Valve gate systems
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.
Overview of overall design
Single valve gate nozzles

Location ring
Clamping plate
Frame plate
Cavity plate

Permanent power connection
Permanent thermocouple plug connection
Power connector CMT
Thermocouple connector CMLK
3.1 Single valve gate nozzles

SINGLE VALVE GATE NOZZLES

<table>
<thead>
<tr>
<th>Nozzle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8NEST</td>
<td>Single nozzle with conventional heating element and heated nozzle adapter,</td>
</tr>
<tr>
<td></td>
<td>needle guide versions LA, LA with titanium ring, LAZ and KA</td>
</tr>
<tr>
<td>12NEST</td>
<td>Single nozzle with conventional heating element and heated nozzle adapter,</td>
</tr>
<tr>
<td></td>
<td>needle guide versions LA, LA with titanium ring and KA</td>
</tr>
</tbody>
</table>

We reserve the right to make technical changes.
Valve gate nozzle type 8NEST
Single nozzle with conventional heating element

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>8NEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle Ød</td>
</tr>
<tr>
<td>3 mm</td>
</tr>
<tr>
<td>Melt channel Ød</td>
</tr>
<tr>
<td>7.5 mm</td>
</tr>
<tr>
<td>Gate point Ød</td>
</tr>
<tr>
<td>1.6, 2.0 or 2.5 mm</td>
</tr>
<tr>
<td>Operating pressure</td>
</tr>
<tr>
<td>8 to 10 bar</td>
</tr>
<tr>
<td>Operating voltage</td>
</tr>
<tr>
<td>230 V AC*</td>
</tr>
<tr>
<td>Nominal length of the nozzle (L) in mm</td>
</tr>
<tr>
<td>![Available](on request)</td>
</tr>
<tr>
<td>![Available](on request)</td>
</tr>
<tr>
<td>![Available](on request)</td>
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<tr>
<td>![Available](on request)</td>
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<td>![Available](on request)</td>
</tr>
<tr>
<td>![Available](on request)</td>
</tr>
<tr>
<td>![Available](on request)</td>
</tr>
</tbody>
</table>

*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 at least 6 mm. Pneumatic valve size of at least 750 l/min.
**Valve gate nozzle type 8NEST**

**INSTALLATION**

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

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

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.

<table>
<thead>
<tr>
<th>$\Delta T(°C)$</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
</tr>
</thead>
<tbody>
<tr>
<td>$K$(mm)</td>
<td>0.09</td>
<td>0.16</td>
<td>0.23</td>
<td>0.29</td>
<td>0.36</td>
<td>0.42</td>
</tr>
</tbody>
</table>

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

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

Needle closed Ø 6 mm

Needle open Ø 6 mm

Pin position Ø 6.1 mm

4x Ø 6 ∨ 15
M6-6H * 12
Ø 6.05x90°, oben

Power and thermocouple plug connections can be bent once; minimum radius: R8

Thermocouple connector CMLK

Power connector CMT

Permanent thermocouple plug connection

Permanent power connection

Valve gate nozzle type 8NEST

We reserve the right to make technical changes.

3.1.20
Valve gate nozzle type 8NEST
Needle guide versions LA, LA with titanium ring, LAZ and KA

NEEDLE GUIDE VERSIONS

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 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 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.

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!

Installation dimensions of needle guide version LAZ

<table>
<thead>
<tr>
<th>ØD</th>
<th>ØS7</th>
<th>t5</th>
<th>t6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6</td>
<td>3.0</td>
<td>0.63</td>
<td>0.77</td>
</tr>
<tr>
<td>2.0</td>
<td>3.5</td>
<td>0.63</td>
<td>1.07</td>
</tr>
<tr>
<td>2.5</td>
<td>4.0</td>
<td>0.58</td>
<td>1.43</td>
</tr>
</tbody>
</table>
Valve gate nozzle type 12NEST
Single nozzle with conventional heating element

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>12NEST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Needle Ød</strong></td>
</tr>
<tr>
<td><strong>Melt channel Ød</strong></td>
</tr>
<tr>
<td><strong>Gate point Ød</strong></td>
</tr>
<tr>
<td><strong>Operating pressure</strong></td>
</tr>
<tr>
<td><strong>Operating voltage</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nominal length of the nozzle (L) in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
</tr>
<tr>
<td>■</td>
</tr>
</tbody>
</table>

*Volts alternating current

**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 at least 6 mm. Pneumatic valve size of at least 750 l/min.
Valve gate nozzle type 12NEST

**INSTALLATION**

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

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 pretension of 0.03 mm is taken into account for the K dimensions.

