



**Valve gate systems**





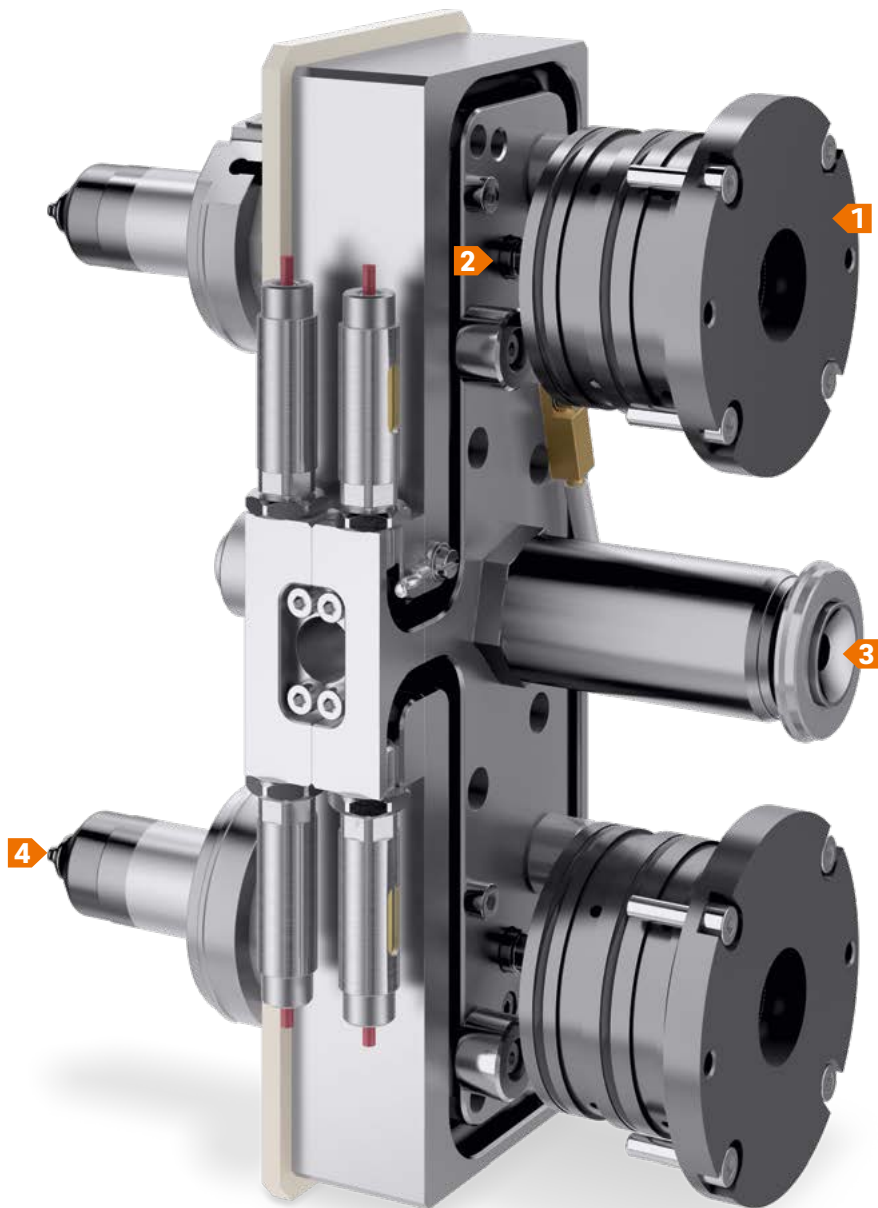
## 3 Valve gate systems

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## Valve gate technology

High visual requirements, a variety of applications, minimal shear stress, variable gate diameters and high process reliability. These are just a few of the requirements for which GÜNTHER valve gate technology has the right answer.

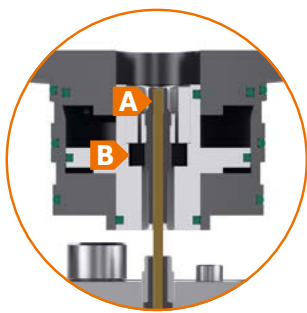




GÜNTHER's portfolio includes a variety of valve gate nozzles and needle actuation options. This enables perfect application-specific adaptation to the mould concept, both technically and financially. Both the smallest and large shot volumes and gate diameters from 0.8 to 4.0 mm can be implemented with valve gate technology.

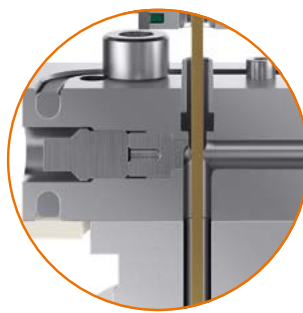
The innovative design of the needle guide and the optimised shut-off needle enable low-wear operation. During the shut-off movement, the needle is first led over a cone up

to the cylindrical pre-centring device for precise immersion into the cylindrical gate point. The needle guide is supported floating in the melt channel. In case of wear, the needle guide can be changed with minimal effort. Special openings in the mould clamping plate enable individual adjustment of the immersion depth of the shut-off needle from the outside. Depending on the application, highly filled plastics can be processed.



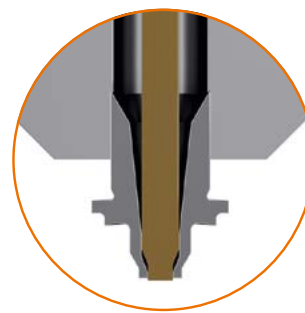
**1 ENV single-needle valve**

- A** Adjustment of the needle position
- B** Installation independent of heat expansion



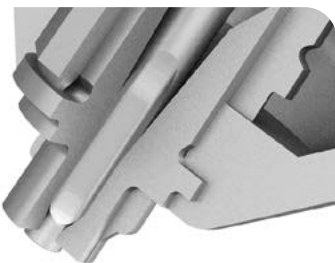
**2 Needle guide and sealing in the manifold**

**3 Heated connecting nozzle**



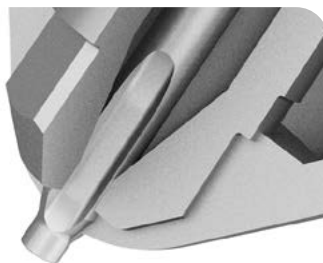
**4 Needle guide in the nozzle**

**POSSIBLE NEEDLE GUIDE DESIGNS**



**LA NEEDLE GUIDE**

Second mark on the part



**KA NEEDLE GUIDE**

Application-dependent use

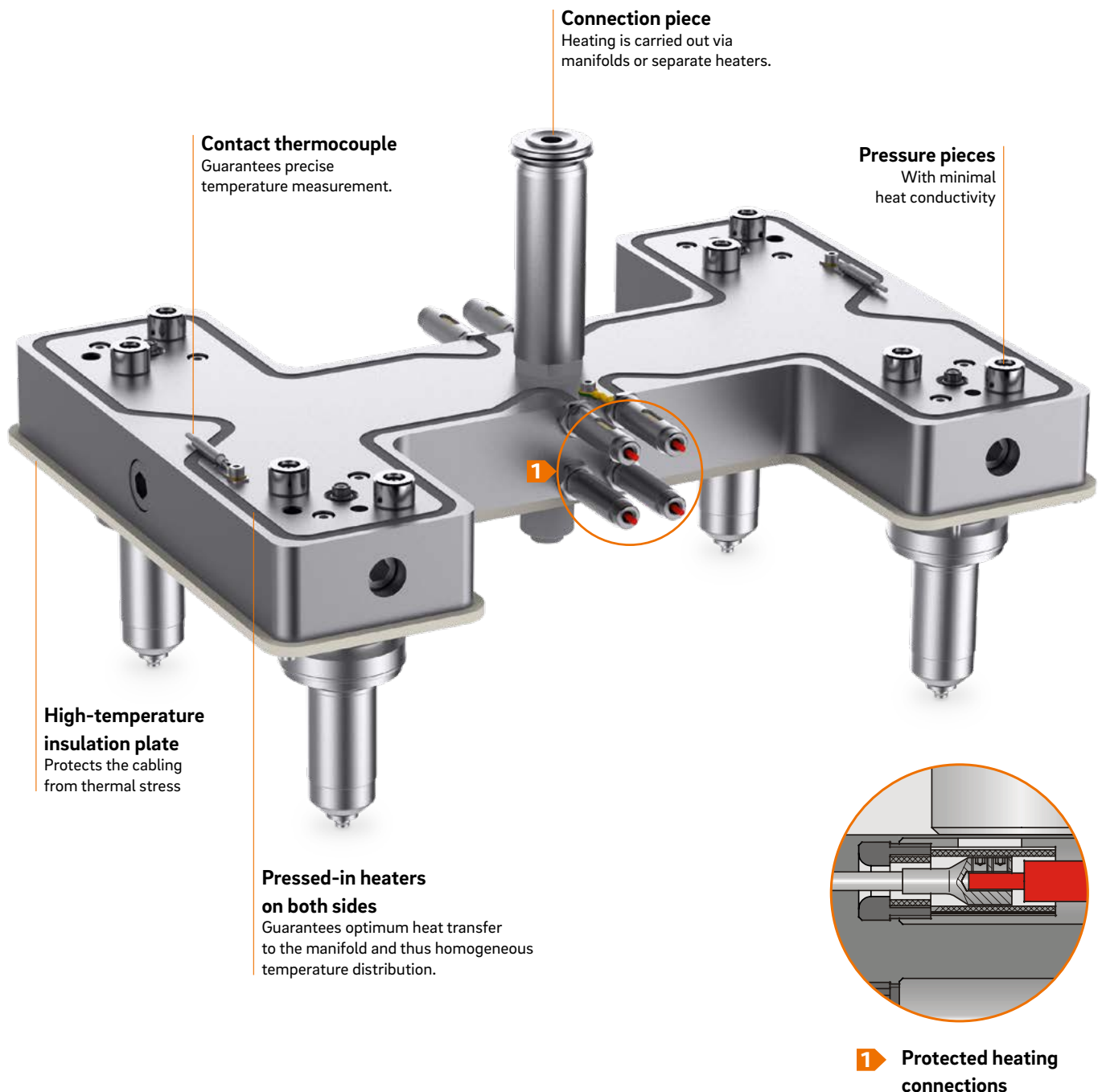
**THE ADVANTAGES AT A GLANCE**

- + Unambiguous opening behaviour
- + Consistent gate point quality
- + Sequential injection
- + Long needle guide service life
- + Time and cost savings
- + Wear parts are easy to replace



## Manifold systems

Different manifold versions can be selected for different applications, from partially or fully balanced to customer-specific special solutions. Flexible positioning of hot runner nozzles with a manifold make individualised mould design possible.



## HOMOGENEOUS TEMPERATURE MANAGEMENT THANKS TO PRESSED-IN HEATERS

All melt-conducting components are heated externally, which ensures optimum plastic flow with the smallest possible pressure loss. Pressed-in heaters on both sides guarantee optimum heat transfer to the manifold block. This results in homogeneous temperature distribution.

## PROTECTED POWER CONNECTIONS – HIGHLY MAINTENANCE FRIENDLY

Steel and ceramic sleeves protect the power connections from damage. Mechanical cleaning of the manifold channels is easy and fast. Cleaning in the fluid bed bath and oven is also possible. The model data in the CADHOC® System Designer library can be configured (and are thus quickly available) for both individual and standard manifolds.

## CADHOC® SYSTEM DESIGNER – TOP-NOTCH SOFTWARE PROVIDED FOR YOUR SUPPORT

CADHOC® System Designer enables us to meet your needs for fast provision of product data on everything from individual components to complete hot runner systems, including negative volume.

Among other things, CADHOC® System Designer enables you to:

- Design nozzle sizes in an optimum way
- Select plastic types from a comprehensive list
- Make a direct configuration without any specifications of the processing parameters
- Make an application-based configuration with specifications of the processing parameters

3D CAD models on every hot runner system are available for download in a variety of different data formats. After entering your configuration parameters, you will receive an e-mail with a link to the product data of the configured hot runner system.

### THE ADVANTAGES AT A GLANCE

- + Homogeneous temperature distribution
- + Variable nozzle positions
- + Power connections with external damage protection
- + Easy and fast cleaning
- + Model data is stored in the CADHOC® online library





## Needle actuator

GÜNTHER needle actuators enable precise and intelligent needle control with simple installation and connection technology. Uniform opening of the individual valve gate nozzles enables a reliable injection moulding process, even with the smallest shot weights.

- 1 Fast and powerful servo drive**  
For valve gate systems, up to 24 drops per sliding mechanism. Needle adjustment in the  $\mu$  range. Needles close in less than 0.2 s. Can be used in clean rooms.
- 2 Sliding components with special coating**  
Protected against wear, can be replaced by the customer.

### ANES SLIDING MECHANISM

If a large number of closely positioned nozzles are being operated, a sliding mechanism is to be provided as the drive. Design of moulds with a high number of drops with small mould dimensions. High product quality, as all cavities are filled evenly through the synchronised opening and closing of the needles. Adjustment of the needle position when mounted on the machine.

Possible drive types:



Electrical



Hydraulic



Pneumatic

### THE ADVANTAGES AT A GLANCE

- + Precise opening and closing
- + Reliable injection process
- + Individual cavities can be shut off
- + Optimally adjusted needle
- + Precise and intelligent needle control
- + All moving parts can be replaced by the customer
- + Saves time





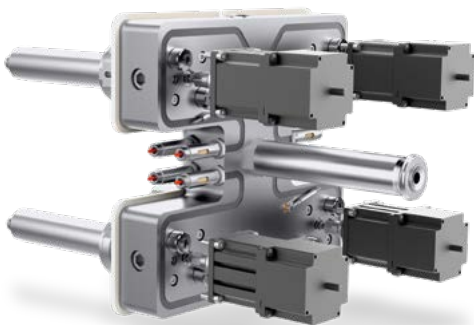
### ENV AND EEV SINGLE-NEEDLE VALVE

Single-needle actuation on single- and multi-drop nozzle systems. Cascade injection moulding through the sequential opening and closing of needles is possible. Single-needle valve is mounted with the housing in the clamping plate.

**ENV single-needle valve:** Minimum cavity spacing with hydraulic drive: 48 mm, with pneumatic drive: 69 mm. Needle adjustment or needle replacement without removing the mould.

**EEV single-needle valve:** Minimum cavity spacing with hydraulic drive: 40 mm, with pneumatic drive: 57 mm. Due to a fixed needle length, needle adjustment is only possible with the mould disassembled.

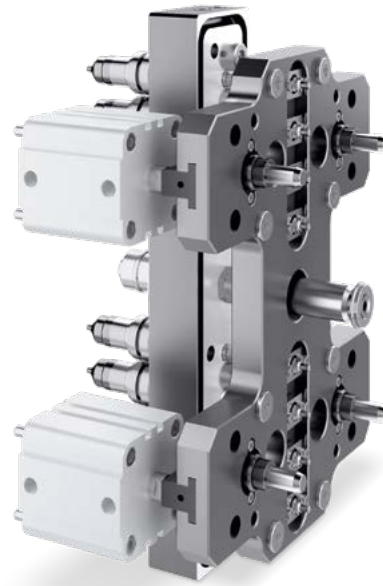
Possible drive types:  Hydraulic  Pneumatic



### SMA 10 STEPPER MOTOR

Electric drive for complex applications with up to four different needle positions per cycle. Up to 16 SMA 10 stepper motors can be controlled with extreme precision using the DPE control unit. Using the DPE control unit, the position of each individual shut-off needle in the mould can be set individually. Needle adjustment in the range of 1/100 mm. Can be used in clean rooms.

Drive type:  Electrical



### ANEH STROKE MECHANISM

Reliable injection process, even with small shot weights thanks to uniform opening and closing of the needles. Replacement of the external cylinder without removal of the mould. Adjustment of the needle position in the assembled mould.

Possible drive types:  Hydraulic  Pneumatic  Electrical



### NEST SINGLE VALVE GATE NOZZLE

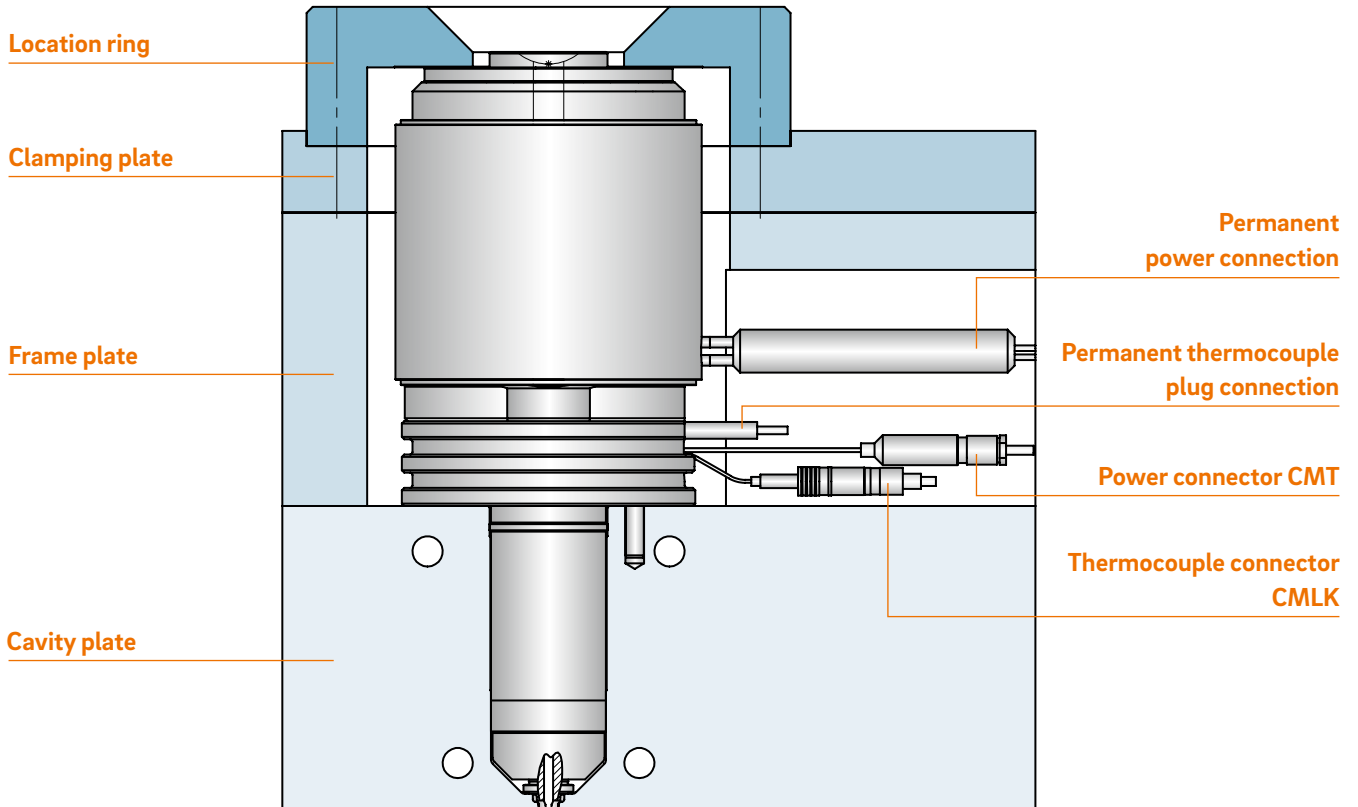
The pneumatically driven NEST valve gate nozzle offers optimum process reliability when processing high-quality, demanding materials. Melt channel diameters from 5 to 12 mm and a length of up to 250 mm enable a variety of different injection moulded part and mould designs.

Drive type:  Pneumatic



# Overview of overall design

## Single valve gate nozzles





## 3.1 Single valve gate nozzles

### SINGLE VALVE GATE NOZZLES

Page



#### **8NEST**

Single nozzle with conventional heating element and heated nozzle adapter, needle guide versions LA, LA with titanium ring, LAZ and KA

**20**



#### **12NEST**

Single nozzle with conventional heating element and heated nozzle adapter, needle guide versions LA, LA with titanium ring and KA

**30**



# Valve gate nozzle type 8NEST

Single nozzle with conventional heating element

## TECHNICAL DATA

### 8NEST

Needle Ød	3 mm						
Melt channel Ød	7.5 mm						
Gate point Ød	1.6, 2.0 or 2.5 mm						
Operating pressure	10 bar						
Operating voltage	230 V <sub>AC</sub> *						
<b>Nominal length of the nozzle (L) in mm</b>							
50	60	80	100	120	150	200	250
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\*Volts alternating current

■ available    □ on request

## NOTE

Power connector CMT and thermocouple connector CMLK are to be ordered separately.

### Feed and discharge lines for operating the needle

Preferably, channels with a minimum dia. of 6 mm and a minimum length of 200 mm are to be used. Feed/discharge lines are to be placed in the heated mould plate to prevent overheating of the compressed air. The temperature should lie between 40 °C and 70 °C.

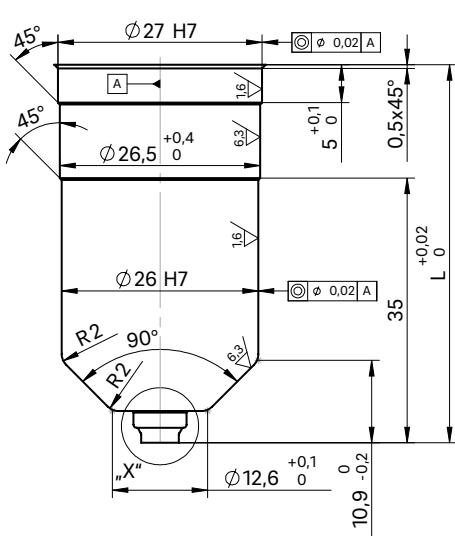
In the case of mould temperatures exceeding the thermal stress limit of the pneumatic valves, a separate air cooler is to be installed. Pneumatic hose inner dia. of 8 mm. Pneumatic valve size of 2000 l/min to 3000 l/min.



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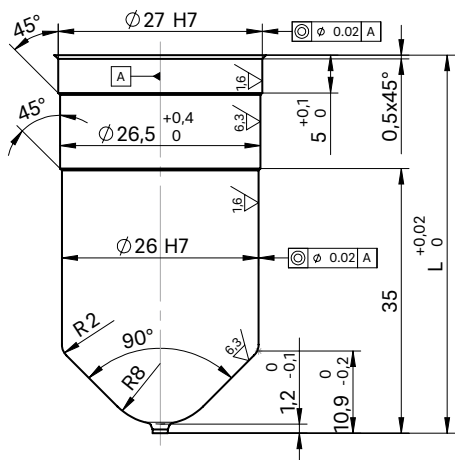


Nozzle with needle guide antechamber design LA

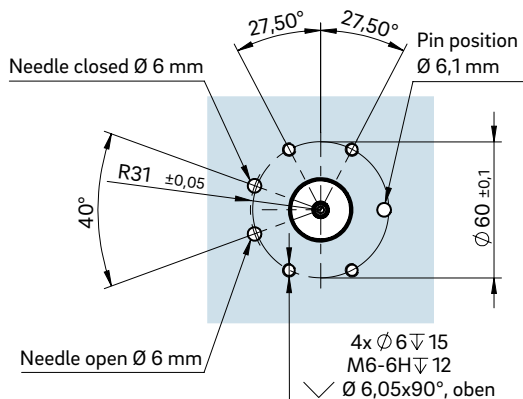


For "X" version of the needle guide see following page

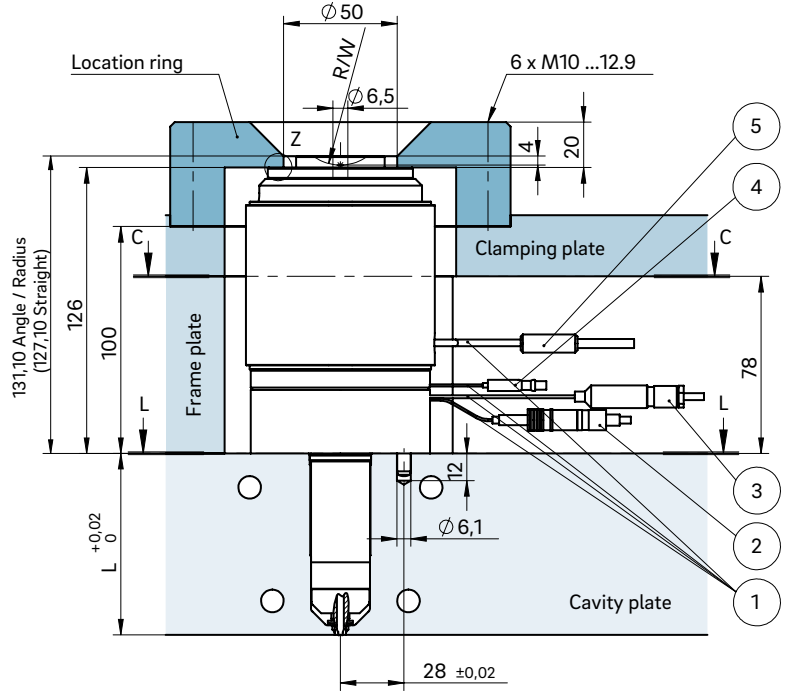
Nozzle with needle guide antechamber design KA



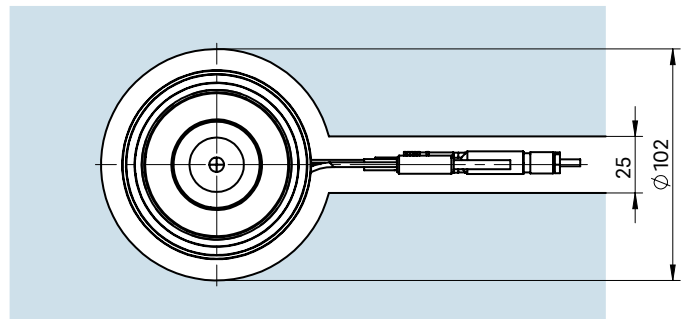
Cross-section L-L: Hole for feed/discharge air, fastening thread and centring/positioning pin



INSTALLATION

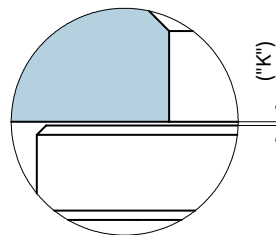


Cross-section C-C: Cutout for nozzle head, power and thermocouple plug connections



- ① Power and thermocouple plug connections in this area can be bent once; minimum radius: R8
- ② Thermocouple connector CMLK
- ③ Power connector CMT
- ④ Permanent thermocouple plug connection
- ⑤ Permanent power connection

Detail "Z"



Dimension "K" required for heat expansion is to be ensured by grinding the location ring! Determine the difference between the height of the nozzle (with mount) and the height of the structure when installed!  $\Delta T$  specifies the temperature differential between the processing temperature and the mould temperature! A pre-tension of 0.03 mm is taken into account for the K dimensions.

$\Delta T$ (°C)	100	150	200	250	300	350
K (mm)	0.09	0.16	0.23	0.29	0.36	0.42



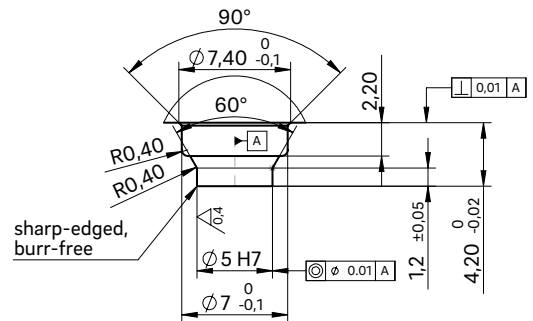
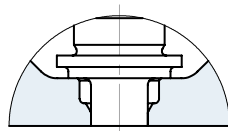
# Valve gate nozzle type 8NEST

Needle guide versions LA, LA with titanium ring, LAZ and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

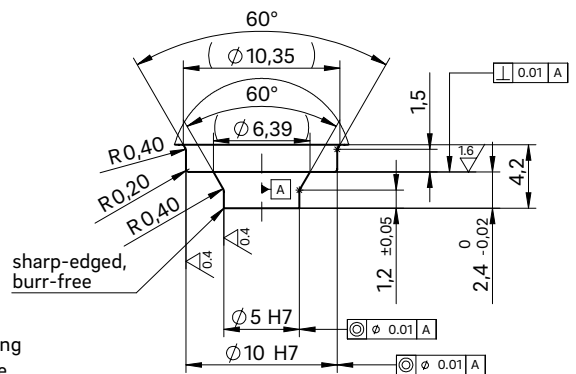
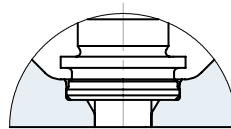
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring



### Needle guide LA

Special version with titanium ring

Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)

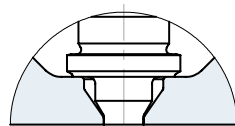


**Installation dimensions of needle guide version LAZ**

ØD	ØS7	t5	t6
1.6	3.0	0.63	0.77
2.0	3.5	0.63	1.07
2.5	4.0	0.58	1.43



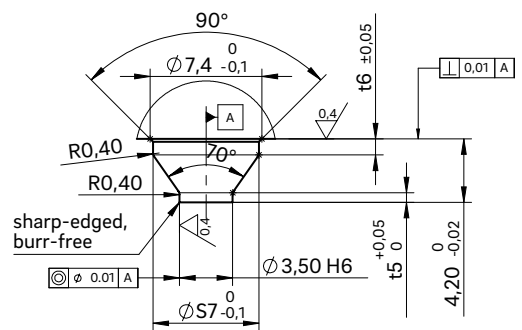
Needle guide version  
Antechamber version LAZ



**Needle guide LAZ**

Made of powder-metallurgical steel

If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring. Needle guide type LAZ has a tapered shape with a smaller contact surface which creates a smaller impression. This version is suitable for items with a minimal wall thickness and part geometries not permitting a larger impression.

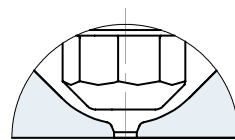


**Advantages:**

- Long service life and wear-resistance
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- Outstanding and flash-free gate point quality
- Very good visual surface quality
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- Minimal shear stress



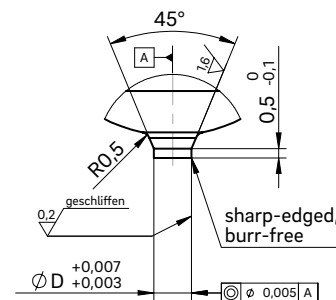
Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of 64 ±2 HRC is to be taken into account!





# Valve gate nozzle type 12NEST

Single nozzle with conventional heating element

## TECHNICAL DATA

### 12NEST

Needle Ød	5 mm					
Melt channel Ød	12 mm					
Gate point Ød	3.0, 3.5 or 4.0 mm					
Operating pressure	10 bar					
Operating voltage	230 V <sub>AC</sub> *					
<b>Nominal length of the nozzle (L) in mm</b>						
60	80	100	120	150	200	250
■	■	■	□	□	□	□

\*Volts alternating current

■ available □ on request

## NOTE

Power connector CMT and thermocouple connector CMLK are to be ordered separately.

### Feed and discharge lines for operating the needle

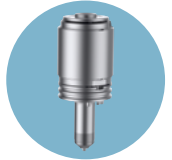
Preferably, channels with a minimum dia. of 6 mm and a minimum length of 200 mm are to be used. Feed/discharge lines are to be placed in the heated mould plate to prevent overheating of the compressed air. The temperature should lie between 40 °C and 70 °C.

In the case of mould temperatures exceeding the thermal stress limit of the pneumatic valves, a separate air cooler is to be installed. Pneumatic hose inner dia. of 8 mm. Pneumatic valve size of 2000 l/min to 3000 l/min.

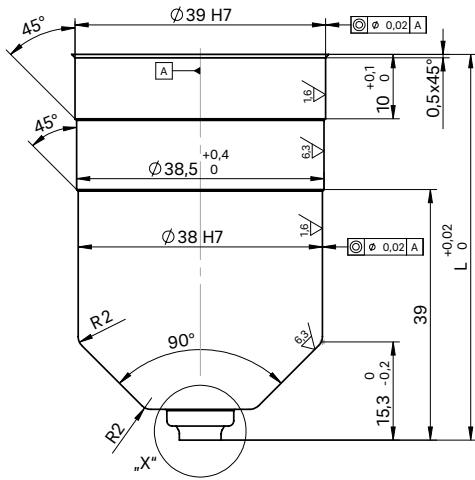


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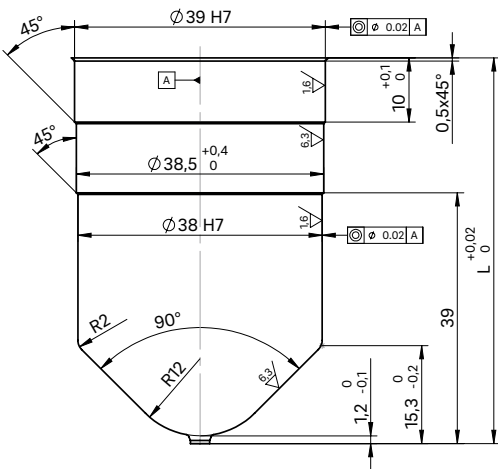


Nozzle with needle guide antechamber design LA

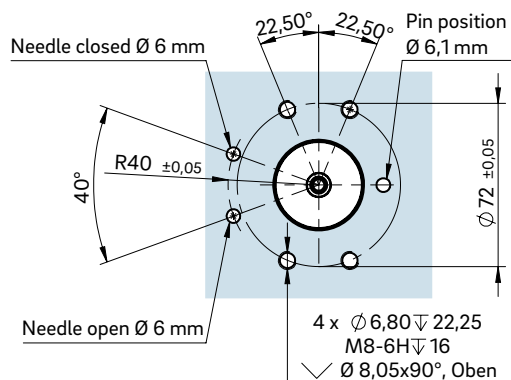


For "X" version of the needle guide see following page

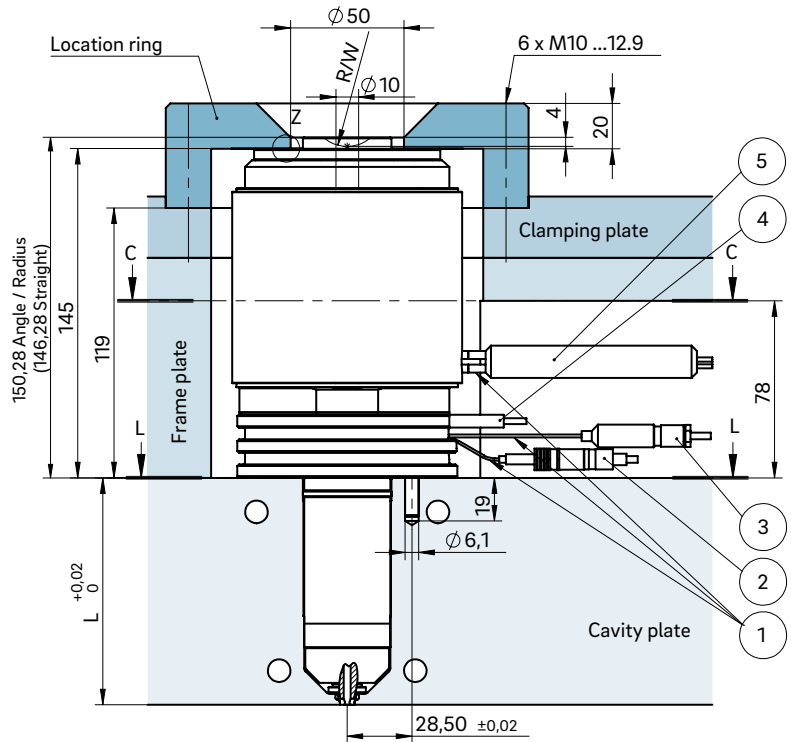
Nozzle with needle guide antechamber design KA



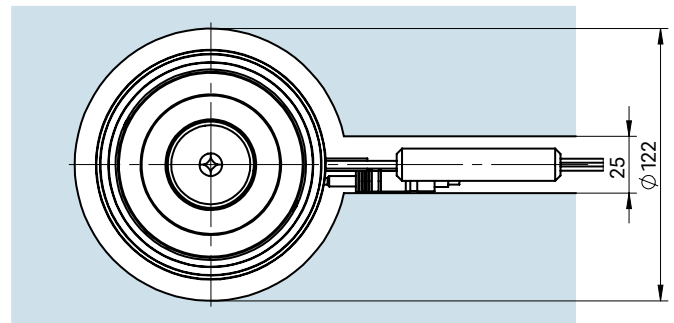
Cross-section L-L: Hole for feed/discharge air, fastening thread and centring/positioning pin



INSTALLATION

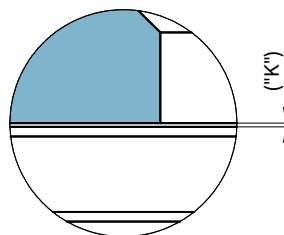


View C-C: Cutout for nozzle head, power and thermocouple plug connections



- ① Power and thermocouple plug connections in this area can be bent once; minimum radius: R8
- ② Thermocouple connector CMLK
- ③ Power connector CMT
- ④ Permanent thermocouple plug connection
- ⑤ Permanent power connection

Detail "Z"



Dimension "K" required for heat expansion is to be ensured by grinding the location ring! Determine the difference between the height of the nozzle (with mount) and the height of the structure when installed! ΔT specifies the temperature differential between the processing temperature and the mould temperature! A pretension of 0.03 mm is taken into account for the K dimensions.

