Hot Half Product Catalog
Hot Runner Systems

Stabilize your Process

CAT-04-0001_EN-REV02  03 / 2019
Product Type
Synventive Hot Halves are provided with a choice of threaded nozzles which provide a leak-proof system with superior thermal uniformity. The hot runner systems are supplied completely assembled in mold plates, pre-wired, with connections for pneumatically actuating valve pins which are fully adjusted to suite for valve gate applications (if required). The Hot Halves are designed to order and provide quick integration to the remainder of the mold by simply installing the customer-supplied cavity plate. Systems outside of these guidelines will fall under our custom Hot Half design. Please contact Synventive for further information.

Components
Hot Runner System
1. Threaded nozzle
2. Manifold
3. Inlet bushing
4. Actuator
Mold Plates
5. Top clamp plate
6. Manifold plate
7. Insulator plate

Design and layout of Hot Halves are done in accordance to customer specifications.

Specifications
Available tool steel grade
Stainless steel or P-20
Available nozzles
06E, 09E, 12E
Pneumatic actuators
PNC3008B, PNC4508B, PNC6018B
Delivery status
Pre-plumbed valve gate systems
Pre-wired & pre-tested
Optional
Insulator plate
Temperature controller
Plate size
Up to 900 x 900 mm
Cooling
In top clamp plate and manifold plate
Electrical connections
Epic, DME, Harting

Overview

<table>
<thead>
<tr>
<th>Hot Halves Mold Plates Standard Thickness</th>
<th>Top clamp plate</th>
<th>Manifold plate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Actuators</td>
<td>TG</td>
<td>VG</td>
</tr>
<tr>
<td>06E</td>
<td>-</td>
<td>PNC3008B</td>
</tr>
<tr>
<td>09E</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>12E</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* Plate can increase up to 10 mm in order to achieve custom "L" length.
TG = Thermal Gate   VG = Valve Gate
* For configurations greater than four nozzles, plate thickness may vary.
Plate Sizing
- Flexible plate sizes up to a maximum size of 900 mm width x 900 mm length
- 2-plate design (Top clamp plate with pocketed manifold plate)

Interface Features
Locating Ring
- Choice of size (see page 8)

Guide Pins
- Choice of size and location of either 2 or 4 standard DME/Hasco guide pin (see page 5)

Interface Taps
- Tapped holes in face of manifold plate for customer to mount cavity plate.
- Choice of quantity, size and location (see page 5)

Clamping
- Flexible machined clamp slots on operator and non-operator sides
- Optional overhanging top clamp plate with options for direct bolting (see page 4)

Electrical Connectors
- Choice of Epic, DME and Harting connectors.
- Single and double latch options with configurable pinouts (see page 7)

Components
1. Guide pins
2. Interface taps
3. Lift holes
4. Electrical connectors
5. Pneumatic connections
6. Cooling
7. Locating ring
Top Clamp Plate Options

Clamp Slots
(Operator / Non-Operator only)

Oversized Top Clamp Plate
(Operator / Non-Operator only)

<table>
<thead>
<tr>
<th>Option 1</th>
<th>Option 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Operator Image]</td>
<td>![Operator Image]</td>
</tr>
<tr>
<td>![Top Clamp Plate Image]</td>
<td>![Top Clamp Plate Image]</td>
</tr>
<tr>
<td>Manifold Plate Width</td>
<td>Manifold Plate Width</td>
</tr>
</tbody>
</table>

Option 3

Option 4

<table>
<thead>
<tr>
<th>Option 3</th>
<th>Option 4</th>
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<tbody>
<tr>
<td>![Operator Image]</td>
<td>![Operator Image]</td>
</tr>
<tr>
<td>![Top Clamp Plate Image]</td>
<td>![Top Clamp Plate Image]</td>
</tr>
<tr>
<td>Manifold Plate Width</td>
<td>Manifold Plate Width</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric mm</td>
<td>Imperial in</td>
<td>Metric mm</td>
</tr>
<tr>
<td>22.2</td>
<td>0.87</td>
<td>25</td>
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</tbody>
</table>

Choose Standard or Custom height
Guide Pin / Interface Tap

Guide Pin Configuration
Locations - Customer to specify
Offset size and/or location available

<table>
<thead>
<tr>
<th>Ø Metric (mm)</th>
<th>12</th>
<th>14</th>
<th>16</th>
<th>18</th>
<th>20</th>
<th>24</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø Imperial (in)</td>
<td>3/4</td>
<td>7/8</td>
<td>1</td>
<td>1 1/4</td>
<td>1 1/2</td>
<td></td>
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</tr>
</tbody>
</table>

Interface Tap Configuration
Size: Customer to specify
Quantity: Customer to specify
Locations: Customer to specify

<table>
<thead>
<tr>
<th>Metric ISO (mm)</th>
<th>M10</th>
<th>M12</th>
<th>M16</th>
<th>M20</th>
<th>M22</th>
<th>M24</th>
<th>M30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imperial UNC (in)</td>
<td>1/4</td>
<td>5/16</td>
<td>3/8</td>
<td>1/2</td>
<td>5/8</td>
<td>3/4</td>
<td>1</td>
</tr>
</tbody>
</table>

Optional Chamfer
Standard chamfer 6.35 mm (0.25) x 45 deg
Customer to specify chamfer location (typically Top/Operator)
Standard chamfer feature typically correlates with the offset leader/guide pin location.
Lift Holes