<table>
<thead>
<tr>
<th>( \Delta T ) (°C)</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
</tr>
</thead>
<tbody>
<tr>
<td>( K ) (mm)</td>
<td>0.11</td>
<td>0.19</td>
<td>0.26</td>
<td>0.33</td>
<td>0.41</td>
<td>0.48</td>
</tr>
</tbody>
</table>

- For "X" version of the needle guide see following page
- View C-C: Cutout for nozzle head, power and thermocouple plug connections

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

- Needle closed Ø 6 mm
- Pin position Ø 6.1 mm

- Needle open Ø 6 mm
- 4 x Ø 6.80 x 22.25
- M8-6H x 16
- Ø 8.05x90°, Oben

**Details**

- \( \Delta T \) (°C) values for different mould temperatures:
  - \( \Delta T \) (°C): 100, 150, 200, 250, 300, 350
  - Corresponding \( K \) (mm) values: 0.11, 0.19, 0.26, 0.33, 0.41, 0.48

- We reserve the right to make technical changes.
Valve gate nozzle type 12NEST
Needle guide versions LA, LA with titanium ring and KA

NEEDLE GUIDE VERSIONS

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 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 ±2 HRC is to be taken into account!
### 3.2 System valve gate nozzles

#### SINGLE VALVE GATE NOZZLES

<table>
<thead>
<tr>
<th><strong>4NHF, 5NHF and 6NHF</strong></th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>System nozzle with thick-film heating element (BlueFlow®), screwed to the manifold, needle guide versions LA, LA with titanium ring, LAZ and KA</td>
<td>30, 40, 50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>5NHT and 6NHT</strong></th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>System nozzle with conventional heating element screwed to the manifold, needle guide versions LA, LA with titanium ring, LAZ and KA</td>
<td>60, 70</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>8NHT, 10NHT and 12NHT</strong></th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>System nozzle with conventional heating element screwed to the manifold, needle guide versions LA, LA with titanium ring, LAZ and KA</td>
<td>80, 90, 100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>5NMT and 6NMT</strong></th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>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</td>
<td>110, 120</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>4NTT, 5NTT and 6NTT</strong></th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>System nozzle with conventional heating element screwed from the parting line, needle guide versions LA, LA with titanium ring, LAZ and KA</td>
<td>130, 140, 150</td>
</tr>
</tbody>
</table>
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**

<table>
<thead>
<tr>
<th>4NHF</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Needle Ød</strong></td>
<td>2 mm</td>
</tr>
<tr>
<td><strong>Melt channel Ød</strong></td>
<td>3.8 mm</td>
</tr>
<tr>
<td><strong>Gate point Ød</strong></td>
<td>0.8, 1.0, 1.2 or 1.4 mm</td>
</tr>
<tr>
<td><strong>Operating voltage</strong></td>
<td>230 V AC*</td>
</tr>
<tr>
<td><strong>Nominal length of the nozzle (L) in mm</strong></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>■</td>
<td>■</td>
</tr>
</tbody>
</table>

Contact us for other nozzle lengths!

*Volts alternating current

**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!*
Valve gate nozzle type 4NHF

Nozzle with needle guide
antechamber design KA

- Shut-off needle
- Clamping plate
- Manifold
- Cavity plate
- Nozzle holding plate
- Thermocouple connector
- Power connector

Example cutout for nozzle head, power and thermocouple plug connections

Nozzle with needle guide
antechamber design LA

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

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!

<table>
<thead>
<tr>
<th>VH</th>
<th>$\Delta T$ ($^\circ$C)</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>390</th>
</tr>
</thead>
<tbody>
<tr>
<td>36 mm</td>
<td>K (mm)</td>
<td>0.021</td>
<td>0.059</td>
<td>0.098</td>
<td>0.137</td>
<td>0.177</td>
<td>0.217</td>
<td></td>
</tr>
<tr>
<td>46 mm</td>
<td>K (mm)</td>
<td>0.033</td>
<td>0.078</td>
<td>0.124</td>
<td>0.170</td>
<td>0.218</td>
<td>0.264</td>
<td></td>
</tr>
<tr>
<td>56 mm</td>
<td>K (mm)</td>
<td>0.046</td>
<td>0.097</td>
<td>0.150</td>
<td>0.203</td>
<td>0.258</td>
<td>0.311</td>
<td></td>
</tr>
</tbody>
</table>

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

We reserve the right to make technical changes.

