Actuators and Accessories
for Valve Gate Hot Runner Systems
**Product type**
 Components and accessories to be added to hot runner systems in order to use them as valve gate systems:

1. **Valve gate nozzle head for single nozzles**
   Nozzle head for single axis valve gate nozzles; inherent part of the nozzle which will always be delivered including the complete nozzle.

2. **Actuator, bolted to the manifold**
   Actuator for manifold systems bolted to the manifold. There is a cooling plate between the actuator and the manifold in order to cool the actuator and to thermally separate it from the hot manifold surface.

3. **Actuator, in mould plate**
   Actuator for manifold systems mounted in the mould plate. The actuator is cooled by the cooling system of the plate.

4. **Cooling unit for single axis valve gate nozzles**
   Without being directly cooled the available single axis valve gate nozzles can be used up to a mould temperature of 80°C. For higher temperatures the associated cooling unit has to be used.

5. **Valve pin position control**
   Add-on for hot runner systems with actuators.  
   1) Valve pin position sensor  
   2) End position indication by end pos. switch  
   3) End position indication by flow sensor  
   4) End position indication by magnetic switch

6. **SynCool®**
   The new HYC4018M and HYC2508M actuator series with SynCool® technology is bolt to the manifold.

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### Valve gate components

#### Operation principle

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</table>

Illustrations simplified, schematically drawn and not to scale.
Nozzle head for single axis valve gate nozzles; inherent part of the nozzle which will always be delivered including the complete nozzle.

**Valve pin**
- Valve pin diameter: ø 3.8 mm
- Attachment: anti-rotation
- Adjustment: ±1.5 mm via adjustment threads from outside

**Valve pin operation**
- Operation: pneumatic
- Operation pressure: 5...10 bar
- Flow rate: 1.2 l/min
- Reaction time: 1.2 s
- Valve pin stroke: 8 mm
- Closing force: 792 N (6 bar)
- Opening force: 792 N (6 bar)
- Connections: M10x1
  - a) Close
  - b) Open

**Cooling**
Without being directly cooled the nozzle can be used up to a mould temperature of 80°C. For higher temperatures the associated cooling unit has to be used.
Without being directly cooled the single axis valve gate nozzles CB N ... S can be used up to a mould temperature of 80°C. For higher temperatures the cooling unit shown here has to be used.

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<th>Cooling</th>
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<td>Pressure</td>
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<td>Temperature</td>
<td>30...80 °C</td>
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<tr>
<td>Connections</td>
<td>M14x1.5</td>
</tr>
</tbody>
</table>
Nozzle head for single axis valve gate nozzles; inherent part of the nozzle which will always be delivered including the complete nozzle.

**Valve pin**
- Valve pin ø: 6 mm
- Attachment: anti-rotation
- Adjustment: ±1.5 mm via adjustment threads from outside

**Valve pin operation**
- Operation: pneumatic
- Operation pressure: 5...10 bar
- Flow rate: 5.4 l/min (5 bar)
- Reaction time: 1.2 s
- Valve pin stroke: 13 mm
- Closing force: 2081 N (6 bar)
- Opening force: 2081 N (6 bar)
- Connections: M12x1.5
  - a) Close
  - b) Open

**Cooling**
Without being directly cooled the nozzle can be used up to a mould temperature of 80°C. For higher temperatures the associated cooling unit has to be used.
Without being directly cooled the single axis valve gate nozzles GA N ... S can be used up to a mould temperature of 80°C. For higher temperatures the cooling unit shown here has to be used.

**Cooling**
- **Medium**: Cooling water
- **Flow rate**: 4 l/min
- **Pressure**: max. 8 bar
- **Temperature**: 30...60 °C
- **Connections**: M14x1.5
Nozzle head for single axis valve gate nozzles; inherent part of the nozzle which will always be delivered including the complete nozzle.

