New

High-Power Pneumatic Die Clamp

Introducing the Automatic Die Clamp for Press Machine with No Hydraulic Use!

Model HQB

Model HQA
High-Power Pneumatic Die Clamp

T-Slot Manual Slide

Model HQA
Model HQB

Slides in the T-slot and clamps the die.
Compact Die Clamp without Hydraulic Pressure

Action Description

Lock Action
1. Load the die.
2. Slide the clamp forward in the T-slot.
3. By supplying lock air pressure, the clamp with mechanical lock secures the die.

Release Action
1. The lever is released when the pressure is released.
2. Slide the clamp backward in the T-slot.
3. Unload the die.

※ We provide HQA/HQB clamps according to the clamping die thickness and T-slot dimension. Please refer to the external dimensions for details.
Application Examples

- **Progressive Die**  Upper Die : HQA Clamp × 4 / Lower Die : HQB Clamp × 4

- **Single Die**  Upper Die : HQA Clamp × 2 / Lower Die : HQA Clamp × 2
The High-Power Pneumatic Die Clamp is a HYBRID system using air pressure and a mechanical lock.

Advantages of High-Power Pneumatic Die Clamp

Self-Lock Function is built in the clamp.
Even when air pressure is cut off, 20% of holding force will prevent falling of the die.

With Self Lock Function
Even when air pressure leaks, the clamp will stay locked with the internal locking spring.

Hydraulic Clamp
No Self Lock Function
When hydraulic pressure leaks, the clamp will be released due to the spring release function.
Improved Maintainability

Drastically reduces the running cost since valves and other control devices are available on the market and easily replaced in case of trouble.

**Pneumatic System**

*Short Time • Low Cost Maintenance*

- Damages on the piping are easily replaced!
- Valves are available on the market!
- Recovery of equipment in short time!

**Hydraulic System**

*Long Time • High Cost Maintenance*

- Need to talk with manufacturers for replacement of hydraulic hose.
- Require expensive pumps and valves in stock.

Energy Saving • Time Reduction

Keeps Your Factory Clean.

Also, since clamping action is faster than hydraulic, the die change time is drastically reduced.

**Pneumatic Die Clamping System** is suitable for press machines of electronic component.
Piston Clamp (Clamps at U-Cut of Die Shoe) : Model HQA

Model No. Indications

HQA 025 0 - - - - - S

Clamping Force

<table>
<thead>
<tr>
<th>010</th>
<th>040</th>
<th>025</th>
<th>063</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 kN</td>
<td>40 kN</td>
<td>25 kN</td>
<td>63 kN</td>
</tr>
</tbody>
</table>

Design No.

0 : Revision Number

Option

- Please contact us for specifications, external dimensions, etc.
- Blank : Standard
- H : Extra Height Rod
- N : NPT Port
- P : Die Confirmation Proximity Switch (1 040 or more)
- T : T-Slot Locking
- V : High Temperature (0~120°C)

Note:

- 1. Dimensions in the specification sheet and other documents are in inches.

Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>HQA0100</th>
<th>HQA0250</th>
<th>HQA0400</th>
<th>HQA0630</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamp Capacity</td>
<td>Holding Force kN:</td>
<td>Air Pressure at 0.4~0.8 MPa:</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Air Pressure at 0 MPa:</td>
<td>2</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Air Pressure at 0.8 MPa:</td>
<td>2.5</td>
<td>6.3</td>
<td>10</td>
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<tr>
<td></td>
<td>Air Pressure at 0.7 MPa:</td>
<td>2.2</td>
<td>5.6</td>
<td>8.9</td>
</tr>
<tr>
<td></td>
<td>Air Pressure at 0.6 MPa:</td>
<td>2.0</td>
<td>4.9</td>
<td>7.8</td>
</tr>
<tr>
<td></td>
<td>Air Pressure at 0.5 MPa:</td>
<td>1.7</td>
<td>4.2</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>Air Pressure at 0.4 MPa:</td>
<td>1.4</td>
<td>3.5</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td>Air Pressure at 0 MPa:</td>
<td>0.25</td>
<td>0.63</td>
<td>1.0</td>
</tr>
<tr>
<td>Full Stroke (mm)</td>
<td>Lock</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Release</td>
<td>29</td>
<td>77</td>
<td>188</td>
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<tr>
<td></td>
<td>Air Pressure (MPa)</td>
<td>0.4~0.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Withstanding Pressure (MPa)</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Usable Fluid</td>
<td>Dry Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operating Temperature °C</td>
<td>0<del>70 (V High Temperature: 0</del>120)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use Frequency</td>
<td>Less than 20 Cycles / Day</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Minimum T-Slot Width (J5) mm</td>
<td>8</td>
<td>12</td>
<td>16</td>
</tr>
</tbody>
</table>