01/18
Valve gate nozzle type 4NHF
Needle guide versions LA, LA with titanium ring, LAZ and KA

NEEDLE GUIDE VERSIONS

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 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

<table>
<thead>
<tr>
<th>ØD</th>
<th>ØS7</th>
<th>t6</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>2.2</td>
<td>1.41</td>
</tr>
<tr>
<td>1.0</td>
<td>2.4</td>
<td>1.55</td>
</tr>
<tr>
<td>1.2</td>
<td>2.6</td>
<td>1.70</td>
</tr>
<tr>
<td>1.4</td>
<td>2.8</td>
<td>1.84</td>
</tr>
</tbody>
</table>

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 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

<table>
<thead>
<tr>
<th>5NHF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle Ød</td>
</tr>
<tr>
<td>Melt channel Ød</td>
</tr>
<tr>
<td>Gate point Ød</td>
</tr>
<tr>
<td>Operating voltage</td>
</tr>
</tbody>
</table>

Nominal length of the nozzle (L) in mm

<table>
<thead>
<tr>
<th>50</th>
<th>60</th>
<th>80</th>
<th>100</th>
<th>120</th>
<th>150</th>
<th>180</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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!
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!

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

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

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)

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
Installation dimensions of needle guide version LAZ

<table>
<thead>
<tr>
<th>ØD</th>
<th>ØS7</th>
<th>t6</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>2.2</td>
<td>0.91</td>
</tr>
<tr>
<td>1.0</td>
<td>2.4</td>
<td>1.05</td>
</tr>
<tr>
<td>1.2</td>
<td>2.6</td>
<td>1.20</td>
</tr>
<tr>
<td>1.4</td>
<td>2.8</td>
<td>1.34</td>
</tr>
</tbody>
</table>

**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 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

<table>
<thead>
<tr>
<th>6NHF</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle Ød</td>
<td>3 mm</td>
</tr>
<tr>
<td>Melt channel Ød</td>
<td>6 mm</td>
</tr>
<tr>
<td>Gate point Ød</td>
<td>0.8, 1.0, 1.2 or 1.4 mm</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>230 V&lt;sub&gt;AC&lt;/sub&gt; *</td>
</tr>
<tr>
<td>Nominal length of the nozzle (L) in mm</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

*Volts alternating current

**Contact us for other nozzle lengths!**

**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!*
**INSTALLATION**

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! ∆T specifies the temperature differential between the processing temperature and the mould temperature!

<table>
<thead>
<tr>
<th>VH</th>
<th>∆T(°C)</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
</tr>
</thead>
<tbody>
<tr>
<td>36 mm K (mm)</td>
<td>0.021</td>
<td>0.059</td>
<td>0.098</td>
<td>0.137</td>
<td>0.177</td>
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<td>46 mm K (mm)</td>
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<td>0.203</td>
<td>0.258</td>
<td>0.311</td>
<td></td>
</tr>
</tbody>
</table>

1. Thermocouple plug connection in this area can be bent once; minimum radius: R8
   SW = flat area on nozzle head
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 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)
Valve gate nozzle type 6NHF

**Installation dimensions of needle guide version LAZ**

<table>
<thead>
<tr>
<th>ØD</th>
<th>ØS7</th>
<th>t6</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>2.2</td>
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**Needle guide LAZ**
Made of powder-metallurgical steel

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- 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 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

<table>
<thead>
<tr>
<th>5NHT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle Ød</td>
<td>3 mm</td>
</tr>
<tr>
<td>Melt channel Ød</td>
<td>4.8 mm</td>
</tr>
<tr>
<td>Gate point Ød</td>
<td>0.8, 1.0, 1.2 or 1.4 mm</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>230 V AC*</td>
</tr>
<tr>
<td>Nominal length of the nozzle (L) in mm</td>
<td>50</td>
</tr>
<tr>
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<td></td>
</tr>
</tbody>
</table>