**Valve pin**
- Valve pin ø: 8 mm
- Attachment: anti-rotation
- Adjustment: ±1.5 mm via adjustment threads from outside

**Valve pin operation**
- Operation: pneumatic
- Operation pressure: 5...10 bar
- Flow rate: 10 l/min (5bar)
- Reaction time: 1.4 s
- Valve pin stroke: 14 mm
- Closing force: 2081 N (6 bar)
- Opening force: 2081 N (6 bar)
- Connections: M12×1.5
  - a) Close
  - b) Open

**Cooling**
Without being directly cooled the nozzle can be used up to a mould temperature of 80°C. For higher temperatures the associated cooling unit has to be used.
Without being directly cooled the single axis valve gate nozzles GB N ... S can be used up to a mould temperature of 80°C. For higher temperatures the cooling unit shown here has to be used.

**Cooling**
- **Medium**  
  Cooling water
- **Flow rate**  
  4 l/min
- **Pressure**  
  max. 8 bar
- **Temperature**  
  30...60 °C
- **Connections**  
  M14x1.5

Illustrations simplified, schematically drawn and not to scale.
Nozzle head for single axis valve gate nozzles; inherent part of the nozzle which will always be delivered including the complete nozzle.

**Valve pin**
- **Valve pin ø**: ø 6 mm
- **Attachment**: anti-rotation
- **Adjustment**: ±1 mm via adjustment threads from outside

**Valve pin operation**
- **Operation**: hydraulic
- **Operation pressure**: 40...60 bar
- **Flow rate**: 2.5 l/min
- **Reaction time**: 0.5 s
- **Valve pin stroke**: 13 mm
- **Closing force**: 3770 N (40 bar)
- **Opening force**: 2825 N (40 bar)
- **Connections**: M12×1.5 (8-L)
  - a) Close
  - b) Open

**Cooling**
Without being directly cooled the nozzle can be used up to a mould temperature of 80°C. For higher temperatures the associated cooling unit has to be used.
Without being directly cooled the single axis valve gate nozzles 12S01 ... V can be used up to a mould temperature of 80°C. For higher temperatures the cooling unit shown here has to be used.

**Cooling**

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<td>Flow rate</td>
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</table>

Illustrations simplified, schematically drawn and not to scale.
Nozzle head for single axis valve gate nozzles; inherent part of the nozzle which will always be delivered including the complete nozzle.

**Valve pin**
- **Valve pin ø**: ø 8 mm
- **Attachment**: anti-rotation
- **Adjustment**: ±1 mm via adjustment threads from outside

**Valve pin operation**
- **Operation**: hydraulic
- **Operation pressure**: 40...60 bar
- **Flow rate**: 2.5 l/min
- **Reaction time**: 0.5 s
- **Valve pin stroke**: 14 mm
- **Closing force**: 4984 N (40 bar)
- **Opening force**: 4043 N (40 bar)
- **Connections**: M12x1.5 (8-L)
- **a)** Close
- **b)** Open

**Cooling**
Without being directly cooled the nozzle can be used up to a mould temperature of 80°C. For higher temperatures the associated cooling unit has to be used.
Without being directly cooled the single axis valve gate nozzles 16S01 ... V can be used up to a mould temperature of 80°C. For higher temperatures the cooling unit shown here has to be used.

**Cooling**

- **Medium**: Cooling water
- **Flow rate**: 4 l/min
- **Pressure**: max. 8 bar
- **Temperature**: 30...60 °C
- **Connections**: M14x1.5
Actuator for manifold systems bolted to the manifold. There is a cooling plate between the actuator and the manifold in order to cool the actuator and to thermally separate it from the hot manifold surface.

Valve pin
- Valve pin ø: ø 3.8 mm
- Attachment: anti-rotation
- Adjustment: ±1 mm via adjustment threads from outside

Valve pin operation
- Operation: pneumatic
- Operation pressure: 6...12 bar (87...174 psi)
- Flow rate: 12 l/min
- Reaction time: 0.5 s
- Valve pin stroke: 8 mm
- Closing force: 954 N (6 bar)
- Opening force: 859 N (6 bar)
- Connections: M10x1 (8-L)

Valve pin operation:

- a) Close
- b) Open

Cooling
- Medium: Cooling water
- Flow rate: 3 l/min
- Temperature: 30...60 °C
- Connections: M10x1 (8-L)

We recommend to cool the actuator after the end of production for minimum 15 minutes to protect it against overheat due to heat flow from the manifold.
Actuator for manifold systems bolted to the manifold. There is a cooling plate between the actuator and the manifold in order to cool the actuator and to thermally separate it from the hot manifold surface.