Notes:

- 3. Option V : High Temperature for operating temperature 0~120°C.
- 4. Please contact us for more frequent use.
- 5. It shows reference dimensions. The dimension may differ from specification depending on T-slot (T-leg) dimension.

Holding Force Curve

Clamping Force Curve

Production Number

This number represents the main specification of the clamp’s T-slot stem and the clamping height. After the specification is confirmed, we will create a number.

Air Port

Proximity Switch

Air Port

L : Right Side as Seen from Air Port
R : Left Side as Seen from Air Port
### External Dimensions

![Diagram of external dimensions]

**Notes:**
1. The drawing shows the clamped condition of blank: Standard in the model No. indication. Please contact us for external dimensions for options.
2. All dimensions are determined by Kosmek according to the T-slot dimensions.
3. When making an order, please indicate a, b, c, d dimensions of T-slot and h dimensions of die clamping thickness.
4. Please indicate the dimensions of a, b, c, d and h in 0.1 mm increments.
5. When the dimension of h+d is higher than the standard, Blank: Extra Height Rod should be chosen.
6. Do not exceed the clamp’s capacity.
7. Specifications/Contents in this catalog are subject to change without prior notice.
8. Ask for the approval drawing before deciding to purchase.
9. Blank: If you would like to change the ratio of clamp stroke and extra stroke, please contact us separately.

### Allowable Protrusion Amount when Locking

![Diagram of allowable protrusion amount]

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Allowable Protrusion Amount (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQA0100</td>
<td>18</td>
</tr>
<tr>
<td>HQA0250</td>
<td>25.5</td>
</tr>
<tr>
<td>HQA0400</td>
<td>34</td>
</tr>
<tr>
<td>HQA0630</td>
<td>41</td>
</tr>
</tbody>
</table>

**Note:**
1. The dimensions on the list are for reference. The dimensions may differ from specification depending on T-slot (T-leg) dimension or body material.

### Accessory: HQAH Clamp Hook

![Diagram of accessory]

**Note:**
1. Please do not operate the press machine continuously with clamp suspended from clamp hook. Clamp hook should be used only during the die change.

### Table of Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>HQA0100</th>
<th>HQA0250</th>
<th>HQA0400</th>
<th>HQA0630</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Stroke</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Clamp Stroke</td>
<td>E</td>
<td>F</td>
<td>G</td>
<td>H</td>
</tr>
<tr>
<td>Extra Stroke</td>
<td>J</td>
<td>K</td>
<td>L</td>
<td>M</td>
</tr>
<tr>
<td>E</td>
<td>50</td>
<td>77</td>
<td>15</td>
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<td>F</td>
<td>70</td>
<td>89</td>
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<td>G</td>
<td>90</td>
<td>126</td>
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<td>H</td>
<td>108</td>
<td>128</td>
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</tr>
<tr>
<td>J</td>
<td>60</td>
<td>60</td>
<td>10.5</td>
<td>78</td>
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<tr>
<td>K</td>
<td>50</td>
<td>10.5</td>
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<td>P</td>
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<td>11</td>
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<td>min.C</td>
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<td>max.h+d</td>
<td>60</td>
<td>80</td>
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### Application Examples

![Application examples]

**Model No.**
<table>
<thead>
<tr>
<th>HQAH220</th>
<th>HQAH280</th>
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<tbody>
<tr>
<td>a (T-Slot)</td>
<td>20~22</td>
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<td>A</td>
<td>22</td>
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<tr>
<td>L</td>
<td>125</td>
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<tr>
<td>T</td>
<td>3.2</td>
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</table>
Lever Clamp (No U-Cuts Required) : Model HQB

