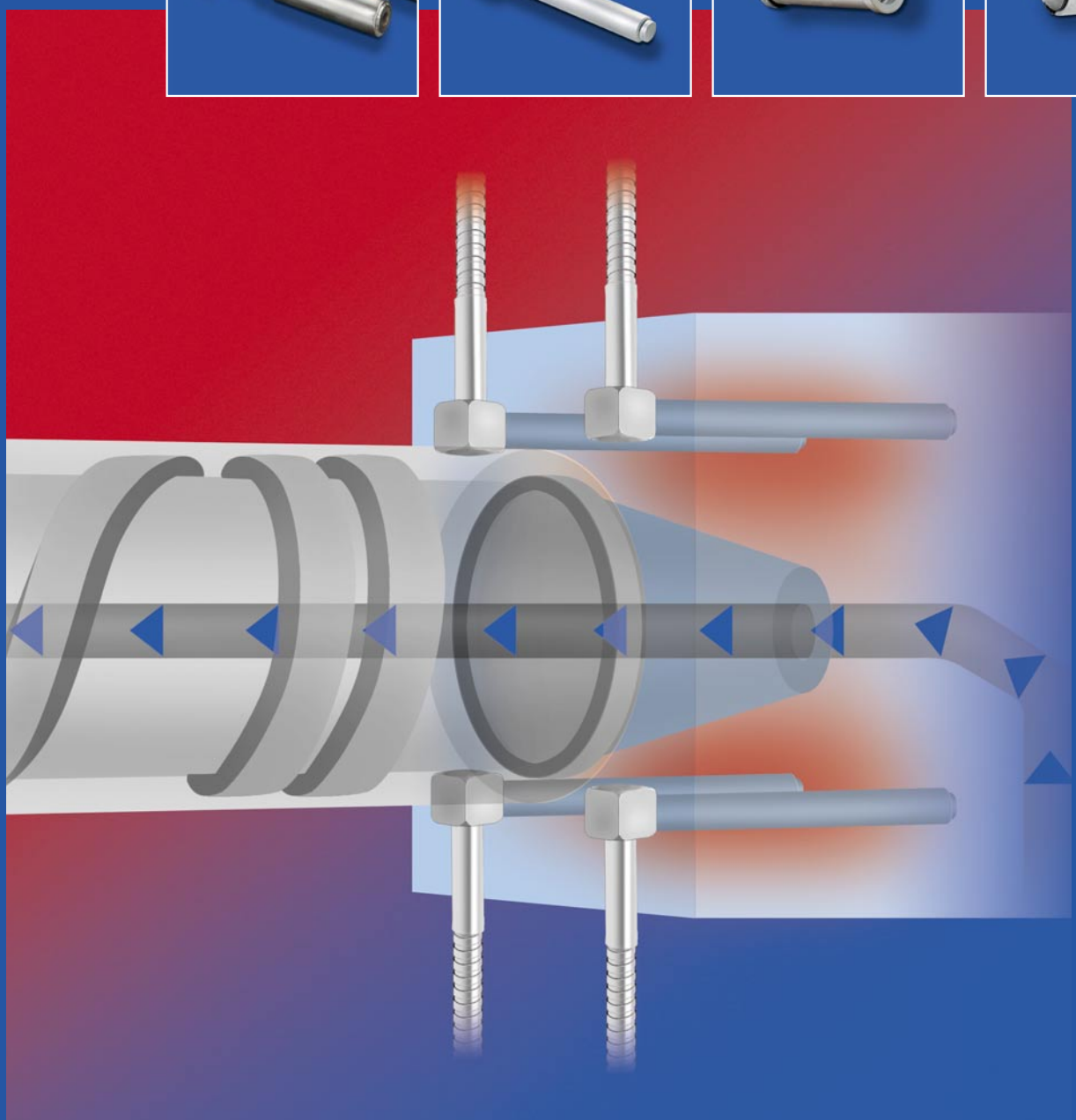
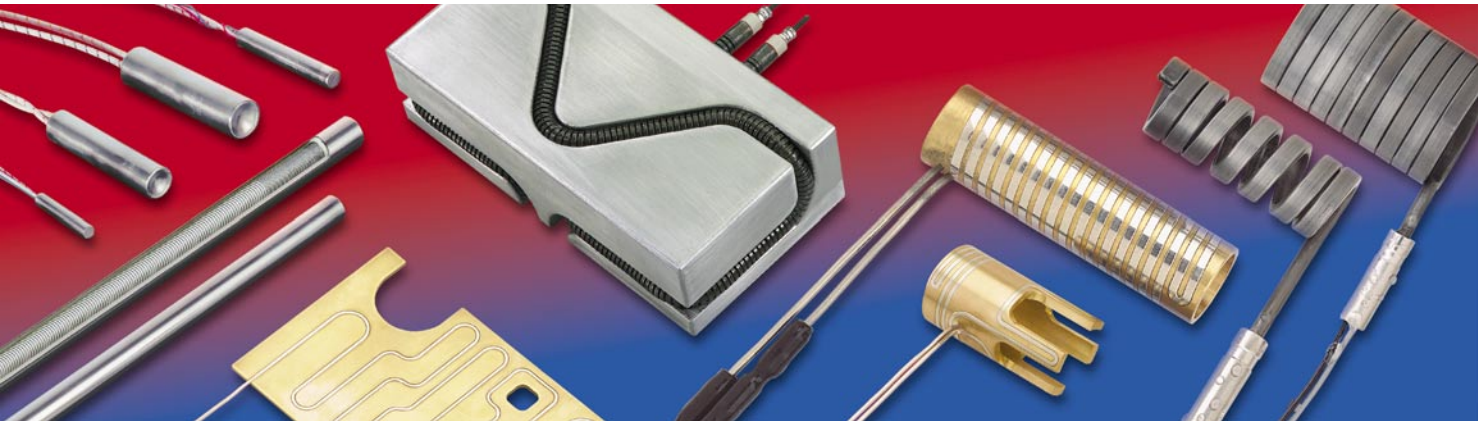
Heating elements for the die-casting industry