**Valve pin**
- Valve pin ø: 5 mm
- Attachment: Anti-rotation
- Adjustment: ±1.5 mm via adjustment threads from outside

**Valve pin operation**
- Operation: Pneumatic
- Operation pressure: 14...20 bar (203...290 psi)
- Flow rate: 6 l/min
- Reaction time: 0.5 s
- Valve pin stroke: 18 mm
- Closing force:
  - 2749 N (14 bar)
  - 3142 N (16 bar)
  - 3535 N (18 bar)
  - 3927 N (20 bar)
- Opening force:
  - 2167 N (14 bar)
  - 2477 N (16 bar)
  - 2768 N (18 bar)
  - 3096 N (20 bar)
- Connections: M12x1.5 (8-L)
  - a) Close
  - b) Open

**Cooling**
- Medium: Cooling water
- Flow rate: 6 l/min
- Temperature: 30...80 °C
- Connections: M12x1.5 (8-L)
  - Max. 3 actuators in a row
  - c) different positions on cooling plate

**Available versions**
- PNC5018M01
  - With end position (open) micro switch

**Technical data Micro Switch PS-MS-O-01**
- Safety class: IP67
- Schalter Kapazität: 0.1 up to 10 A at 250 VAC
- Min. switch capacity: 1 mA at 4 VDC
- Temperature range: -40 up to +125 °C
- Cable specification: FEP Flouropolymere
  - 2 x 0.25 mm² for
  - Temperature range: -100 °C bis +205 °C

We recommend to cool the actuator after the end of production for minimum 15 minutes to protect it against overheat due to heat flow from the manifold.
Actuator for manifold systems bolted to the manifold. There is a cooling plate between the actuator and the manifold in order to cool the actuator and to thermally separate it from the hot manifold surface.

**Valve pin**
- Valve pin ø: Ø 5 mm, Ø 6 mm
- Attachment: anti-rotation
- Adjustment: ±1.5 mm via adjustment threads from outside

**Valve pin operation**
- Operation: pneumatic
- Operation pressure: 6...12 bar (87...174 psi)
- Flow rate: 6 l/min
- Reaction time: 0,5 s
- Valve pin stroke: 18 mm
- Closing force:
  - 1697 N (6 bar)
  - 2262 N (8 bar)
  - 2827 N (10 bar)
  - 3393 N (12 bar)
- Opening force:
  - 1447 N (6 bar)
  - 1930 N (8 bar)
  - 2412 N (10 bar)
  - 2894 N (12 bar)
- Connections: M12x1.5 (8-L)
  - a) Close
  - b) Open

**Cooling**
- Medium: Cooling water
- Flow rate: 6 l/min
- Temperature: 30...80 °C
- Connections: M12x1.5 (8-L)
  - max. 3 Actuators in a row
  - c) different positions on cooling plate

**Available versions**
- PNC6018M01: with end position (open) micro switch
- PNC6018M02: without end position (open) micro switch

**Technical data Micro Switch PS-MS-O-01**
- Safety class: IP67
- Switch capacity: 0,1 up to 10 A at 250 VAC
- Min. switch capacity: 1 mA at 4 VDC
- Temperature range: -40 up to +125 °C
- Cable specification: FEP Fluoropolymer
  - 2 x 0,25 mm² for Temperature range
  - -100 °C bis +205 °C

We recommend to cool the actuator after the end of production for minimum 15 minutes to protect it against overheat due to heat flow from the manifold.
Actuator for manifold systems bolted to the manifold. There is a cooling plate between the actuator and the manifold in order to cool the actuator and to thermally separate it from the hot manifold surface.