**Model No. Indications**

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<th>Model No.</th>
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<th>-</th>
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<tbody>
<tr>
<td>1 Clamping Force</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>010 : 10 kN</td>
<td>040 : 40 kN</td>
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</tr>
<tr>
<td>025 : 25 kN</td>
<td>063 : 63 kN</td>
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<tr>
<td>2 Design No.</td>
<td></td>
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<tr>
<td>0 : Revision Number</td>
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<tr>
<td>3 Option</td>
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<td>※ Please contact us for specifications, external dimensions, etc.</td>
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<tr>
<td>Blank : Standard</td>
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<tr>
<td>H : Extra Height Body</td>
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<tr>
<td>J : Low Lever</td>
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<tr>
<td>N : NPT Port ※1</td>
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<tr>
<td>P : Die Confirmation Proximity Switch (※2 040 or more)</td>
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<tr>
<td>V : High Temperature (0~120°C)</td>
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</table>

**Specifications**

<table>
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<th>Model No.</th>
<th>HQB0100</th>
<th>HQB0250</th>
<th>HQB0400</th>
<th>HQB0630</th>
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<tr>
<td>Clamp Capacity</td>
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</tr>
<tr>
<td>Holding Force kN</td>
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</tr>
<tr>
<td>Air Pressure at 0.4~0.8 MPa</td>
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<tr>
<td>10</td>
<td></td>
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<tr>
<td>Air Pressure at 0 MPa</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
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<td>2.5</td>
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<td>Air Pressure at 0.7 MPa</td>
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<tr>
<td>2.2</td>
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<td>Air Pressure at 0.6 MPa</td>
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<td>2.0</td>
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<td>Air Pressure at 0.5 MPa</td>
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<td>1.4</td>
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<tr>
<td>Air Pressure at 0 MPa</td>
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<tr>
<td>0.25</td>
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<tr>
<td>Full Stroke mm</td>
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<tr>
<td>Cylinder Capacity cm³</td>
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<td>Lock</td>
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<td>Release</td>
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<td>30</td>
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<tr>
<td>Air Pressure MPa</td>
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<td>0.4~0.8</td>
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<tr>
<td>Withstanding Pressure MPa</td>
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</tr>
<tr>
<td>1.0</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Usable Fluid</td>
<td></td>
<td></td>
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<tr>
<td>Dry Air</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Operating Temperature °C</td>
<td></td>
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<td></td>
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<tr>
<td>0~70</td>
<td></td>
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</tr>
<tr>
<td>Use Frequency ※4</td>
<td></td>
<td></td>
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<tr>
<td>Less than 20 Cycles / Day</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Minimum T-Slot Width a (JIS) mm</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
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<tr>
<td>Notes:</td>
<td></td>
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</tr>
<tr>
<td>※3. Option V : High Temperature for operating temperature 0~120°C.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>※4. Please contact us for more frequent use.</td>
<td></td>
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</tr>
<tr>
<td>※5. It shows reference dimensions. The dimension may differ from specification depending on T-slot (T-leg) dimension.</td>
<td></td>
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</tr>
</tbody>
</table>

**Holding Force Curve**

<table>
<thead>
<tr>
<th>Air Pressure (MPa)</th>
<th>HQB0100</th>
<th>HQB0250</th>
<th>HQB0400</th>
<th>HQB0630</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>0.4</td>
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<td>20</td>
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<td>0.6</td>
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<tr>
<td>0.8</td>
<td>40</td>
<td>40</td>
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</table>

**Clamping Force Curve**

<table>
<thead>
<tr>
<th>Air Pressure (MPa)</th>
<th>HQB0100</th>
<th>HQB0250</th>
<th>HQB0400</th>
<th>HQB0630</th>
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<tbody>
<tr>
<td>0.2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>0.4</td>
<td>4</td>
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<td>4</td>
<td>4</td>
</tr>
<tr>
<td>0.6</td>
<td>6</td>
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<tr>
<td>0.8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>
**External Dimensions**

1. The drawing shows the clamped condition of Option “Blank: Standard” in the model No. indication. Please contact us for external dimensions for options.
2. Dimensions are determined by Kosmek according to the T-slot dimensions.
3. When making an order, please indicate a, b, c, d dimensions of T-slot and h dimensions of die clamping thickness.
4. Please indicate the dimensions of a, b, c, and d in 0.1mm increments.
5. When it is lower than the min. h, Option J : Low Lever should be chosen.
   When it is higher than the max. h, Option H : Extra Height Body should be chosen.
6. Do not exceed the clamp’s capacity.
7. Specifications/Contents in this catalog are subject to change without prior notice.