Everything out of one cast!





Since the foundation in 1973 hotset has developed and produced heating elements and since then they have been on an expansion course. Oriented by customer demands hotset solves heating tasks for industrial applications.

With production plants in Lüdenscheid and on Malta hotset offers high production knowledge and innovation force for the future.

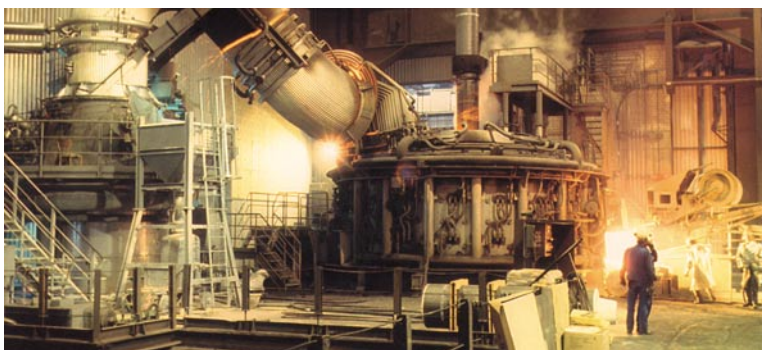
Starting with a large stock range via simple standard heating elements up to customer-specific developments: no matter whether hotrod® cartridge heaters, hotspring® coil heaters or innovative products such as hotflex® or hotslot® as well as excellent customer service, hotset offers the right solution – also customer-specific!

Thus, hotset can prove its high level of innovations and can offer heating elements which are of high quality, fully developed and are suitable for different applications.

In Germany and in more than 30 countries worldwide hotset is for its customers "always one step ahead".

Motivated and qualified employees take care that hotset stands for proximity to customers, innovation, competence and reliability also in future.

You will see and experience it – promised!