**Valve pin**
- Valve pin ø: Ø 5 mm, Ø 6 mm
- Attachment: anti-rotation
- Adjustment: ±1,5 mm via adjustment threads from outside

**Valve pin operation**
- Operation: pneumatic
- Operation pressure: 6...12 bar (87...174 psi)
- Flow rate: 12 l/min
- Reaction time: 0,5 s
- Valve pin stroke: 18 mm
- Closing force: 2651 N (6 bar), 3534 N (8 bar), 4418 N (10 bar), 5302 N (12 bar), 6185 N (14 bar)
- Opening force: 2401 N (6 bar), 3202 N (8 bar), 4002 N (10 bar), 4802 N (12 bar), 5603 N (14 bar)
- Connections: M12x1.5 (8-L)
  - a) Close
  - b) Open

**Cooling**
- Medium: Cooling water
- Flow rate: 6 l/min
- Temperature: 30...60 °C
- Connections: M12x1.5 (8-L)
  - max. 3 Actuators in a row
  - c) different on cooling plate

**Available versions**
- PNC7518M03 (Standard Version)
- PNC7518M04 (Strong version with two pistons)

We recommend to cool the actuator after the end of production for minimum 15 minutes to protect it against overheat due to heat flow from the manifold.
Actuator for manifold systems bolted to the manifold. There is a cooling plate between the actuator and the manifold in order to cool the actuator and to thermally separate it from the hot manifold surface.

### Valve pin
- **Valve pin Ø:** 6 mm, Ø 8 mm
- **Attachment:** anti-rotation
- **Adjustment:** ±1.5 mm via adjustment threads from outside

### Valve pin operation
- **Operation:** pneumatic
- **Operation pressure:** 6...10 bar (87...145 psi)
- **Flow rate:** 20 l/min
- **Reaction time:** 0.5 s
- **Valve pin stroke:** 18 mm
- **Closing force:** 5074 N (6 bar), 6765 N (8 bar), 8456 N (10 bar)
- **Opening force:** 4624 N (6 bar), 6432 N (8 bar), 8040 N (10 bar)
- **Connections:** M12x1.5 (8-L)
  - a) Close
  - b) Open

### Cooling
- **Medium:** Cooling water
- **Flow rate:** 6 l/min
- **Temperature:** 30...60 °C
- **Connections:** M12x1.5 (8-L)
  - max. 3 Actuators in a row
  - c) different positions on cooling plate

### Available versions
- **PNC7518M03:** Standard actuator
- **PNC7518M04:** Strong version with two pistons

We recommend to cool the actuator after the end of production for minimum 15 minutes to protect it against overheat due to heat flow from the manifold.
Actuator for manifold systems bolted to the manifold. It is sealed by the back plate based on the thermal expansion of the manifold stack height.

**Valve pin**
- Valve pin ø: ø 3 mm
- Attachment: T - Valve pin head
- Adjustment: ±1 mm

**Valve pin operation**
- Operation: pneumatic
- Operation pressure: 6...12 bar (87...174 psi)
- Flow rate: 1.5 l/min
- Reaction time: 0.5 s
- Valve pin stroke: 8 mm
- Closing force: 424 N (6 bar) / 848 N (12 bar)
- Opening force: 332 N (6 bar) / 663 N (12 bar)

**Cooling**
The design provides an active cooling through the cooled back plate.

**Connections**
No piping. Pressure line provided by back plate.
Actuator for manifold systems bolted to the manifold. It is sealed by the back plate based on the thermal expansion of the manifold stack height.

**Valve pin**
- Valve pin ø: 3.8 mm
- Attachment: T - Valve pin head
- Adjustment: ±1 mm

**Valve pin operation**
- Operation: pneumatic
- Operation pressure: 6...12 bar (87...174 psi)
- Flow rate: 1.5 l/min
- Reaction time: 0.5 s
- Valve pin stroke: 8 mm
- Closing force: 954 N (6 bar)
  - 1272 N (8 bar)
  - 1590 N (10 bar)
  - 1908 N (12 bar)
- Opening force: 848 N (6 bar)
  - 1131 N (8 bar)
  - 1414 N (10 bar)
  - 1696 N (12 bar)

**Cooling**
The design provides an active cooling through the cooled back plate.

**Connections**
No piping. Pressure line provided by back plate.
Actuator for manifold systems bolted to the manifold. It is sealed by the back plate based on the thermal expansion of the manifold stack height.