ΔT (°C)	100	150	200	250	300	350
K (mm)	0.11	0.19	0.26	0.33	0.41	0.48



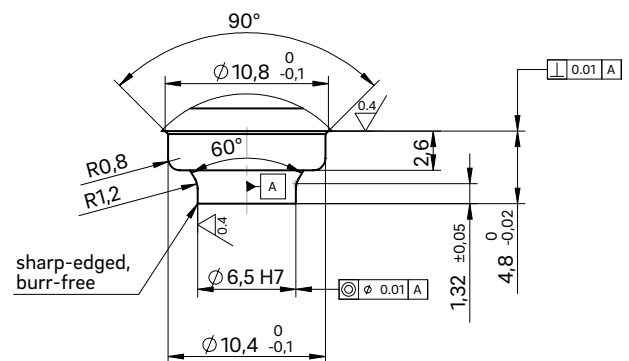
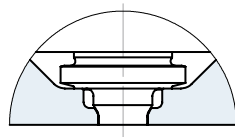
# Valve gate nozzle type 12NEST

Needle guide versions LA, LA with titanium ring and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

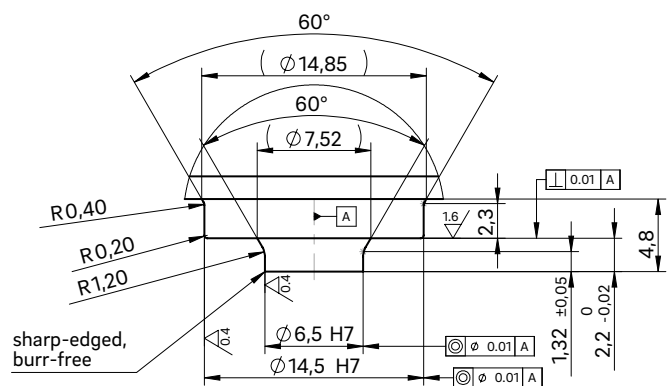
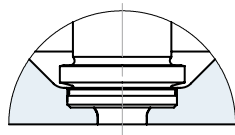
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring



### Needle guide LA

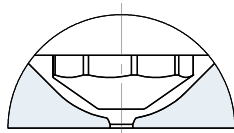
Special version with titanium ring

Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)



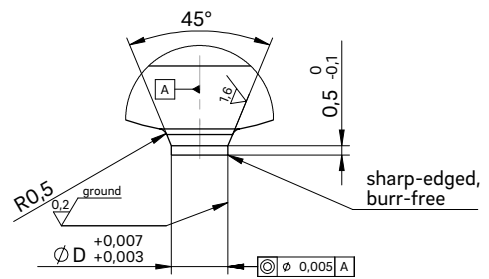
Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of  $64 \pm 2$  HRC is to be taken into account!







## 3.2 System valve gate nozzles

### SINGLE VALVE GATE NOZZLES

Page



#### 4NHF, 5NHF and 6NHF

System nozzle with thick-film heating element (BlueFlow®),  
screwed to the manifold,  
needle guide versions LA, LA with titanium ring, LAZ and KA

30, 40, 50



#### 5NHT and 6NHT

System nozzle with conventional heating element  
screwed to the manifold,  
needle guide versions LA, LA with titanium ring, LAZ and KA

60, 70



#### 8NHT, 10NHT and 12NHT

System nozzle with conventional heating element  
screwed to the manifold,  
needle guide versions LA, LA with titanium ring, LAZ and KA

80, 90, 100



#### 5NMT and 6NMT

System nozzle with conventional heating element, for minimal spacing  
not screwed to the manifold,  
needle guide versions LA, LA with titanium ring, LAZ and KA

110, 120



#### 4NTT, 5NTT and 6NTT

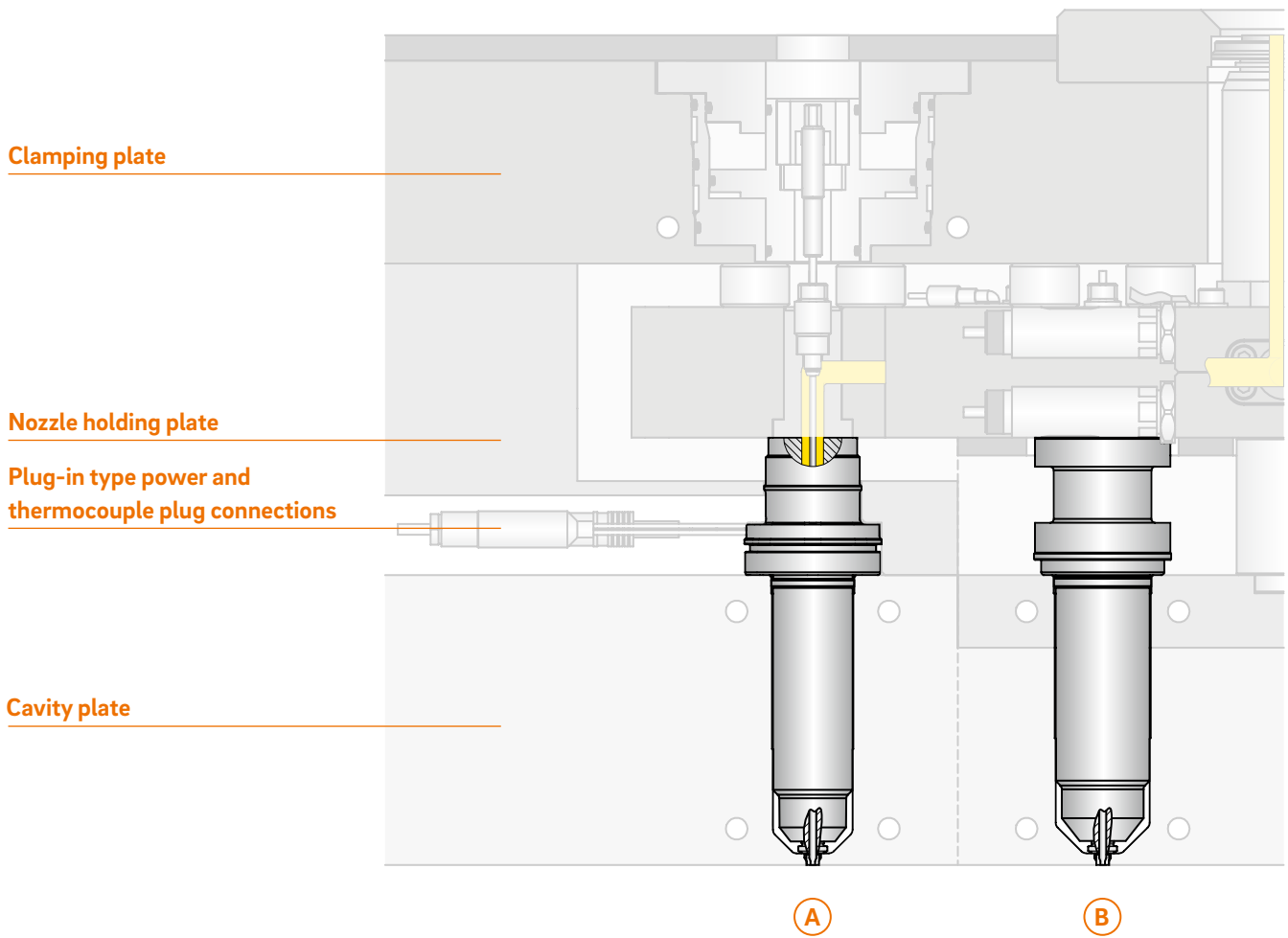
System nozzle with conventional heating element  
screwed from the parting line,  
needle guide versions LA, LA with titanium ring, LAZ and KA

130, 140, 150



# Overview of overall design

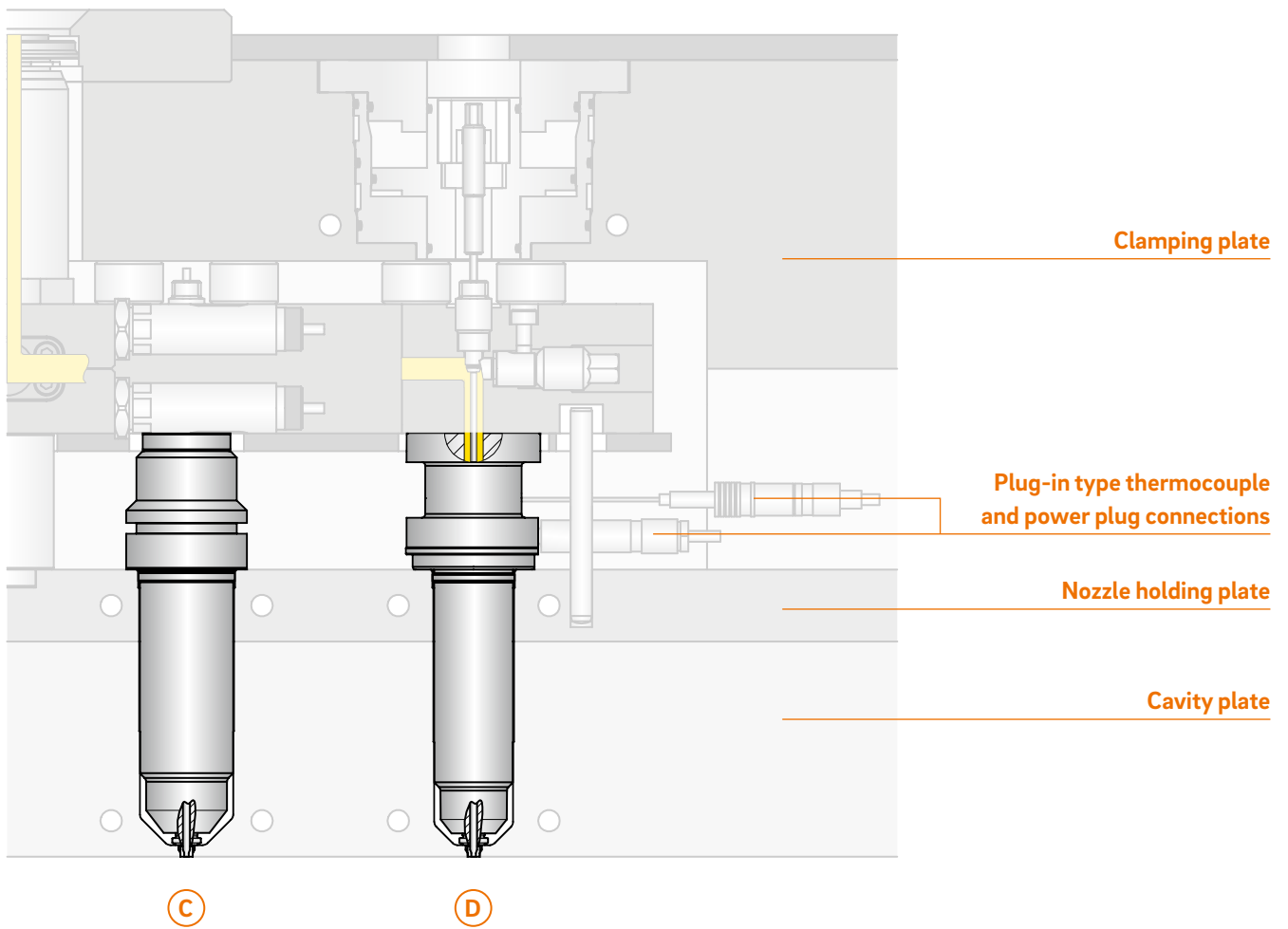
## System valve gate nozzles



**A**  
Valve gate nozzle type NTT  
- With shaft  
- Screwed from the parting line

**B**  
Valve gate nozzle type NHT  
- With shaft  
- Screwed to the manifold





- C**  
 Valve gate nozzle type NMT  
 - With shaft  
 - For minimal spacing  
 - Not screwed to the manifold

- D**  
 BlueFlow® valve gate nozzle type NHF  
 - With shaft  
 - Thick-film heating element (BlueFlow®)  
 - Screwed to the manifold



## Valve gate nozzle type 4NHF

System nozzle with thick-film heating element (BlueFlow®), screwed to the manifold

### TECHNICAL DATA

#### 4NHF

Needle Ød	2 mm
Melt channel Ød	3.8 mm
Gate point Ød	0.8, 1.0, 1.2 or 1.4 mm
Operating voltage	230 V <sub>AC</sub> *

#### Nominal length of the nozzle (L) in mm

50	60	80	100	120	150	180
■	■	■	■	■	□	□

Contact us for other nozzle lengths!

\*Volts alternating current

■ available □ on request

### NOTE

Power connector CHF and thermocouple connector CMLK are to be ordered separately.

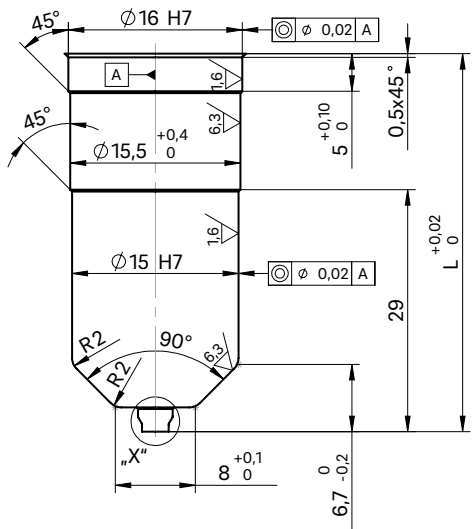
**BlueFlow® hot runner nozzle type NHF is not intended for sale or use in the USA or Canada!**



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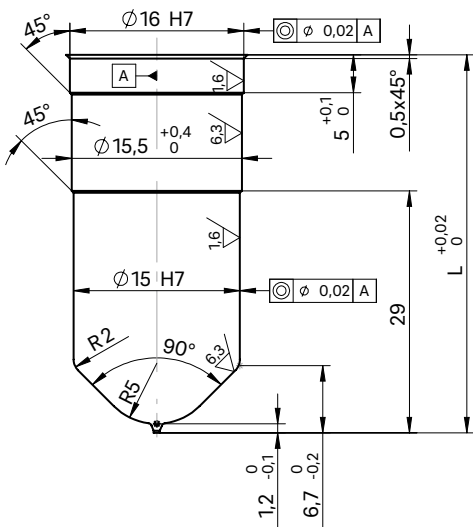


Nozzle with needle guide antechamber design LA

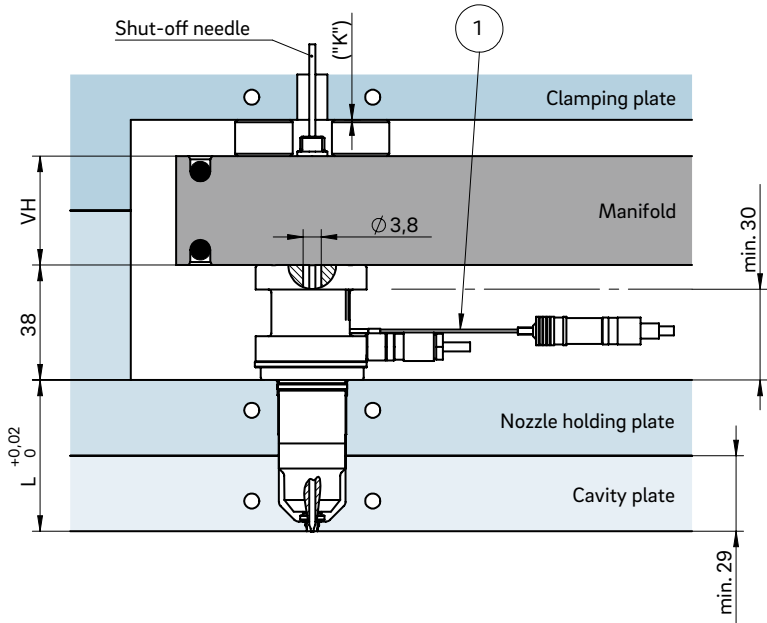


For "X" version of the needle guide see following page

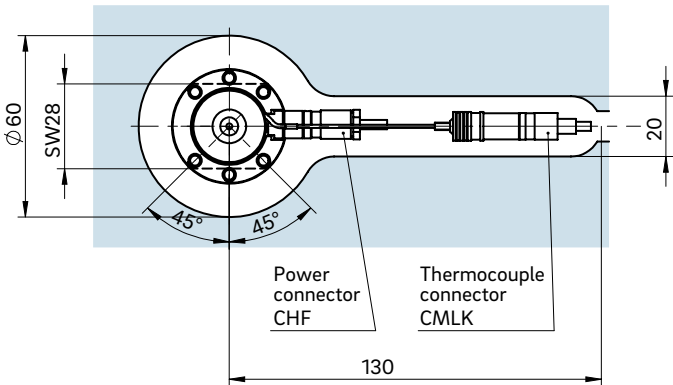
Nozzle with needle guide antechamber design KA



INSTALLATION



Example cutout for nozzle head, power and thermocouple plug connections



① Power plug connection in this area can be bent once; minimum radius: R8  
SW = flat area on nozzle head

Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed! ΔT specifies the temperature differential between the processing temperature and the mould temperature!

VH	ΔT (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264
56 mm	K (mm)	0.046	0.097	0.150	0.203	0.258	0.311



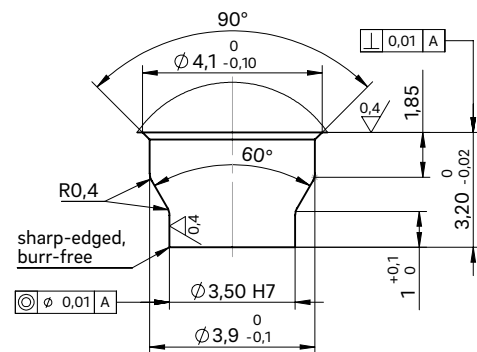
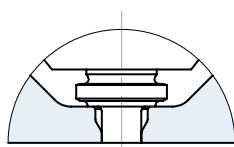
# Valve gate nozzle type 4NHF

Needle guide versions LA, LA with titanium ring, LAZ and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

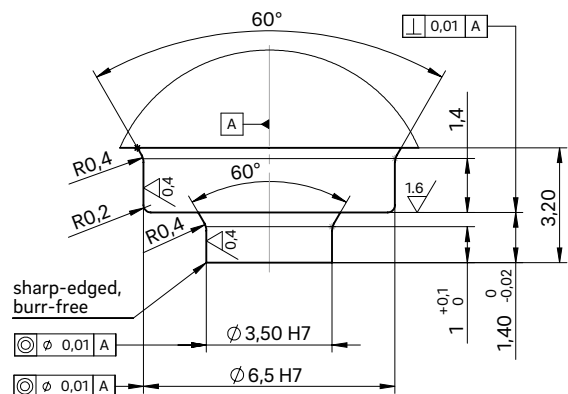
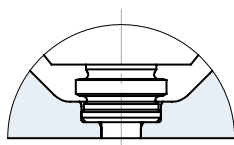
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring



### Needle guide LA

Special version with titanium ring

Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)

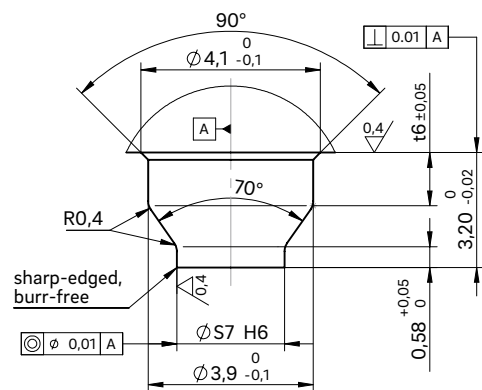
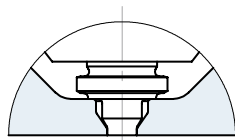


**Installation dimensions of needle guide version LAZ**

ØD	ØS7	t6
0.8	2.2	1.41
1.0	2.4	1.55
1.2	2.6	1.70
1.4	2.8	1.84



Needle guide version Antechamber version LAZ



**Needle guide LAZ**

Made of powder-metallurgical steel

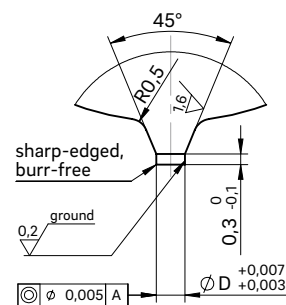
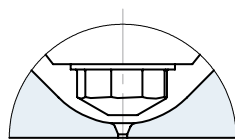
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring. Needle guide type LAZ has a tapered shape with a smaller contact surface which creates a smaller impression. This version is suitable for items with a minimal wall thickness and part geometries not permitting a larger impression.

**Advantages:**

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of 64 ±2 HRC is to be taken into account!



## Valve gate nozzle type 5NHF

System nozzle with thick-film heating element (BlueFlow®),  
screwed to the manifold

### TECHNICAL DATA

#### 5NHF

Needle Ød	3 mm
Melt channel Ød	4.8 mm
Gate point Ød	0.8, 1.0, 1.2 or 1.4 mm
Operating voltage	230 V <sub>AC</sub> *

#### Nominal length of the nozzle (L) in mm

50	60	80	100	120	150	180
■	■	■	■	■	□	□

Contact us for other nozzle lengths!

\*Volts alternating current

■ available □ on request

### NOTE

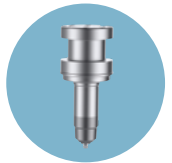
Power connector CHF and thermocouple connector CMLK are to be ordered separately.

**BlueFlow® hot runner nozzle type NHF is not intended for sale or use in the USA or Canada!**

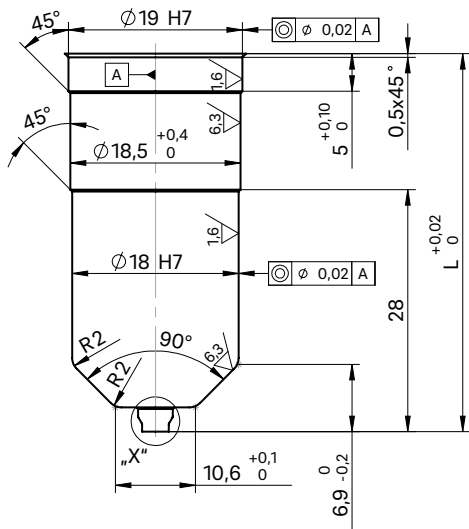


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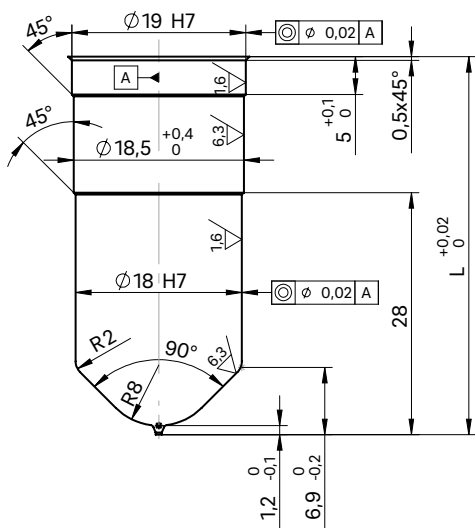


Nozzle with needle guide  
antechamber design LA

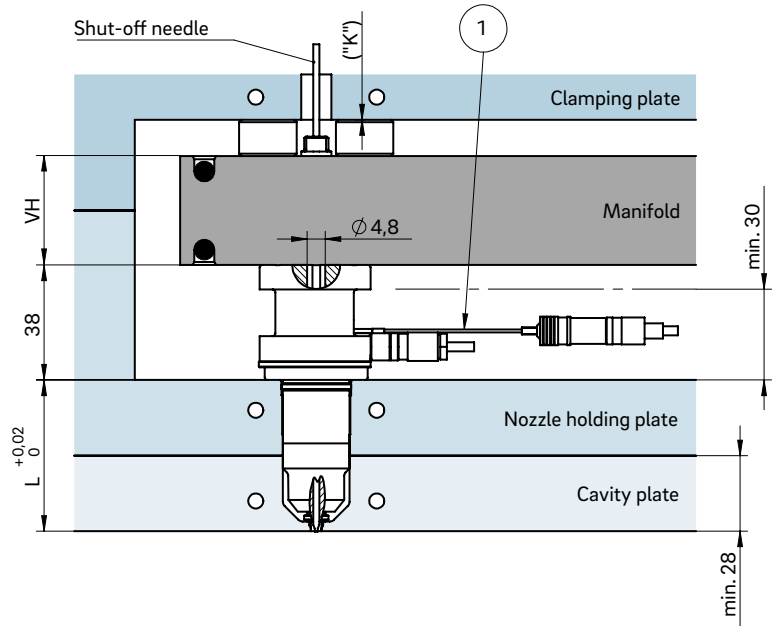


For "X" version of the needle guide  
see following page

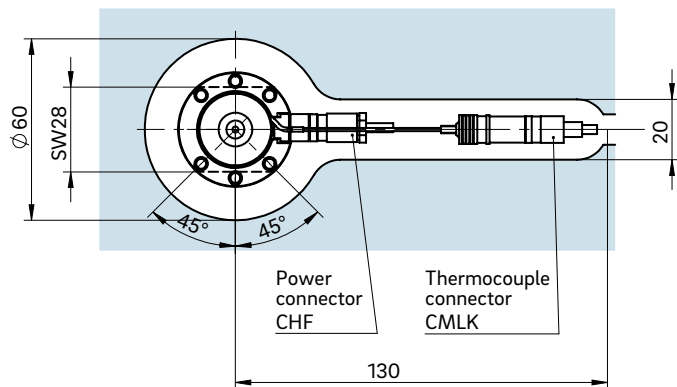
Nozzle with needle guide  
antechamber design KA



**INSTALLATION**



Example cutout for nozzle head, power and thermocouple plug connections



① Thermocouple plug connection in this area can be bent once; minimum radius: R8  
SW = flat area on nozzle head

Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed! ΔT specifies the temperature differential between the processing temperature and the mould temperature!

VH	ΔT (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264
56 mm	K (mm)	0.046	0.097	0.150	0.203	0.258	0.311



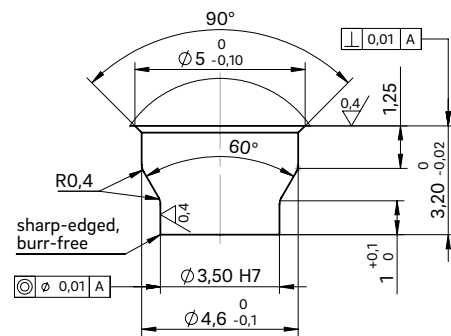
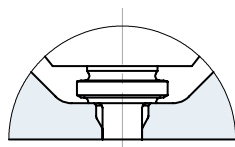
# Valve gate nozzle type 5NHF

Needle guide versions LA, LA with titanium ring, LAZ and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

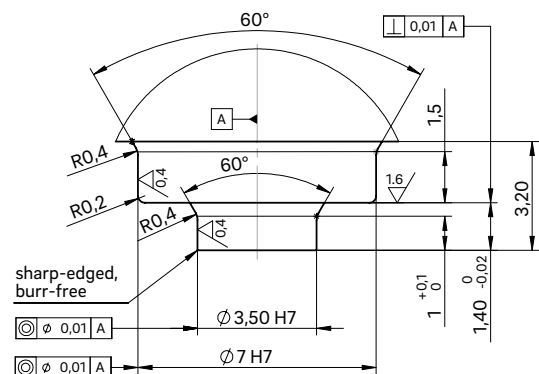
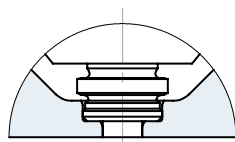
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring



### Needle guide LA

Special version with titanium ring

Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)

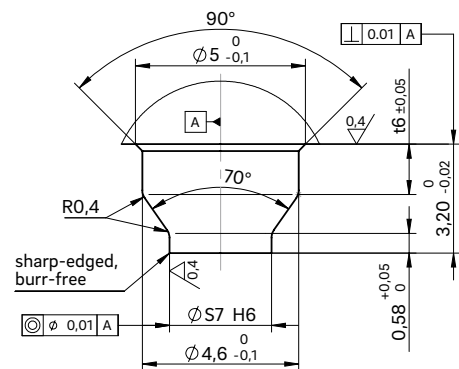
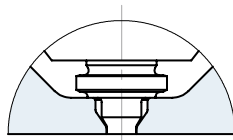


**Installation dimensions of needle guide version LAZ**

ØD	ØS7	t6
0.8	2.2	0.91
1.0	2.4	1.05
1.2	2.6	1.20
1.4	2.8	1.34



Needle guide version  
Antechamber version LAZ



**Needle guide LAZ**

Made of powder-metallurgical steel

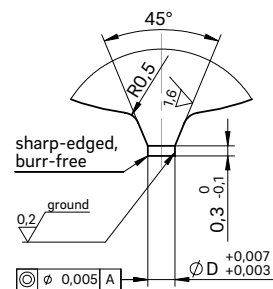
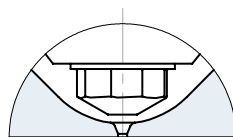
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring. Needle guide type LAZ has a tapered shape with a smaller contact surface which creates a smaller impression. This version is suitable for items with a minimal wall thickness and part geometries not permitting a larger impression.

**Advantages:**

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of 64 ±2 HRC is to be taken into account!



## Valve gate nozzle type 6NHF

System nozzle with thick-film heating element (BlueFlow®),  
screwed to the manifold

### TECHNICAL DATA

#### 6NHF

Needle Ød	3 mm
Melt channel Ød	6 mm
Gate point Ød	0.8, 1.0, 1.2 or 1.4 mm
Operating voltage	230 V <sub>AC</sub> *

#### Nominal length of the nozzle (L) in mm

50	60	80	100	120	150
■	■	■	■	■	□

Contact us for other nozzle lengths!

\*Volts alternating current

■ available □ on request

### NOTE

Power connector CHF and thermocouple connector CMLK are to be ordered separately.

**BlueFlow® hot runner nozzle type NHF is not intended for sale or use in the USA or Canada!**



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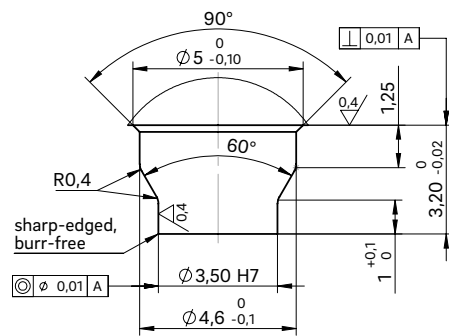
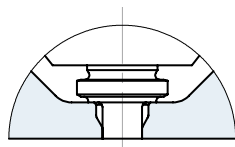
# Valve gate nozzle type 6NHF

Needle guide versions LA, LA with titanium ring, LAZ and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

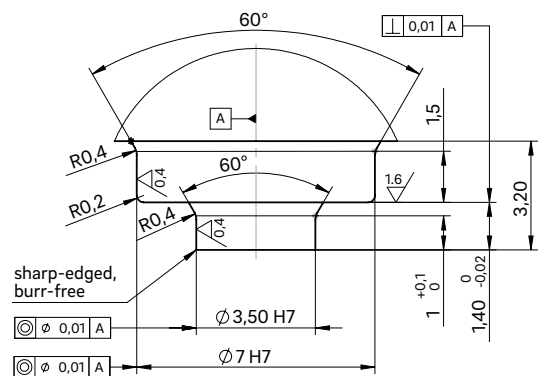
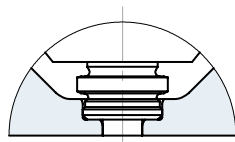
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring

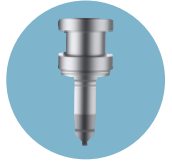


### Needle guide LA

Special version with titanium ring

Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)

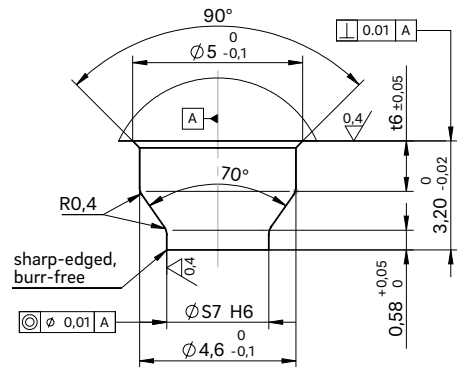
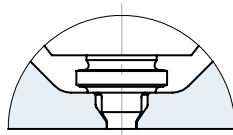


**Installation dimensions of needle guide version LAZ**

ØD	ØS7	t6
0.8	2.2	0.91
1.0	2.4	1.05
1.2	2.6	1.20
1.4	2.8	1.34



Needle guide version  
Antechamber version LAZ



**Needle guide LAZ**

Made of powder-metallurgical steel

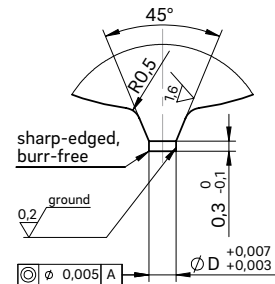
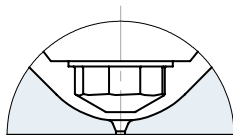
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring. Needle guide type LAZ has a tapered shape with a smaller contact surface which creates a smaller impression. This version is suitable for items with a minimal wall thickness and part geometries not permitting a larger impression.

**Advantages:**

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of 64 ±2 HRC is to be taken into account!



## Valve gate nozzle type 5NHT

System nozzle with conventional heating element, screwed to the manifold

### TECHNICAL DATA

#### 5NHT

Needle Ød	3 mm
Melt channel Ød	4.8 mm
Gate point Ød	0.8, 1.0, 1.2 or 1.4 mm
Operating voltage	230 V <sub>AC</sub> *

#### Nominal length of the nozzle (L) in mm

50 | 60 | 80 | 100



Contact us for other nozzle lengths!

\*Volts alternating current

■ available

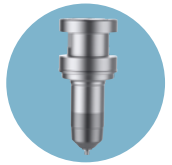
### NOTE

Power connector CMT and thermocouple connector CMLK are to be ordered separately.

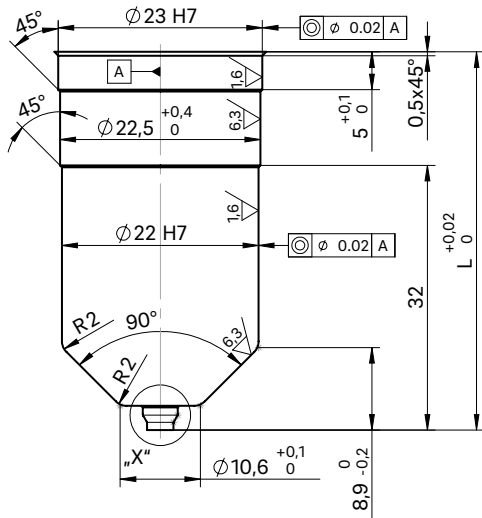


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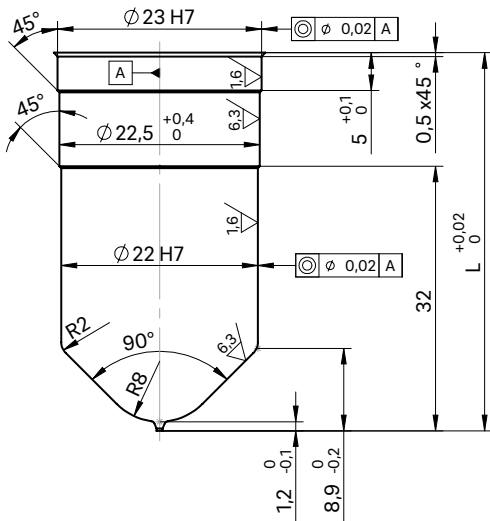


Nozzle with needle guide  
antechamber design LA

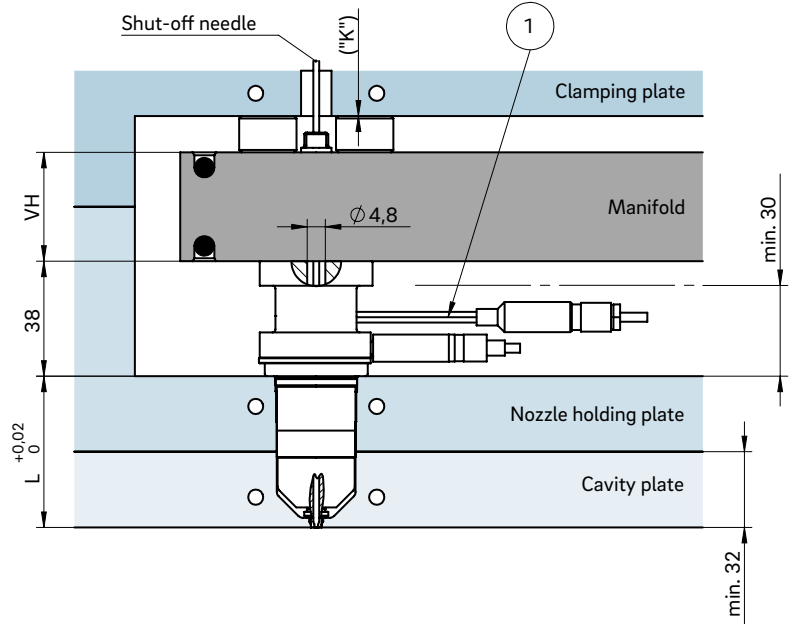


For "X" version of the needle guide  
see following page

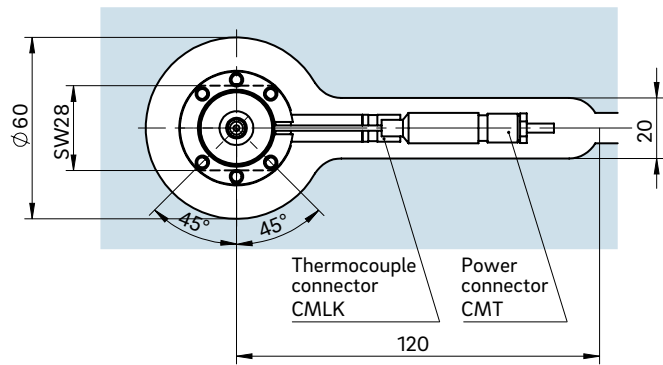
Nozzle with needle guide  
antechamber design KA



## INSTALLATION



Example cutout for nozzle head, power and thermocouple plug connections



① Power plug connection in this area can be bent once; minimum radius: R8  
SW = flat area on nozzle head

Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed!  $\Delta T$  specifies the temperature differential between the processing temperature and the mould temperature!