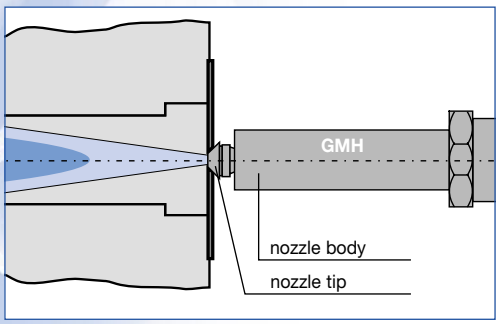


Content

Everything out of one cast!

hotset offers with a large product range a complete system for the heating of hot chamber die-casting machines.
With the open ended heater (OMH) as well as sealed heater (GMH) hotset offers two alternatives for the heating with gas respectively heating elements in two half shells.
As “core” of these products a coil heater (type WRP/Maxi/4.6 x 8.6) is used.
The main advantage is the application-specified power distribution for an optimal heat transfer as well as the equal heat distribution in the mass channel. Furthermore an integrated thermocouple (NiCr-Ni, type K) as well as high energy savings by using an insulation tube can be mentioned.
For balancing the decrease in temperature of the nozzle body to the nozzle tip, the heated nozzle tip (BMV) offers the optimal solution. Thus, the temperature in the mass channel can be kept to low level by the heated nozzle tip (BMV).
The electrical heating of the gooseneck by a special cast-heating element (type HHP/G) guarantees an optimal, even material temperature before entering into the nozzle body. The complete mechanical protection consisting of angular block, tube section and braided metal sleeving eases handling.
The hotset-product range for the casting industry is completed by a wide spectrum of control technology with proved temperature controllers for the die-casting industry as well as a wide range of thermocouples, e. g. cylindric sensors or clamping sensors.

compared to gas heating high energy savings due to sealed heating



Compact system – great use!

1 hotcast® Sealed heater (type GMH)

- compact sealed system
- application-specified power distribution of hotspring® coil heater (type WRP/Maxi/4.6 x 8.6) for an optimal heat transfer and equal heat distribution in mass channel
- easy handling
- integrated hotcontrol® thermocouple NiCr-Ni (type K)
- protection against penetrating material (densely situated hotspring® coil heater with densely welded sheath out off stainless steel)
- deep immersion into the mould by low outer diameter and extra length (shorter cycle times)
- long life
- high energy savings
- optimal temperature control

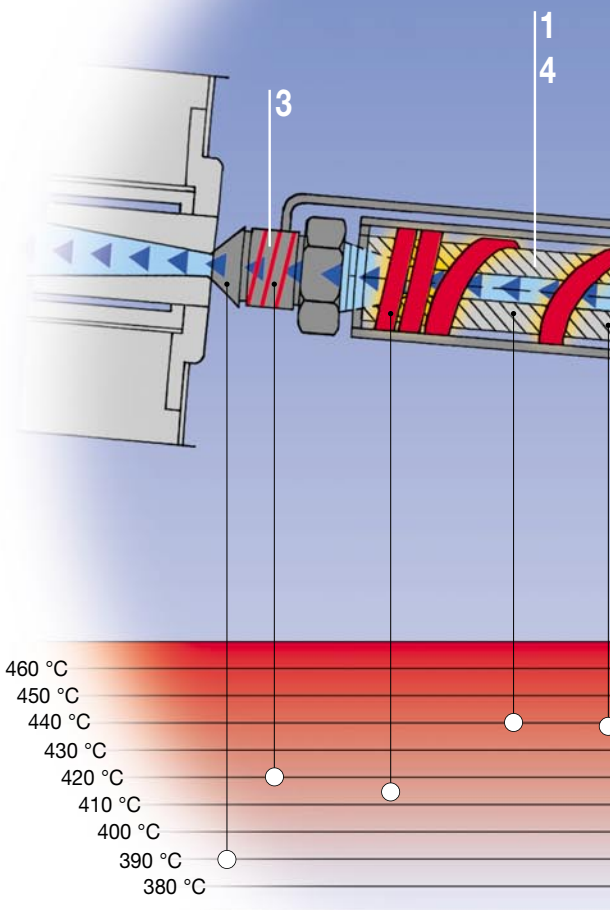
Quality which counts!