**Valve pin**
- Valve pin ø: Ø 6 mm
- Attachment: T - Valve pin head
- Adjustment: ±1 mm

**Valve pin operation**
- Operation: pneumatic
- Operation pressure: 6...12 bar (87...174 psi)
- Flow rate: 1.5 l/min
- Reaction time: 0.5 s
- Valve pin stroke: 18 mm

**Closing force**
- 1696 N (6 bar)
- 3393 N (12 bar)

**Opening force**
- 1447 N (6 bar)
- 2894 N (12 bar)

**Cooling**
The design provides an active cooling through the cooled back plate.

**Connections**
No piping. Pressure line provided by back plate.
Actuator for manifold systems bolted to the manifold. There is a cooling plate between the actuator and the manifold in order to cool the actuator and to thermally separate it from the hot manifold surface.

**Valve pin**
- Valve pin ø: Ø 3.8 mm
- Attachment: anti-rotation
- Adjustment: ±1 mm via adjustment threads from outside

**Valve pin operation**
- Operation: hydraulic
- Operation pressure: 40...60 bar (600...870 psi)
- Flow rate: 1.5 l/min / 40 bar
- Reaction time: 0.2 s / 40 bar
- Valve pin stroke: 8 mm
- Closing force: 1964 N (40 bar)
- Opening force: 1512 N (40 bar)
- Connections: M10x1 (8-L)
- a) Close
- b) Open

**Cooling**
- Medium: Cooling water
- Flow rate: 3 l/min
- Temperature: 30...60 °C
- Connections: M10x1 (8-L)
  - max. 3 Actuators in a row
c) Different positions

**Available versions**
- HYC2508M02: Standard actuator and SynCool® 1
- HYC2508M03: Standard actuator and SynCool® 1 or 2

Alle versions are compatible with SynCool® 1

We recommend to cool the actuator after the end of production for minimum 15 minutes to protect it against overheat due to heat flow from the manifold.
Available versions
SynCool® 1
SynCool® 2

Product description
The HYC2508M actuator series with SynCool® technology is bolt to the manifold. The cooling plate between the actuator and the manifold provides active cooling of the needle guide and the actuator in order to thermally separate it from the hot manifold surface. The new SynCool® technology provides in addition an indirect cooling which allows the operator on certain applications at <250°C operating & <50°C mould temperature, to switch off the complete system including the mould and actuator cooling without the risk of decomposing the hydraulic oil.

Product specification
The design provides active cooling on the needle guide. The SynCool® technology provides indirect cooling from the back plate to the housing in order to avoid hydraulic oil decomposing and further seal damage during end of production. No post-cooling required.

SynCool® 1 technology is applicable for the actuators:
♠ HYC2508M02
♠ HYC2508M03

When applying the option SynCool® 1 following standard specifications can be changed:
♠ The construction height of the Actuator heightened by 2,5 mm
♠ The used valve pin has to be 2,5 mm longer than the valve pin without the option SynCool® 1.

SynCool® 2 technology is applicable for the actuator:
♠ HYC2508M03

Heat deflector must has contact with the mold.
Variable height adjustment of the heat deflectors.

Illustrations simplified, schematically drawn and not to scale.
Actuator for manifold systems bolted to the manifold. There is a cooling plate between the actuator and the manifold in order to cool the actuator and to thermally separate it from the hot manifold surface.

**Valve pin**
- **Valve pin ø** ø 6 mm / ø 8 mm
- **Attachment** anti-rotation
- **Adjustment** ±1.5 mm
  - via adjustment threads from outside

**Valve pin operation**
- **Operation** hydraulic
- **Operation pressure** 40...60 bar (600...870psi)
- **Flow rate** 3 l/min / 40 bar
- **Reaction time** 0.5 s / 40 bar
- **Valve pin stroke** 18 mm
- **Closing force** 5027 N (40 bar)
- **Opening force** 3365 N (40 bar)
- **Connections** M12x1.5 (8-L)
  - a) Close
  - b) Open

**Cooling**
- **Medium** Cooling water
- **Flow rate** 6 l/min
- **Temperature** 30...60 °C
- **Connections** M12x1.5 (8-L)
  - c) Different positions
  - max. 3 Actuators in a row
  - on cooling plate

**Available versions**
- **HYC4018M03** For SynCool® 2 and/or the option with Thermocouple
- **HYC4018M04** Standard version
- **HYC4018M05** For position monitoring (XP060...) with (RVM-4/1S)

All versions are compatible with SynCool® 1

We recommend to cool the actuator after the end of production for minimum 15 minutes to protect it against overheat due to heat flow from the manifold.
Available versions
SynCool® 1
SynCool® 2

Product description
The HYC4018M actuator series with SynCool® technology is bolted to the manifold. The cooling plate between the actuator and the manifold provides active cooling of the needle guide and the actuator in order to thermally separate it from the hot manifold surface. The new SynCool® technology provides in addition an indirect cooling which allows the operator on certain applications at <250°C operating & <50°C mould temperature, to switch off the complete system including the mould and actuator cooling without the risk of decomposing the hydraulic oil.