VH	$\Delta T$ (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264
56 mm	K (mm)	0.046	0.097	0.150	0.203	0.258	0.311



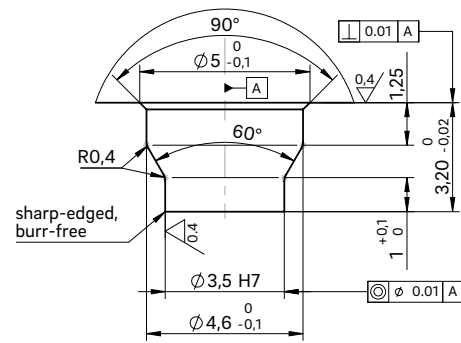
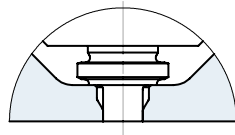
# Valve gate nozzle type 5NHT

Needle guide versions LA, LA with titanium ring, LAZ and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

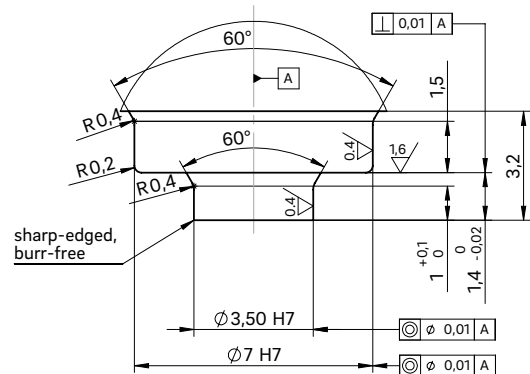
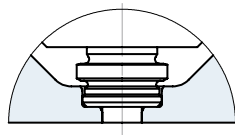
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring

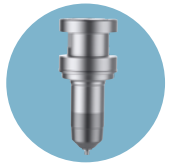


### Needle guide LA

Special version with titanium ring

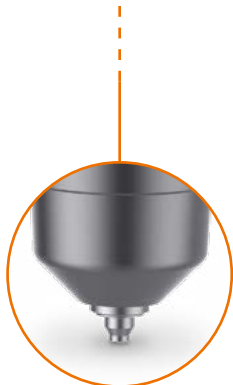
Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)

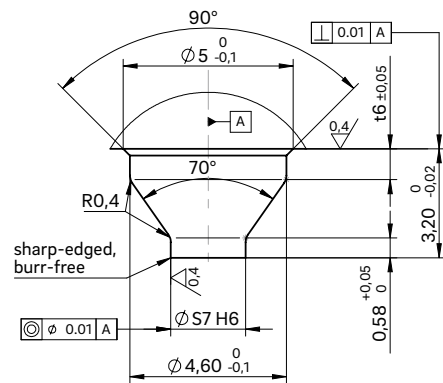
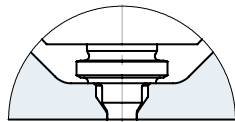


**Installation dimensions of needle guide version LAZ**

ØD	ØS7	t6
0.8	2.2	0.91
1.0	2.4	1.05
1.2	2.6	1.20
1.4	2.8	1.34



Needle guide version  
Antechamber version LAZ



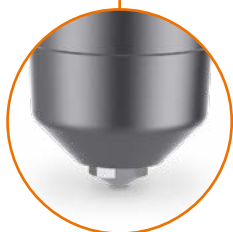
**Needle guide LAZ**

Made of powder-metallurgical steel

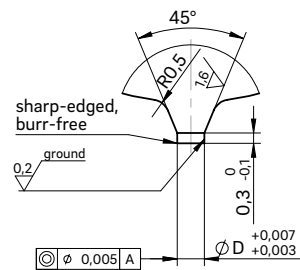
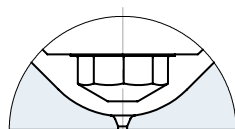
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring. Needle guide type LAZ has a tapered shape with a smaller contact surface which creates a smaller impression. This version is suitable for items with a minimal wall thickness and part geometries not permitting a larger impression.

**Advantages:**

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of 64 ±2 HRC is to be taken into account!



## Valve gate nozzle type 6NHT

System nozzle with conventional heating element, screwed to the manifold

### TECHNICAL DATA

#### 6NHT

Needle Ød	3 mm
Melt channel Ød	6 mm
Gate point Ød	0.8, 1.0, 1.2 or 1.4 mm
Operating voltage	230 V <sub>AC</sub> *

#### Nominal length of the nozzle (L) in mm

50	60	80	100	120	150	200
■	■	■	■	■	□	□

Contact us for other nozzle lengths!

\*Volts alternating current

■ available □ on request

### NOTE

Power connector CMT and thermocouple connector CMLK are to be ordered separately.



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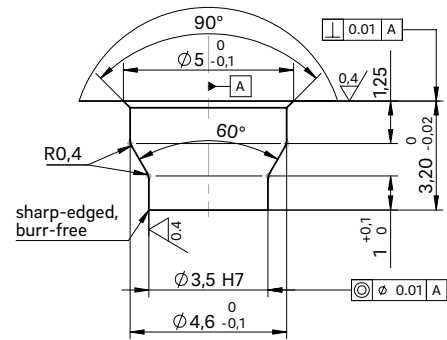
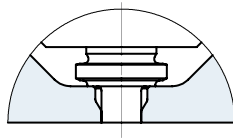
# Valve gate nozzle type 6NHT

Needle guide versions LA, LA with titanium ring, LAZ and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

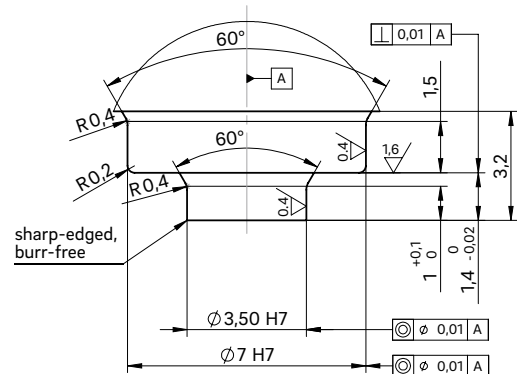
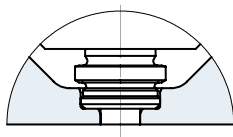
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring

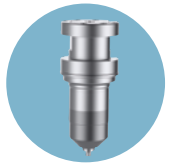


### Needle guide LA

Special version with titanium ring

Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)

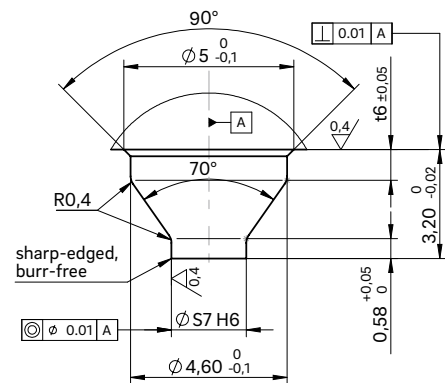
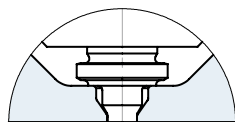


**Installation dimensions of needle guide version LAZ**

ØD	ØS7	t6
0.8	2.2	0.91
1.0	2.4	1.05
1.2	2.6	1.20
1.4	2.8	1.34



Needle guide version  
Antechamber version LAZ



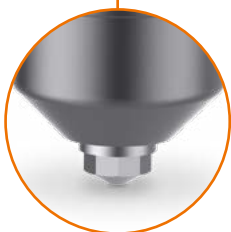
**Needle guide LAZ**

Made of powder-metallurgical steel

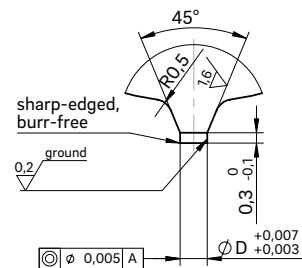
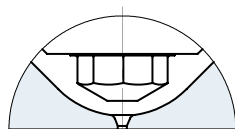
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring. Needle guide type LAZ has a tapered shape with a smaller contact surface which creates a smaller impression. This version is suitable for items with a minimal wall thickness and part geometries not permitting a larger impression.

**Advantages:**

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of 64 ±2 HRC is to be taken into account!



## Valve gate nozzle type 8NHT

System nozzle with conventional heating element, screwed to the manifold

### TECHNICAL DATA

#### 8NHT

Needle Ød	3 mm						
Melt channel Ød	7.5 mm						
Gate point Ød	1.6, 2.0 or 2.5 mm						
Operating voltage	230 V <sub>AC</sub> *						
Nominal length of the nozzle (L) in mm							
50	60	80	100	120	150	200	250
■	■	■	■	■	■	□	□

Contact us for other nozzle lengths!

\*Volts alternating current

■ available □ on request

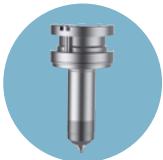
### NOTE

Power connector CMT and thermocouple connector CMLK are to be ordered separately.

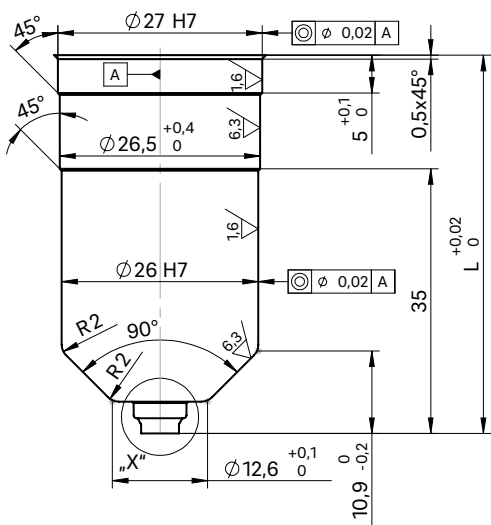


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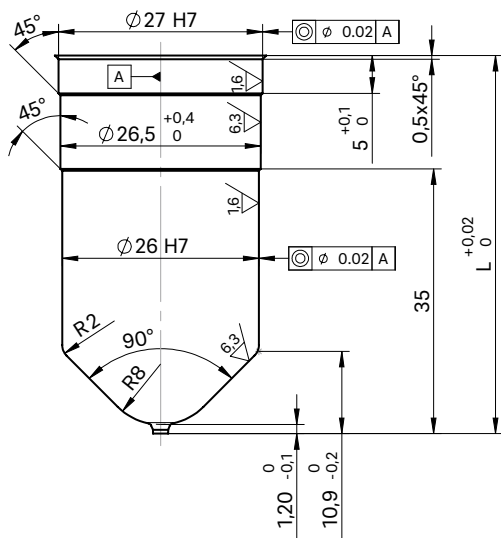


Nozzle with needle guide antechamber design LA

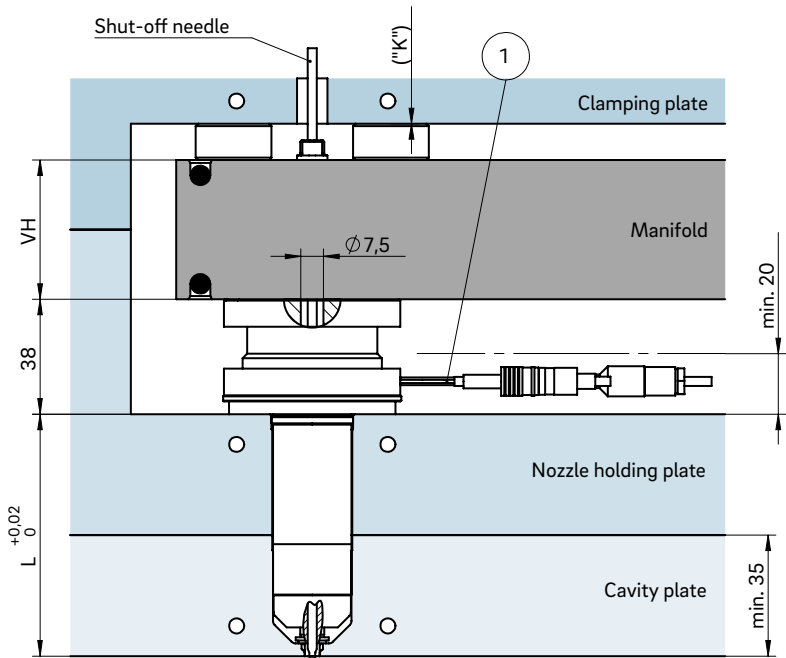


For "X" version of the needle guide see following page

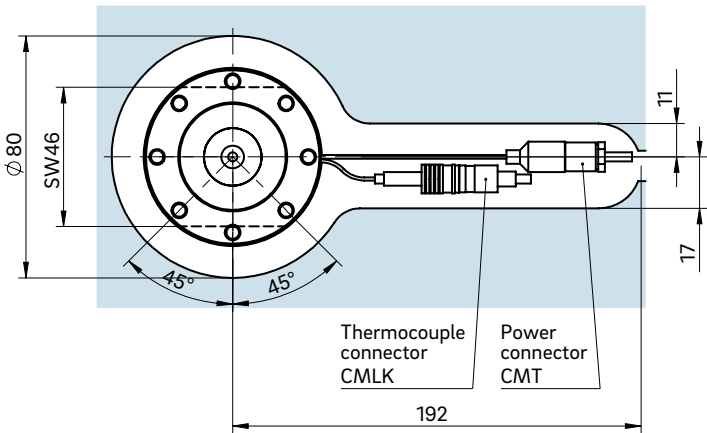
Nozzle with needle guide antechamber design KA



**INSTALLATION**



Example cutout for nozzle head, power and thermocouple plug connections



- ① Power and thermocouple plug connections in this area can be bent once; minimum radius: R8  
SW = flat area on nozzle head

Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed! ΔT specifies the temperature differential between the processing temperature and the mould temperature!

VH	ΔT (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264
56 mm	K (mm)	0.046	0.097	0.150	0.203	0.258	0.311



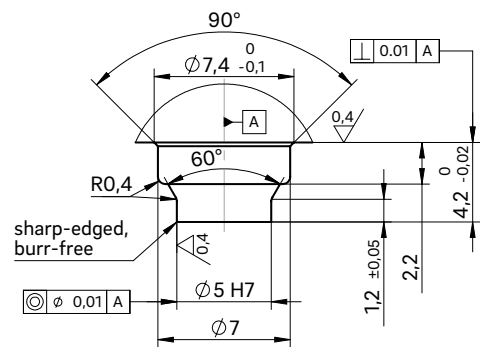
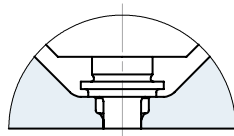
# Valve gate nozzle type 8NHT

Needle guide versions LA, LA with titanium ring, LAZ and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

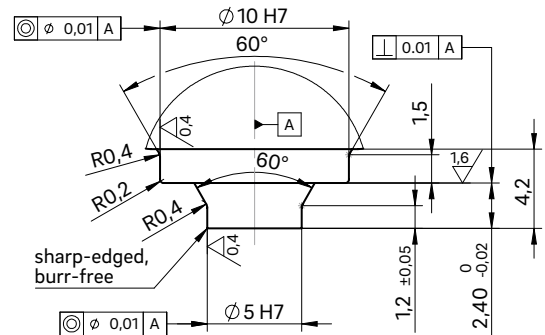
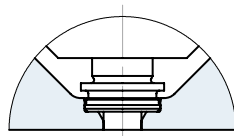
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring



### Needle guide LA

Special version with titanium ring

Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)

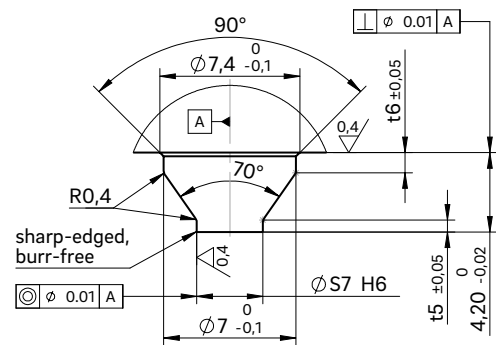
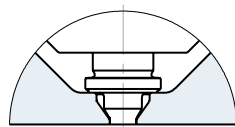


**Installation dimensions of needle guide version LAZ**

ØD	ØS7	t5	t6
1.6	3.0	0.63	0.77
2.0	3.5	0.63	1.07
2.5	4.0	0.58	1.43



Needle guide version  
Antechamber version LAZ



**Needle guide LAZ**

Made of powder-metallurgical steel

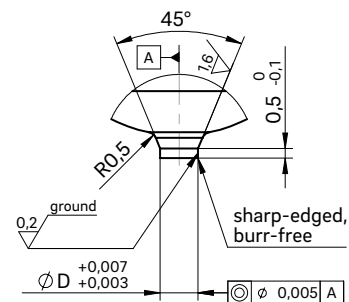
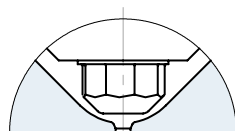
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring. Needle guide type LAZ has a tapered shape with a smaller contact surface which creates a smaller impression. This version is suitable for items with a minimal wall thickness and part geometries not permitting a larger impression.

**Advantages:**

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of 64 ±2 HRC is to be taken into account!



## Valve gate nozzle type 10NHT

System nozzle with conventional heating element, screwed to the manifold

### TECHNICAL DATA

#### 10NHT

Needle Ød	3 mm
Melt channel Ød	10 mm
Gate point Ød	2.0 or 2.5 mm
Needle Ød	5 mm
Melt channel Ød	10 mm
Gate point Ød	3.0, 3.5 or 4.0 mm
Operating voltage	230 V <sub>AC</sub> *

#### Nominal length of the nozzle (L) in mm

60	80	100	120	150	200	250
■	■	■	■	■	□	□

Contact us for other nozzle lengths!

\*Volts alternating current

■ available □ on request

### NOTE

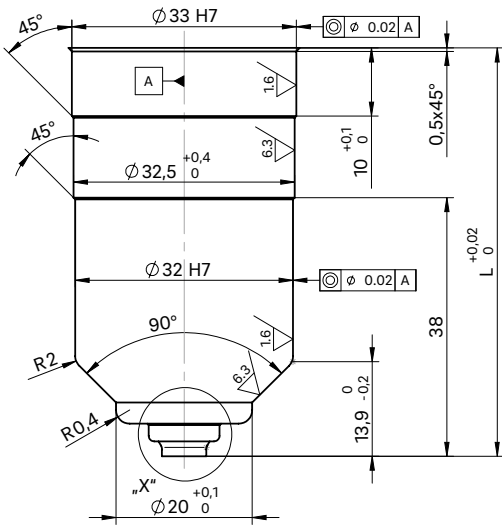
Power connector CMT and thermocouple connector CMLK are to be ordered separately.



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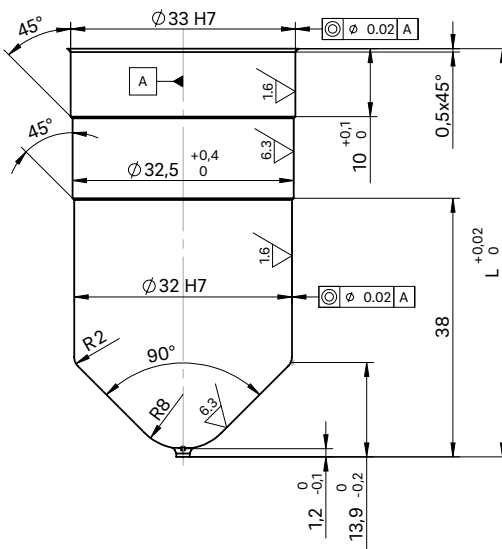


Nozzle with needle guide  
antechamber design LA

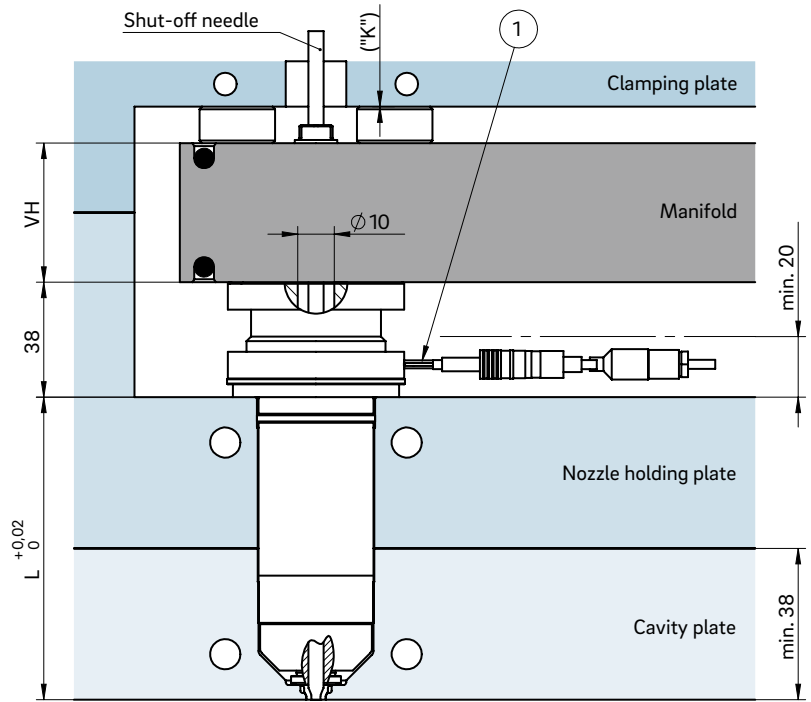


For "X" version of the needle guide  
see following page

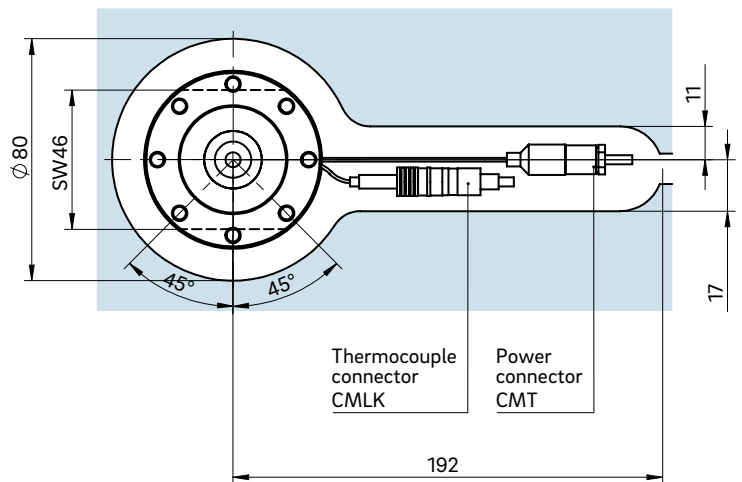
Nozzle with needle guide  
antechamber design KA



### INSTALLATION



Example cutout for nozzle head, power and thermocouple plug connections



- ① Power and thermocouple plug connections in this area can be bent once; minimum radius: R8  
SW = flat area on nozzle head

Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed!  $\Delta T$  specifies the temperature differential between the processing temperature and the mould temperature!

VH	$\Delta T$ (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264
56 mm	K (mm)	0.046	0.097	0.150	0.203	0.258	0.311



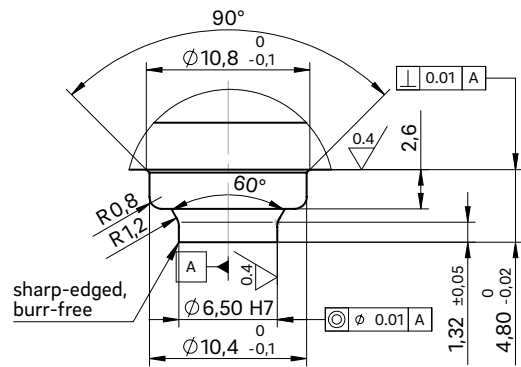
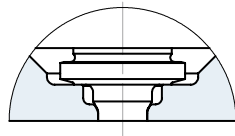
# Valve gate nozzle type 10NHT

Needle guide versions LA, LA with titanium ring and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

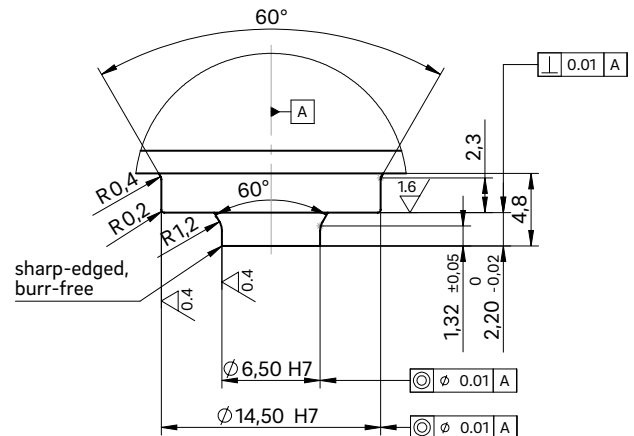
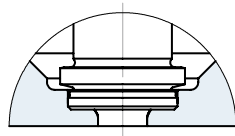
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring

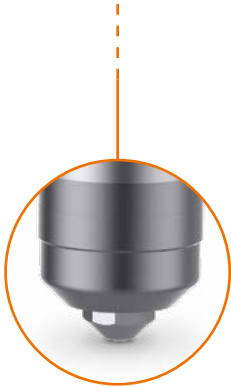


### Needle guide LA

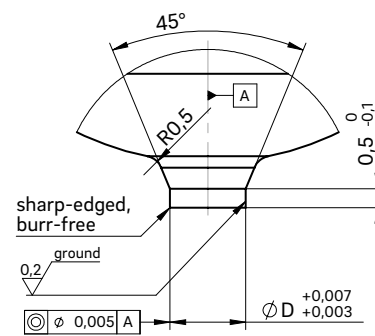
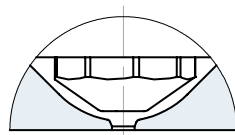
Special version with titanium ring

Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)



Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of  $64 \pm 2$  HRC is to be taken into account!



## Valve gate nozzle type 12NHT

System nozzle with conventional heating element, screwed to the manifold

### TECHNICAL DATA

#### 12NHT

Needle Ød	5 mm
Melt channel Ød	12 mm
Gate point Ød	3.0, 3.5 or 4.0 mm
Operating voltage	230 V <sub>AC</sub> *

#### Nominal length of the nozzle (L) in mm

60	80	100	120	150	200	250
■	■	■	□	■	□	□

Contact us for other nozzle lengths!

\*Volts alternating current

■ available □ on request

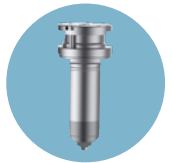
### NOTE

Power connector CMT and thermocouple connector CMLK are to be ordered separately.

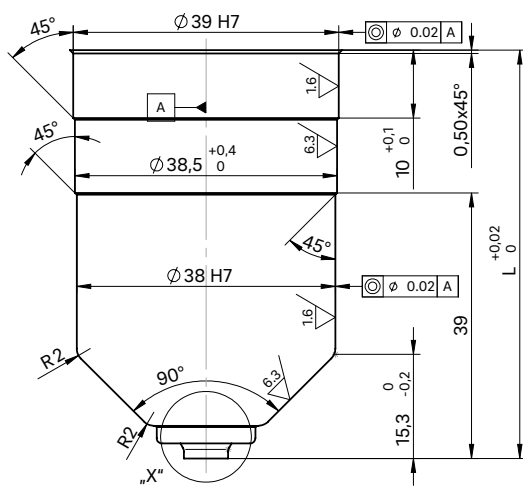


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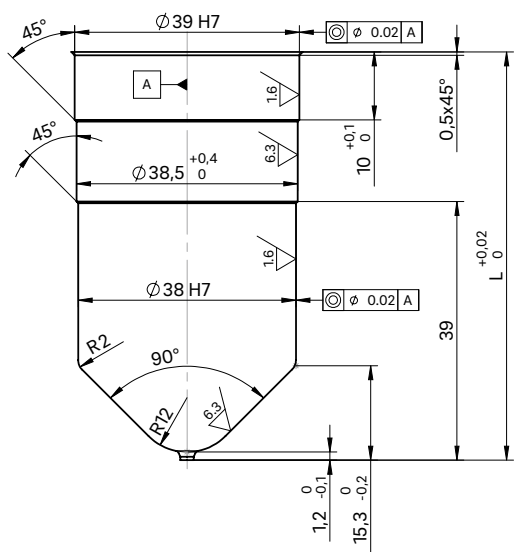


Nozzle with needle guide antechamber design LA

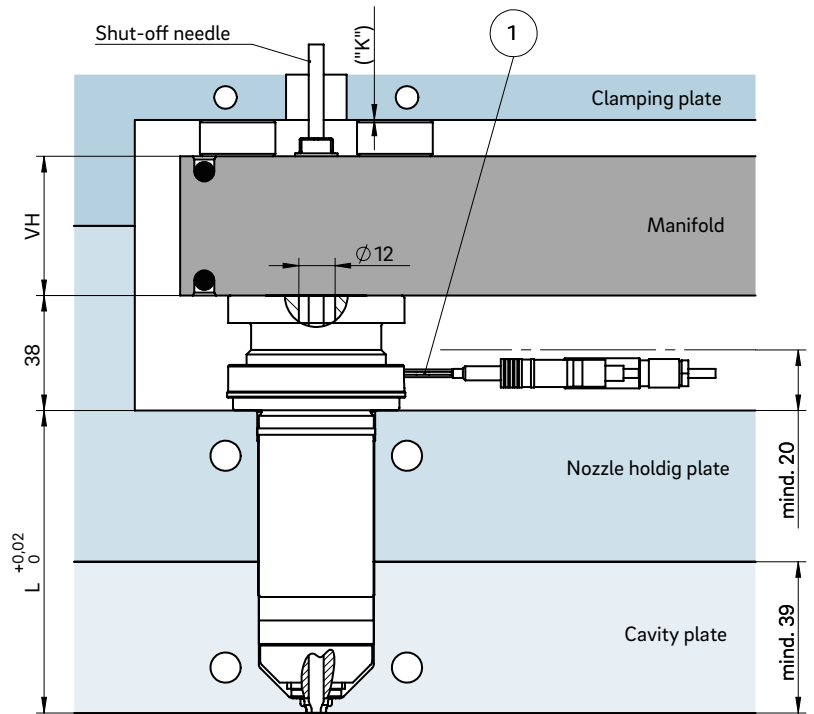


For "X" version of the needle guide see following page

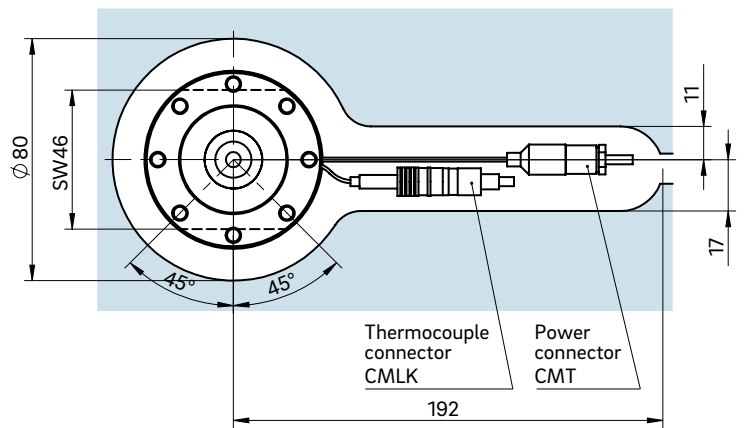
Nozzle with needle guide antechamber design KA



**INSTALLATION**



Example cutout for nozzle head, power and thermocouple plug connections



- ① Power and thermocouple plug connections in this area can be bent once; minimum radius: R8  
SW = flat area on nozzle head

Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed! ΔT specifies the temperature differential between the processing temperature and the mould temperature!

VH	ΔT (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264
56 mm	K (mm)	0.046	0.097	0.150	0.203	0.258	0.311



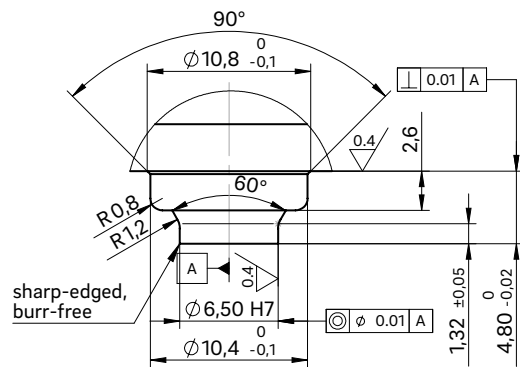
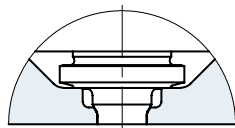
# Valve gate nozzle type 12NHT

Needle guide versions LA, LA with titanium ring and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

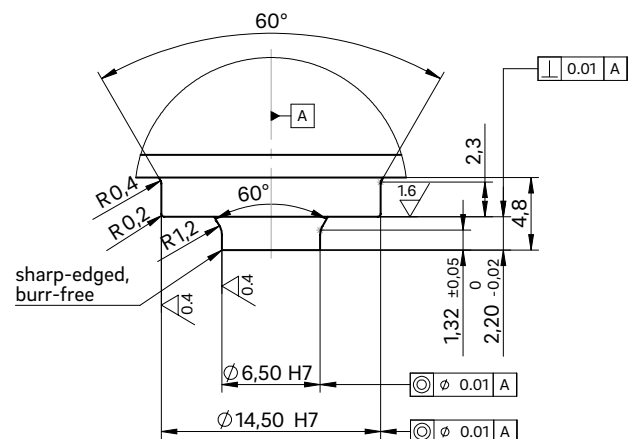
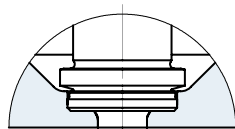
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring



### Needle guide LA

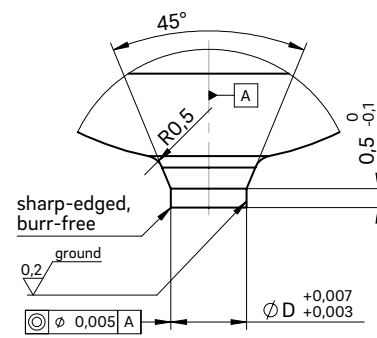
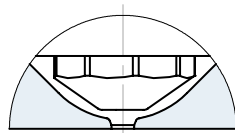
Special version with titanium ring

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- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)



Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of  $64 \pm 2$  HRC is to be taken into account!



## Valve gate nozzle type 5NMT

System nozzle with conventional heating element, for minimal spacing, not screwed to the manifold

### TECHNICAL DATA

#### 5NMT

Needle Ød	3 mm
Melt channel Ød	4.8 mm
Gate point Ød	0.8, 1.0, 1.2 or 1.4 mm
Operating voltage	230 V <sub>AC</sub> *

#### Nominal length of the nozzle (L) in mm

50	60	80	100	120	150
■	■	■	■	■	□

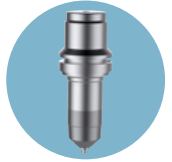
Contact us for other nozzle lengths!