*Volts alternating current
[ ] available

NOTE

Power connector CMT and thermocouple connector CMLK are to be ordered separately.
Valve gate nozzle type 5NHT

### INSTALLATION

#### Nozzle with needle guide antechamber design LA

- Shut-off needle
- Clamping plate
- Manifold
- Cavity plate

- Thermocouple connector CMLK
- Power connector CMT

**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)!

<table>
<thead>
<tr>
<th>VH</th>
<th>ΔT(°C)</th>
<th>100</th>
<th>150</th>
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</tbody>
</table>

**SW = flat area on nozzle head**

01/18 We reserve the right to make technical changes.
Valve gate nozzle type 5NHT
Needle guide versions LA, LA with titanium ring, LAZ and KA

NEEDLE GUIDE VERSIONS

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
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- Minimal shear stress

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:
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- Thermoplastic polyesters (PBT and PET)
- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)
### Needle guide LAZ

Made of powder-metallurgical steel

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#### Advantages:
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### 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**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle Ød</td>
<td>3 mm</td>
</tr>
<tr>
<td>Melt channel Ød</td>
<td>6 mm</td>
</tr>
<tr>
<td>Gate point Ød</td>
<td>0.8, 1.0, 1.2 or 1.4 mm</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>230 V~*</td>
</tr>
<tr>
<td>Nominal length of the nozzle (L) in mm</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Contact us for other nozzle lengths!</td>
<td></td>
</tr>
</tbody>
</table>

*Volts alternating current

**NOTE**

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

WEBCODE

32050
**INSTALLATION**

![Diagram of installation setup]

**Valve gate nozzle type 6NHT**

**Nozzle with needle guide antechamber design LA**

**Nozzle with needle guide antechamber design KA**

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

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! ∆T specifies the temperature differential between the processing temperature and the mould temperature!

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</tr>
</tbody>
</table>

01/18 We reserve the right to make technical changes.
Valve gate nozzle type 6NHT
Needle guide versions LA, LA with titanium ring, LAZ and KA

NEEDLE GUIDE VERSIONS

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:
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- Minimal shear stress

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

<table>
<thead>
<tr>
<th>ØD</th>
<th>ØS7</th>
<th>t6</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>2.2</td>
<td>0.91</td>
</tr>
<tr>
<td>1.0</td>
<td>2.4</td>
<td>1.05</td>
</tr>
<tr>
<td>1.2</td>
<td>2.6</td>
<td>1.20</td>
</tr>
<tr>
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Needle guide LAZ
Made of powder-metallurgical steel

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- Minimal shear stress

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

<table>
<thead>
<tr>
<th>TECHNICAL DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>8NHT</td>
</tr>
<tr>
<td>Needle Ød</td>
</tr>
<tr>
<td>Melt channel Ød</td>
</tr>
<tr>
<td>Gate point Ød</td>
</tr>
<tr>
<td>Operating voltage</td>
</tr>
<tr>
<td>Nominal length of the nozzle (L) in mm</td>
</tr>
<tr>
<td>50</td>
</tr>
<tr>
<td>□</td>
</tr>
<tr>
<td>Contact us for other nozzle lengths!</td>
</tr>
</tbody>
</table>

*Volts alternating current
■ available □ on request

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

WEBCODE 32060
Nozzle with needle guide
antechamber design LA

Nozzle with needle guide
antechamber design KA

Example cutout for nozzle head, power and thermocouple plug connections

Installation

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! ∆T specifies the temperature differential between the processing temperature and the mould temperature!

<table>
<thead>
<tr>
<th>VH</th>
<th>∆T (°C)</th>
<th>100</th>
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<td></td>
</tr>
</tbody>
</table>

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 8NHT
Needle guide versions LA, LA with titanium ring, LAZ and KA

NEEDLE GUIDE VERSIONS

Needle guide LA
Made of powder-metallurgical steel

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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)

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
Valve gate nozzle type 8NHT

Installation dimensions of needle guide version LAZ

<table>
<thead>
<tr>
<th>ØD</th>
<th>ØS7</th>
<th>t5</th>
<th>t6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6</td>
<td>3.0</td>
<td>0.63</td>
<td>0.77</td>
</tr>
<tr>
<td>2.0</td>
<td>3.5</td>
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<td>1.07</td>
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<tr>
<td>2.5</td>
<td>4.0</td>
<td>0.58</td>
<td>1.43</td>
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Needle guide LAZ
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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

<table>
<thead>
<tr>
<th>TECHNICAL DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>10NHT</td>
</tr>
<tr>
<td><strong>Needle Ød</strong></td>
</tr>
<tr>
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<td><strong>Gate point Ød</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Nominal length of the nozzle (L) in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
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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.
Valve gate nozzle type 10NHT

Nozzle with needle guide antechamber design LA

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

Nozzle with needle guide antechamber design KA

Example cutout for nozzle head, power and thermocouple plug connections

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!