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**Allowable Protrusion Amount when Locking**

- **Notes:**
  1. The dimensions on the list are for reference. The dimensions may differ from specification depending on T-slot (T-leg) dimension or body material.

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**Accessory : HQBH Clamp Hook**

- **Note:**
  1. Please do not operate the press machine continuously with clamp suspended from clamp hook. Clamp hook should be used only during the die change.
Air Valve Unit
Model MV90

Automatic Control Air Valve Unit
With Booster Valve, Suitable for Control of High-Power Pneumatic Die Clamp

Model No.

MV901 2 - GG - 1 - 4 -

1. Design No.
   2 : Revision Number

2. Circuit Symbol ※1
   G : One Clamp Circuit
   GG : Two Clamp Circuits

Note:
※1. Please contact us for die lifter circuit.

3. Control Voltage
   1 : AC100V
   2 : AC200V
   5 : DC24V

Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>MV9012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve</td>
<td>Metal Seal / Five-Port Pilot Operated</td>
</tr>
<tr>
<td>Position</td>
<td>Two-Position Single Solenoid</td>
</tr>
<tr>
<td>Piping Port Size</td>
<td>Rc1/4</td>
</tr>
<tr>
<td>Min. Passage Area</td>
<td>mm2</td>
</tr>
<tr>
<td>Usable Fluid</td>
<td>Dry Air</td>
</tr>
<tr>
<td>Clamp Max Operating Pressure</td>
<td>MPa</td>
</tr>
<tr>
<td>Incoming Supply Air Pressure</td>
<td>MPa</td>
</tr>
<tr>
<td>Fluid Temperature</td>
<td>℃</td>
</tr>
<tr>
<td>Oil Supply</td>
<td>No Oil Supply</td>
</tr>
<tr>
<td>Protection</td>
<td>Dust-Proof</td>
</tr>
</tbody>
</table>

4. Operating Air Pressure
   3 : 0.3 MPa
   4 : 0.4 MPa

5. Option
   Blank : Standard
   N : NPT Port ※2

Note:
※2. When selecting N NPT Port, the dimensions in the specification sheet and other documents are in inches.

Notes:
1. Each pressure is set as shown below before shipment.
   When selecting ※3 3 : 0.3MPa
   Incoming Pressure (Filter Regulator) : 0.3MPa
   Outgoing Pressure (Boosting Valve) : 0.6MPa
   Pressure Switch : 0.4MPa
   Relief Valve : 0.65MPa

   When selecting ※4 4 : 0.4MPa
   Incoming Pressure (Filter Regulator) : 0.4MPa
   Outgoing Pressure (Boosting Valve) : 0.8MPa
   Pressure Switch : 0.5MPa
   Relief Valve : 0.85MPa

   Before use, check with the pressure gauge of boosting valve that the incoming/outgoing pressure is set as shown above.

2. Use a residual pressure release valve when bleeding outgoing pressure for maintenance, etc. (When operating a clamp, the residual pressure release valve must be closed.)
**Circuit Symbol**

This shows when selecting Circuit Symbol: GG.

![Diagram of Circuit Symbol]

**External Dimensions**

This drawing shows MV9011-GG.

![Diagram of External Dimensions]

<table>
<thead>
<tr>
<th>Circuit Symbol</th>
<th>C</th>
<th>D</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>323</td>
<td>2</td>
<td>280.5</td>
<td>-</td>
</tr>
<tr>
<td>GG</td>
<td>379</td>
<td>4</td>
<td>308.5</td>
<td>28</td>
</tr>
</tbody>
</table>