\*Volts alternating current

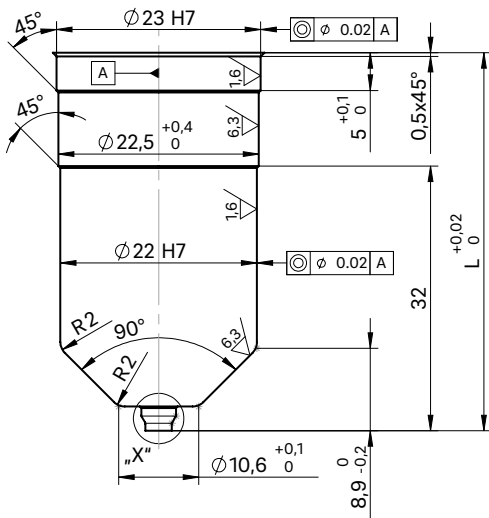
■ available □ on request



WEBCODE  
32090

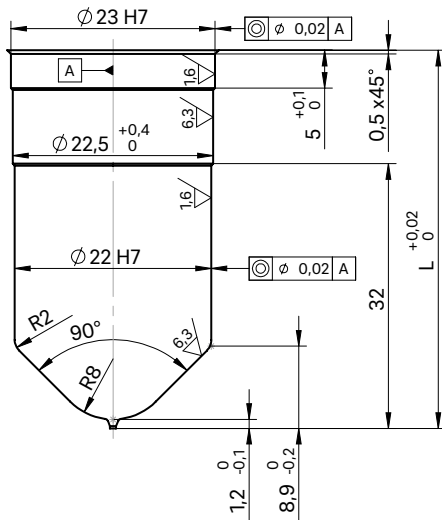


Nozzle with needle guide  
antechamber design LA

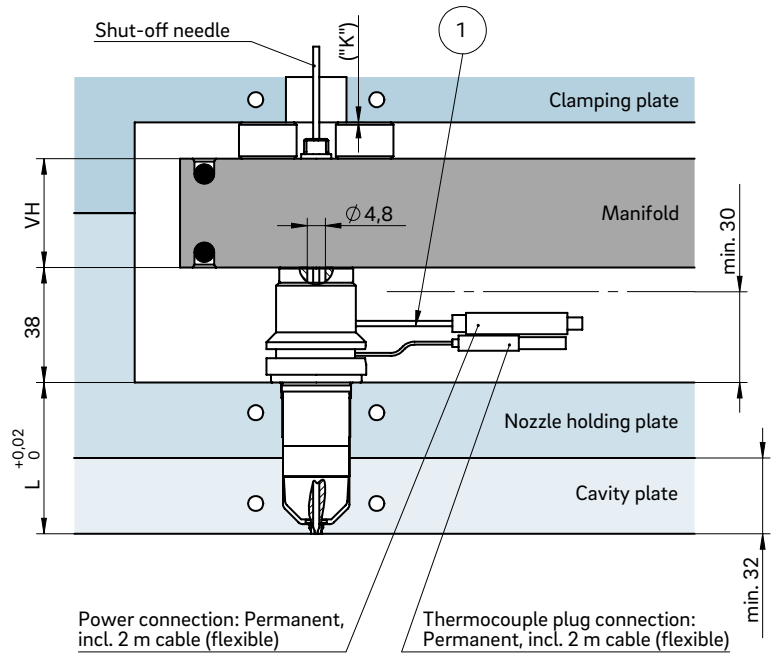


For "X" version of the needle guide  
see following page

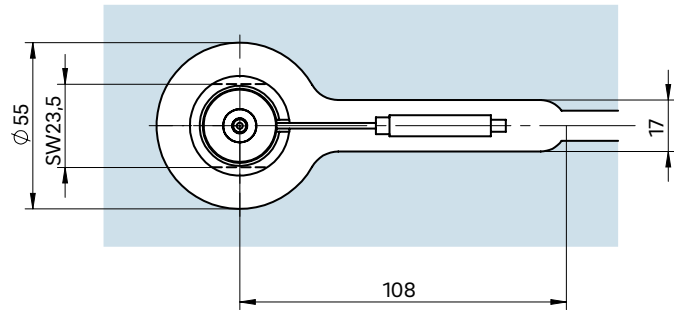
Nozzle with needle guide  
antechamber design KA



## INSTALLATION



Example cutout for nozzle head, power and thermocouple plug connections



- ① Power and thermocouple plug connections in this area can be bent once; minimum radius: R8  
SW = flat area on nozzle head

Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed!  $\Delta T$  specifies the temperature differential between the processing temperature and the mould temperature!

VH	$\Delta T$ (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264
56 mm	K (mm)	0.046	0.097	0.150	0.203	0.258	0.311



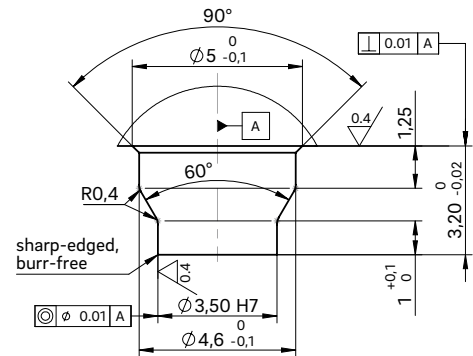
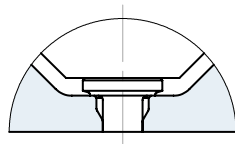
# Valve gate nozzle type 5NMT

Needle guide versions LA, LA with titanium ring, LAZ and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

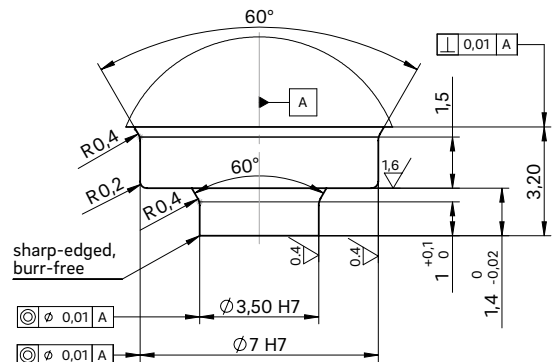
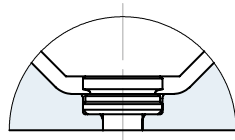
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring

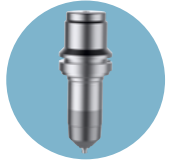


### Needle guide LA

Special version with titanium ring

Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)

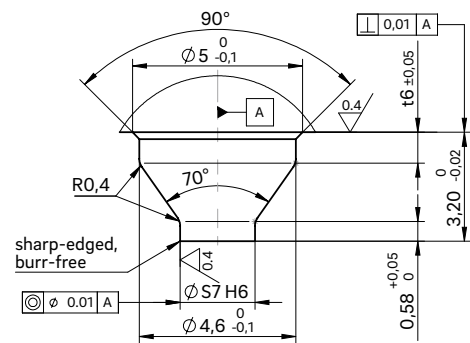
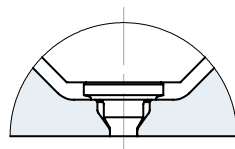


**Installation dimensions of needle guide version LAZ**

ØD	ØS7	t6
0.8	2.2	0.91
1.0	2.4	1.05
1.2	2.6	1.20
1.4	2.8	1.34



Needle guide version  
Antechamber version LAZ



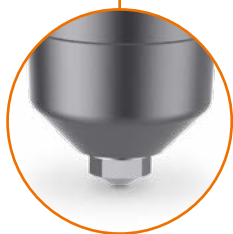
**Needle guide LAZ**

Made of powder-metallurgical steel

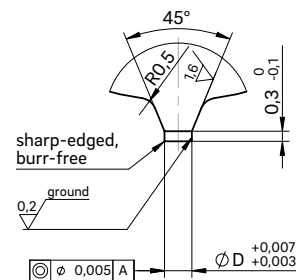
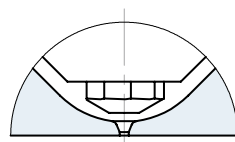
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring. Needle guide type LAZ has a tapered shape with a smaller contact surface which creates a smaller impression. This version is suitable for items with a minimal wall thickness and part geometries not permitting a larger impression.

**Advantages:**

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of 64 ±2 HRC is to be taken into account!



## Valve gate nozzle type 6NMT

System nozzle with conventional heating element, for minimal spacing, not screwed to the manifold

### TECHNICAL DATA

#### 6NMT

Needle Ød	3 mm
Melt channel Ød	6 mm
Gate point Ød	0.8, 1.0, 1.2 or 1.4 mm
Operating voltage	230 V <sub>AC</sub> *

#### Nominal length of the nozzle (L) in mm

50	60	80	100	120	150	200
■	■	■	■	□	□	□

Contact us for other nozzle lengths!

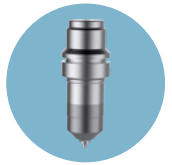
\*Volts alternating current

■ available □ on request

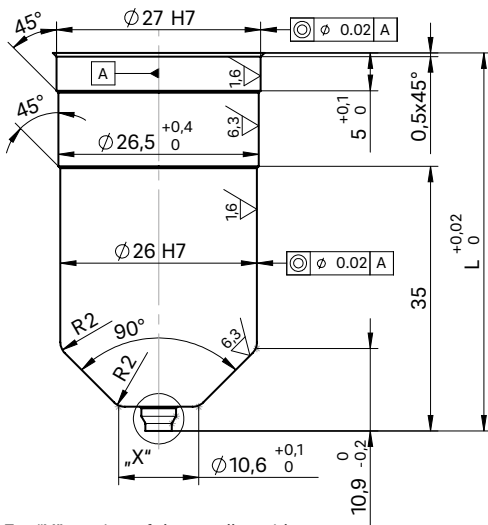


WEBCODE  
32100



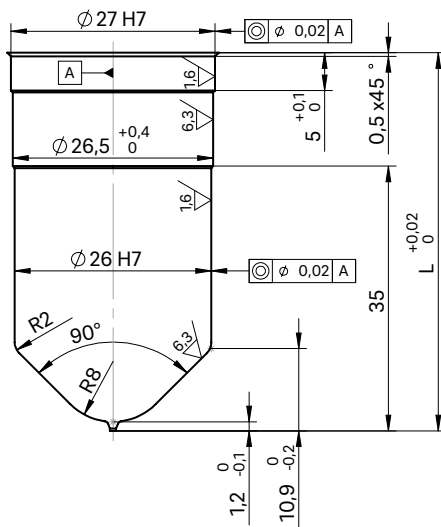


Nozzle with needle guide  
antechamber design LA

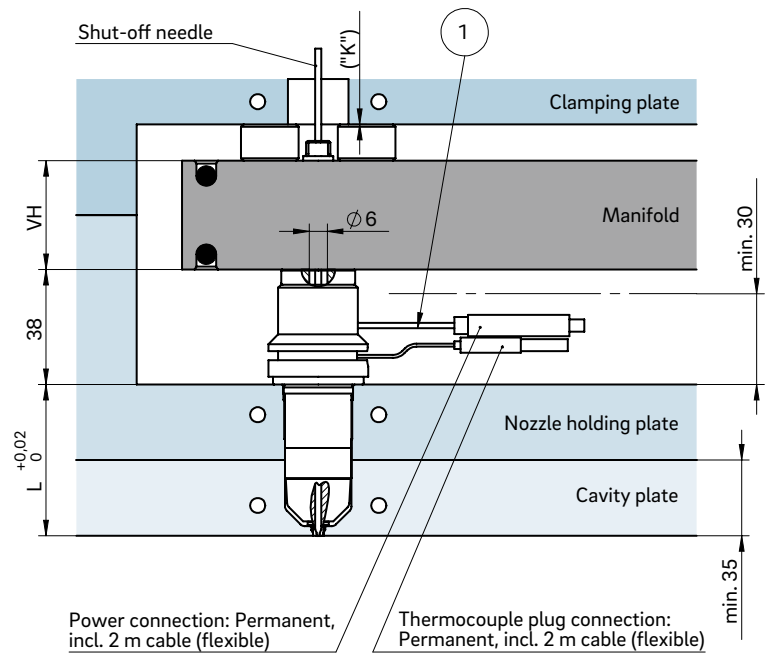


For "X" version of the needle guide  
see following page

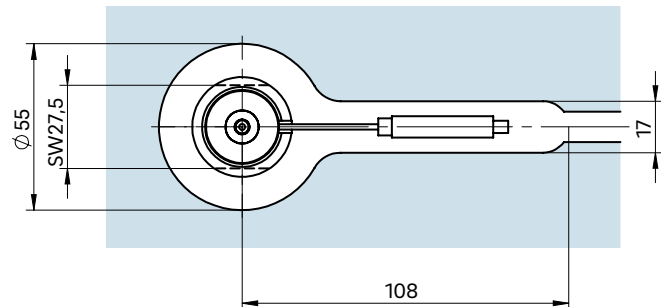
Nozzle with needle guide  
antechamber design KA



## INSTALLATION



Example cutout for nozzle head, power and thermocouple plug connections



- ① Power and thermocouple plug connections in this area can be bent once; minimum radius: R8  
SW = flat area on nozzle head

Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed!  $\Delta T$  specifies the temperature differential between the processing temperature and the mould temperature!

VH	$\Delta T$ (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264
56 mm	K (mm)	0.046	0.097	0.150	0.203	0.258	0.311



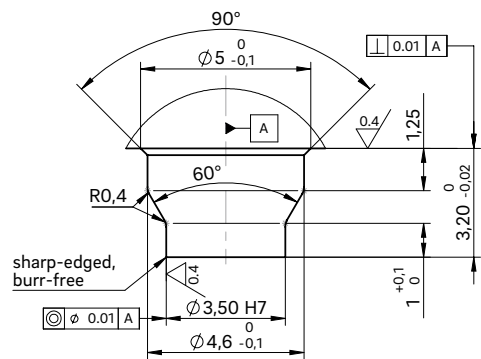
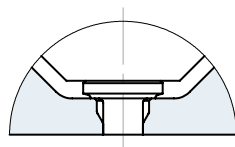
# Valve gate nozzle type 6NMT

Needle guide versions LA, LA with titanium ring, LAZ and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

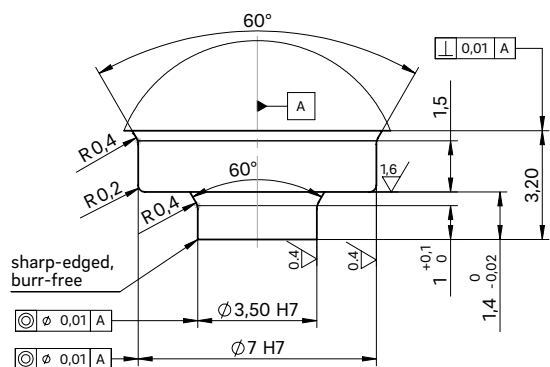
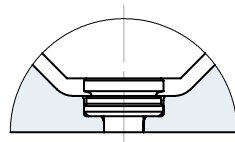
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring



### Needle guide LA

Special version with titanium ring

Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)

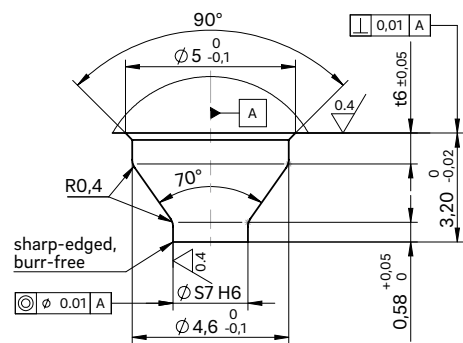
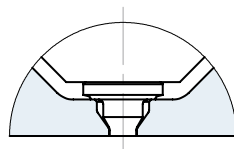


**Installation dimensions of needle guide version LAZ**

ØD	ØS7	t6
0.8	2.2	0.91
1.0	2.4	1.05
1.2	2.6	1.20
1.4	2.8	1.34



Needle guide version  
Antechamber version LAZ



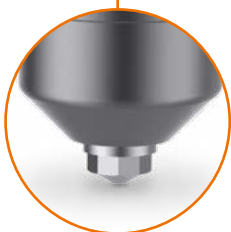
**Needle guide LAZ**

Made of powder-metallurgical steel

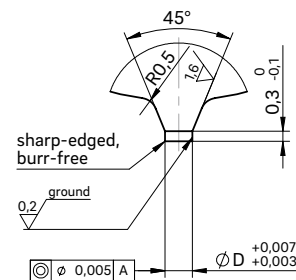
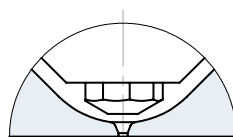
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring. Needle guide type LAZ has a tapered shape with a smaller contact surface which creates a smaller impression. This version is suitable for items with a minimal wall thickness and part geometries not permitting a larger impression.

**Advantages:**

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of 64 ±2 HRC is to be taken into account!



## Valve gate nozzle type 4NTT

System nozzle with conventional heating element, screwed from the parting line

### TECHNICAL DATA

#### 4NTT

Needle Ød	2 mm
Melt channel Ød	3.8 mm
Gate point Ød	0.8, 1.0, 1.2 or 1.4 mm
Operating voltage	230 V <sub>AC</sub> *

#### Nominal length of the nozzle (L) in mm

50	60	80
■	■	■

Contact us for other nozzle lengths!

\*Volts alternating current

■ available

### NOTE

Power connector CMT and thermocouple connector CMLK are to be ordered separately.



WEBCODE  
32110





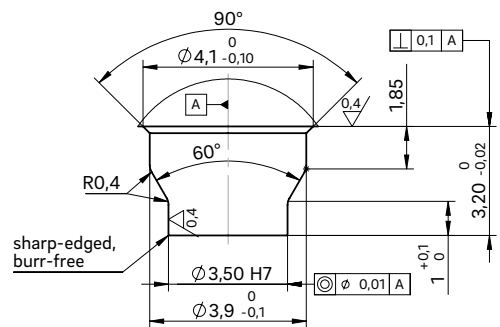
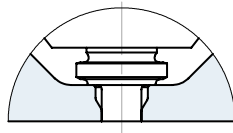
# Valve gate nozzle type 4NTT

Needle guide versions LA, LA with titanium ring, LAZ and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

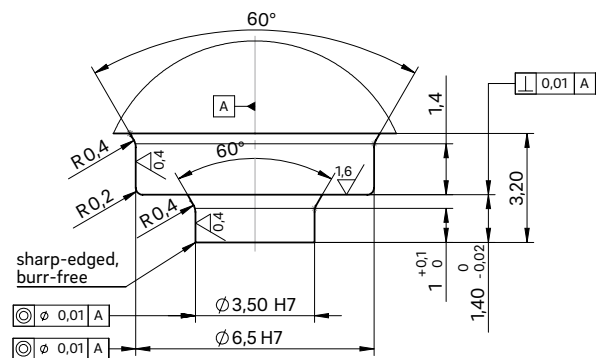
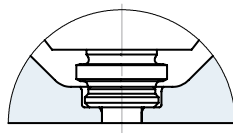
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring



### Needle guide LA

Special version with titanium ring

Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)

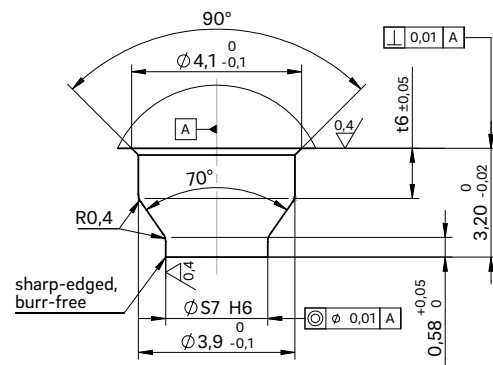
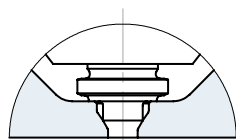


**Installation dimensions of needle guide version LAZ**

ØD	ØS7	t6
0.8	2.2	1.41
1.0	2.4	1.55
1.2	2.6	1.70
1.4	2.8	1.84



Needle guide version  
Antechamber version LAZ



**Needle guide LAZ**

Made of powder-metallurgical steel

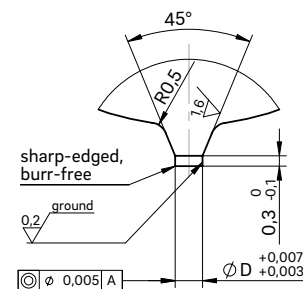
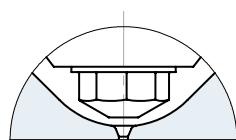
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring. Needle guide type LAZ has a tapered shape with a smaller contact surface which creates a smaller impression. This version is suitable for items with a minimal wall thickness and part geometries not permitting a larger impression.

**Advantages:**

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of 64 ±2 HRC is to be taken into account!



## Valve gate nozzle type 5NTT

System nozzle with conventional heating element, screwed from the parting line

### TECHNICAL DATA

#### 5NTT

Needle Ød	3 mm
Melt channel Ød	4.8 mm
Gate point Ød	0.8, 1.0, 1.2 or 1.4 mm
Operating voltage	230 V <sub>AC</sub> *

#### Nominal length of the nozzle (L) in mm

50	60	80	100	120
■	■	■	■	■

Contact us for other nozzle lengths!

\*Volts alternating current

■ available

### NOTE

Power connector CMT and thermocouple connector CMLK are to be ordered separately.



WEBCODE  
32120







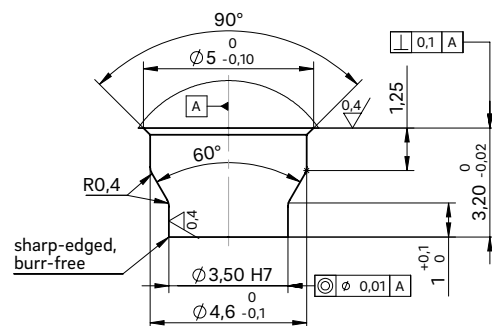
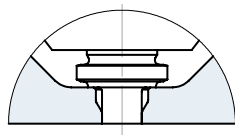
# Valve gate nozzle type 5NTT

Needle guide versions LA, LA with titanium ring, LAZ and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

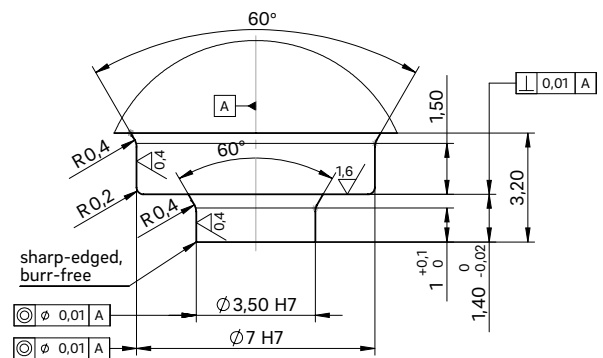
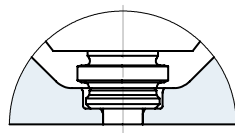
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### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring



### Needle guide LA

Special version with titanium ring

Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)

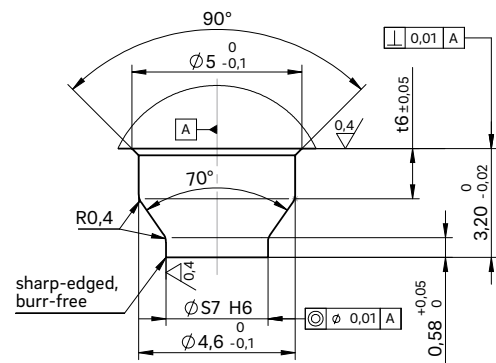
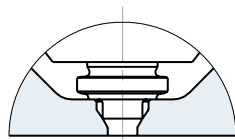


**Installation dimensions of needle guide version LAZ**

ØD	ØS7	t6
0.8	2.2	0.91
1.0	2.4	1.05
1.2	2.6	1.20
1.4	2.8	1.34



Needle guide version  
Antechamber version LAZ



**Needle guide LAZ**

Made of powder-metallurgical steel

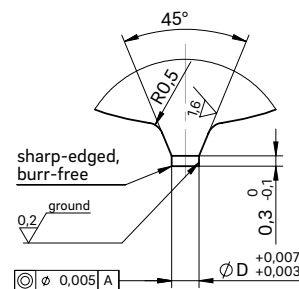
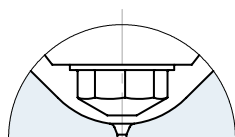
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring. Needle guide type LAZ has a tapered shape with a smaller contact surface which creates a smaller impression. This version is suitable for items with a minimal wall thickness and part geometries not permitting a larger impression.

**Advantages:**

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of 64 ± 2 HRC is to be taken into account!



## Valve gate nozzle type 6NTT

System nozzle with conventional heating element, screwed from the parting line

### TECHNICAL DATA

#### 6NTT

Needle Ød	3 mm
Melt channel Ød	6 mm
Gate point Ød	0.8, 1.0, 1.2 or 1.4 mm
Operating voltage	230 V <sub>AC</sub> *

#### Nominal length of the nozzle (L) in mm

50	60	80	100	120
■	■	■	■	■

Contact us for other nozzle lengths!

\*Volts alternating current

■ available

### NOTE

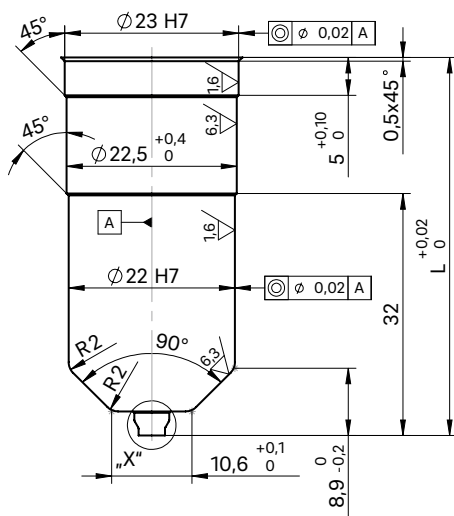
Power connector CMT and thermocouple connector CMLK are to be ordered separately.



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32130

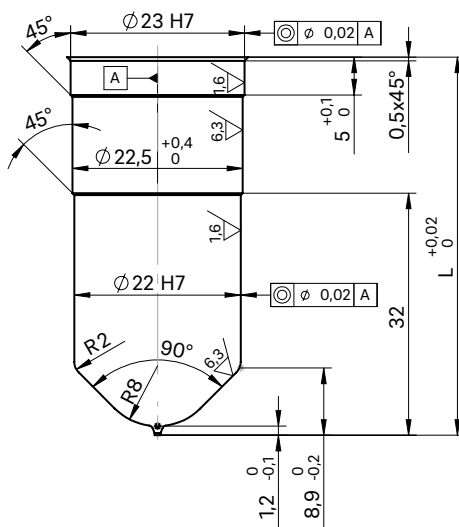


Nozzle with needle guide antechamber design LA



For "X" version of the needle guide see following page

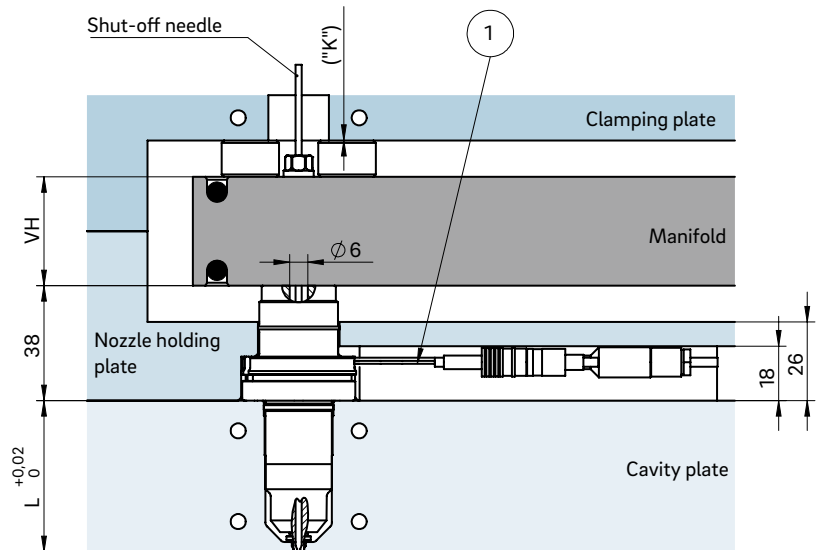
Nozzle with needle guide antechamber design KA



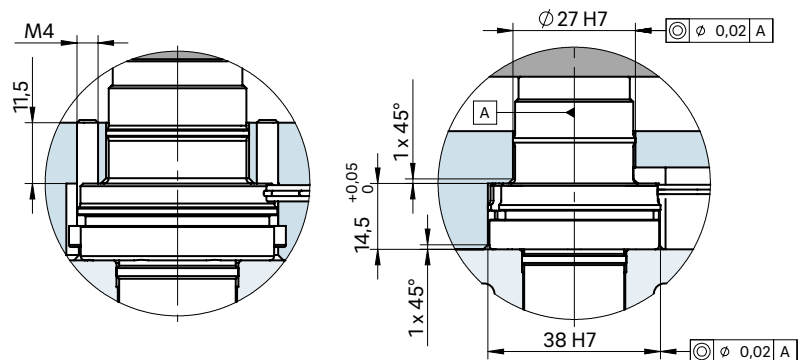
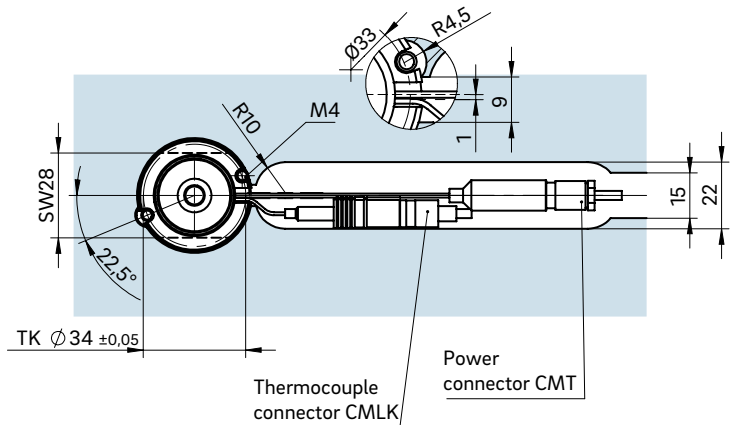
Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed! ΔT specifies the temperature differential between the processing temperature and the mould temperature!

VH	ΔT (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264
56 mm	K (mm)	0.046	0.097	0.150	0.203	0.258	0.311

### INSTALLATION



Example cutout for nozzle head, power and thermocouple plug connections



① Power and thermocouple plug connections in this area can be bent once; minimum radius: R8  
SW = flat area on nozzle head



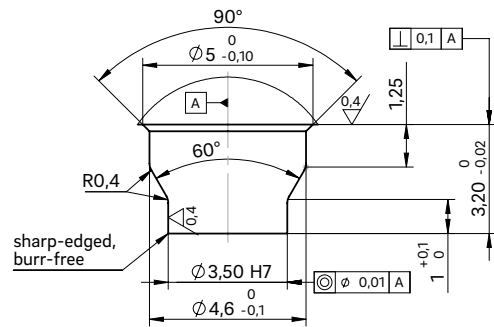
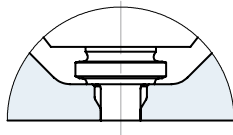
# Valve gate nozzle type 6NTT

Needle guide versions LA, LA with titanium ring, LAZ and KA

## NEEDLE GUIDE VERSIONS



Needle guide version  
Antechamber version LA



### Needle guide LA

Made of powder-metallurgical steel

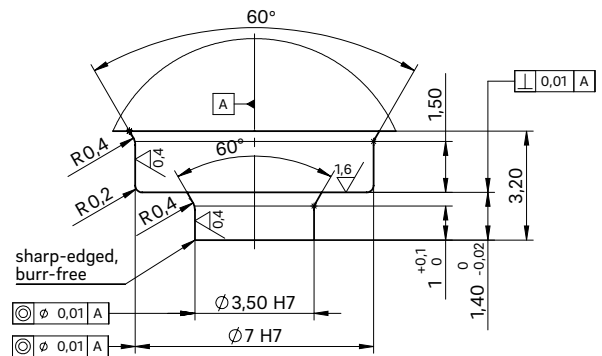
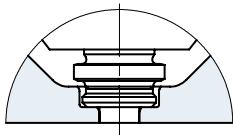
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring.

### Advantages:

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



Needle guide version  
Antechamber version LA  
with titanium ring



### Needle guide LA

Special version with titanium ring

Thermal insulation of the needle guide using a titanium ring expands the area of use of the valve gate nozzle to include the following plastics:

- Polyamides (PA4.6, PA6.6 and HTN)
- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)

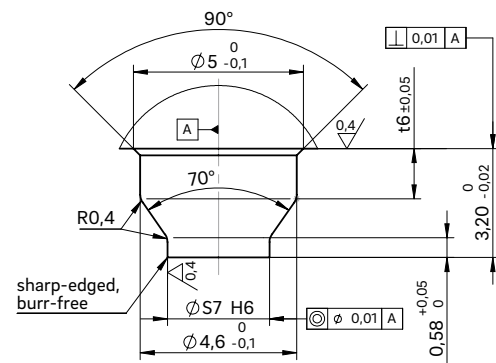
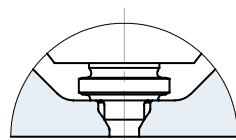


**Installation dimensions of needle guide version LAZ**

ØD	ØS7	t6
0.8	2.2	0.91
1.0	2.4	1.05
1.2	2.6	1.20
1.4	2.8	1.34



Needle guide version  
Antechamber version LAZ



**Needle guide LAZ**

Made of powder-metallurgical steel

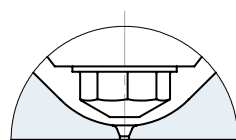
If necessary, the needle guide can be changed without great effort. By replacing the needle guide and needle, the gate point diameter can be made larger or smaller without subsequent reworking of the mould cavity. Thanks to a precise needle guide, the clean gate point can be closed with nearly no wear or burring. Needle guide type LAZ has a tapered shape with a smaller contact surface which creates a smaller impression. This version is suitable for items with a minimal wall thickness and part geometries not permitting a larger impression.

**Advantages:**

- Long service life and wear-resistance
- Wear parts are easy to replace
- Outstanding and flash-free gate point quality
- Very good visual surface quality
- No replacement or subsequent reworking of the mould inserts required
- Minimal shear stress



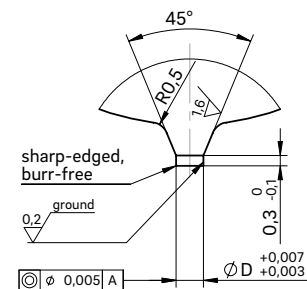
Needle guide version  
Antechamber version KA



**Needle guide KA**

This is used when a second marking on the part is not permissible.

When selecting the material to be used, the needle hardness of 64 ±2 HRC is to be taken into account!