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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 10NHT
Needle guide versions LA, LA with titanium ring and KA

NEEDLE GUIDE VERSIONS

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.

Needle guide LA
Special version with titanium ring

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

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 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 12NHT
System nozzle with conventional heating element, screwed to the manifold

TECHNICAL DATA

<table>
<thead>
<tr>
<th>12NHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle Ød</td>
</tr>
<tr>
<td>Melt channel Ød</td>
</tr>
<tr>
<td>Gate point Ød</td>
</tr>
<tr>
<td>Operating voltage</td>
</tr>
</tbody>
</table>

Nominal length of the nozzle (L) in mm

<table>
<thead>
<tr>
<th>60</th>
<th>80</th>
<th>100</th>
<th>120</th>
<th>150</th>
<th>200</th>
<th>250</th>
</tr>
</thead>
<tbody>
<tr>
<td>■</td>
<td>■</td>
<td>■</td>
<td>□</td>
<td>■</td>
<td>■</td>
<td>□</td>
</tr>
</tbody>
</table>

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.
Valve gate nozzle type 12NHT

Nozzle with needle guide antechamber design LA

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

Nozzle with needle guide antechamber design KA

Example cutout for nozzle head, power and thermocouple plug connections

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!

<table>
<thead>
<tr>
<th>VH</th>
<th>ΔT (°C)</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
</tr>
</thead>
<tbody>
<tr>
<td>36 mm K (mm)</td>
<td>0.021</td>
<td>0.059</td>
<td>0.098</td>
<td>0.137</td>
<td>0.177</td>
<td>0.217</td>
<td></td>
</tr>
<tr>
<td>46 mm K (mm)</td>
<td>0.033</td>
<td>0.078</td>
<td>0.124</td>
<td>0.170</td>
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<td>0.264</td>
<td></td>
</tr>
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<td>56 mm K (mm)</td>
<td>0.046</td>
<td>0.097</td>
<td>0.150</td>
<td>0.203</td>
<td>0.258</td>
<td>0.311</td>
<td></td>
</tr>
</tbody>
</table>

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

SW = flat area on nozzle head

We reserve the right to make technical changes.
**Valve gate nozzle type 12NHT**

Needle guide versions LA, LA with titanium ring and KA

**NEEDLE GUIDE VERSIONS**

**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.

**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)

**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 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 5NMT
System nozzle with conventional heating element, for minimal spacing, not screwed to the manifold

TECHNICAL DATA

<table>
<thead>
<tr>
<th>5NMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle Ød</td>
</tr>
<tr>
<td>Melt channel Ød</td>
</tr>
<tr>
<td>Gate point Ød</td>
</tr>
<tr>
<td>Operating voltage</td>
</tr>
<tr>
<td>Nominal length of the nozzle (L) in mm</td>
</tr>
<tr>
<td>50</td>
</tr>
<tr>
<td>❑</td>
</tr>
</tbody>
</table>

Contact us for other nozzle lengths!

*Volts alternating current
❑ available  ☐ on request
Valve gate nozzle type 5NMT

Nozzle with needle guide antechamber design KA

Nozzle with needle guide antechamber design LA

INSTALLATION

Power connection: Permanent, incl. 2 m cable (flexible)
Thermocouple plug connection: Permanent, incl. 2 m cable (flexible)

Example cutout for nozzle head, power and thermocouple plug connections

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

For “X” version of the needle guide see following page

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!

<table>
<thead>
<tr>
<th>VH</th>
<th>ΔT (°C)</th>
<th>100</th>
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<th>200</th>
<th>250</th>
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<td>0.258</td>
<td>0.311</td>
</tr>
</tbody>
</table>

We reserve the right to make technical changes.