<table>
<thead>
<tr>
<th>Metric ISO (mm)</th>
<th>M10</th>
<th>M12</th>
<th>M16</th>
<th>M20</th>
<th>M22</th>
<th>M24</th>
<th>M30</th>
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</thead>
<tbody>
<tr>
<td>UNC Imperial (in)</td>
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<td>5/16</td>
<td>3/8</td>
<td>1/2</td>
<td>5/8</td>
<td>3/4</td>
<td>1</td>
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</table>

Water / Air Configurations

Available Fittings from Supplier

<table>
<thead>
<tr>
<th>Air</th>
<th>Water</th>
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<tbody>
<tr>
<td>DME</td>
<td>✔</td>
</tr>
<tr>
<td>Festo</td>
<td>✔</td>
</tr>
<tr>
<td>Hasco</td>
<td>✔</td>
</tr>
<tr>
<td>Parker</td>
<td>✔</td>
</tr>
</tbody>
</table>

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Electrical Connectors
Choice of industry standard HBE24 or MTC/PIC (DME) connectors.

PWR - Power Input Connector
MTC - Mold Thermocouple Connector

Choice of Single or Double Latch

Single latch

Double latch

Electrical Connectors

Option 1
- Power: Male Pin # 12
- MTC: Male Pin # 10

Option 2
- Power: Male Pin # 25
- MTC: Male Pin # 24

Option 3
- Power: Male Pin # 24
- MTC: Female Pin # 24

Option 4
- Power: Male Pin # 25
- MTC: Male Pin # 16

Option 5
- Power: Male Pin # 16
- MTC: Female Pin # 16
Locating Ring & Inlet Bushing

<table>
<thead>
<tr>
<th>Diameter (ØD)</th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>mm</td>
<td>in.</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>3.93</td>
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<tr>
<td>101.3</td>
<td>3.99</td>
<td></td>
</tr>
<tr>
<td>101.6</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>4.72</td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>4.92</td>
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</tbody>
</table>
Developing the Hot Half Design
Following tasks have to be communicated with Synventive Molding Solutions for developing the hot half design:

1. Tool steel type
2. Guide pin, positions and diameter.
3. Guide pin protrusion
4. Lift holes, dimension
5. Clamp slot, type
6. Interface tap, positions
7. Nozzle, positions
8. Connector specifications
9. Fittings for cooling water connection positions and type
10. Dimension L
11. Locating ring diameter
12. Mold plates, thickness max.
13. Mold plates, width
14. Mold plates, length
15. Tiebar (IMM), positions and dimensions, optional
16. Insulator plate y/n
### Customer Worksheet

<table>
<thead>
<tr>
<th>Customer:</th>
<th>Phone:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact:</td>
<td>Email:</td>
</tr>
</tbody>
</table>

#### Hot Half Material:
- [ ] P-20
- [ ] Stainless Steel

#### Hot Half Size:
- Length ________
- Width ________

#### Insulator Plate:
- [ ] Yes
- [ ] No

#### Clamp Slot Type:
(see page 4)
- [ ] Option 1
- [ ] Option 2
- [ ] Option 3
- [ ] Option 4

(see page 4)

#### Lift Hole Thread Size:
(see page 6)

#### Specify Fittings:
(see page 6)

**Cooling Water Fitting:**
- [ ] Bottom of Mold
- [ ] Non-Operator Side

**Cooling Water Fitting Location:**
(see page 6)

**Valve Gate Air Fitting:**
- [ ] Bottom of Mold
- [ ] Non-Operator Side

**Valve Gate Air Fitting Location:**
(see page 6)

#### Connector Specification:
(see page 7)
- [ ] Option 1 Single Latch
- [ ] Option 2 Double Latch
- [ ] Option 3
- [ ] Option 4
- [ ] Option 5

Unless otherwise specified the sequence of the zones will begin with the Inlet > Manifold > Nozzle.
Please specify if different sequence is required.

#### Locating Ring Diameter:
(see page 8)

#### Max Hot Half Thickness:
(see page 2)

Submit Mold Prints and/or 3D-Model to Communicate the Following:
- Guide Pin Positions, Diameter and Length (see page 5)
- Interface Top Thread Size and Locations (see page 5)
- Nozzle Locations and "L" Length

#### Notes:

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Customer: ___________________ Phone: ________________
Contact: ________________ Email: ________________

<table>
<thead>
<tr>
<th>Hot Half Material:</th>
<th>Stainless Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Half Size:</td>
<td>Length ________ Width ________</td>
</tr>
<tr>
<td>Insulator Plate:</td>
<td>Yes, No</td>
</tr>
<tr>
<td>Clamp Slot Type:</td>
<td>Option 1, 2, 3, 4</td>
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<tr>
<td>Lift Hole Thread Size:</td>
<td></td>
</tr>
<tr>
<td>Specify Fittings:</td>
<td>Cooling Water Fitting: Bottom of Mold, Non-Operator Side</td>
</tr>
<tr>
<td></td>
<td>Cooling Water Fitting Location:</td>
</tr>
<tr>
<td></td>
<td>Valve Gate Air Fitting: Bottom of Mold, Non-Operator Side</td>
</tr>
<tr>
<td>Connector Specification:</td>
<td>Option 1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>Locating Ring Diameter:</td>
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</tr>
<tr>
<td>Max Hot Half Thickness:</td>
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For design and application information, see the Synventive Hot Runner Guide. For a specific application, please consult Synventive.