## 3.3 Valve gate manifolds

### STRAIGHT MANIFOLDS

Page



**NGCP**  
Manifold length (VL) 160-360

30



**NGCP**  
Manifold length (VL) 410-510

40



**NGDP**  
Manifold length (VL) 160-360

50



**NGDP**  
Manifold length (VL) 410-510

60

### H-MANIFOLDS



**NHCP/NHDP/NHEP**

70

### CROSS MANIFOLDS



**NKCP4/NKDP4**  
Manifold length (VL) 135-165

80



**NKCP4/NKDP4**  
Manifold length (VL) 180

90



**NKCP4/NKDP4**  
Manifold length (VL) 210

100



**NKCP4/NKDP4**  
Manifold length (VL) 240/270/300

110

### STAR MANIFOLDS



**NSCP/NSDP/NSEP**

120

### T-MANIFOLDS

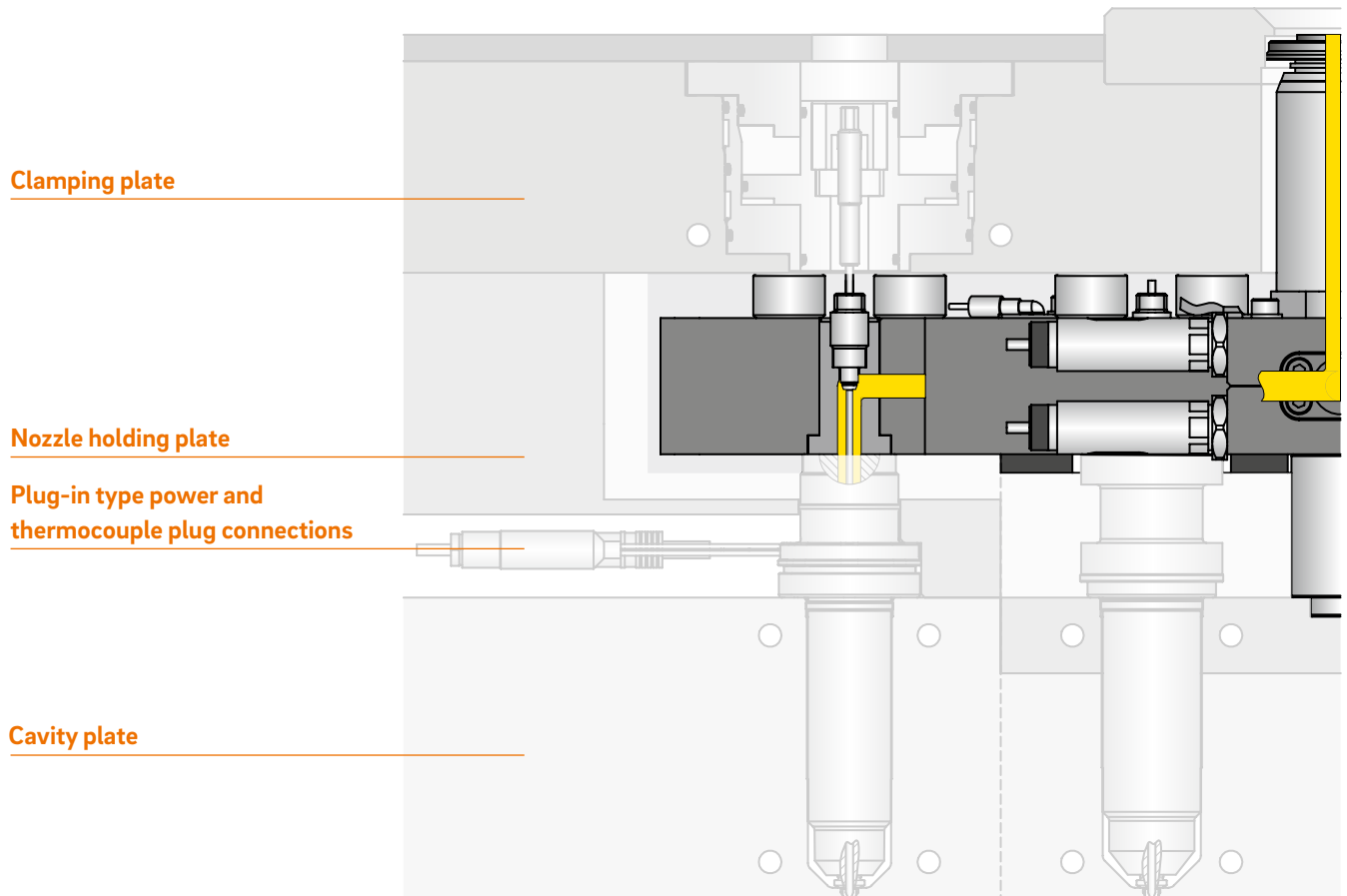


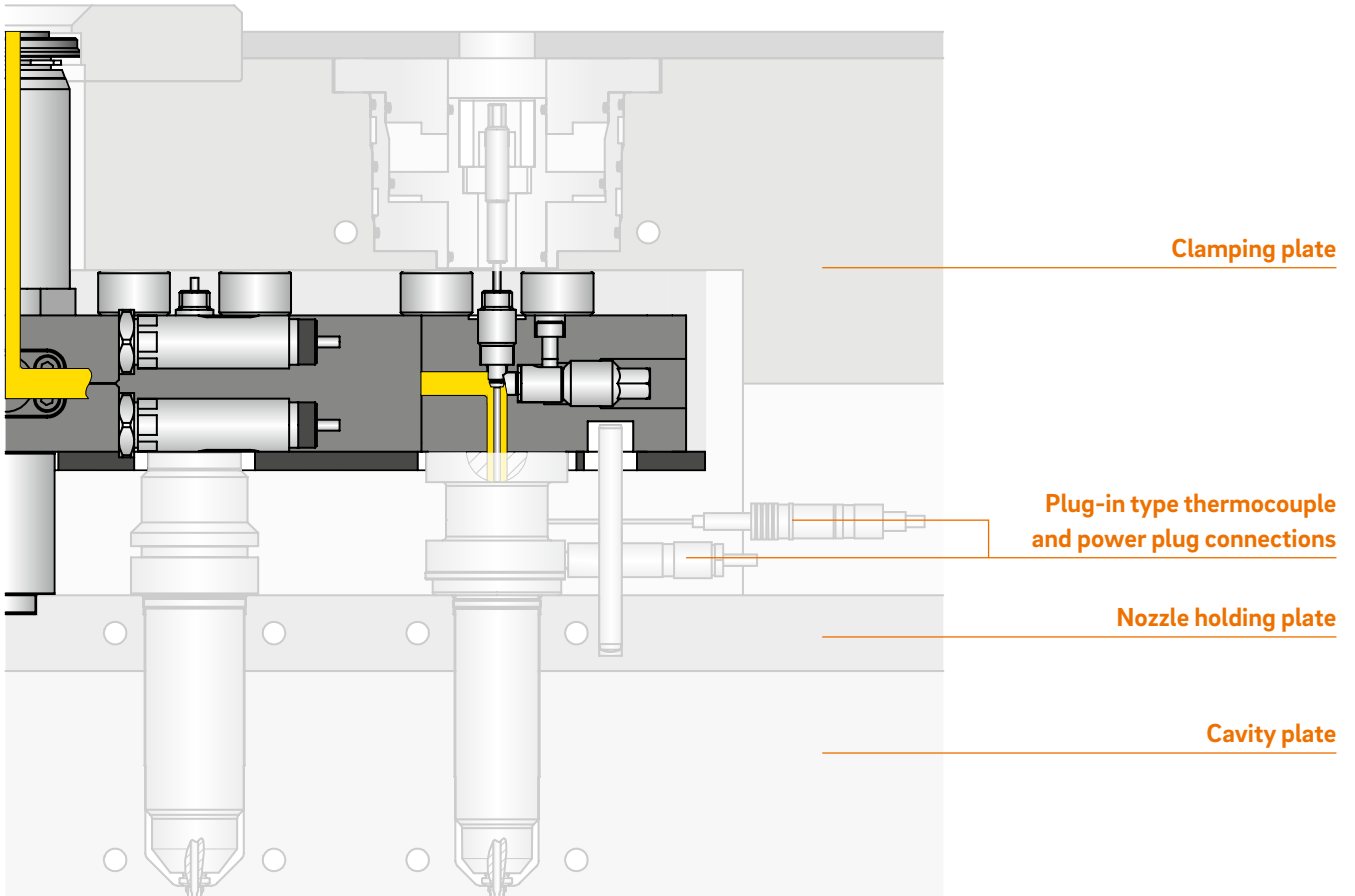
**NTCP/NTDP/NTEP**

130



# Overview of overall design for valve gate manifolds

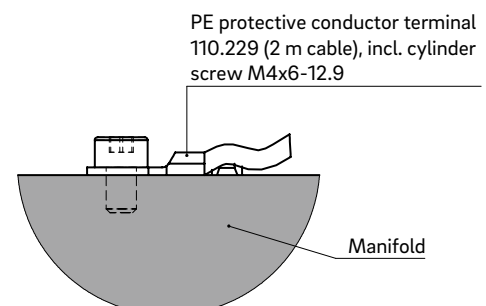
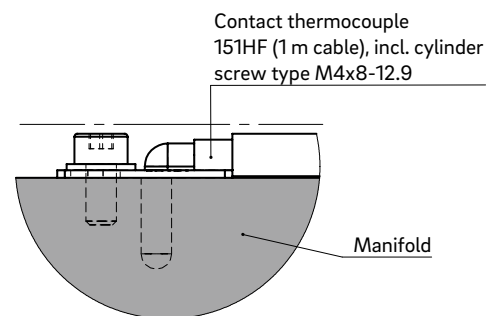
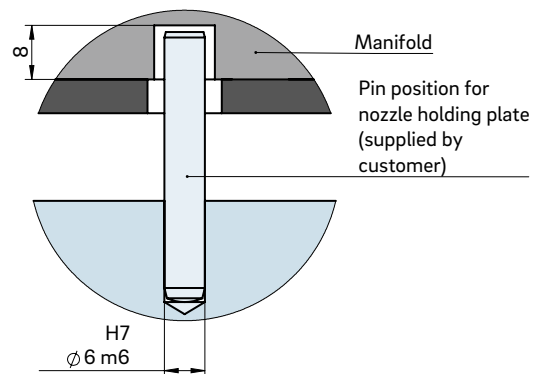






# Straight manifold type NGCP

Manifold length (VL) 160-360



## TECHNICAL DATA

### NGCP VL 160-360

Manifold height (VH) 36 mm

Operating voltage 230 V<sub>AC</sub> \*

Manifold length (VL)	160	210	260	310	360
Control circuits	1	1	1	1	1
Power (watts) per control circuit	2 × 750	2 × 950	2 × 1000	2 × 1350	2 × 1500

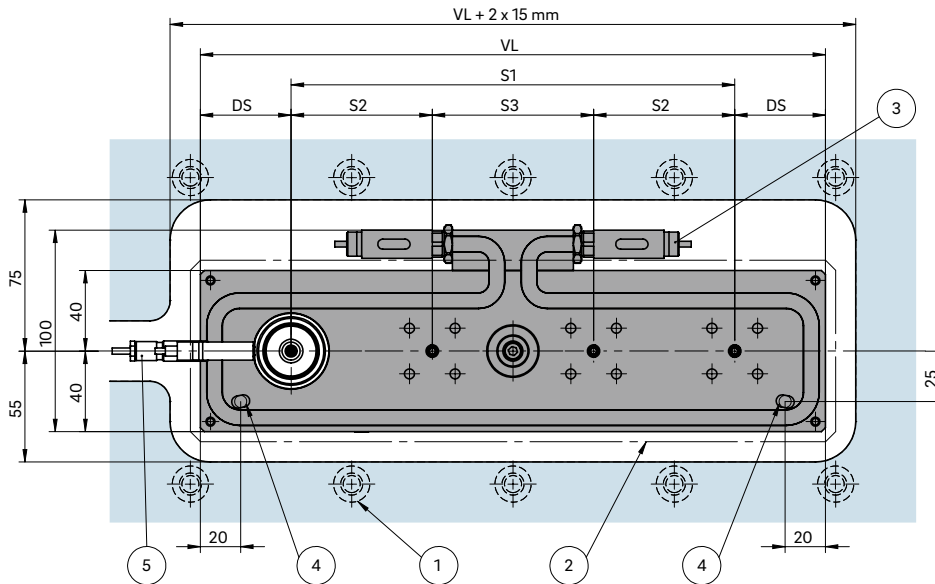
\*Volts alternating current

WEBCODE  
33010



## INSTALLATION

Nozzle tip view



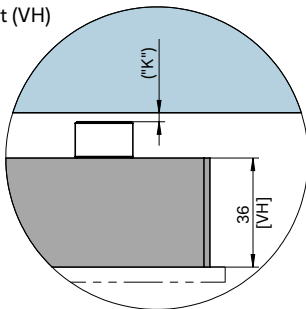
DS Edge distance:  
 a. min. 35.0 with nozzle size  $\leq 6$   
 b. min. 45.0 with nozzle size 8

S1 Largest pitch (max. pitch)  
 S2 Pitch between the nozzles (min./max. pitch)

S3 Pitch between the nozzles, taking connecting element and spacer into account (min./max. pitch)

- ① Screw connection close to manifold
- ② High-temperature insulation plate
- ③ Heating connections
- ④ Possible pin position
- ⑤ Opening and plug location dependent upon nozzle type

Manifold height (VH)



Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed!  $\Delta T$  specifies the temperature differential between the processing temperature and the mould temperature!

VH	$\Delta T$ (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217

### Design examples/Balancing

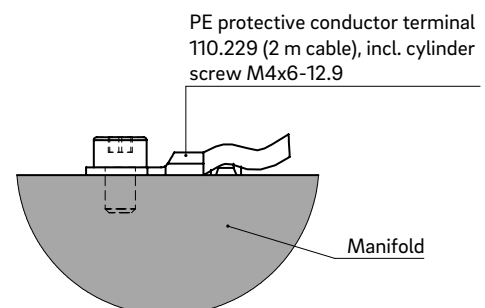
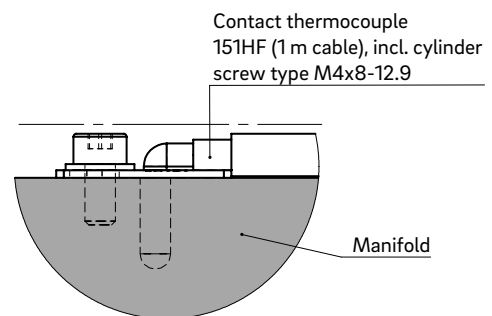
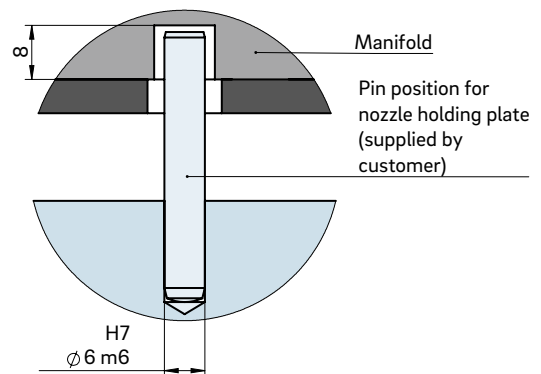
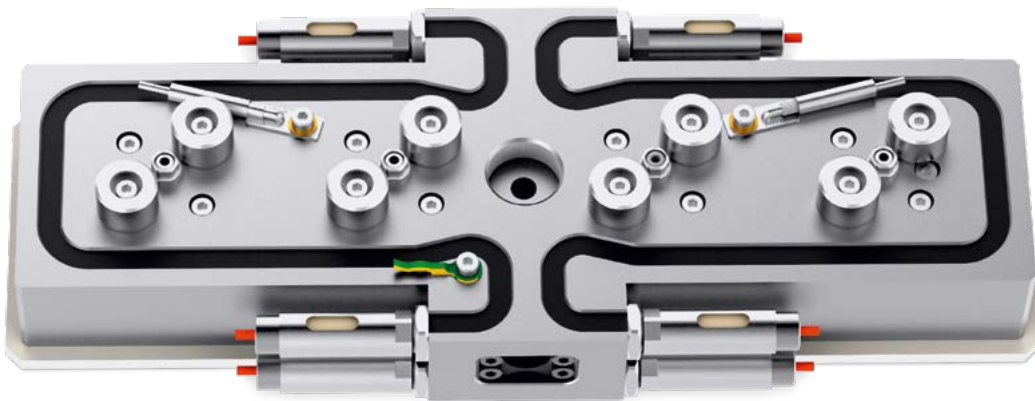
Type		Melt channel $\varnothing$ in mm	Number of drops
NGCP1B		$\leq 8$	1
NGCP2B		$\leq 8$	2
NGCP4B		$\leq 8$	4
NGCP8T		$\leq 8$	8

B = balanced T = partially balanced



# Straight manifold type NGCP

Manifold length (VL) 410-510



## TECHNICAL DATA

### NGCP VL 410-510

<b>Manifold height (VH)</b>	36 mm		
<b>Operating voltage</b>	230 V <sub>AC</sub> *		
<b>Manifold length (VL)</b>	410	460	510
<b>Control circuits</b>	2	2	2
<b>Power (watts) per control circuit</b>	2 × 850	2 × 950	2 × 1000

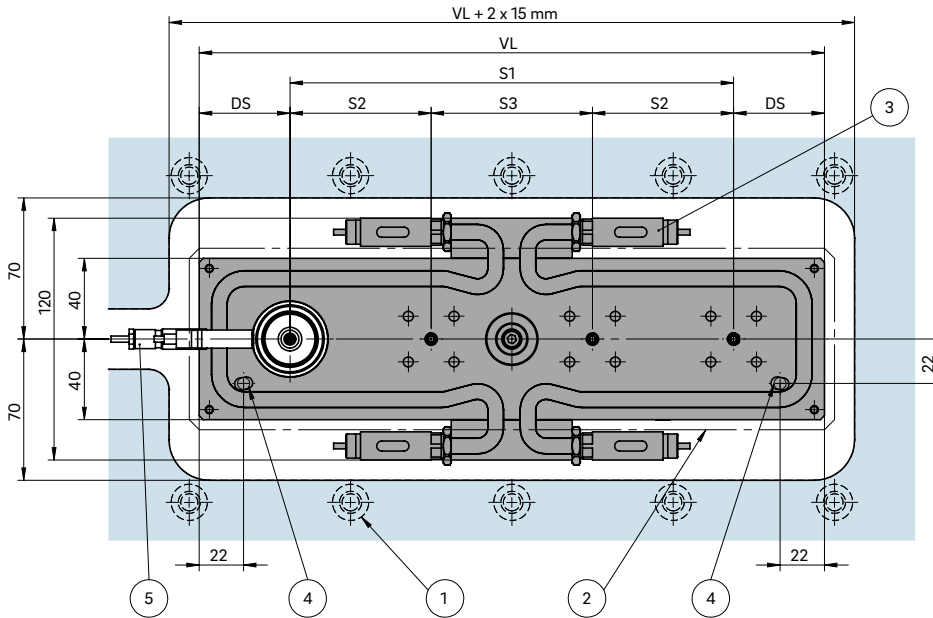
\*Volts alternating current

**WEBCODE**  
33020



## INSTALLATION

Nozzle tip view



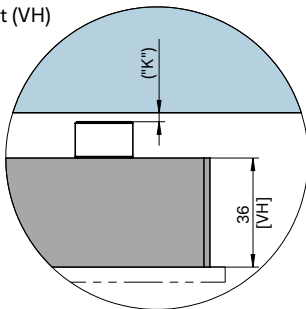
DS Edge distance:  
 a. min. 35.0 with nozzle size ≤ 6  
 b. min. 45.0 with nozzle size 8

S1 Largest pitch (max. pitch)  
 S2 Pitch between the nozzles (min./max. pitch)

S3 Pitch between the nozzles, taking connecting element and spacer into account (min./max. pitch)

- ① Screw connection close to manifold
- ② High-temperature insulation plate
- ③ Heating connections
- ④ Possible pin position
- ⑤ Opening and plug location dependent upon nozzle type

Manifold height (VH)



Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed! ΔT specifies the temperature differential between the processing temperature and the mould temperature!

VH	ΔT (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217

### Design examples/Balancing

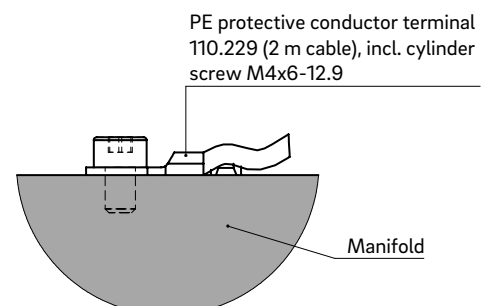
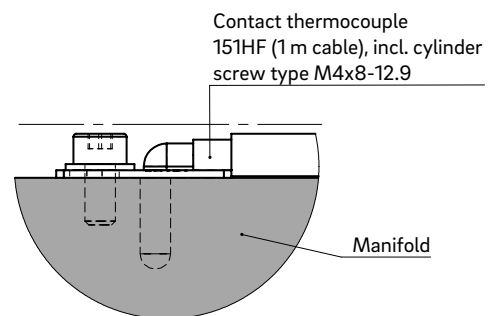
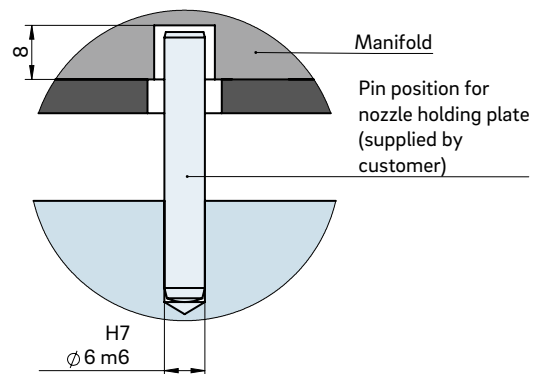
Type		Melt channel Ød in mm	Number of drops
NGCP1B		≤ 8	1
NGCP2B		≤ 8	2
NGCP4B		≤ 8	4
NGCP6T		≤ 8	6
NGCP8T		≤ 8	8

B = balanced T = partially balanced



# Straight manifold type NGDP

Manifold length (VL) 160-360



## TECHNICAL DATA

### NGDP VL 160-360

Manifold height (VH) 46 mm

Operating voltage 230 V<sub>AC</sub> \*

Manifold length (VL)	160	210	260	310	360
Control circuits	1	1	1	1	1
Power (watts) per control circuit	2 × 750	2 × 950	2 × 1000	2 × 1350	2 × 1500

\*Volts alternating current

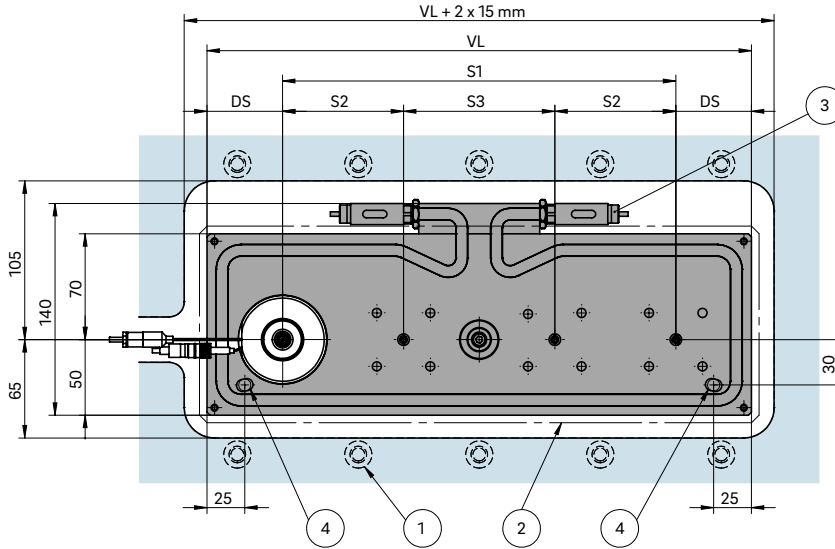
WEBCODE  
33030





## INSTALLATION

Nozzle tip view



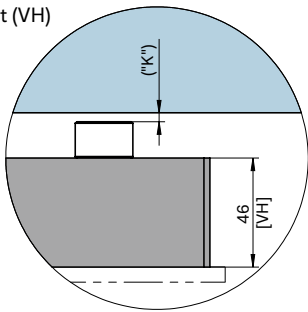
DS Edge distance:  
 a. min. 35.0 with nozzle size  $\leq 6$   
 b. min. 45.0 with nozzle size 8 or 10  
 c. min. 50.0 with nozzle size  $\geq 12$

S1 Largest pitch (max. pitch)  
 S2 Pitch between the nozzles (min./max. pitch)

S3 Pitch between the nozzles, taking connecting element and spacer into account (min./max. pitch)

- ① Screw connection close to manifold
- ② High-temperature insulation plate
- ③ Heating connections
- ④ Possible pin position
- ⑤ Opening and plug location dependent upon nozzle type

Manifold height (VH)



Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed!  $\Delta T$  specifies the temperature differential between the processing temperature and the mould temperature!

VH	$\Delta T$ (°C)	100	150	200	250	300	350
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264

### Design examples/Balancing

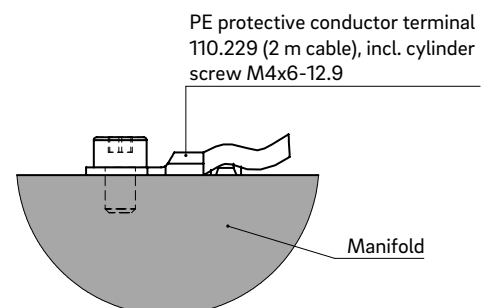
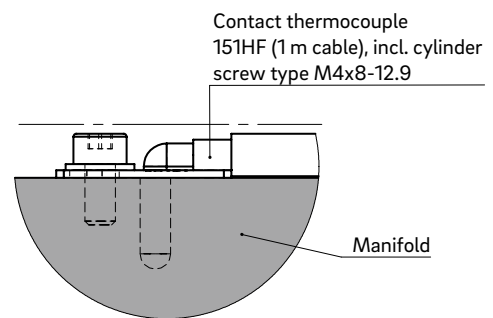
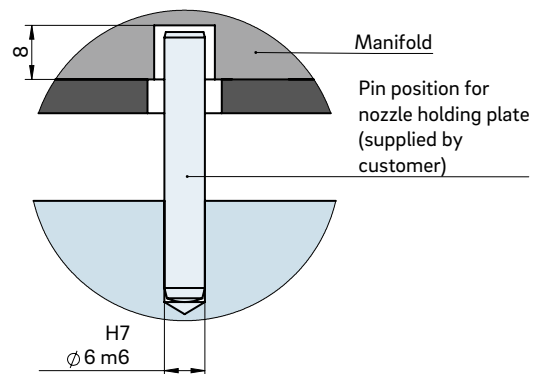
Type		Melt channel $\varnothing$ d in mm	Number of drops
NGDP1B		$\geq 10$ to 12	1
NGDP2B		$\geq 10$ to 12	2
NGDP4B		$\geq 10$ to 12	4
NGDP6T		$\leq 8$	6

B = balanced T = partially balanced



# Straight manifold type NGDP

Manifold length (VL) 410-510



## TECHNICAL DATA

### NGDP VL 410-510

**Manifold height (VH)** 46 mm

**Operating voltage** 230 V<sub>AC</sub> \*

<b>Manifold length (VL)</b>	410	460	510
-----------------------------	-----	-----	-----

<b>Control circuits</b>	2	2	2
-------------------------	---	---	---

<b>Power (watts) per control circuit</b>	2 × 850	2 × 950	2 × 1000
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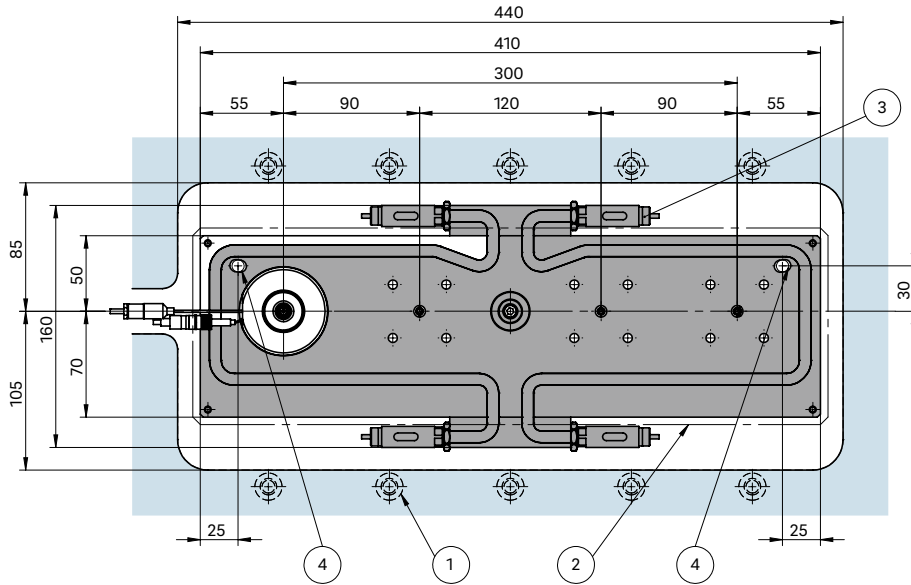
\*Volts alternating current

**WEBCODE**  
33040



## INSTALLATION

Nozzle tip view

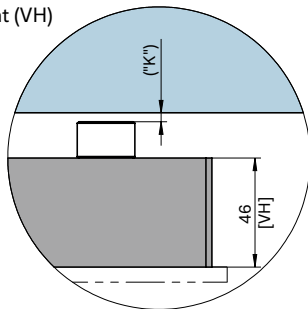


DS Edge distance:  
 a. min. 35.0 with nozzle size  $\leq 6$   
 b. min. 45.0 with nozzle size 8 or 10  
 c. min. 50.0 with nozzle size  $\geq 12$

S1 Largest pitch (max. pitch)  
 S2 Pitch between the nozzles (min./max. pitch)  
 S3 Pitch between the nozzles, taking connecting element and spacer into account (min./max. pitch)

- ① Screw connection close to manifold
- ② High-temperature insulation plate
- ③ Heating connections
- ④ Possible pin position
- ⑤ Opening and plug location dependent upon nozzle type

Manifold height (VH)



Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed!  $\Delta T$  specifies the temperature differential between the processing temperature and the mould temperature!

VH	$\Delta T$ (°C)	100	150	200	250	300	350
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264

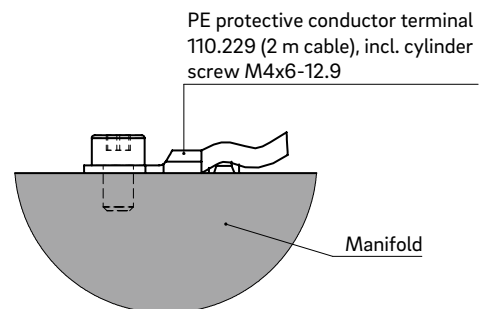
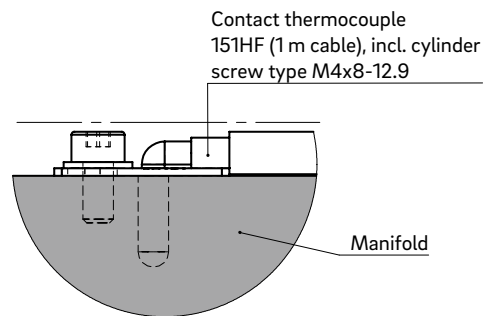
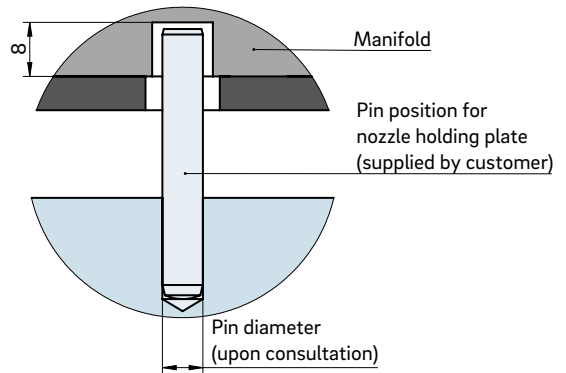
### Design examples/Balancing

Type		Melt channel $\varnothing$ d in mm	Number of drops
NGDP1B		$\geq 12$	1
NGDP2B		$\geq 12$	2
NGDP4B		$\geq 12$	4
NGDP6T		$\leq 8$	6
NGDP8T		$\geq 12$	8

B = balanced T = partially balanced



# H-manifold type NHCP/NHDP/NHEP



## TECHNICAL DATA

### NHCP/NHDP/NHEP

**Manifold height (VH)** NHCP: 36 mm  
 NHDP: 46 mm  
 NHEP: 56 mm

**Operating voltage** 230 V<sub>AC</sub>\*

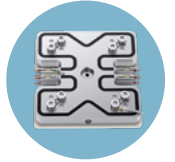
**Manifold length (VL)**  $H + 2 \times DS$

**Manifold width (VB)**  $B + 2 \times DS$

The heating output of each control circuit is calculated individually.

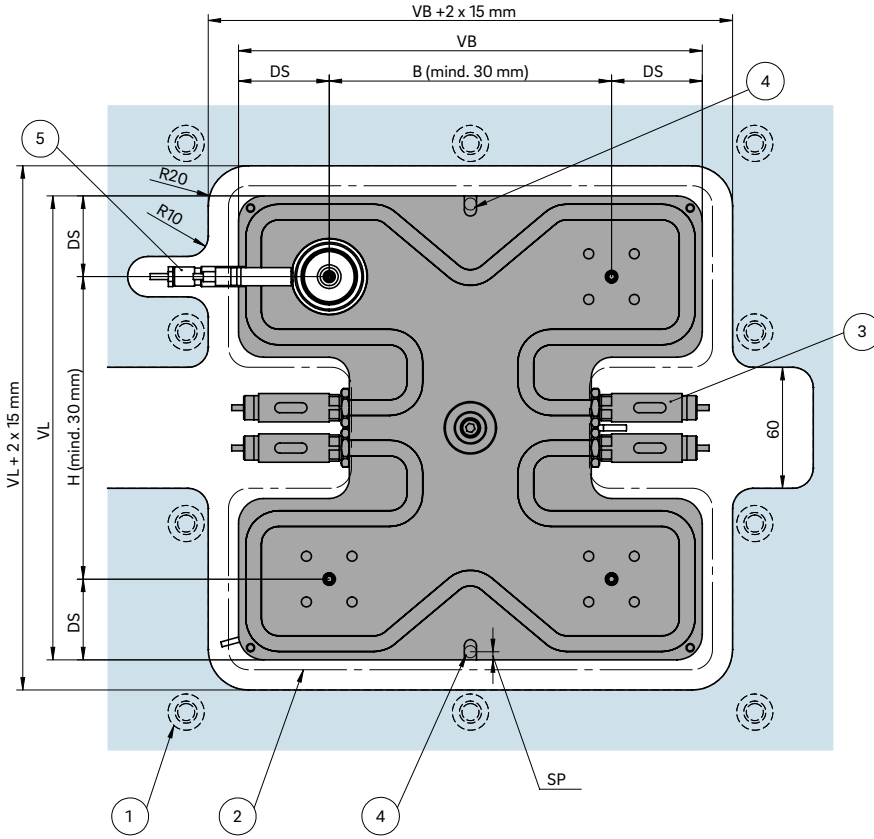
\*Volts alternating current





## INSTALLATION

Nozzle tip view

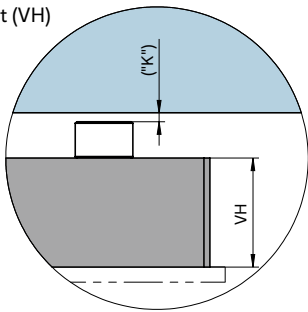


DS Edge distance:  
 a. min. 35.0 with nozzle size  $\leq 6$   
 b. min. 45.0 with nozzle size 8 or 10  
 c. min. 50.0 with nozzle size  $\geq 12$

H Pitch between the nozzles  
 B Pitch between the nozzles

- ① Screw connection close to manifold
- ② High-temperature insulation plate
- ③ Heating connections
- ④ Possible pin position  
"SP" =  $d/2 + 1$  mm
- ⑤ Opening and plug location dependent upon nozzle type

Manifold height (VH)



Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad ( $12 + 0.1$  mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed!  $\Delta T$  specifies the temperature differential between the processing temperature and the mould temperature!