Product specification
The design provides active cooling on the needle guide.
The SynCool® technology provides indirect cooling from the back plate to the housing in order to avoid hydraulic oil decomposing and further seal damage during end of production.
No post-cooling required

SynCool® 1 technology is applicable for the actuator:
♦ HYC4018M03
♦ HYC4018M04
♦ HYC4018M05

SynCool® 2 technology is applicable for the actuator:
♦ HYC4018M03

When applying the option SynCool® 1 following standard specifications can be changed:
♦ The construction height of the Actuator heightened by 2.5 mm
♦ The used valve pin has to be 2.5 mm longer than the valve pin without the option SynCool® 1.

Illustrations simplified, schematically drawn and not to scale.
Actuator for manifold systems bolted to the manifold. There is a cooling plate between the actuator and the manifold in order to cool the actuator and to thermally separate it from the hot manifold surface.

Valve pin
- Valve pin Ø: 6 mm / Ø 8 mm
- Attachment: anti-rotation
- Adjustment: ± 1.5 mm via adjustment threads from outside

Valve pin operation
- Operation: hydraulisch
- Operation pressure:
  - HYC4520M04: 120 bar (1740 psi)
  - HYC4520M05: 50...60 bar (730...870 psi)
- Flow rate:
  - HYC4520M04: 6 l/min / 40 bar
  - HYC4520M05: 3 l/min / 40 bar
- Reaction time: 0.5 s / 40 bar
- Valve pin stroke: 20 mm
- Closing force: 14100 N (120 bar)
- Opening force: 14100 N (120 bar)
- Connections: M12x1.5 (8-L)
  - a) Close
  - b) Open

Cooling
- Medium: Cooling water
- Flow rate: 6 l/min
- Temperature: 30...60 °C
- Connections: M12x1.5 (8-L) max. 3 Actuators in a row
  - c) different positions on cooling plate

Available versions
- HYC4520M04: with position sensor
- HYC4520M05: without position sensor

We recommend to cool the actuator after the end of production for 60 minutes at 30 °C to protect it against overheat due to heat flow from the manifold.
Actuator for manifold systems mounted in the back plate. The actuator is cooled by the cooling system in the plate.

**Valve pin**
- Valve pin Ø: 3.0 mm / 3.8 mm
- Attachment: Valve pin head inside piston
- Adjustment: By adjusting a height adjustment piece.

**Valve pin operation**
- Operation: pneumatic
- Operation pressure: 6 - 10 bar (87 - 145 psi)
- Operation pressure max.: 11 bar (160 psi)
- Flow rate: 1.5 l/min
- Valve pin stroke: 8 mm
- Closing force: 754 N (6 bar)
- Opening force: 686 N (6 bar)
- Connections: M10x1

**Cooling**
- Medium: Clamping plate cooling (max. 100 °C / 210 °F).
- Cooling lines are required in clamping plate.

**Different Informations**
- Minimum clamping plate thickness: 32 mm
- Minimum distance between two actuators: 55 mm
- Max. distance from actuator to center support: 650 mm

Illustrations simplified, schematically drawn and not to scale.
Actuator for manifold systems mounted in the back plate. The actuator is cooled by the cooling system in the plate.

**Valve pin**
- **Valve pin Ø**: Ø 5 mm / Ø 6 mm / Ø 8 mm
- **Attachment**: Valve pin head inside piston
- **Adjustment**: By adjusting a height adjustment piece

**Valve pin operation**
- **Operation**: pneumatic
- **Operation pressure**: 6 - 10 bar (87 - 145 psi)
- **Operation pressure max.**: 11 bar (160 psi)
- **Flow rate**: 1.5 l/min
- **Valve pin stroke**: 16 mm
- **Closing force**: 3016 N (6 bar)
- **Opening force**: 2788 N (6 bar)
- **Connections**: M12x1.5

**Cooling**
- **Medium**: Clamping plate cooling (max. 100 °C / 210 °F).
  - Cooling lines are required in clamping plate.