2 hotrod® Special cast-heating element (type HHP/G)

- optimal, even material temperature in gooseneck before entering into the nozzle body
- with angular block, tube section and braided metal sleeving
- complete mechanical protection
- eases handling
- standard stud at the bottom for easy removal

6 hotcontrol® Thermocouples

- cylindric and clamping sensors

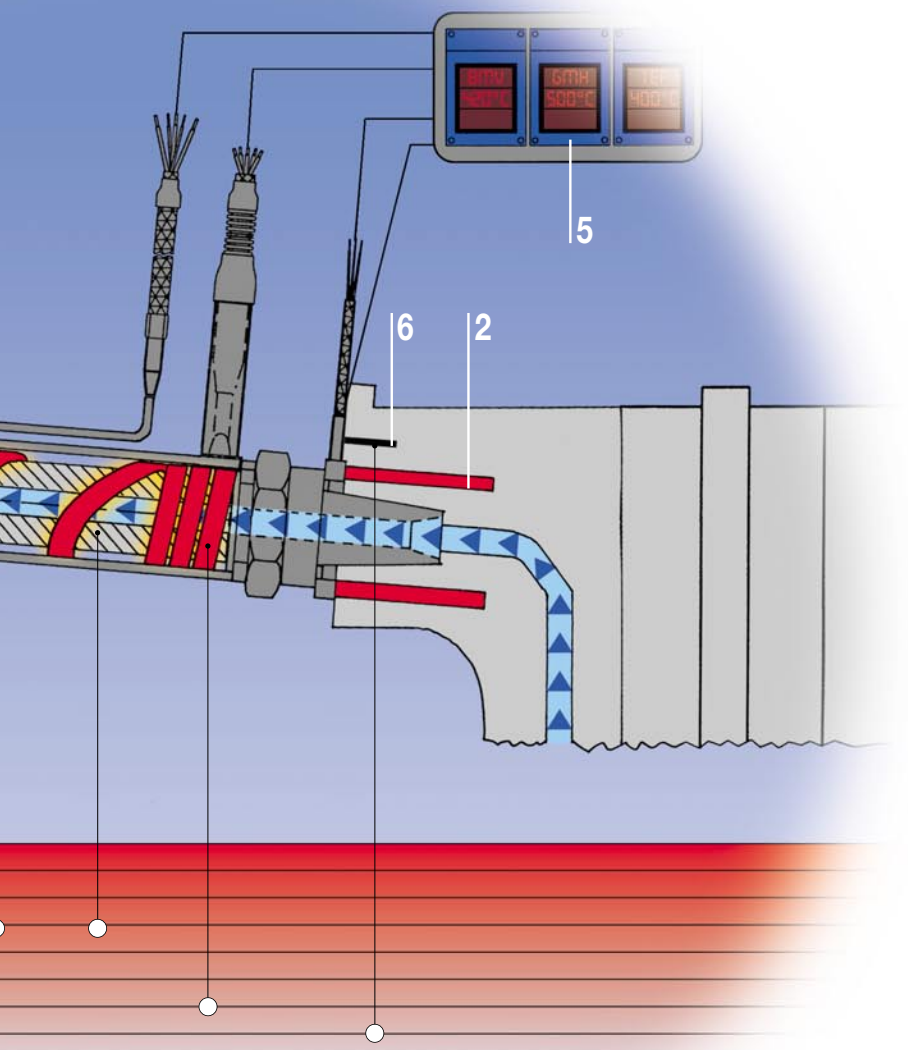


3 Heated nozzle tip (type BMV)

- balancing the decrease in temperature of the nozzle body to mould
- equal temperature in system

4 hotcast® Open ended heater (type OMH)

- application-specified power distribution of hotspring® coil heater (type WRP/Maxi/4.6 x 8.6) for optimal heat transfer
- easy handling
- integrated hotcontrol® thermocouple NiCr-Ni (type K)



5 hotcontrol® Temperature controllers

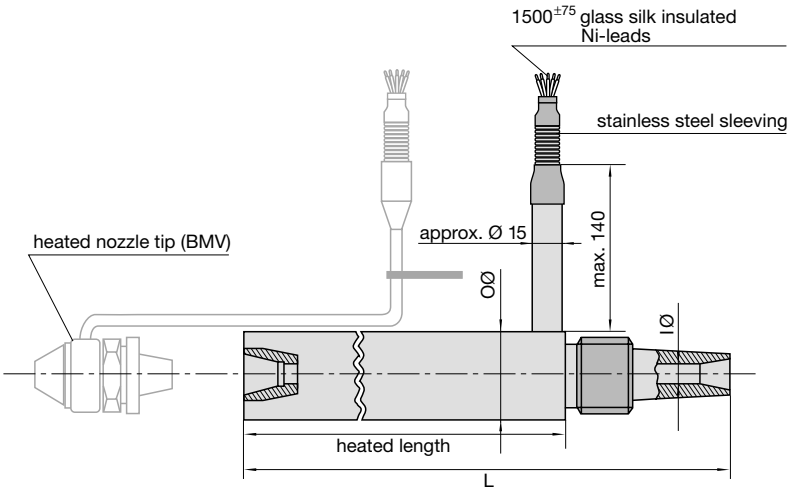
- PID-control with self-optimization
- reverse thermocouple indicator
- automatic power controller if thermocouple breaks
- soft start switch
- limitation of set value