01/18
Valve gate nozzle type 5NMT
Needle guide versions LA, LA with titanium ring, LAZ and KA

**NEEDLE GUIDE VERSIONS**

**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 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

<table>
<thead>
<tr>
<th>ØD</th>
<th>ØS7</th>
<th>t6</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>2.2</td>
<td>0.91</td>
</tr>
<tr>
<td>1.0</td>
<td>2.4</td>
<td>1.05</td>
</tr>
<tr>
<td>1.2</td>
<td>2.6</td>
<td>1.20</td>
</tr>
<tr>
<td>1.4</td>
<td>2.8</td>
<td>1.34</td>
</tr>
</tbody>
</table>

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 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**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle Ød</td>
<td>3 mm</td>
</tr>
<tr>
<td>Melt channel Ød</td>
<td>6 mm</td>
</tr>
<tr>
<td>Gate point Ød</td>
<td>0.8, 1.0, 1.2 or 1.4 mm</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>230 V AC *</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nominal length of the nozzle (L) in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
</tr>
<tr>
<td>[ ]</td>
</tr>
</tbody>
</table>

Contact us for other nozzle lengths!

*Volts alternating current

- available
- on request
Valve gate nozzle type 6NMT

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

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!

<table>
<thead>
<tr>
<th>VH mm</th>
<th>ΔT(°C)</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>K [mm]</td>
<td>0.021</td>
<td>0.059</td>
<td>0.098</td>
<td>0.137</td>
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<td>0.150</td>
<td>0.203</td>
<td>0.258</td>
<td>0.311</td>
</tr>
</tbody>
</table>

01/18 We reserve the right to make technical changes.
Valve gate nozzle type 6NMT
Needle guide versions LA, LA with titanium ring, LAZ and KA

NEEDLE GUIDE VERSIONS

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.

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)

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
**Installation dimensions of needle guide version LAZ**

<table>
<thead>
<tr>
<th>ØD</th>
<th>ØS7</th>
<th>t6</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>2.2</td>
<td>0.91</td>
</tr>
<tr>
<td>1.0</td>
<td>2.4</td>
<td>1.05</td>
</tr>
<tr>
<td>1.2</td>
<td>2.6</td>
<td>1.20</td>
</tr>
<tr>
<td>1.4</td>
<td>2.8</td>
<td>1.34</td>
</tr>
</tbody>
</table>

**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 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

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle Ød</td>
<td>2 mm</td>
</tr>
<tr>
<td>Melt channel Ød</td>
<td>3.8 mm</td>
</tr>
<tr>
<td>Gate point Ød</td>
<td>0.8, 1.0, 1.2 or 1.4 mm</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>230 V AC*</td>
</tr>
</tbody>
</table>

Nominal length of the nozzle (L) in mm

<table>
<thead>
<tr>
<th>Length</th>
<th>50</th>
<th>60</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
</tbody>
</table>

Contact us for other nozzle lengths!

*Volts alternating current
■ available

NOTE

Power connector CMT and thermocouple connector CMLK are to be ordered separately.
Valve gate nozzle type 4NTT

Nozzle with needle guide
antechamber design KA

Example cutout for nozzle head, power and thermocouple plug connections

Nozzle with needle guide
antechamber design LA

INSTALLATION

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! ∆T specifies the temperature differential between the processing temperature and the mould temperature!

<table>
<thead>
<tr>
<th>VH</th>
<th>∆T°C</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
</tr>
</thead>
<tbody>
<tr>
<td>36 mm K [mm]</td>
<td>0.021</td>
<td>0.059</td>
<td>0.098</td>
<td>0.137</td>
<td>0.177</td>
<td>0.217</td>
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<td>0.203</td>
<td>0.258</td>
<td>0.311</td>
<td></td>
</tr>
</tbody>
</table>

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

SW = flat area on nozzle head

01/18 We reserve the right to make technical changes.
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.