**Different Informations**
- **Minimum clamping plate thickness**: 50 mm
- **Minimum distance between two actuators**: 97 mm
- **Max. distance from actuator to center support**: 650 mm

Illustrations simplified, schematically drawn and not to scale.
Actuator for manifold systems mounted in the clamping plate. The actuator is cooled by the cooling system in the plate.

**Valve pin**
- Valve pin ø: Ø 3.8 mm
- Attachment: Valve pin head inside piston
- Adjustment: By height adjusting of washers above and below valve pin head

**Valve pin operation**
- Operation: hydraulic
- Operation pressure max.: 40 bar (600 psi)
- Flow rate: 1.5 l/min
- Reaction time: 0.2 s
- Valve pin stroke: 8 mm
- Closing force: 1964 N (40 bar)
- Opening force: 1512 N (40 bar)
- Connections: Ø 5 mm

**Cooling**
- Medium: Clamping plate cooling (max. 60 °C / 140 °F).
- Cooling lines are required in clamping plate.

Illustrations simplified, schematically drawn and not to scale.
Actuator for manifold systems mounted in the clamping plate. The actuator is cooled by the cooling system in the plate.

### Valve pin
- **Valve pin ø**: Ø 6 mm / Ø 8 mm
- **Attachment**: Quick coupling, anti-rotation
- **Adjustment**: ± 1 mm via adjustment nut from top

### Valve pin operation
- **Operation**: hydraulic
- **Operation pressure**: 35 - 42 bar (500 - 600 psi)
- **Operation pressure max.**: 103 bar (1500 psi)
- **Flow rate**: 1.8 l/min
- **Valve pin stroke**: 16 mm
- **Closing force**: 6670 N (100 bar)
- **Opening force**: 6670 N (100 bar)
- **Connections**: Ø 1/8 NPT

### Cooling
- **Medium**: Clamping plate cooling (max. 100 °C / 210 °F).
- Cooling lines are required in clamping plate.

Illustrations simplified, schematically drawn and not to scale.
Actuator for manifold systems mounted on the retainer plate.

**Valve pin**
- Valve pin ø: Ø 2 mm
- Attachment: Quick coupling
- Adjustment: ± 1.5 mm
  - Valve pin has not anti-rotation

**Valve pin operation**
- Operation: electrical
- Valve pin stroke: 8 mm

**Cooling**
- A insulator plate (6 mm) is required if the cavity plate temperature exceeds 55 °C / 131 °F.
- A separate actuator retainer plate cooling circuit at a temperature less than or equal to 55°C is required for applications requiring a cavity plate cooling temperature greater than 55 °C / 131 °F.
Actuator for manifold systems mounted on the retainer plate.

**Valve pin**
- Valve pin ø: Ø 3 mm
- Attachment: Quick coupling
- Adjustment: ± 1.5 mm
  - Valve pin has not anti-rotation

**Valve pin operation**
- Operation: electrical
- Valve pin stroke: 8 mm

**Cooling**
A insulator plate (6 mm) is required if the cavity plate temperature exceeds 55 °C / 131 °F.
A separate actuator retainer plate cooling circuit at a temperature less than or equal to 55°C is required for applications requiring a cavity plate cooling temperature greater than 55 °C / 131 °F.

Relevant Parts for the Mounting of the Actuator ELA8708P
- (1) Actuator
- (SP) Spacer plate
- (RP) Retainer plate
- (IP) Insulator plate
- (VPG) Valve pin guide
- (M) Manifold
- (CP) Cavity plate

Illustrations simplified, schematically drawn and not to scale.
Add-on for hot runner systems with actuators HYC4018M05 which shows the end positions and the moving direction of the valve pins during production.

1. Flow sensor RVM/U4/1S
Flow sensors are placed outside of the hot runner system on each hydraulic line to the actuators.

2. Connection box XP0601-01
All signal lines from the flow sensors are connected to the connection box. In total 6 actuators can be connected to one connection box.