Compact system – wide use!

hotcast®
Sealed heater (type GMH)

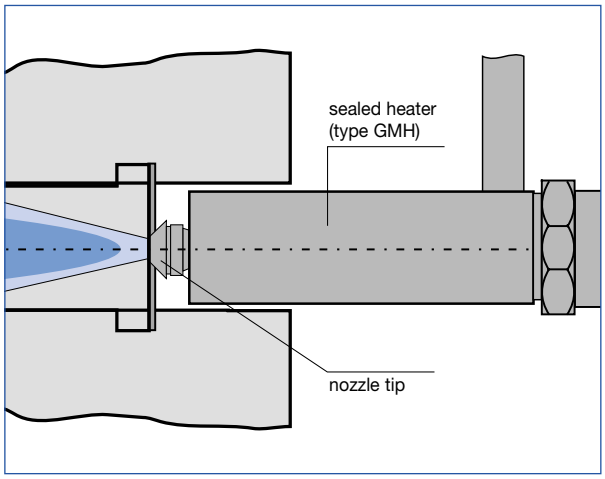
With the hotcast® sealed heater (type GMH) an alternative for the heating with gas will be offered. As “core” of this heating element a hotspring® coil heater (type WRP/Maxi/4.6 x 8.6) is used.

The main advantage is the application-specified power distribution for an optimal heat transfer as well as the equal heat distribution in the mass channel. Furthermore an integrated hotcontrol® thermocouple (NiCr-Ni, type K) as well as high energy savings by using an insulation tube can be mentioned.



measures [mm]

IØ Innerhole
OØ Outer diameter
L Length



heating with a sealed heater (type GMH)

Technical data

- compact sealed system
- application-specified power distribution of hotspring® coil heater (type WRP/Maxi/ 4.6 x 8.6) for an optimal heat transfer and equal heat distribution in mass channel
- easy handling
- integrated hotcontrol® thermocouple NiCr-Ni (type K)
- protection against penetrating material (densely situated hotspring® coil heater with densely welded sheath out off stainless steel)
- deep immersion into the mould by low outer diameter and extra length
- shorter down and cycle times
- long life
- high energy savings
- optimal temperature control
- 1500 mm glass silk insulated Ni-leads with ground wire and stainless steel sleeving

Optional:

- surface treatment of mass channel for flow velocity > 50 m/s
- nozzle tip mould nut included
- BMV – heated nozzle tip for balancing the decrease in temperature of the nozzle body to the mould
- insulation tube for energy saving
- connection length standard: approx. 1500 mm, others on request
- connection version chooseable
- with drawel nut

Attention:
Connection versions which are not dense have to be protected against penetrating liquids, automized spray etc.!

Other dimensions and product varieties on request.

We reserve the right to change technical details.