**Components**

<table>
<thead>
<tr>
<th>Equipment Name</th>
<th>Model No.</th>
<th>Maker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter Regulator</td>
<td>AW20-02BCG-A</td>
<td>SMC</td>
</tr>
<tr>
<td>Booster Valve</td>
<td>VBA10A-02GN</td>
<td>SMC</td>
</tr>
<tr>
<td>Relief Valve</td>
<td>NSV-302K10</td>
<td>TACO</td>
</tr>
<tr>
<td>Residual Pressure Release Valve</td>
<td>HV02-6</td>
<td>PISCO</td>
</tr>
<tr>
<td>Manifold with Terminal Block</td>
<td>VVSFS2-017T-041-02</td>
<td>SMC</td>
</tr>
<tr>
<td>Solenoid Valve</td>
<td>VF52100-1-1F</td>
<td>SMC</td>
</tr>
<tr>
<td>Silencer</td>
<td>AN20-02</td>
<td>SMC</td>
</tr>
<tr>
<td>Pressure Switch</td>
<td>APS-6D-W</td>
<td>CKD</td>
</tr>
</tbody>
</table>

**Notes:**
1. Follow the top and bottom directions when mounting.
2. Piping, etc. to connect the filter regulator and booster valve is prepared by customer.
3. Use a stainless steel pipe or nylon tube/hose, etc. for air piping to prevent rust.
Cautions

Notes for Design

1) Check specifications.
   ● Please use each product according to the specifications.
   ● Do not exceed the specified operating pressure.
     Falling down of the die due to the damage on clamps leads to injury. In order to reduce clamping force, use them with lower operating pressure.
   ● The ambient operating temperature of clamp should be 70°C or less.
     (For High Temperature Model, it should be 120°C or less.)
   ● When selecting the clamping force, consider the thrust load which is applied on the die.

2) Check clamping die thickness.
   ● Please check the clamping die thickness.
     If using dies other than specified, clamps cannot conduct locking action normally leading to injury.

3) Check T-slot dimensions.
   ● Please check the T-slot dimensions.
     If T-slot dimensions are different from the specification, clamps cannot conduct locking action normally leading to injury.

4) When the clamp cylinder sticks out of U-slot or T-slot, please use it within the allowable protrusion amount. Otherwise, excessive force is applied to the clamp and it deforms the clamp or damages mounting bolt resulting in falling off of the clamp and injury.
   Sticks out from the U-cut of the die.
   Sticks out from T-slot of the slider / bolster.
   Model HQA

![Thrust Load Diagram]

- Allowable Protrusion Amount

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Allowable Protrusion Amount (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQA0100</td>
<td>18</td>
</tr>
<tr>
<td>HQA0250</td>
<td>25.5</td>
</tr>
<tr>
<td>HQA0400</td>
<td>34</td>
</tr>
<tr>
<td>HQA0630</td>
<td>41</td>
</tr>
</tbody>
</table>

Model HQB

- Allowable Protrusion Amount

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Allowable Protrusion Amount (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQB0100</td>
<td>75</td>
</tr>
<tr>
<td>HQB0250</td>
<td>84.5</td>
</tr>
<tr>
<td>HQB0400</td>
<td>123</td>
</tr>
<tr>
<td>HQB0630</td>
<td>125</td>
</tr>
</tbody>
</table>

5) The clamp surface and T-slot must be parallel to mounting surface of the die.
   ● If clamp surface is not even or parallel, excessive force is applied to the clamp and it deforms main body and lever of the clamp resulting in falling off of the clamp and injury.

![Clamp Surface Diagram]

6) When Using HQB Clamp
   ● The clamp sliding surface must be smooth (without any bumps).
     Otherwise the clamp does not slide properly.

![Clamp Sliding Surface Diagram]

- Make sure there is no notch such as U-cut on the clamping part of the die.
  Otherwise, clamps cannot conduct locking action normally leading to injury. Please contact us for clamping a die with U-cut (notch).

7) When Using HQB-P Clamp (with Die Confirmation Proximity Switch)
   ● Make sure there is no notch such as U-cut on the die surface where the die confirmation proximity switch contacts.
     Otherwise the die confirmation proximity switch does not operate properly.

![Clamp with Die Confirmation Switch Diagram]

8) When using with Die Lifter
   ● Do not lift up the die lifter while in clamp locked state.
   ● When unloading the die, lift up the die lifter after setting the clamp aside.

9) Do not use with spring die lifter.
   ● Clamp cannot be locked properly due to the lifting force of the spring die lifter.