VH	$\Delta T$ (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264
56 mm	K (mm)	0.046	0.097	0.150	0.203	0.258	0.311

Design examples/Balancing

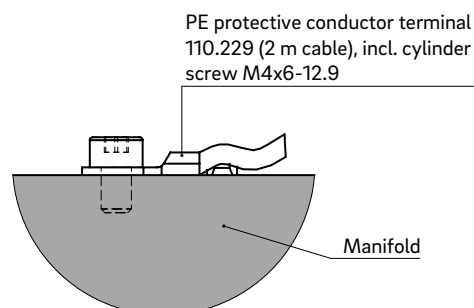
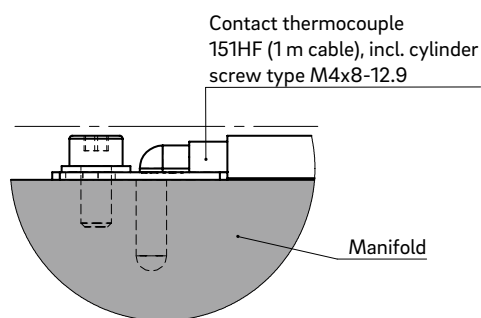
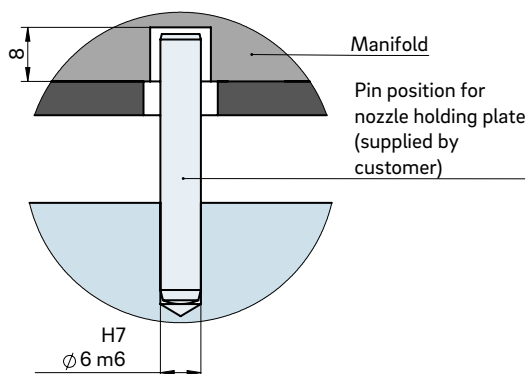
Type		NHCP = 36 (VH) Melt channel $\varnothing d$ in mm	NHDP = 46 (VH) Melt channel $\varnothing d$ in mm	NHEP = 56 (VH) Melt channel $\varnothing d$ in mm	Number of drops
NH_P4B		$\leq 8$	$\geq 10$ to 12	$\geq 16$	4
NH_P6T		$\leq 8$	$\geq 10$ to 12	$\geq 16$	6
NH_P6B			$\leq 8$	$\leq 10$	6
NH_P8B		$\leq 8$	$\geq 10$ to 12	$\geq 16$	8
NH_P12B			$\leq 8$	$\leq 10$	12
NH_P16B		$\leq 8$	$\geq 10$ to 12	$\geq 16$	16

B = balanced T = partially balanced



# Cross manifold type NKCP4/NKDP4

Manifold length (VL) 135-165



## TECHNICAL DATA

### NKCP4/NKDP4 135/165

**Manifold height (VH)** NKCP: 36 mm  
NKDP: 46 mm

**Operating voltage** 230 V<sub>AC</sub> \*

<b>Manifold length (VL)</b>	135	165
-----------------------------	-----	-----

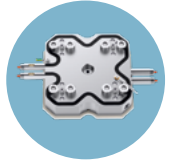
<b>Pin position (SP)</b>	63.5	68.0
--------------------------	------	------

<b>Control circuits</b>	1	1
-------------------------	---	---

<b>Power (watts) per control circuit</b>	2 × 850	2 × 1000
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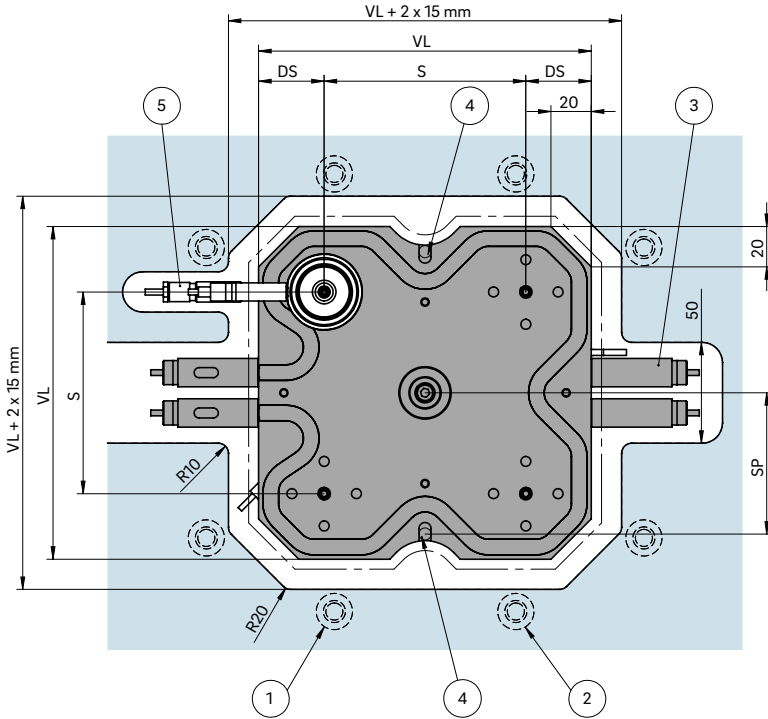
\*Volts alternating current

**WEBCODE**  
33060



## INSTALLATION

Nozzle tip view

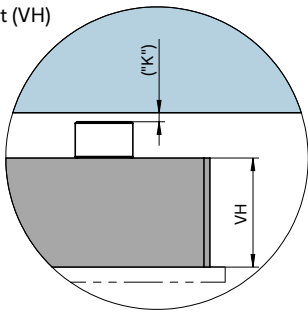


DS Edge distance:  
 a. min. 35.0 with nozzle size  $\leq 6$   
 b. min. 45.0 with nozzle size 8 or 10  
 c. min. 50.0 with nozzle size  $\geq 12$

S Pitch between the nozzles

- ① Screw connection close to manifold
- ② High-temperature insulation plate
- ③ Heating connections
- ④ Possible pin position
- ⑤ Opening and plug location dependent upon nozzle type

Manifold height (VH)



Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed!  $\Delta T$  specifies the temperature differential between the processing temperature and the mould temperature!

VH	$\Delta T$ (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264

### Design examples/Balancing

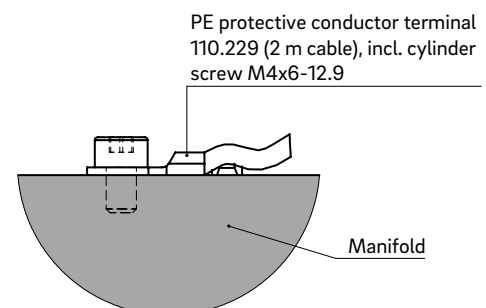
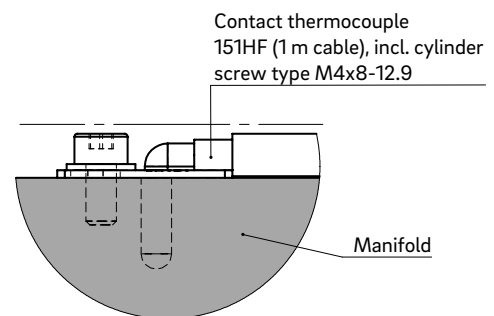
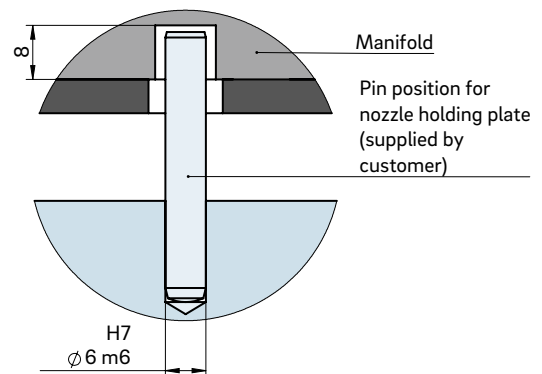
Type		NKCP = 36 (VH) Melt channel $\varnothing d$ in mm	NKDP = 46 (VH) Melt channel $\varnothing d$ in mm	Number of drops
NK_P4B		$\leq 8$ DS min. 35	$\geq 10$ to 12 DS min. 50	4

B = balanced



# Cross manifold type NKCP4/NKDP4

Manifold length (VL) 180



## TECHNICAL DATA

### NKCP4/NKDP4 180

**Manifold height (VH)** NKCP: 36 mm  
NKDP: 46 mm

**Operating voltage** 230 V<sub>AC</sub>\*

**Manifold length (VL)** 180

**Pin position (SP)** 59.0

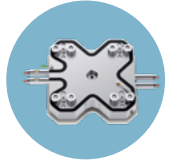
**Control circuits** 1

**Power (watts) per control circuit** 2 × 1000

\*Volts alternating current

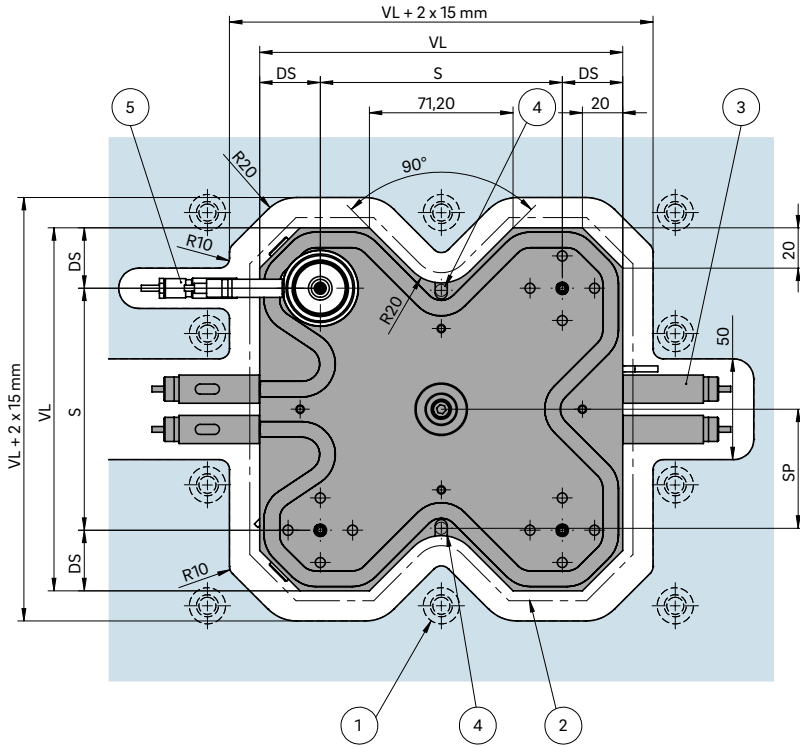
**WEBCODE**  
33070





## INSTALLATION

Nozzle tip view

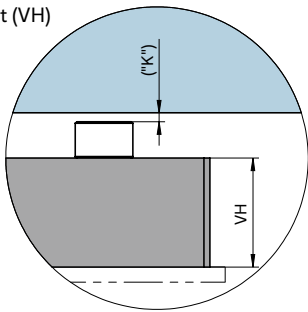


DS Edge distance:  
 a. min. 35.0 with nozzle size ≤ 6  
 b. min. 45.0 with nozzle size 8 or 10  
 c. min. 50.0 with nozzle size ≥ 12

S Pitch between the nozzles

- ① Screw connection close to manifold
- ② High-temperature insulation plate
- ③ Heating connections
- ④ Possible pin position
- ⑤ Opening and plug location dependent upon nozzle type

Manifold height (VH)



Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed! ΔT specifies the temperature differential between the processing temperature and the mould temperature!

VH	ΔT (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264

### Design examples/Balancing

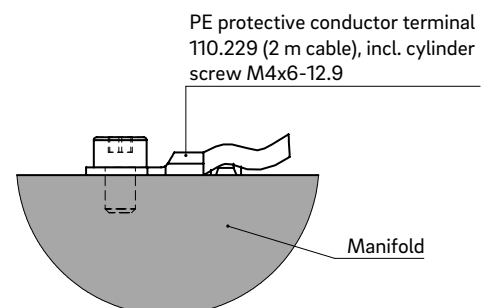
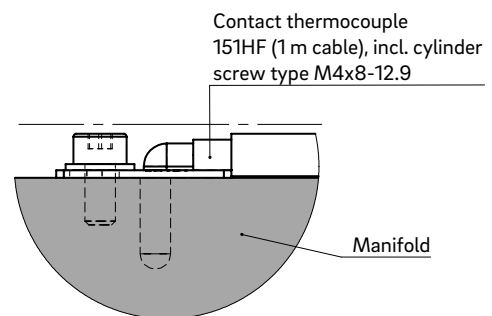
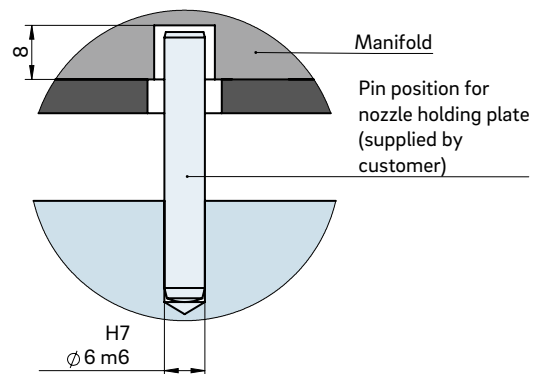
Type		NKCP = 36 (VH) Melt channel Ød in mm	NKDP = 46 (VH) Melt channel Ød in mm	Number of drops
NK_P4B		≤ 8 DS min. 35	≥ 10 to 12 DS min. 50	4

B = balanced



# Cross manifold type NKCP4/NKDP4

Manifold length (VL) 210



## TECHNICAL DATA

### NKCP4/NKDP4 210

**Manifold height (VH)** NKCP: 36 mm  
NKDP: 46 mm

**Operating voltage** 230 V<sub>AC</sub>\*

**Manifold length (VL)** 210

**Pin position (SP)** 60.8

**Control circuits** 1

**Power (watts) per control circuit** 2 × 1000

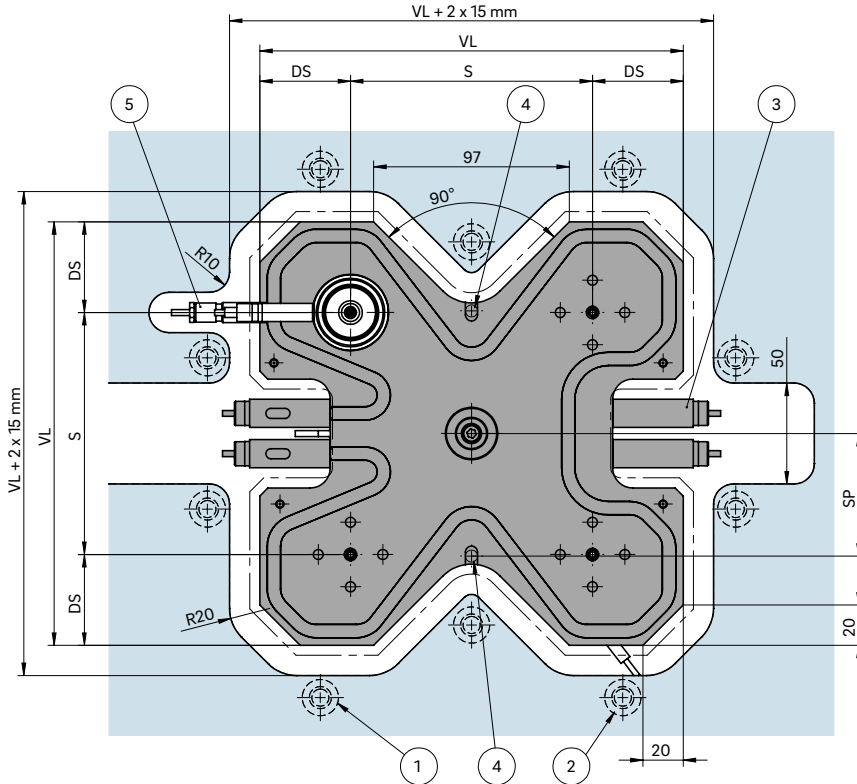
\*Volts alternating current

**WEBCODE**  
33080



## INSTALLATION

Nozzle tip view

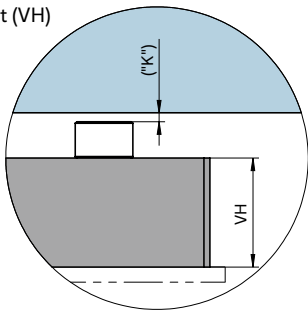


DS Edge distance:  
 a. min. 35.0 with nozzle size  $\leq 6$   
 b. min. 45.0 with nozzle size 8 or 10  
 c. min. 50.0 with nozzle size  $\geq 12$

S Pitch between the nozzles

- ① Screw connection close to manifold
- ② High-temperature insulation plate
- ③ Heating connections
- ④ Possible pin position
- ⑤ Opening and plug location dependent upon nozzle type

Manifold height (VH)



Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed!  $\Delta T$  specifies the temperature differential between the processing temperature and the mould temperature!

VH	$\Delta T$ (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264

### Design examples/Balancing

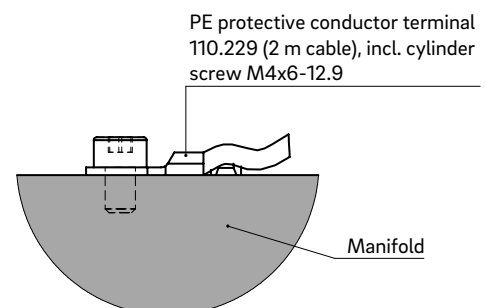
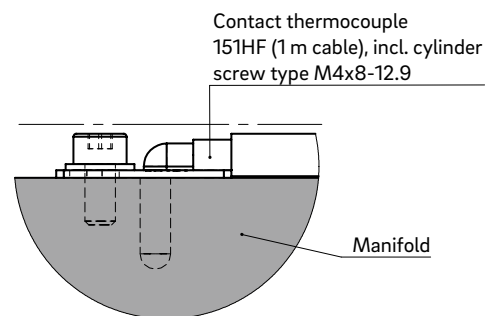
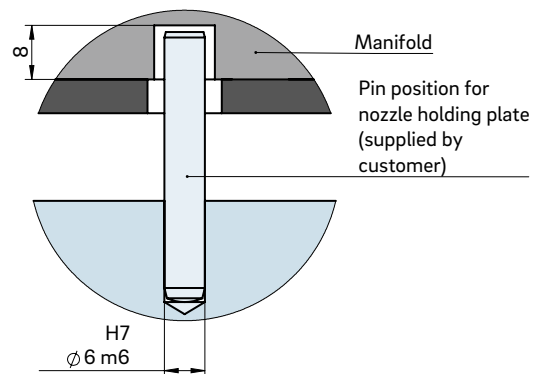
Type		NKCP = 36 (VH) Melt channel $\varnothing d$ in mm	NKDP = 46 (VH) Melt channel $\varnothing d$ in mm	Number of drops
NK_P4B		$\leq 8$ DS min. 35	$\geq 10$ to 12 DS min. 50	4

B = balanced



# Cross manifold type NKCP4/NKDP4

Manifold length (VL) 240/270/300



## TECHNICAL DATA

### NKCP4/NKDP4 240/270/300

**Manifold height (VH)** NKCP: 36 mm  
NKDP: 46 mm

**Operating voltage** 230 V<sub>AC</sub> \*

Manifold length (VL)	240	270	300
Pin position (SP)	81.0	87.5	101.0
Dimension B	127.0	156.6	187.0
Control circuits	2	2	2
Power (watts) per control circuit	2 × 1000	2 × 1350	2 × 1500

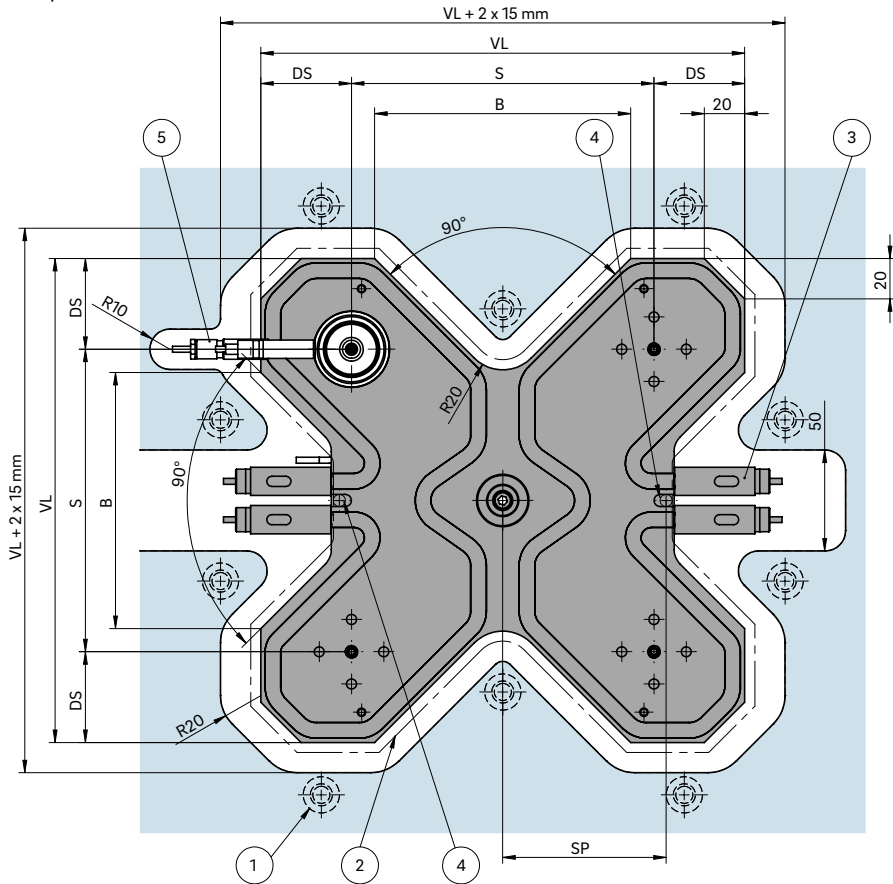
\*Volts alternating current

**WEBCODE**  
33090



## INSTALLATION

Nozzle tip view

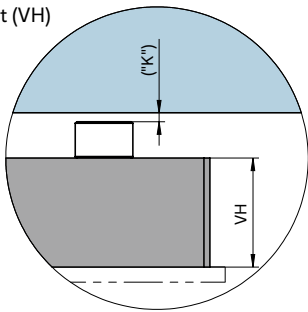


DS Edge distance:  
 a. min. 35.0 with nozzle size ≤ 6  
 b. min. 45.0 with nozzle size 8 or 10  
 c. min. 50.0 with nozzle size ≥ 12

S Pitch between the nozzles

- ① Screw connection close to manifold
- ② High-temperature insulation plate
- ③ Heating connections
- ④ Possible pin position
- ⑤ Opening and plug location dependent upon nozzle type

Manifold height (VH)



### Design examples/Balancing

Type		NKCP = 36 (VH) Melt channel Ød in mm	NKDP = 46 (VH) Melt channel Ød in mm	Number of drops
NK_P4B		≤ 8	≥ 10 to 12	4
		DS min. 35	DS min. 50	

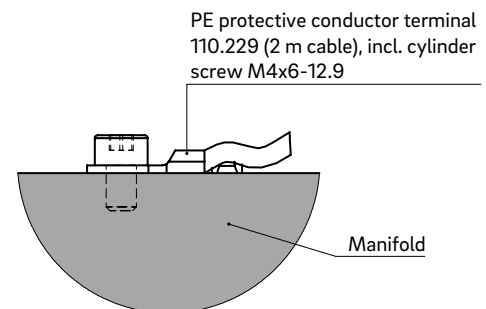
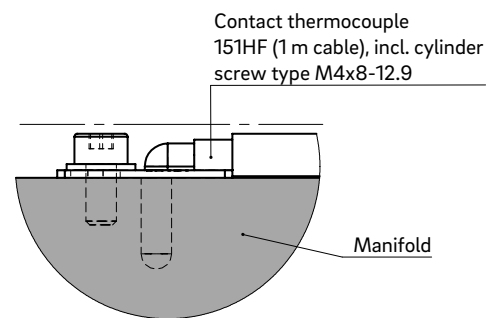
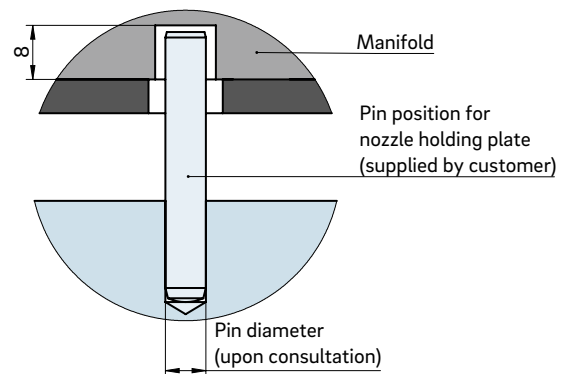
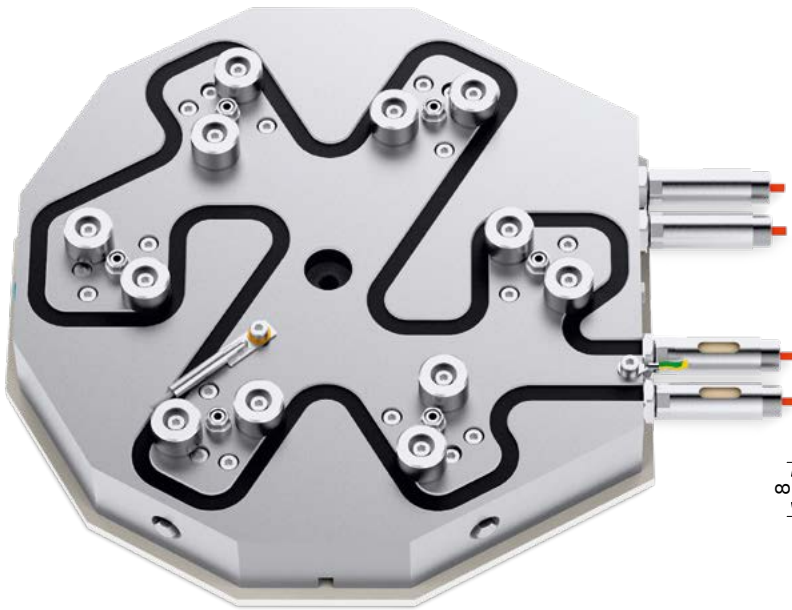
B = balanced

Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed! ΔT specifies the temperature differential between the processing temperature and the mould temperature!

VH	ΔT (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264



# Star manifold type NSCP/NSDP/NSEP



## TECHNICAL DATA

### NSCP/NSDP/NSEP

**Manifold height (VH)** NSCP: 36 mm  
 NSDP: 46 mm  
 NSEP: 56 mm

**Operating voltage** 230 V<sub>AC</sub>\*

**Manifold length (VL)** ØTK + 2 × DS

The heating output of each control circuit is calculated individually.

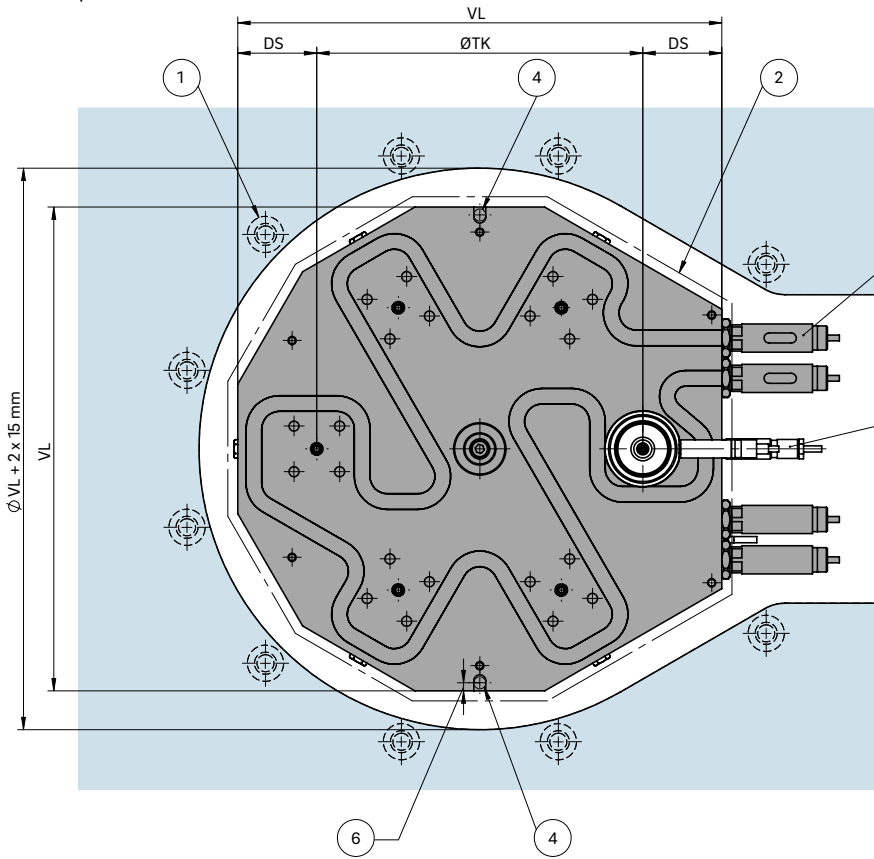
\*Volts alternating current





## INSTALLATION

Nozzle tip view

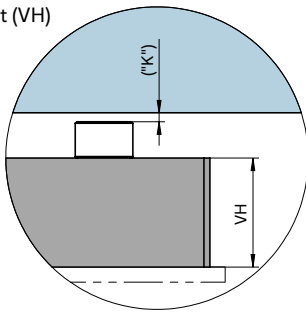


DS Edge distance:  
 a. min. 35.0 with nozzle size  $\leq 6$   
 b. min. 45.0 with nozzle size 8 or 10  
 c. min. 50.0 with nozzle size  $\geq 12$

ØTK Pitch circle diameter

- ① Screw connection close to manifold
- ② High-temperature insulation plate
- ③ Heating connections
- ④ Possible pin position
- ⑤ Opening and plug location dependent upon nozzle type
- ⑥ Pin position "SP" =  $d/2 + 1$  mm

Manifold height (VH)



Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad ( $12 + 0.1$  mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed!  $\Delta T$  specifies the temperature differential between the processing temperature and the mould temperature!

VH	$\Delta T$ (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264
56 mm	K (mm)	0.046	0.097	0.150	0.203	0.258	0.311

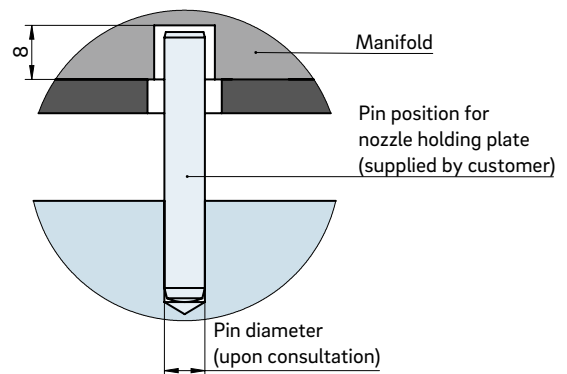
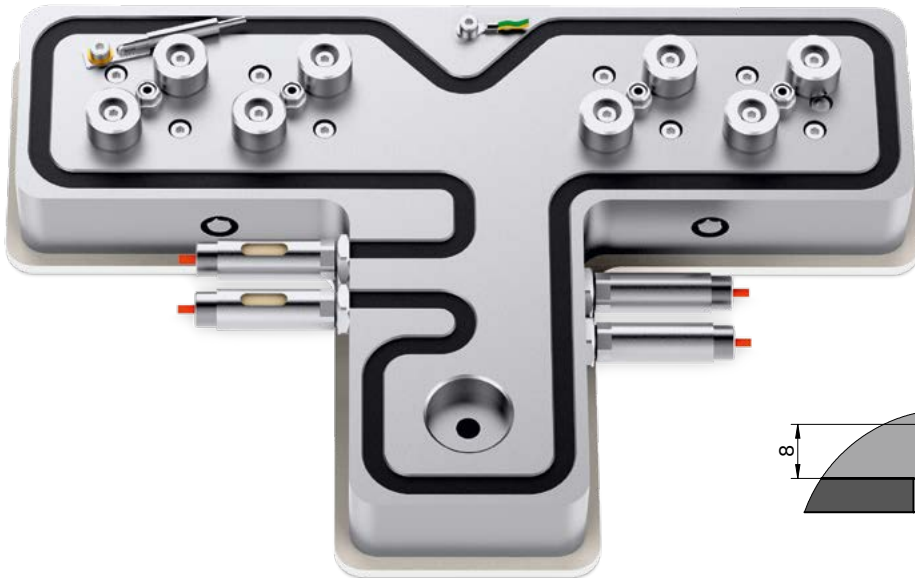
Design examples/Balancing

Type		NSCP = 36 (VH) Melt channel Ød in mm	NSDP = 46 (VH) Melt channel Ød in mm	NSP = 56 (VH) Melt channel Ød in mm	Number of drops
NS_P3B		$\leq 8$	$\geq 10$ to 12	$\geq 16$	3
NS_P6B			$\leq 8$	$\leq 10$	6
NS_P8B			$\leq 8$	$\leq 10$	8

B = balanced



# T-manifold type NTCP/NTDP/NTEP



## TECHNICAL DATA

### NTCP/NTDP/NTEP

**Manifold height (VH)** NTCP: 36 mm  
 NTDP: 46 mm  
 NTEP: 56 mm

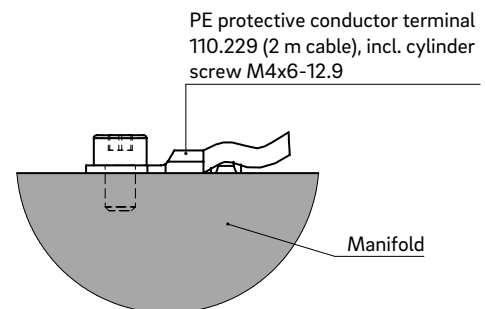
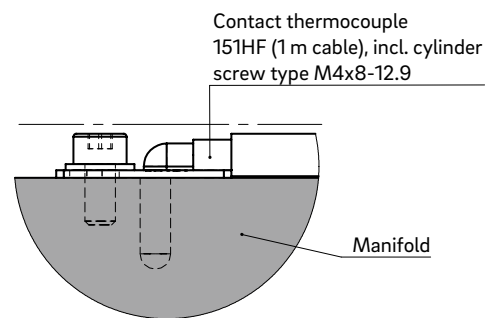
**Operating voltage** 230 V<sub>AC</sub>\*

**Manifold length (VL)** S1 + 2 × DS

**Manifold width (VB)** T + 2 × 40 mm

The heating output of each control circuit is calculated individually.

\*Volts alternating current

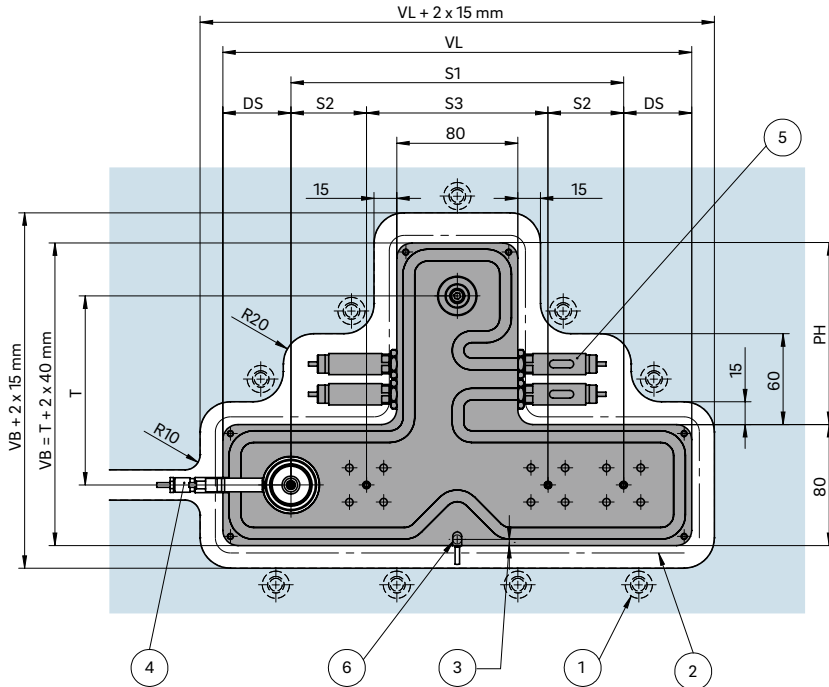






## INSTALLATION

Nozzle tip view

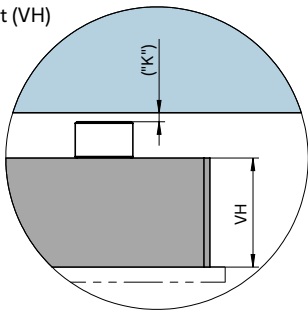


DS Edge distance:  
 a. min. 35.0 with nozzle size ≤ 6  
 b. min. 45.0 with nozzle size 8 or 10  
 c. min. 50.0 with nozzle size ≥ 12

T Distance from the connecting nozzle to the nozzle row

- ① Screw connection close to manifold
- ② High-temperature insulation plate
- ③ Pin position "SP" =  $d/2 + 1$  mm
- ④ Opening and plug location dependent upon nozzle type
- ⑤ Position of the heating connections with  $PH \geq 100$
- ⑥ Position of the heating connections with  $PH \leq 100$ ; different heating connection positions require consultation with the design office

Manifold height (VH)



Dimension "K" required for heat expansion is to be ensured by grinding the pressure pad (12 + 0.1 mm)! Determine the difference between the height of the manifold system and the height of the frame plate when installed!  $\Delta T$  specifies the temperature differential between the processing temperature and the mould temperature!

VH	$\Delta T$ (°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264
56 mm	K (mm)	0.046	0.097	0.150	0.203	0.258	0.311

### Design examples/Balancing

Type	NTCP = 36 (VH) Melt channel $\varnothing d$ in mm	NTDP = 46 (VH) Melt channel $\varnothing d$ in mm	NTEP = 56 (VH) Melt channel $\varnothing d$ in mm	Number of drops
NT_P2B	≤ 8	≥ 10 to 12	≥ 16	2
NT_P4-	≤ 8	≥ 10 to 12	≥ 16	4
NT_P4B	≤ 8	≥ 10 to 12	≥ 16	4
NT_P6T	≤ 8	≥ 10 to 12	≥ 16	6
NT_P8T	≤ 8	≥ 10 to 12	≥ 16	8

B = balanced T = partially balanced - = not balanced





## 3.4 Connecting elements

### CONNECTING NOZZLES

Page



**AKD**

Connecting nozzle linking the machine nozzle and manifold

20



**ASD6-12**

Connecting nozzle linking the machine nozzle and manifold

30



**ASD14-16**

Connecting nozzle linking the machine nozzle and manifold

40



## Connecting nozzle type AKD

Connecting nozzle linking the machine nozzle and manifold

### TECHNICAL DATA

#### AKD

**Operating voltage** 230 V<sub>AC</sub> \*

**Adapter** straight (G)/radius (R)/  
angle (W)

**Nominal length L (mm) of connecting nozzle/  
Delivery times:**

Type	80	90	110
AKD3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AKD4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AKD5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AKD6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AKD8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

\*Volts alternating current

available  on request

### NOTE

Specify the machine nozzle version when ordering.