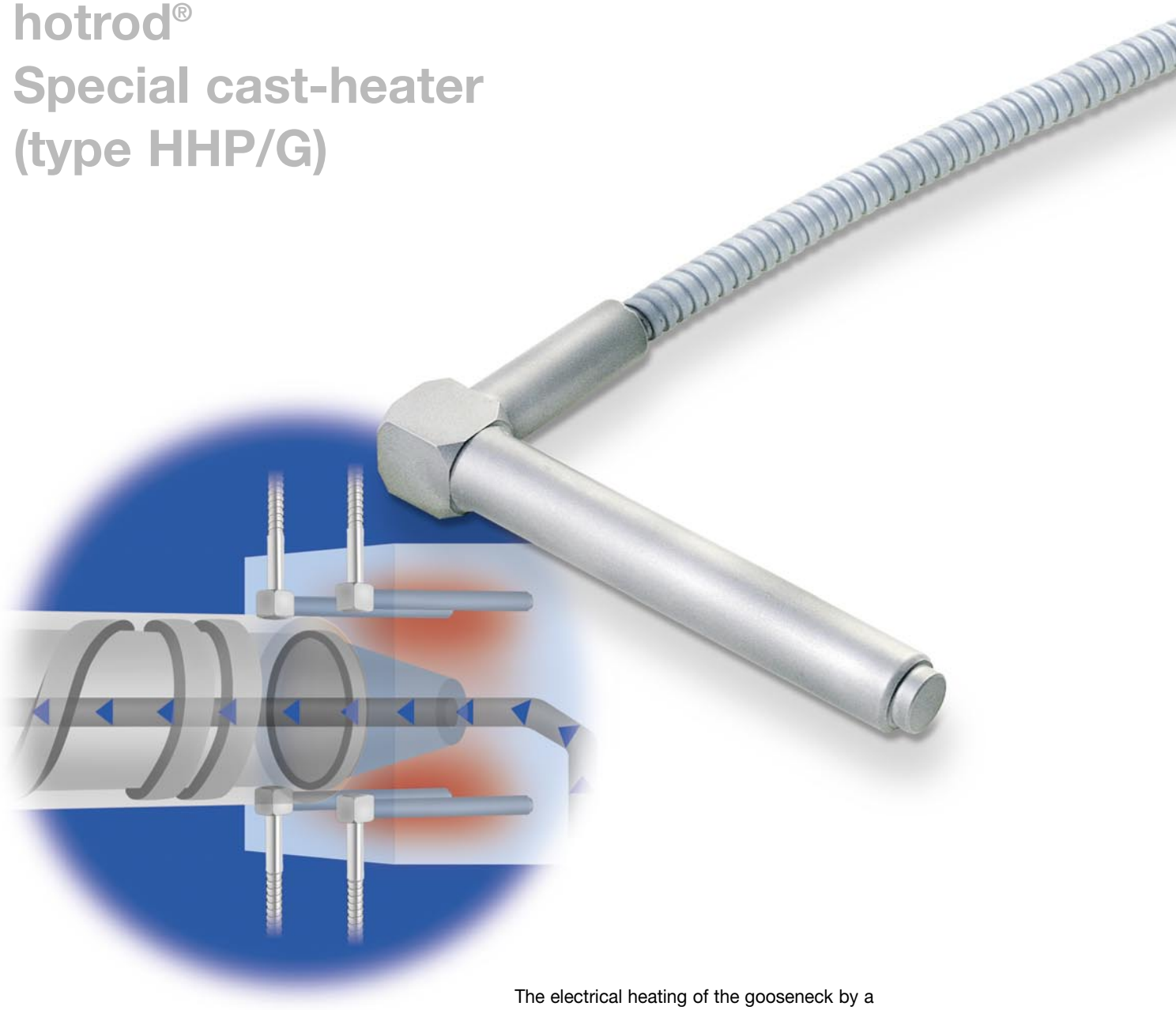
Please consider the hints in our special brochure Calculation basics.

Please note the installation and storage instructions.

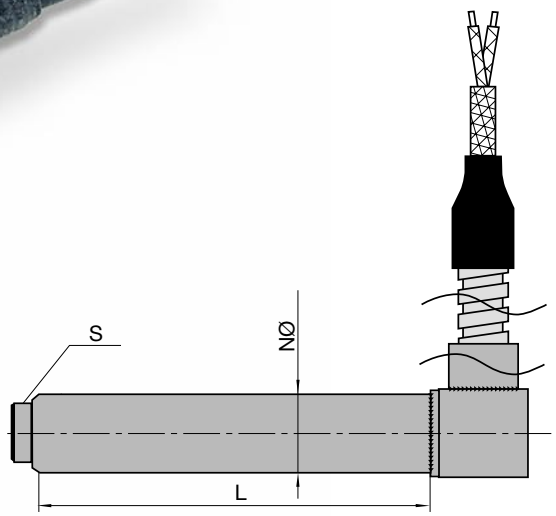
Stock dimensions for hotcast® (type GMH) can be found in the stock range brochure.

Quality which counts!