3. Display module XP0602-01
All signals are conveyed by a connection cable to the display module where the end position and the moving direction of the valve pin are indicated by signal lamps.

4. Connection cable C30-275

5. Signal lamps

**End position**
- Green → open
- Red → closed

**Moving direction**
- Green, short glow → Valve pin is opening
- Green, permanent glow → failure during opening
- Red, short glow → Valve pin is closing
- Red, permanent glow → failure during closing
Positions Control Display Modul
indicates valve gate is in open position.

Verify that all cables are damage free and in good condition.

Verify that all electrical connectors are clean and making good contact, and are securely fastened and latched.

Dirty or otherwise contaminated connector pins can cause loss of signal and subsequent errors.

Clean all connectors with a spraytype commercial electrical contact cleaner / degreaser and allow them to dry fully before reconnecting.

Electrical terminals for attaching cables to the Hot Runner System shall never be allowed to come into contact with the coolant or hydraulic fluid. This could lead to a short circuit in the system, or cause an electrical fire which may lead to damage of the Hot Runner System.

<table>
<thead>
<tr>
<th>Technical Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro Switch PS-MS-O-01</td>
</tr>
<tr>
<td>Safety class</td>
</tr>
<tr>
<td>Switch capacity</td>
</tr>
<tr>
<td>Minimum switch capacity</td>
</tr>
<tr>
<td>Temperature range</td>
</tr>
<tr>
<td>Cable specification</td>
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<td></td>
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</table>

Pin definition of the male connector

<table>
<thead>
<tr>
<th>Pin</th>
<th>V</th>
<th>LED</th>
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<tbody>
<tr>
<td>1</td>
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<td>LED 1</td>
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<tr>
<td>2</td>
<td>+24</td>
<td>LED 2</td>
</tr>
<tr>
<td>3</td>
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<td>LED 3</td>
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</table>

Available versions

- PNC5018M01 with end position microswitch
- PNC6018M01 with end position microswitch
- PNC6018M02 without microswitch
Servo valves to operate the valve pins of valve gate hot runner systems. Servo valves are mounted to a valve block. This valve block and its components can either be mounted to the hot runner system or directly to the tool.

Operating Data
- Pressure: 60 bar
- Max. inlet pressure: 250 bar
- Connection: G 1/2"
- Operating voltage: 24 VDC
- Type of reset: Air spring or double solenoid operated
- Operating medium: Hydraulic oil HLP 32 DIN 51524-2, purity level 21/18/13 according ISO 4406

Configure your valve manifold here
1. Example of description
   - XAM 05 1

2. Selection of variables
   - A - Product group
     - XAM - hydraulic valves
   - B - Number of circuits
     - # - number of circuits / valve gate nozzles
   - C - Type of recovery
     - 1 - spring recovery
     - 2 - electrically operating of both side

3. Your specification
   - Fill in your specification according to the explanation given above.

Illustrations simplified, schematically drawn and not to scale.
Servo valves to operate the valve pins of valve gate hot runner systems. Servo valves are mounted to a valve block. This valve block and its components can either be mounted to the hot runner system or directly to the tool.

**Operating data**
- Pressure: 2 - 10 bar / 29 - 145 psi
- Connections: G 3/8"
- Operating voltage: 24 VDC
- Type of reset: Air spring
- Operating medium: Filtered compressed air, grade of filtration 40 μm, lubricated or unlubricated
- Medium temp.: -5 - 50 °C / 23 - 122 °F

**Configure your valve manifold here**

1. **Example of description**

   XBM 05 1
   C - Type of recovery
   B - Number of circuits
   A - Product group

2. **Selection of variables**

   **A - Product group**
   XBM - pneumatic valves

   **B - Number of circuits**
   # - number of circuits / valve gate nozzles

   **C - Type of recovery**
   1 spring recovery
   2 electrically operating of both side

3. **Your specification**

   A B C
   Fill in your specification according to the explanation given above.

---

Table: Number of circuits and A (mm)

<table>
<thead>
<tr>
<th>Number of circuits</th>
<th>A (mm)</th>
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<tbody>
<tr>
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<tr>
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Illustrations simplified, schematically drawn and not to scale.