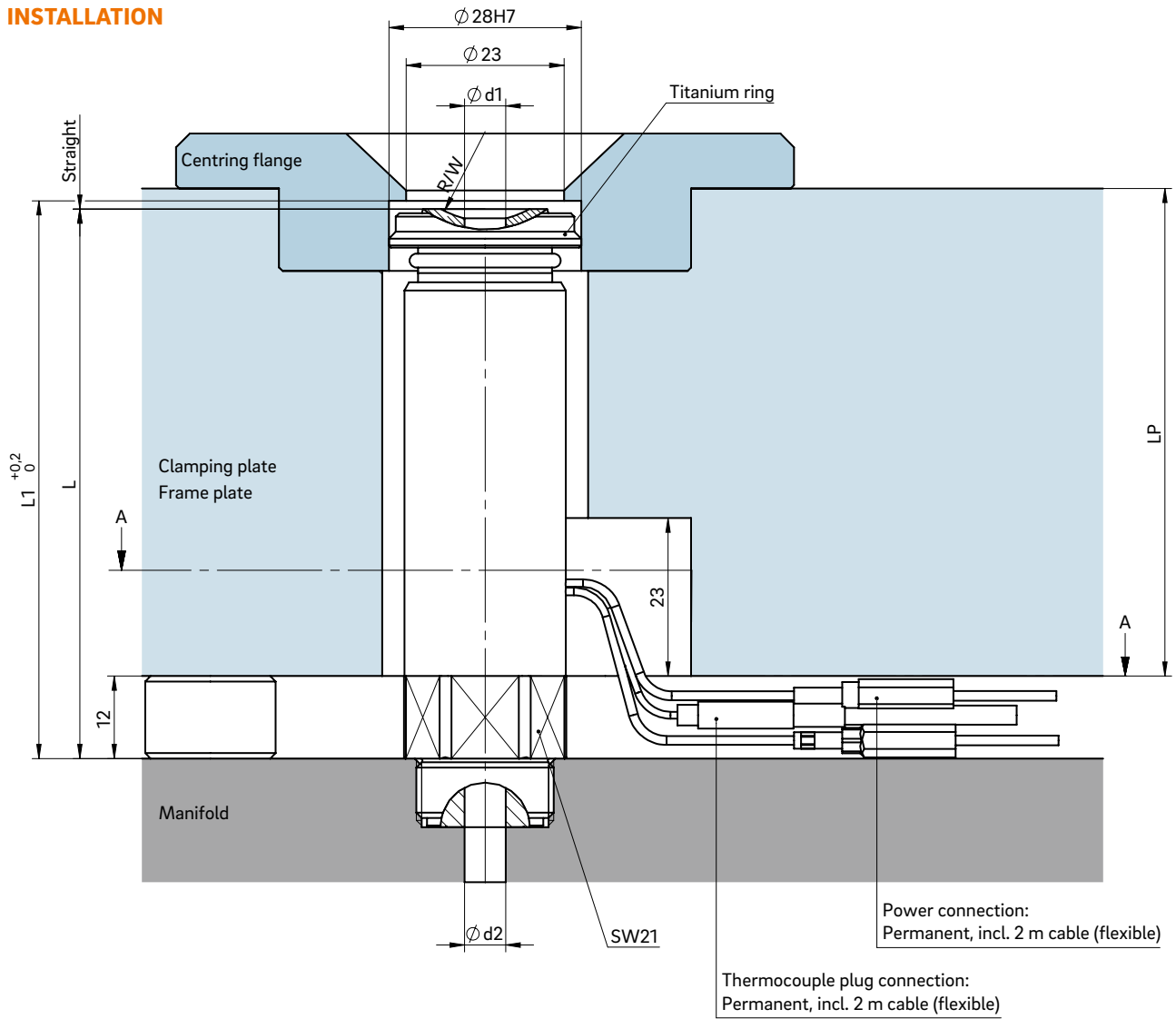
Type	Connecting nozzle (mm)	
	Ød1	Ød2
AKD3	3	3
AKD4	4	4
AKD5	5	5
AKD6	6	6
AKD8	6	8

Nozzle length L (mm)	Installation length L1 (mm)	Plate height LP (mm)
80	80.7	66
90	90.7	76
110	110.7	96

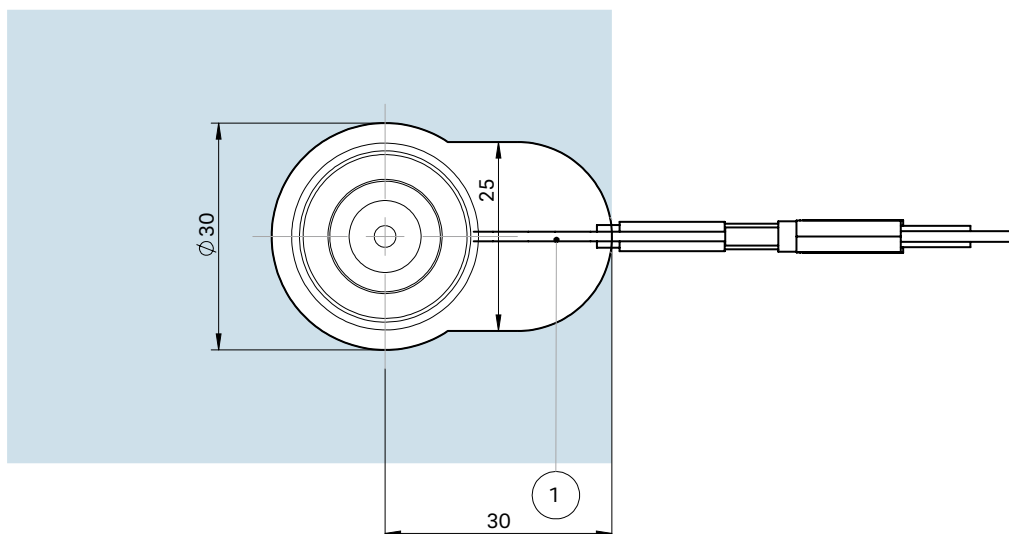
WEBCODE  
35110



**INSTALLATION**



Cross-section A-A: Cutout for connecting nozzle, power and thermocouple cables



① Power and thermocouple plug connections in this area can be bent once; minimum radius: R8



## Connecting nozzle type ASD6-12

Connecting nozzle linking the machine nozzle and manifold

### TECHNICAL DATA

#### ASD6-12

Operating voltage 230 V<sub>AC</sub> \*

Adapter straight (G)/radius (R)/  
angle (W)

Nominal length L (mm) of connecting nozzle/  
Delivery times:

Typ	75	85	95	105	115	125	150	175
ASD6							<input type="checkbox"/>	<input type="checkbox"/>
ASD8							<input type="checkbox"/>	<input type="checkbox"/>
ASD10	■	■	■	■	■	■	<input type="checkbox"/>	<input type="checkbox"/>
ASD12	■	■	■	■	<input type="checkbox"/>	■	<input type="checkbox"/>	<input type="checkbox"/>

\*Volts alternating current

■ available     on request

### NOTE

Specify the machine nozzle version when ordering.



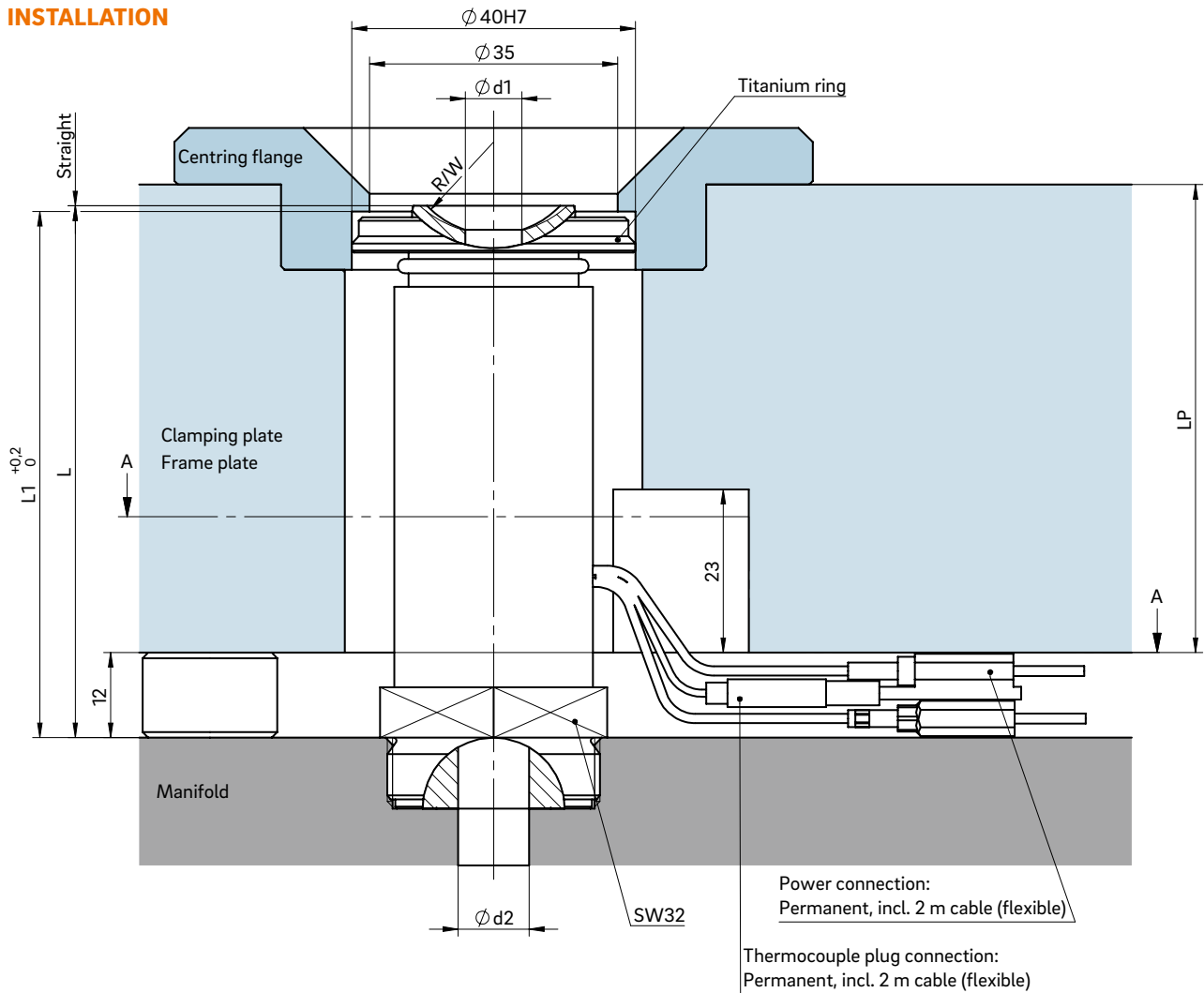
Typ	Connecting nozzle (mm)	
	Ød1	Ød2
ASD6	6	6
ASD8	6	8
ASD10	8	10
ASD12	10	12

Nozzle length L (mm)	Installation length L1 (mm)	Plate height LP (mm)
75	74.7	56
85	84.7	66
95	94.7	76
105	104.7	86
115	114.7	96
125	124.7	106
150	147.7	131
175	174.7	156

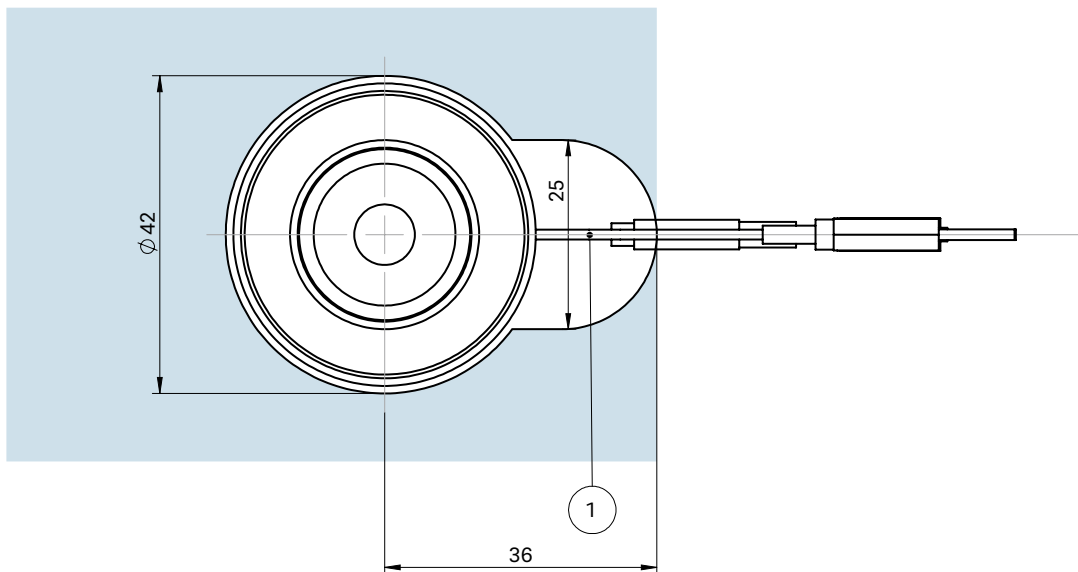
WEBCODE  
35120



**INSTALLATION**



Cross-section A-A: Cutout for connecting nozzle, power and thermocouple cables



① Power and thermocouple plug connections in this area can be bent once; minimum radius: R8



## Connecting nozzle type ASD14-16

Connecting nozzle linking the machine nozzle and manifold

### TECHNICAL DATA

#### ASD14-16

**Operating voltage** 230 V<sub>AC</sub> \*

**Adapter** straight (G)/radius (R)/  
angle (W)

**Nominal length L (mm) of connecting nozzle/  
Delivery times:**

Type	75	85	95	105	115	125
ASD14	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ASD16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

\*Volts alternating current

■ available     on request

### NOTE

Specify the machine nozzle version when ordering.



Type	Connecting nozzle (mm)	
	Ød1	Ød2
ASD14	12	14
ASD16	14	16

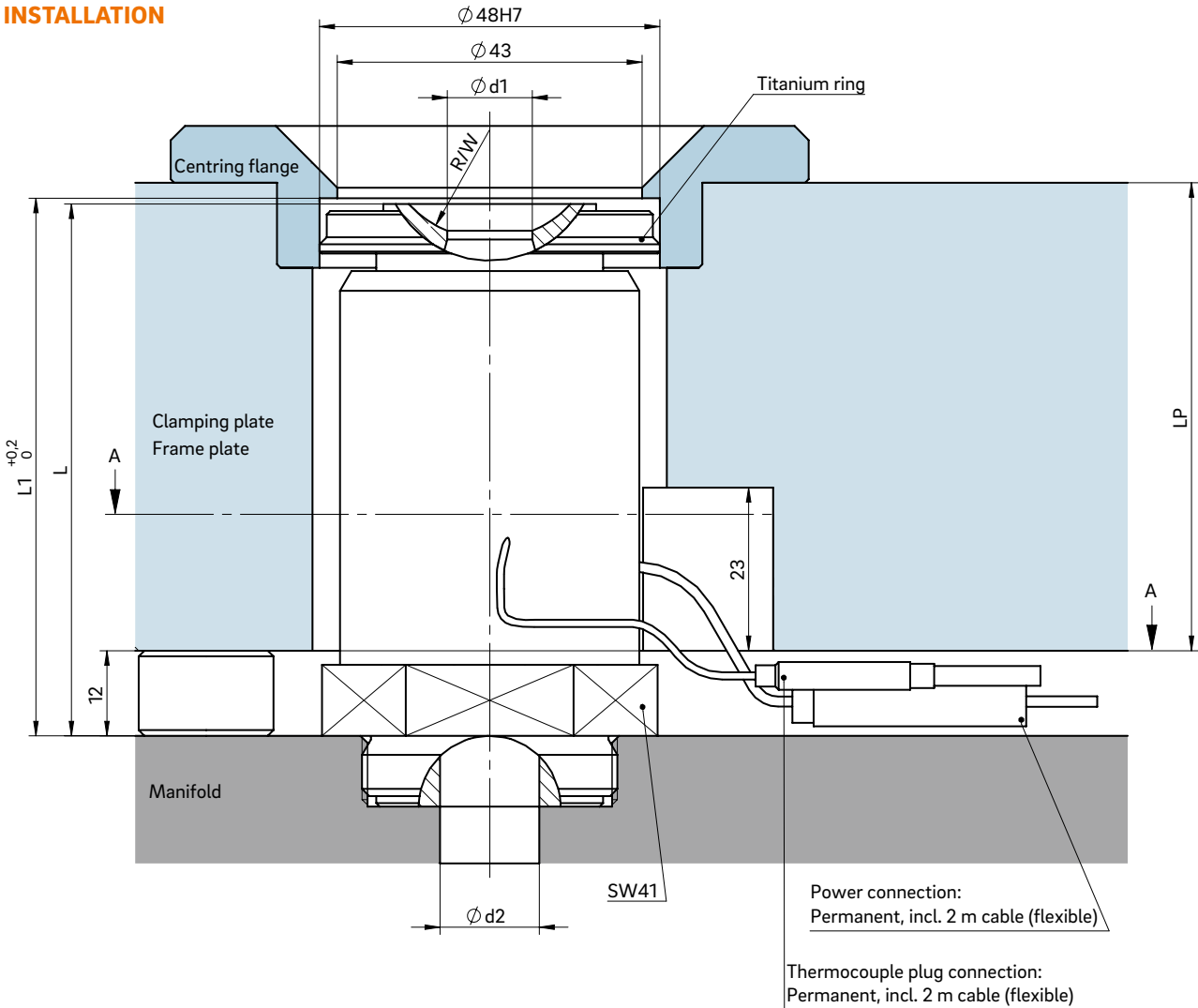
Nozzle length L (mm)	Installation length L1 (mm)	Plate height LP (mm)
75	75.3	56
85	85.3	66
95	95.3	76
105	105.3	86
115	115.3	96
125	125.3	106

**WEBCODE**  
35130

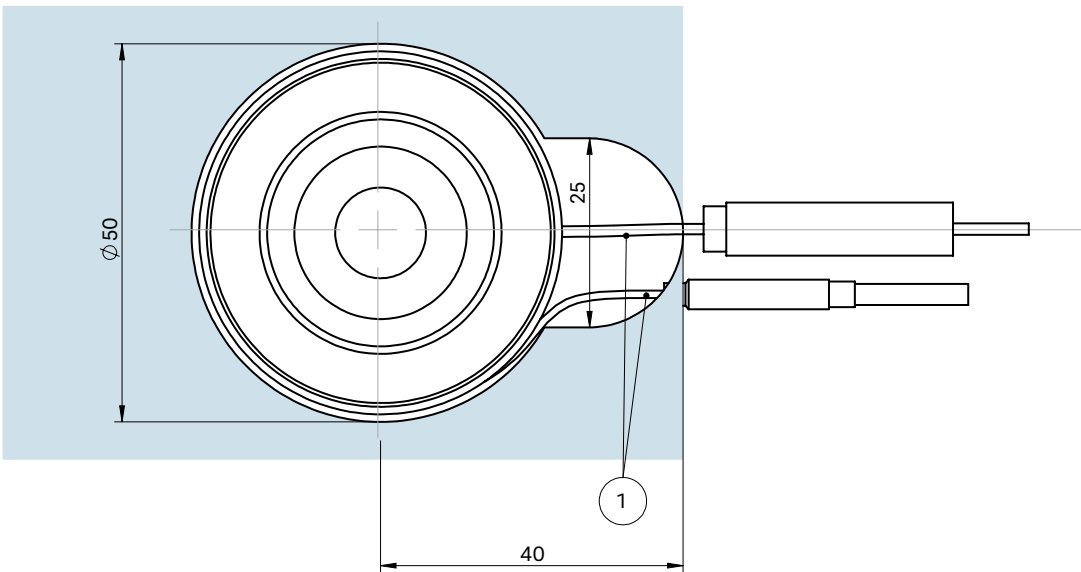




**INSTALLATION**



Cross-section A-A: Cutout for connecting nozzle, power and thermocouple cables



① Power and thermocouple plug connections in this area can be bent once; minimum radius: R8





## 3.5 Needle actuator

### SINGLE-NEEDLE DRIVE

Page



**Single-needle valve ENV2/ENV3**  
Pneumatic drive, with housing

30



**Single-needle valve ENV2/ENV3**  
Hydraulic drive, with housing

40



**Single-needle valve ENV5**  
Pneumatic drive, with housing

50



**Single-needle valve ENV5**  
Hydraulic drive, with housing

60



**Single-needle valve EEV2/EEV3**  
Pneumatic drive, with housing

70



**Single-needle valve EEV2/EEV3**  
Hydraulic drive, with housing

80



**Stepper motor SMA 10**  
Electric drive

100

### MULTI-NEEDLE DRIVE

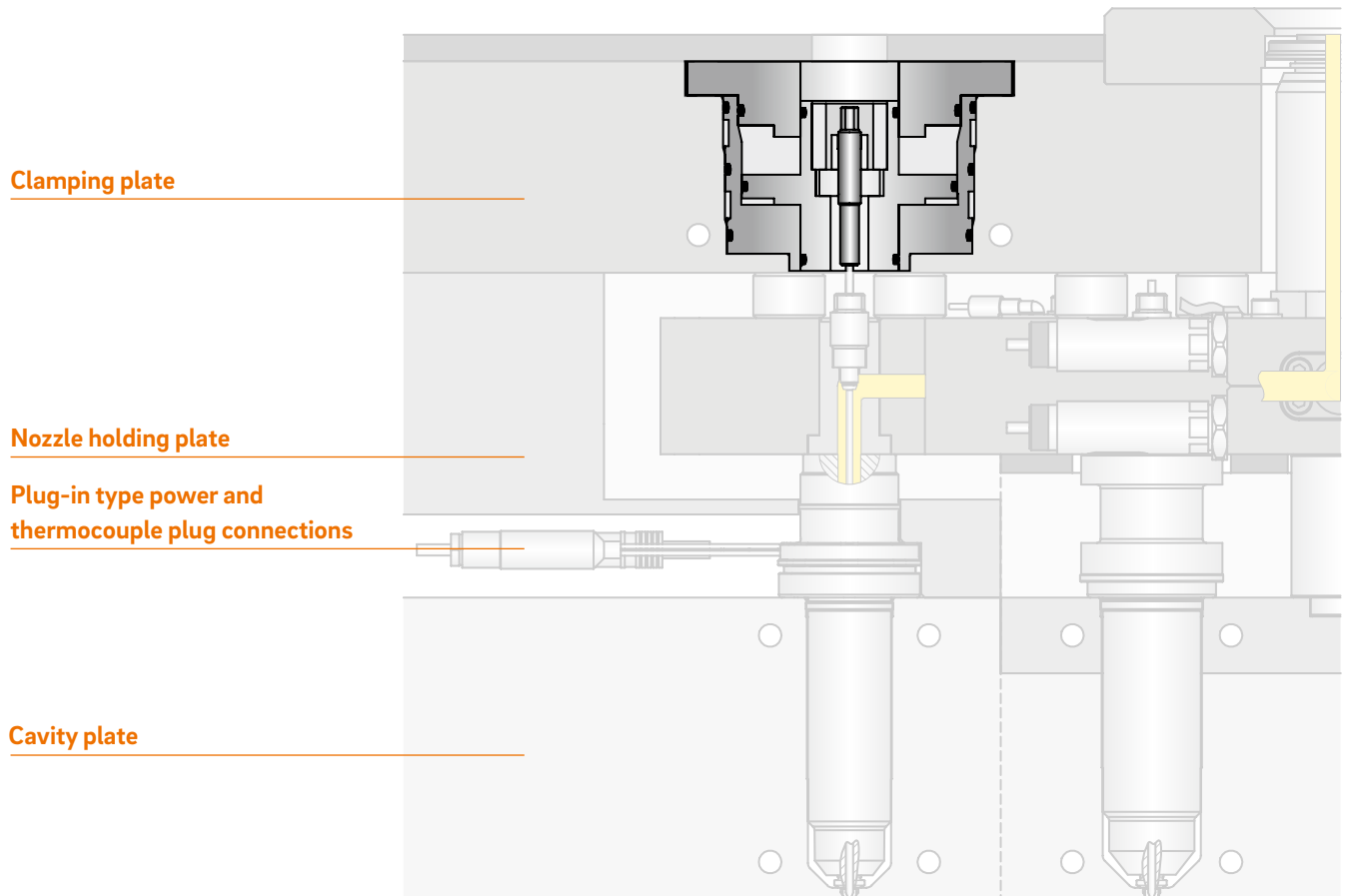


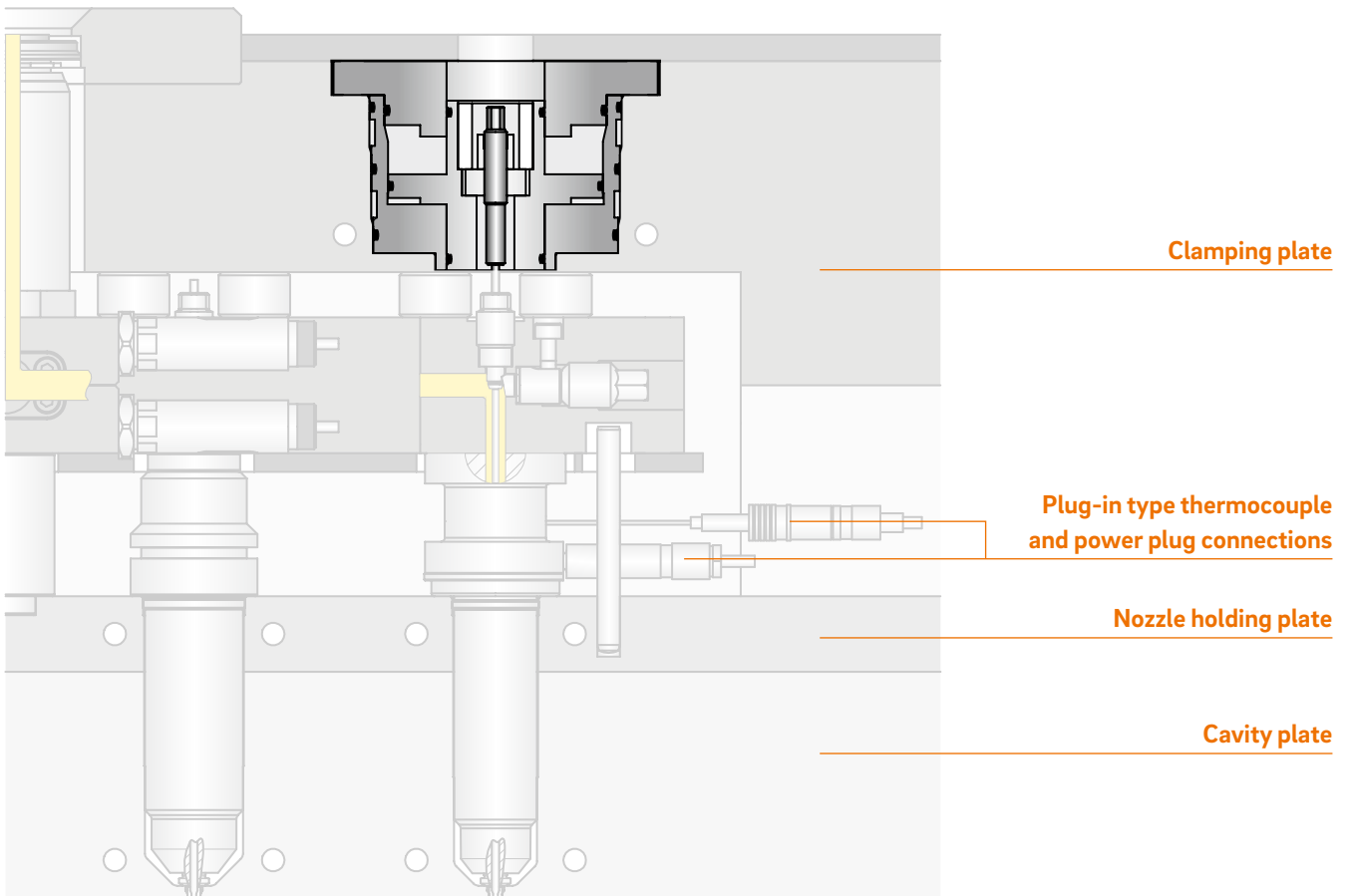
**Sliding mechanism ANES**  
Electric/pneumatic/hydraulic drive

300



## Overview of overall design for needle actuator







## Single-needle valve ENV2/ENV3

Pneumatic drive, with housing

### TECHNICAL DATA

#### ENV2/10/L/G

Nozzle Ød	4–5 mm
Drive type	pneumatic
Operating pressure	min. 6 bar air intake at ENV

#### ENV3/10/L/G

Nozzle Ød	5–10 mm
Drive type	pneumatic
Operating pressure	min. 6 bar air intake at ENV

### NOTE

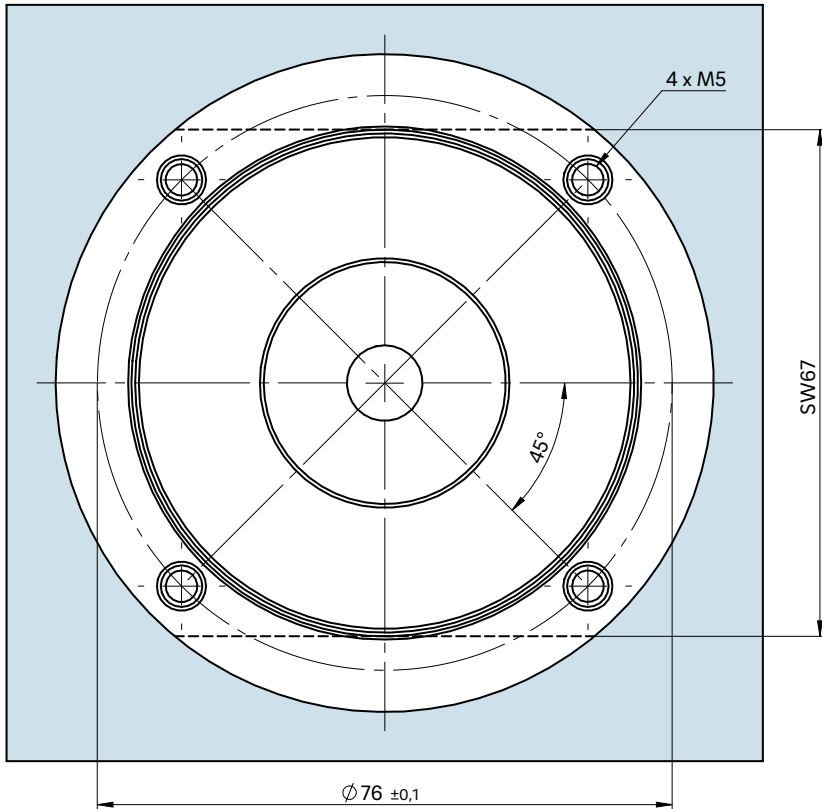
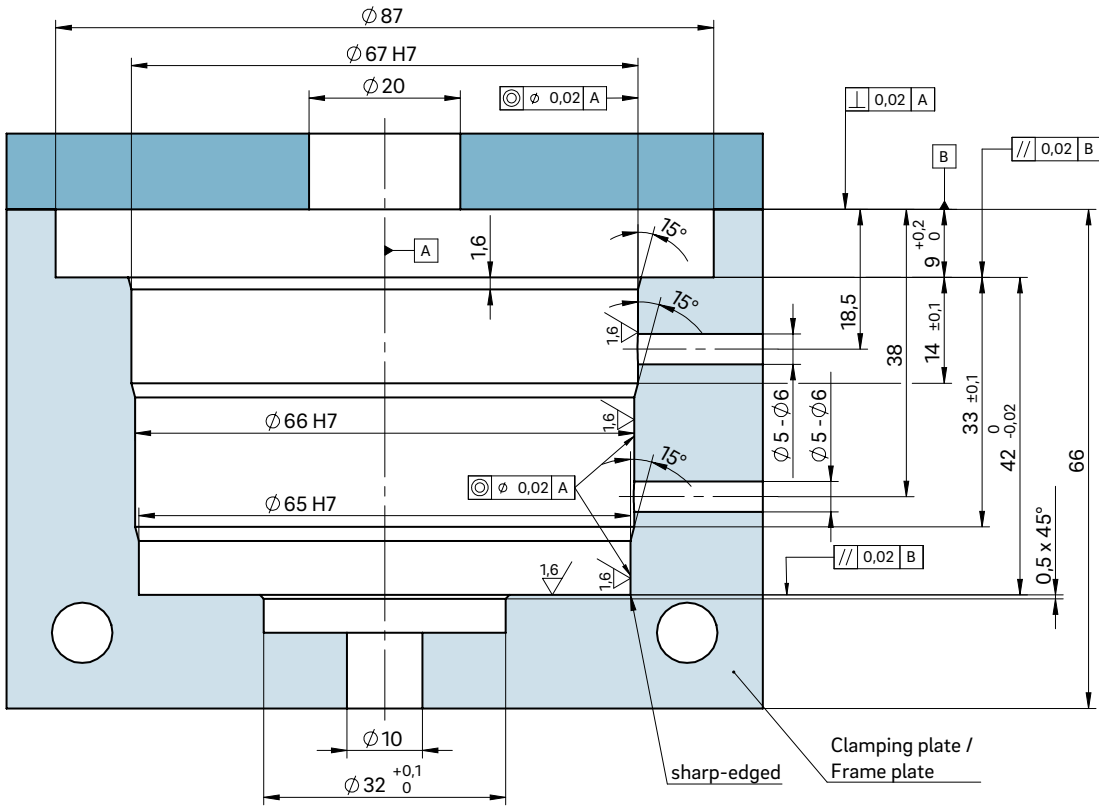
- Adjustable needle
- Maximum usage temperature: 100 °C



WEBCODE  
34010



**INSTALLATION WITH HOUSING**





## Single-needle valve ENV2/ENV3

Hydraulic drive, with housing

### TECHNICAL DATA

#### ENV2/10/0/G

Nozzle Ød	4–5 mm
Drive type	hydraulic
Operating pressure	40–60 bar oil intake at ENV

#### ENV3/10/0/G

Nozzle Ød	5–10 mm
Drive type	hydraulic
Operating pressure	40–60 bar oil intake at ENV

### NOTE

- Adjustable needle
- Maximum usage temperature: 60 °C
- Hydraulic cylinders and the entire hydraulic system are to be carefully vented before commissioning