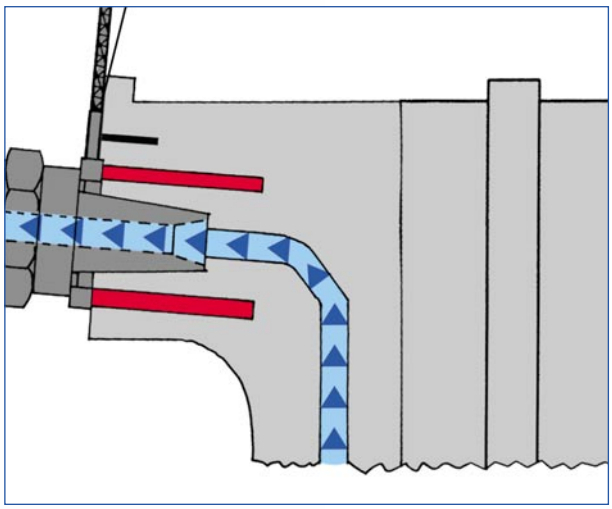
hotrod®
Special cast-heater (type HHP/G)



The electrical heating of the gooseneck by a special cast-heating element (type HHP/G) guarantees an optimal, even material temperature before entering into the nozzle body.



NØ Nominal diameter
L Length
S Stud



heating of the gooseneck

Technical data

- voltage 230 V (standard), others on request
- optimal, even material temperature in gooseneck before entering into the nozzle body
- with angular block, tube section and flexible metal sleeving
- complete mechanical protection
- eases handling
- standard stud at the bottom for easy removal

Optional:

- integrated thermocouple NiCr-Ni (type K)
- connection length chooseable
- connection version chooseable

Other dimensions and product varieties on request.

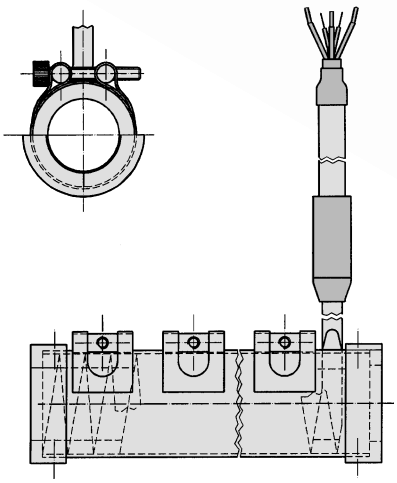
We reserve the right to change technical details.

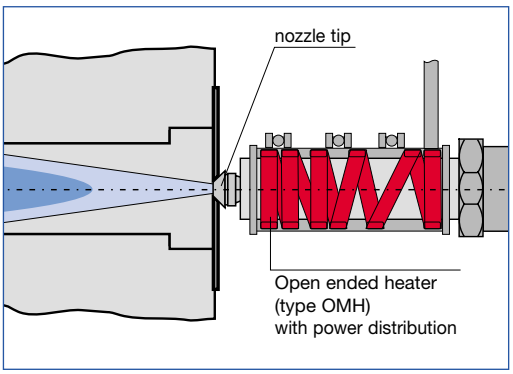
Please consider the hints in our special brochure Calculation basics.

Please note the installation and storage instructions.

Stock dimensions for hotrod® (type HHP/G) can be found in the stock range brochure.

hotcast®
Open ended heater (type OMH)





Technical Data

hotcast® (type OMH) – economic heating of existing nozzle bodies:
The OMH is a sheathed flat hotspring® coil heater which is slipped on an present nozzle body. Thus the mass to be heated is reduced to a minimum which enables low power and results in energy savings. The tight fit of the heating by the clamping band and the end rings nearly avoid penetration of material when spattering.

hotcast® (type OMH) – high product quality by equal temperature control:
By the application-oriented power distribution of the inserted hotspring® coil heater the equal temperature distribution along the total length of the nozzle body is ensured. This mild material treatment increases the product quality and decreases the waste quota.

- application-specified power distribution of hotspring® coil heater (type WRP/ Maxi/4.6 x 8.6) for optimal heat transfer
- easy handling
- integrated thermocouple NiCr-Ni (type K)
- connection length chooseable
- connection version chooseable

Attention:
Connection versions which are not dense have to be protected against penetrating liquids, automized spray etc.!

Other dimensions and product varieties on request.

We reserve the right to change technical details.

Please consider the hints in our special brochure Calculation basics.

Please note the installation and storage instructions.