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)

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
Valve gate nozzle type 4NTT

**Installation dimensions of needle guide version LAZ**

<table>
<thead>
<tr>
<th>ØD</th>
<th>ØS7</th>
<th>t6</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>2.2</td>
<td>1.41</td>
</tr>
<tr>
<td>1.0</td>
<td>2.4</td>
<td>1.55</td>
</tr>
<tr>
<td>1.2</td>
<td>2.6</td>
<td>1.70</td>
</tr>
<tr>
<td>1.4</td>
<td>2.8</td>
<td>1.84</td>
</tr>
</tbody>
</table>

**Needle guide LAZ**  
Made of powder-metallurgical steel

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**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**

<table>
<thead>
<tr>
<th>5NTT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Needle Ød</strong></td>
</tr>
<tr>
<td><strong>Melt channel Ød</strong></td>
</tr>
<tr>
<td><strong>Gate point Ød</strong></td>
</tr>
<tr>
<td><strong>Operating voltage</strong></td>
</tr>
<tr>
<td><strong>Nominal length of the nozzle (L) in mm</strong></td>
</tr>
<tr>
<td>50</td>
</tr>
<tr>
<td>✲</td>
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</table>

Contact us for other nozzle lengths!

*Volts alternating current
резидент available

**NOTE**

Power connector CMT and thermocouple connector CMLK are to be ordered separately.
Valve gate nozzle type 5NTT

INSTALLATION

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

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!

<table>
<thead>
<tr>
<th>VH</th>
<th>( \Delta T (\degree C) )</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
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<tbody>
<tr>
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\( \Delta T \) Power and thermocouple plug connections in this area can be bent once; minimum radius: R8

SW = flat area on nozzle head

01/18 We reserve the right to make technical changes.
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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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)
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- Liquid crystalline polymers (LCP)
- Polyether ether ketones (PEEK)
Installation dimensions of needle guide version LAZ

<table>
<thead>
<tr>
<th>ØD</th>
<th>ØS7</th>
<th>t6</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>2.2</td>
<td>0.91</td>
</tr>
<tr>
<td>1.0</td>
<td>2.4</td>
<td>1.05</td>
</tr>
<tr>
<td>1.2</td>
<td>2.6</td>
<td>1.20</td>
</tr>
<tr>
<td>1.4</td>
<td>2.8</td>
<td>1.34</td>
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Needle guide LAZ
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 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

<table>
<thead>
<tr>
<th>6NTT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needle Ød</td>
</tr>
<tr>
<td>Melt channel Ød</td>
</tr>
<tr>
<td>Gate point Ød</td>
</tr>
<tr>
<td>Operating voltage</td>
</tr>
<tr>
<td>Nominal length of the nozzle (L) in mm</td>
</tr>
<tr>
<td>50</td>
</tr>
</tbody>
</table>

Contact us for other nozzle lengths!

*Volts alternating current
■ available

NOTE

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

WEB CODE
32130
Valve gate nozzle type 6NTT

INSTALLATION

Example cutout for nozzle head, power and thermocouple plug connections

For “X” version of the needle guide see following page

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! ∆T specifies the temperature differential between the processing temperature and the mould temperature!

<table>
<thead>
<tr>
<th>VH</th>
<th>∆T (°C)</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
</tr>
</thead>
<tbody>
<tr>
<td>36 mm K (mm)</td>
<td>0.021</td>
<td>0.059</td>
<td>0.098</td>
<td>0.137</td>
<td>0.177</td>
<td>0.217</td>
<td></td>
</tr>
<tr>
<td>46 mm K (mm)</td>
<td>0.033</td>
<td>0.078</td>
<td>0.124</td>
<td>0.170</td>
<td>0.218</td>
<td>0.264</td>
<td></td>
</tr>
<tr>
<td>56 mm K (mm)</td>
<td>0.046</td>
<td>0.097</td>
<td>0.150</td>
<td>0.203</td>
<td>0.258</td>
<td>0.311</td>
<td></td>
</tr>
</tbody>
</table>

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

SW = flat area on nozzle head

We reserve the right to make technical changes.

01/18
Valve gate nozzle type 6NTT
Needle guide versions LA, LA with titanium ring, LAZ and KA

NEEDLE GUIDE VERSIONS

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 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)
Valve gate nozzle type 6NTT

Installation dimensions of needle guide version LAZ

<table>
<thead>
<tr>
<th>ØD</th>
<th>ØS7</th>
<th>t6</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>2.2</td>
<td>0.91</td>
</tr>
<tr>
<td>1.0</td>
<td>2.4</td>
<td>1.05</td>
</tr>
<tr>
<td>1.2</td>
<td>2.6</td>
<td>1.20</td>
</tr>
<tr>
<td>1.4</td>
<td>2.8</td>
<td>1.34</td>
</tr>
</tbody>
</table>

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 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!