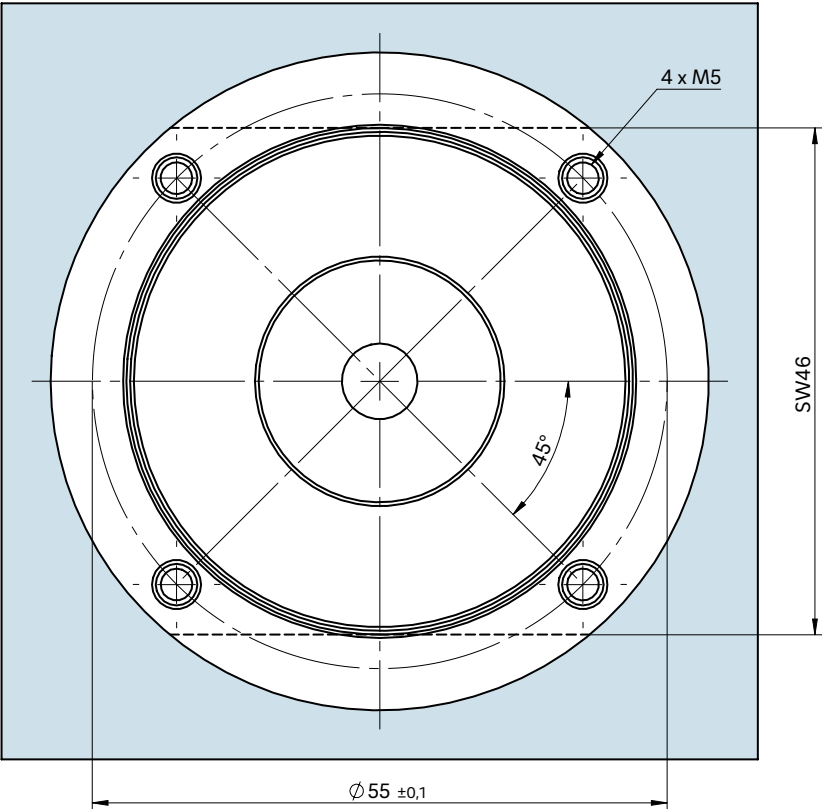
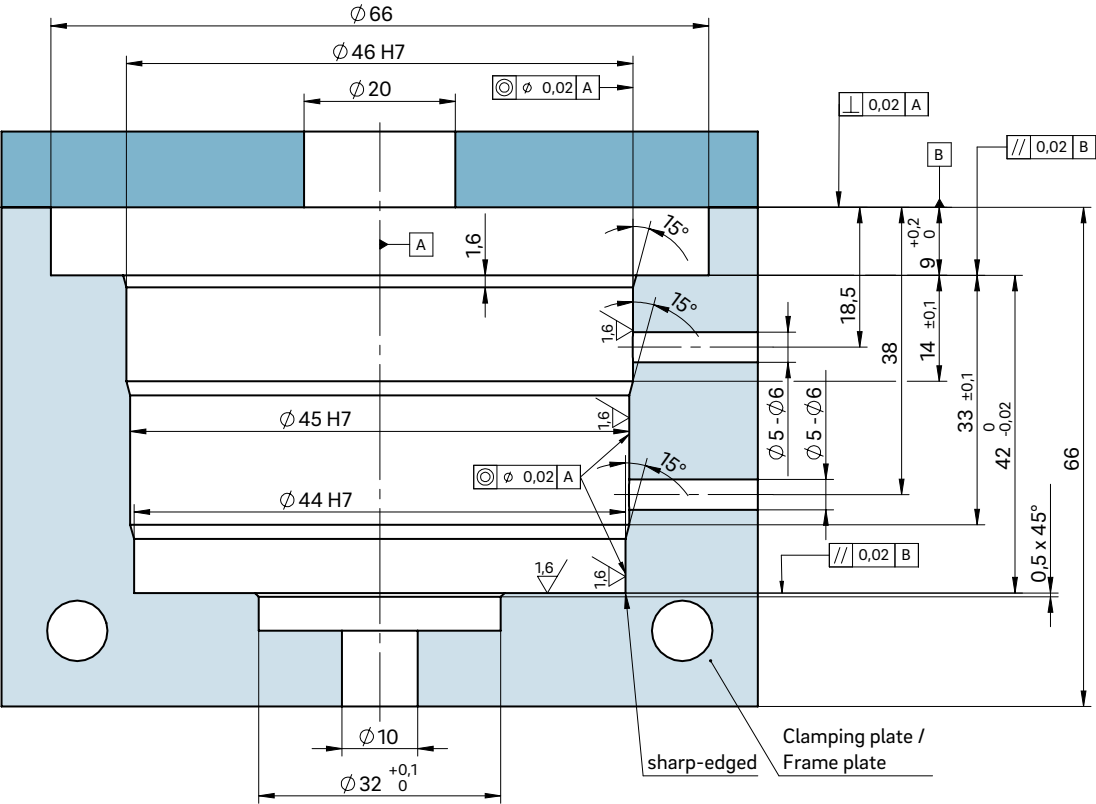


WEBCODE  
34020





INSTALLATION WITH HOUSING





## Single-needle valve ENV5

Pneumatic drive, with housing

### TECHNICAL DATA

#### ENV5/10/L/G

Nozzle Ød	10–12 mm
Drive type	pneumatic
Operating pressure	min. 6 bar air intake at ENV

### NOTE

- Adjustable needle
- Maximum usage temperature: 100 °C



WEBCODE  
34030





# Single-needle valve ENV5

Hydraulic drive, with housing

## TECHNICAL DATA

### ENV5/10/0/G

Nozzle Ød	10–12 mm
Drive type	hydraulic
Operating pressure	40–60 bar oil intake at ENV

## NOTE

- Adjustable needle
- Maximum usage temperature: 60 °C
- Hydraulic cylinders and the entire hydraulic system are to be carefully vented before commissioning



**WEBCODE**  
34040





## Single-needle valve EEV2/EEV3

Pneumatic drive, with housing

### TECHNICAL DATA

#### EEV2/10/L/G

Nozzle Ød	4–5 mm
Drive type	pneumatic
Operating pressure	min. 6 bar air intake at ENV

#### EEV3/10/L/G

Nozzle Ød	5–10 mm
Drive type	pneumatic
Operating pressure	min. 6 bar air intake at ENV

### NOTE

- Non-adjustable needle
- Maximum usage temperature: 100 °C



WEBCODE  
34050





# Single-needle valve EEV2/EEV3

Hydraulic drive, with housing

## TECHNICAL DATA

### EEV2/10/O/G

Nozzle Ød	4–5 mm
Drive type	hydraulic
Operating pressure	40–60 bar oil intake at ENV

### EEV3/10/O/G

Nozzle Ød	5–10 mm
Drive type	hydraulic
Operating pressure	40–60 bar oil intake at ENV

## NOTE

- Non-adjustable needle
- Maximum usage temperature: 60°C
- Hydraulic cylinders and the entire hydraulic system are to be carefully vented before commissioning

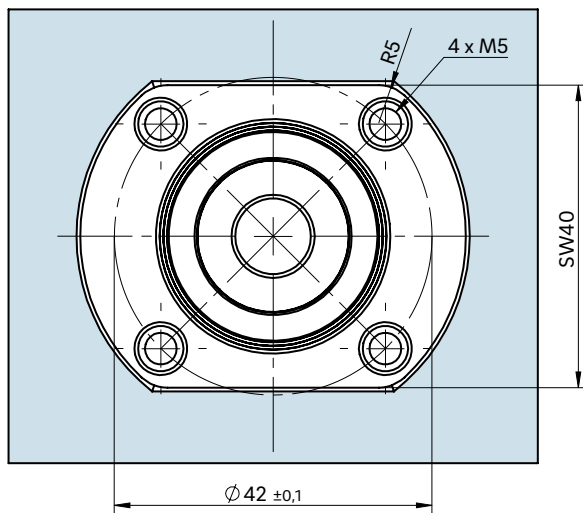
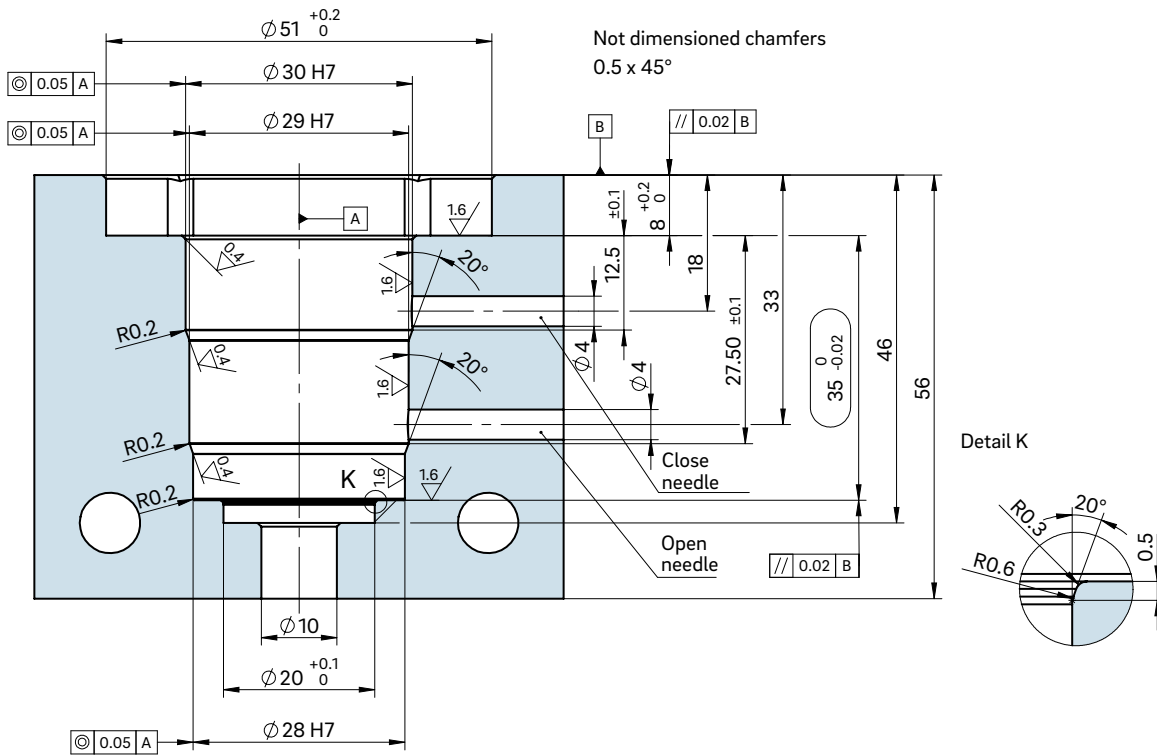


WEBCODE  
34060



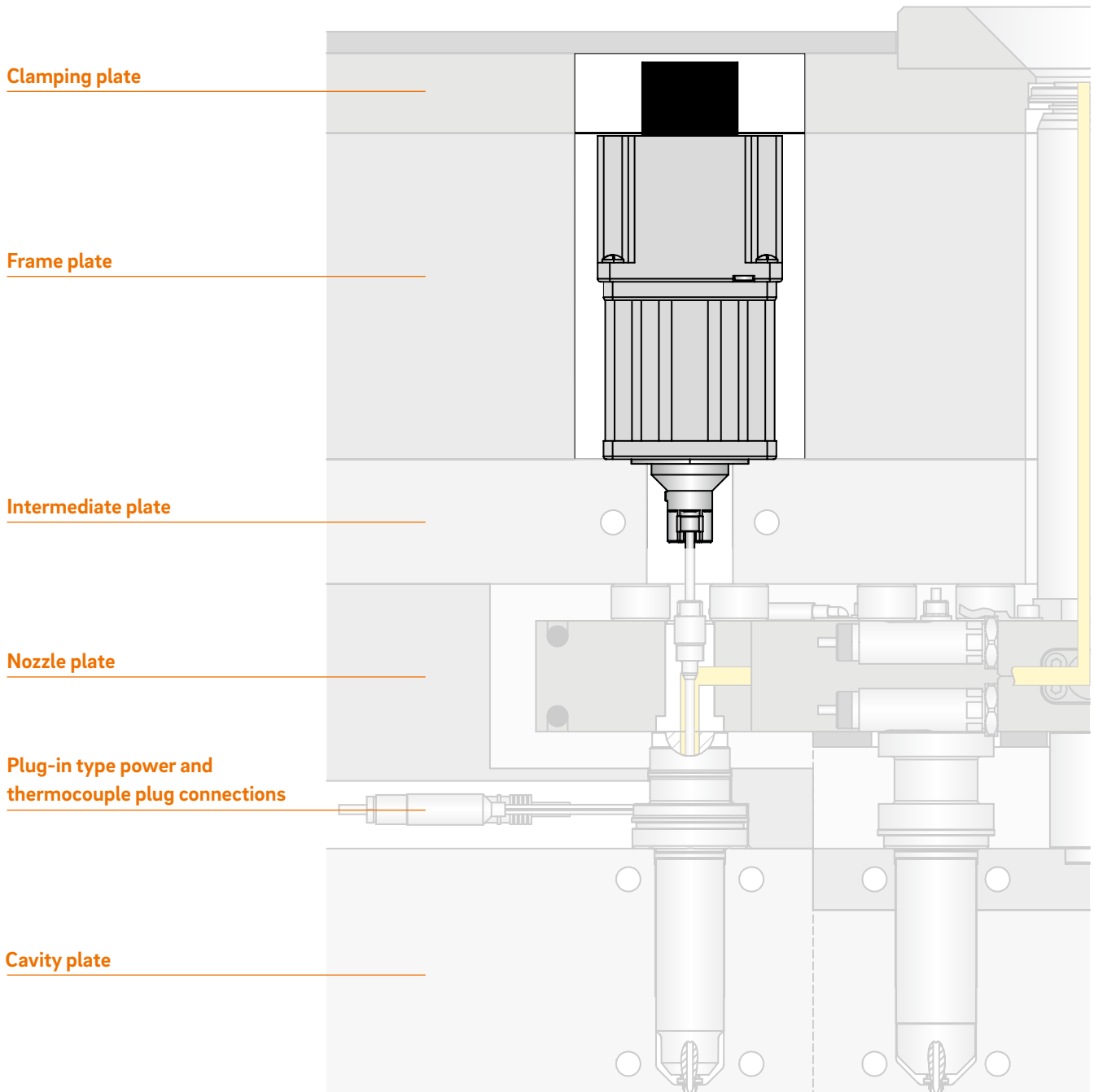


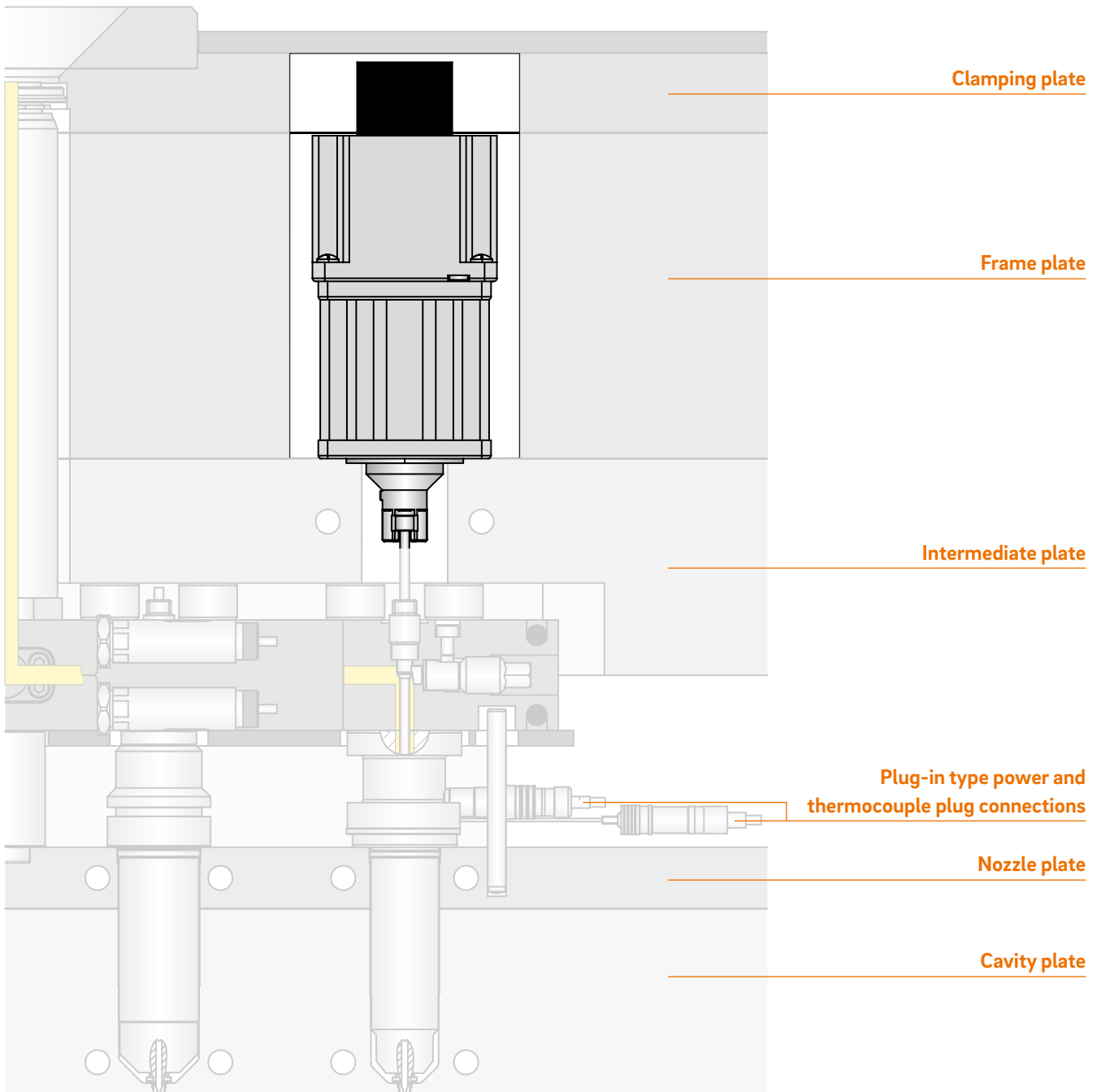
**INSTALLATION WITH HOUSING**





# Overview of overall design for needle actuator – stepper motor SMA 10







# Stepper motor SMA 10

## Electric drive

### TECHNICAL DATA

#### Stepper motor SMA 10

Nozzle Ød 4–10 mm

Drive type electrical

Operating voltage 230 V<sub>AC</sub>\*

\*Volts alternating current

### NOTE

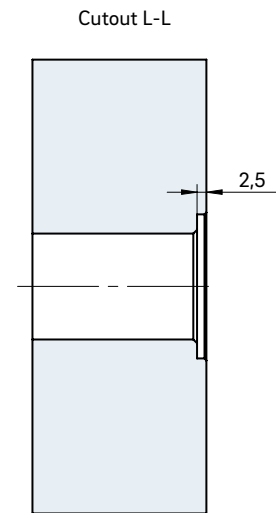
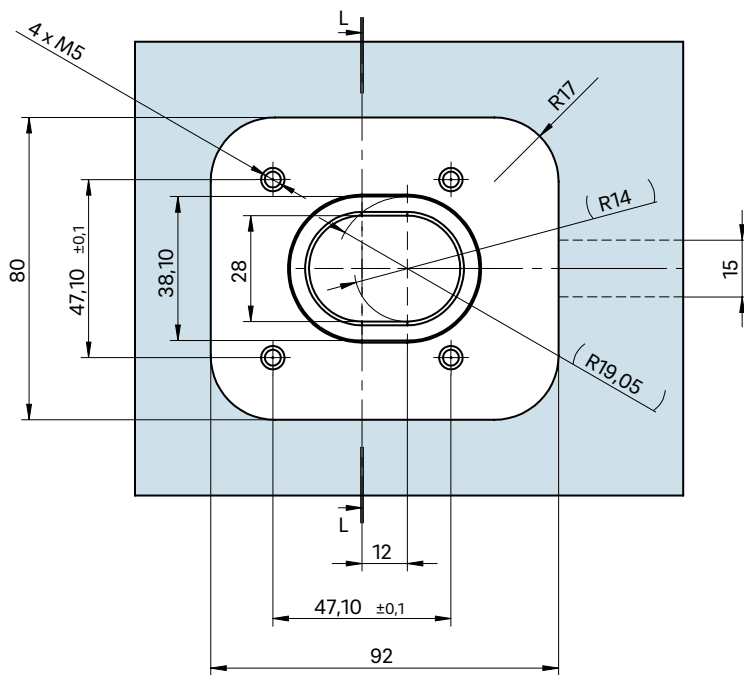
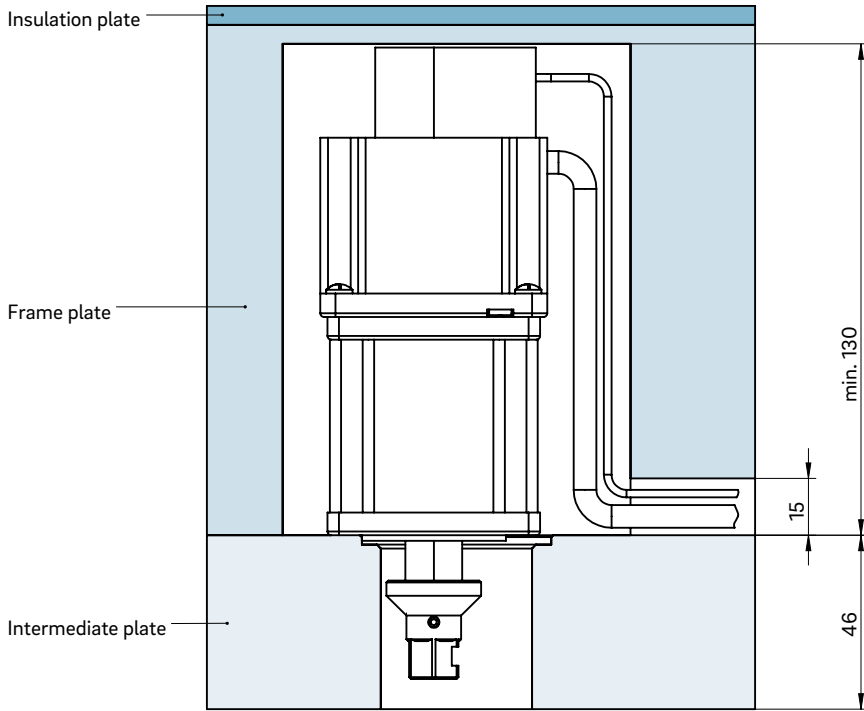
- Adjustable needle



WEBCODE  
34070



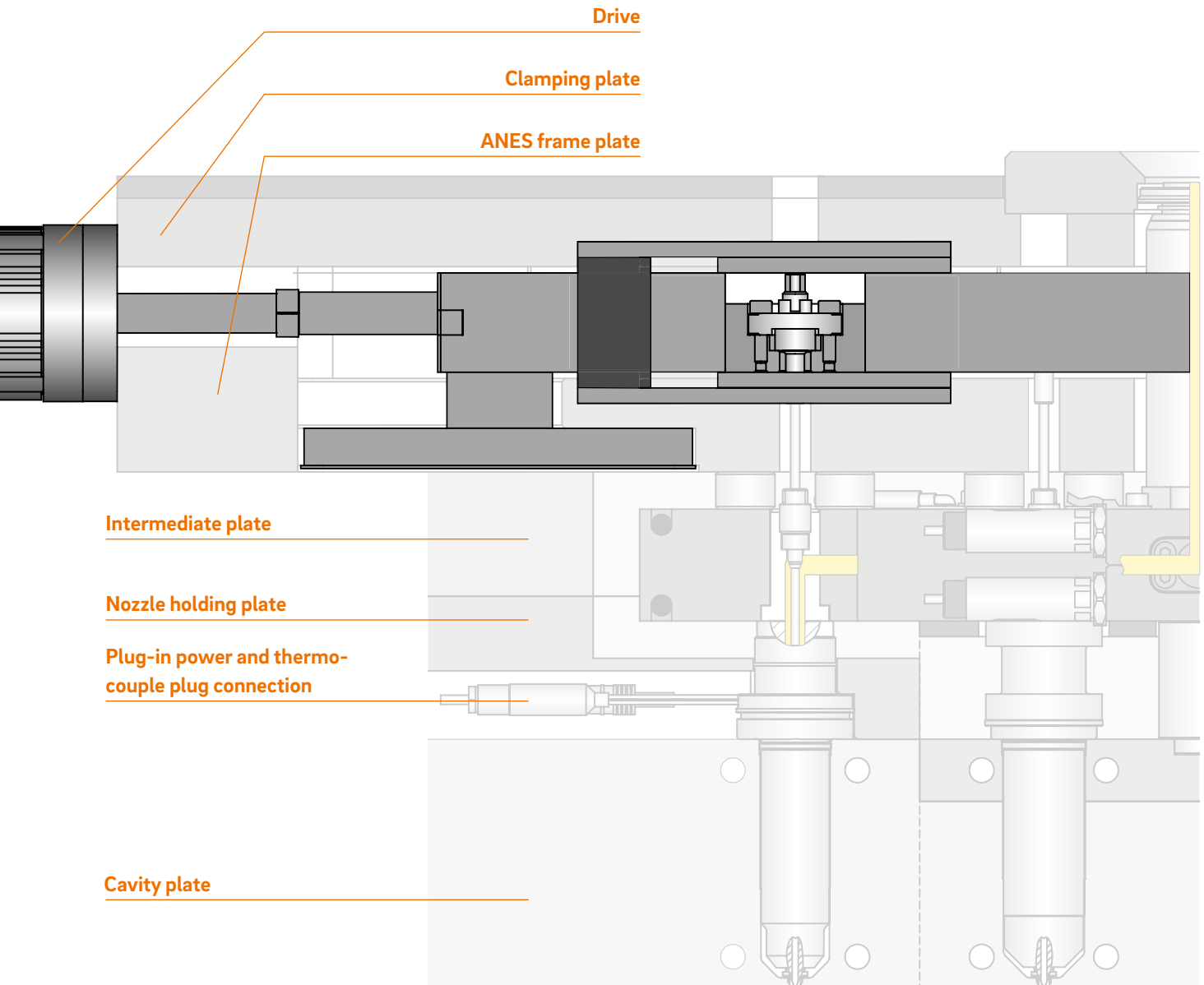
**INSTALLATION**

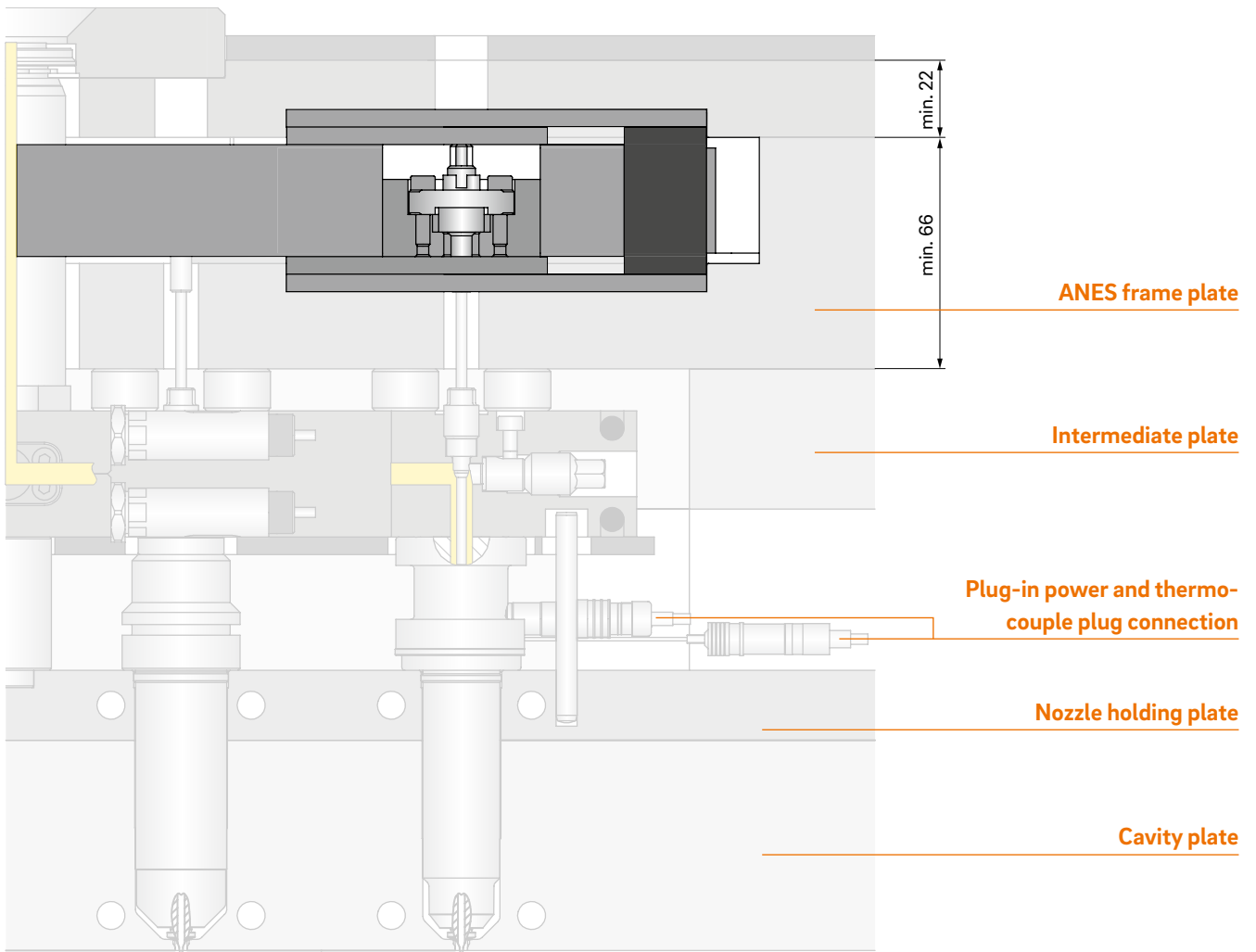




## Configuration in overall structure

of needle actuator – ANES multi-needle drive sliding mechanism

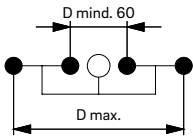






### Nozzle arrangement, single row (SR)

Sample nozzle arrangement

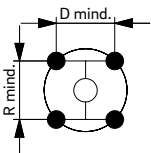


#### Drive type for nozzle arrangement (SR)

Number of nozzles/ cavities	Model	Drive type			Chapter	Page
		pneumatic	hydraulic	electric		
4	ANES-111/ ANES-121	•	•	•	3.5	320
8		•	•	•		
12		•	•	•		
16			•	•		

### Nozzle arrangement, multi-row (MR)

Sample nozzle arrangement



#### Drive type for nozzle arrangement (MR)

Number of nozzles/ cavities	Model	Drive type			Chapter	Page
		pneumatic	hydraulic	electric		
4	ANES-111/ ANES-121	•	•	•	3.5	330
8		•	•	•		
12		•	•	•		
16			•	•		



# ANES multi-needle drive sliding mechanism

Page



**ANES-111 sliding mechanism / ANES-121 sliding mechanism**  
Single row

**320**



**ANES-111 sliding mechanism / ANES-121 sliding mechanism**  
Multi-row

**330**



# ANES-111, -121 multi-needle drive sliding mechanism

Single row

## TECHNICAL DATA

### WEBCODE

34710

### ANES-111

Number of stroke element rows	1
Number of stroke elements	1
Number of drives	1
Drive type	pneumatic (L) hydraulic (O) electric (E)



## TECHNICAL DATA

### WEBCODE

34750

### ANES-121

Number of stroke element rows	1
Number of stroke elements	2
Number of drives	1
Drive type	pneumatic (L) hydraulic (O) electric (E)

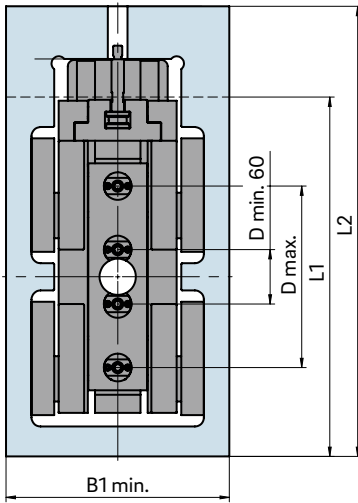


## DESCRIPTION

- Maximum operating temperature 100 °C

If you have any questions, please contact the Application Technology Consulting Service:  
Tel. +49 6451 5008-510




## INSTALLATION



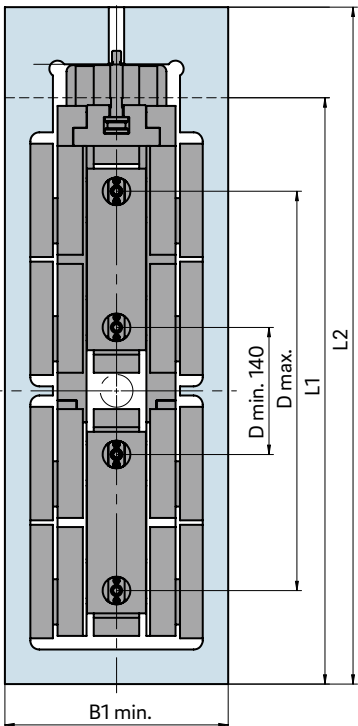
### 1 drive up to 16 nozzles

D max.	W1 x L1	L2
150	246 x 346	446
200	246 x 396	496
250	246 x 446	546
300	246 x 496	596
350	246 x 546	646

All table dimensions in mm

-  pneumatic (6 bar) for up to 12 nozzles
-  hydraulic (100 bar) for up to 16 nozzles
-  electric for up to 16 nozzles




## INSTALLATION



### 1 drive up to 16 nozzles

D max.	W1 x L1	L2
440	246 x 646	746
490	246 x 696	796
540	246 x 746	846
590	246 x 796	896
640	246 x 846	946
690	246 x 896	996
740	246 x 946	1046

All table dimensions in mm

-  pneumatic (6 bar) for up to 12 nozzles
-  hydraulic (100 bar) for up to 16 nozzles
-  electric for up to 16 nozzles



# ANES-111, -121 multi-needle drive sliding mechanism

## Multi-row

### TECHNICAL DATA

**WEBCODE**  
34720

#### ANES-111

Number of stroke element rows	1
Number of stroke elements	1
Number of drives	1
Drive type	pneumatic (L) hydraulic (O) electric (E)



### TECHNICAL DATA

**WEBCODE**  
34760

#### ANES-121

Number of stroke element rows	1
Number of stroke elements	2
Number of drives	1
Drive type	pneumatic (L) hydraulic (O) electric (E)

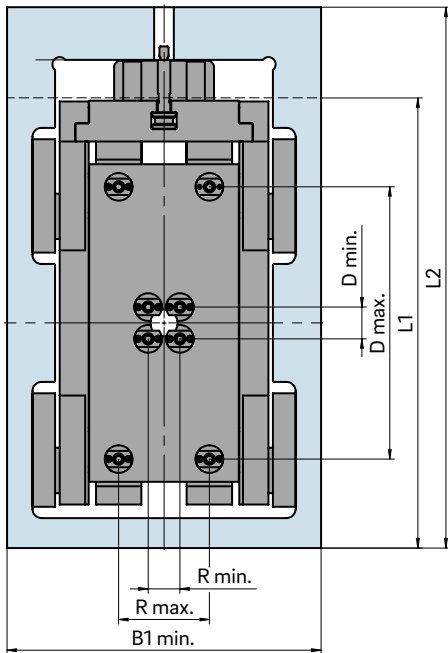


### DESCRIPTION

- Maximum operating temperature 100 °C

If you have any questions, please contact the Application Technology Consulting Service:  
Tel. +49 6451 5008-510




## INSTALLATION



### 1 drive up to 16 nozzles

D max.	W1 x L1					L2
	R. max					
	100	150	200	250	300	
150	346 x 346	396 x 346	-	-	-	446
200	346 x 396	396 x 396	446 x 396	-	-	496
250	346 x 446	396 x 446	446 x 446	496 x 446	-	546
300	346 x 496	396 x 496	446 x 496	496 x 496	546 x 496	596
350	346 x 496	396 x 496	446 x 496	496 x 496	546 x 546	646

All table dimensions in mm

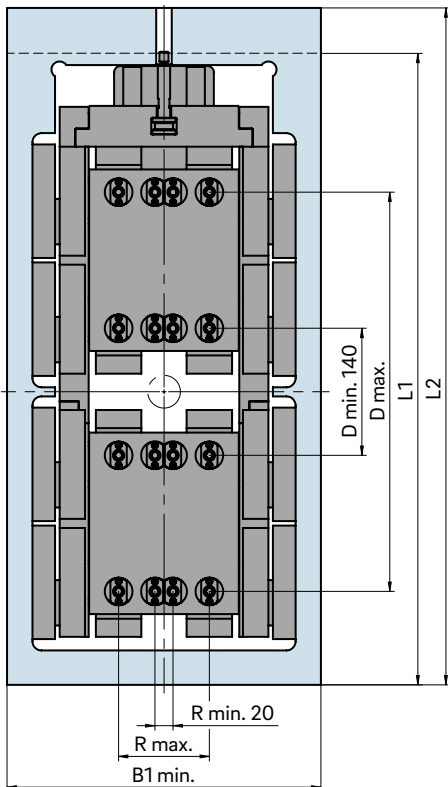
-  pneumatic (6 bar) for up to 12 nozzles
-  hydraulic (100 bar) for up to 16 nozzles
-  electric for up to 16 nozzles

Minimum distances R min./D min.:

- For cross pitch: R min. = 35 mm/D min. = 35 mm
- For asymmetrical pitch: R min. = 20 mm/D min. = 70 mm or R min. = 70 mm/D min. = 20 mm

\* The thickness of the tool plates varies according to their size




## INSTALLATION



### 1 drive up to 16 nozzles

D max.	W1 x L1					L2
	R. max					
	100	150	200	250	300	
440	346 x 646	396 x 646	-	-	-	746
490	346 x 696	396 x 696	-	-	-	796
540	346 x 746	396 x 746	446 x 746	-	-	846
590	346 x 796	396 x 796	446 x 796	-	-	896
640	346 x 846	396 x 846	446 x 846	496 x 846	-	946
690	346 x 896	396 x 896	446 x 896	496 x 896	-	996
740	346 x 946	396 x 946	446 x 946	496 x 946	546 x 946	1046

All table dimensions in mm

-  pneumatic (6 bar) for up to 12 nozzles
-  hydraulic (100 bar) for up to 16 nozzles
-  electric for up to 16 nozzles