Stock dimensions for hotcast® (type OMH) can be found in the stock range brochure.

Accessory for die-casting industry

nozzle tip for hotcast® (type GMH)

BMV – heated nozzle tip for hotcast® (type GMH)

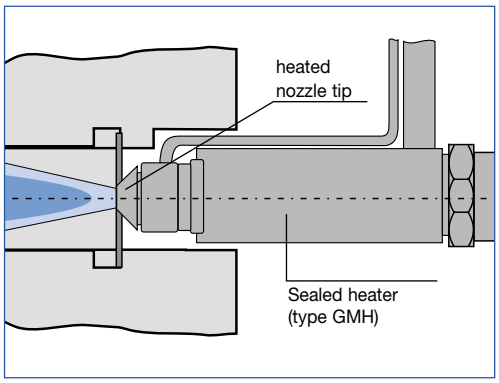
Heated nozzle tip (type BMV)

- for balancing the decrease in temperature of the nozzle body to nozzle tip
- low temperature in mass channel

In order to balance the decrease in temperature of the nozzle body to the nozzle tip the heated nozzle tip (type BMV) is the optimal solution. Thus, the temperature in the mass channel can be kept to a low level.

Please note the installation and storage instructions.

Stock dimensions for nozzle tip for hotcast® (type GMH) can be found in the stock range brochure.



Hexagone nut for removal standard nozzle tip

Mould nut for nozzle bodies

Nuts

Please note the installation and storage instructions.

Stock dimensions for nuts for hotcast® (type GMH) can be found in the stock range brochure.

Accessory for die-casting industry

Insulation tube

By using insulation tubes the heat emission considering the hotcast® sealed heater (type GMH) can be reduced by nearly 60 %.
The heating-up time is shorter, the flow behaviour and termperature distribution are considerably improved.

The outer diameter of nozzle heaters is enlarged by an insulation tube by about 11 mm.

Attention:

An insulation of the nozzle body can only be effected on the total heated length of the GMH, not on parts!

hotcontrol® Temperature controllers

- thermocouples: Fe-CuNi (J, L), NiCr-Ni (K)
- resistance thermometer: Pt 100, can be switched by user
- reverse thermocouple indicator
- automatic power controller by thermo-couple break
- real value correction
- limitation of set value
- display set and real value of [°C]/[°F] can be switched
- soft start with programmable start time and -temperature
- 2. real value (e. g. drop temperature)
- hours counter
- control action: on/off, PID with self-optimization
- control range:
  Fe-CuNi (type J) -100 °C at + 650 °C
  Fe-CuNi (type L) -100 °C at + 650 °C
  NiCr-Ni (type K) -100 °C at +1300 °C
  Pt 100 -100 °C at + 650 °C
- control accuracy: ± 0,5% of adjusted control range
- nominal conditions: 0 °C at + 50 °C

Clamping band sensors Cylindric sensors

hotcontrol® Thermocouples

Clamping band sensors

- band width 9 mm
- sensor is fixed onto the cylinder, which has to be measured, like a wide clip
- compensation line 2000 mm long

Cylindric sensors

- sensor tube Ø 3.5 mm ± 0.05 mm
- length 30 or 40 mm (without screwing)
- stainless steel sheath
- compensation line glass silk insulated, 2000 mm long (standard), longer connections on request
- Fe-CuNi, NiCr-Ni, Pt 100
- optional with fixing plate (stainless steel)

Please note the installation and storage instructions.

Stock dimensions for hotcontrol® thermocouples can be found in the stock range brochure.

Isolite-Spray

High temperature lubricant

- temperature conducting
- not electrically conducting
- avoids corrosion
- reduces abrasion
- very good separation quality against metal, glass and slag melts as well as plastics
- temperature resistant up to 900 °C if exposed to air, up to 2000 °C in non-oxidizing atmosphere
- Art.-No. 9400001

Please note the installation and storage instructions.

Stock dimensions for Isolite-Spray can be found in the stock range brochure.

always one step ahead

We are looking forward to cooperating with you!

hotset develops and realises
heating solutions for

- Hot runner technology
- Packaging technology
- Junction Technology
- Rubber-, India rubber (caoutchouc), and silicon processing
- Welding mirror manufacturing
- Extrusion technology

As well as all other industrial applications –
fast, individually and competent!

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