paste.	
Ceramic plate (T2)	The ceramic plate sticks out about 3-6mm depending on the diameter of the cartridge heater. This prevents the conductor from shorting against the casing when the cartridge heater is exposed to vibrations.	
Terminal block (T3)	A ceramic terminal block terminates the cartridge heater to simplify change of leads.	
Threaded connection (T4)	Threaded connection with nut for quick connection. Advantageously used in parallel connection with electrical high density cartridge heaters.	
Two-sided lead connection (T5)	High density cartridge heaters with leads on both ends.	
Two-sided threaded connection (T6)	High density cartridge heaters with threaded connection on both ends.	
Flange (T7)	Round flange for easy mounting of the cartridge heater. Ideal for moving production machines.	
Bracket (T7b)	The high density cartridge heater is terminated with a perpendicular bracket. This version is also suitable for moving machines.	
Nipple (T8)	The heater is provided with a threaded nipple. Excellent for heating liquids. This solution can withstand pressure and can be supplemented with a gasket.	
Reinforced angle (T9)	Fully waterproof and reinforced high density cartridge heater terminated with a perpendicular mounting block. This solution prevents damage and makes it easy to remove the cartridge heater.	

Perpendicular cable connection (T9 Base)	Flexible leads connected at 90° to the heater and sealed with heat-resistant ceramic paste.	
Perpendicular protected cable connection (T9 PB)	High density cartridge heaters terminated with perpendicular cable connection protected by a welded metal sleeve.	
Angle bow (T9 Elbow)	Connection with 90° tube bow.	

<b>Leads and cable protection</b>		
Nickel rods (Vn.)	Pins made of nickel make it easy to change leads on high density cartridge heaters and are use where there are high demands on flexibility when mounting. The pins are coated with an insulating layer. Temperature resistance up to 700°C.	
Glass fiber leads (P.Cv.)	These flexible leads have nickel conductors coated with glasfiber and an outside of silicone. These are our standard leads. Temperature resistance up to 350°C.	
Teflon leads (P.Tf.)	Water resistant leads that are used where high purity requirements are needed. Temperature resistance up to 250°C.	
Silicone leads (P.Sf.)	High flexible leads for applications subject to movements and vibrations. Temperature resistance up to 200°C.	
Standard cable (P.Cs.)	3-core standard cable with inner copper conductors. Temperature resistance up to 200°C.	
Silicone sleeve (P.Fs.)	Ideal in a humid environment with flexibility demands. The supply leads are inside the silicone sleeve. Temperature resistance up to 200°C.	
Ceramic beads (Pst.)	Designed for high temperature applications. Inner conductor of nickel. Temperature resistance up to 600°C.	
Glasfiber armed sleeve (P.Fv.)	Protects against high temperatures. Suitable for twisted leads and multiple conductors. Temperature resistance up to 200°C.	
Flexible metal web (P.Tm.)	Metal web in stainless steel. Protects the leads against damage with maximum flexibility maintained. Temperature resistance up to 500°C.	
Flexible nickel tube (P.Tv.)	High protection flexible tube made of nickel that withstands impact, spillage and general tough environment. Temperature resistance up to 350°C.	

Flexible stainless steel tube (P.S.Sa.)

High protection flexible tube made of stainless steel that withstands vibrations, impact and viscous products. Temperature resistance up to 600°C.



### Built in sensor/thermocouple

Insulated temperature sensor

The sensor is completely insulated from the outer casing which counteracts interference from the earth potential on the measured value.



Grounded temperature sensor


The sensor is in direct contact with the outer casing for fast response time.



Customized location of temperature sensor

This option gives you as customer a unique possibility to choose where the sensor should be placed for increased precision and process control.



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