- The dimensions on the list are for reference.
  The dimensions may differ from specification depending on T-slot (T-leg) dimension or body material.
10) Notes for Circuit Design
- Be careful with the circuit design. Please design the air-electric circuit properly and review the circuit design in advance in order to avoid malfunction or breakage of the device.
- Refer to the circuit diagram below for designing by customer.

**[Air Circuit Example]**

```
<table>
<thead>
<tr>
<th>Upper Die</th>
<th>HQA Clamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1: Lock Port</td>
<td>A1: Release Port</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lower Die</th>
<th>HQB Clamp</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2: Lock Port</td>
<td>A2: Release Port</td>
</tr>
</tbody>
</table>
```

**[Electric Circuit Example]**

```
X: Inching
OFF: Die Change
ON: Die Change

Y: (Operation Power Supply Cable Number)
Upper Die Release
Lower Die Release

Press Operable
(To the Press Emergency Stop Circuit)
```

**Installation Notes**

1) Check the fluid to use.
   - Please supply filtered clean dry compressed air. (Install the drain removing device such as an aftercooler and air dryer, etc.)
   Since the initial lubricant is applied, oil supply with a lubricator etc. is unnecessary. If oil is supplied with a lubricator, the product ability decreases and the pin operation may be unstable due to the loss of the initial lubricant.

2) Operating Speed Adjustment
   - Install a speed control valve (meter-out) and gradually control the flow rate from the low-speed side (small flow) to the designated speed. Controlling from the high-speed side (large flow) causes excessive surge pressure or overload to the clamp leading to damage of a machine or device.

3) Clamp Fall Prevention
   - Make sure the clamp does not fall from T-slot. Falling of the clamp leads to injury.

4) Procedure before Piping
   - The pipeline, piping connector and fixture circuits should be cleaned and flushed thoroughly. The dust and cutting chips in the circuit may lead to fluid leakage and malfunction.
   (There is no filter provided with this product for prevention of contaminants in the air circuit.)

5) Applying Sealing Tape
   - Wrap with tape 1 to 2 times following the screwing direction. When piping, be careful that contaminants such as sealing tape do not enter in products. Pieces of the sealing tape can lead to air leaks and malfunction.

6) Piping and Wiring
   - For piping and wiring, make sure not to damage air tubes and electric wires when a clamp moves forward and backward.

7) When supplying air pressure with coupler, it is better to change the color of tube or coupler type in order not to connect lock air and release air opposite to each other.
Cautions

- Notes on Handling

1) Shutting down of the machine should be done without load applied to the clamp.
   - This can result in the dropping of a mold / die.
   - When using it with a press machine, make sure to stop the slide at bottom dead point.

2) It should be handled by qualified personnel.
   - The pneumatic equipment should be handled and maintained by qualified personnel.

3) Do not handle or remove the product unless the safety protocols are ensured.
   - The machine and equipment can only be inspected or prepared when it is confirmed that the preventive devices are in place.

4) Before the product is removed, make sure that the above-mentioned safety measures are in place. Shut off the air and power supply and make sure no pressure exists in the air circuit.

5) After stopping the machine, do not remove until the product cools down.

6) Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.

7) Do not disassemble or modify it.
   - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

8) Please do not pour water / oil over the product.
   - It may lead to malfunction or deterioration of the product and cause an accident.

9) Make sure not to connect lock air and release air opposite to each other when supplying air pressure by connecting / disconnecting the coupler.
   - Operate lock/release action after connecting/disconnecting the coupler to make sure that the clamp operates properly.

10) Do not apply load on the clamp when air pressure is at 0MPa.
    - In case of air source trouble the clamp has holding force with mechanical lock even when air pressure is at 0MPa. However, do not apply load on the clamp at this state.

11) Do not supply lock air and release air simultaneously.
    - It leads to damage and decline of the clamp capacity.

5) When changing the width of the die, make sure to check the allowable protrusion amount.
   - If using it with beyond allowable protrusion amount, excessive force is applied to the clamp which deforms or damages the clamp resulting in falling off of the die and accident or injury. Please refer to "Notes for design No.4 (P.11)" for the allowable protrusion amount.

6) Please hold the main body of the clamp when moving or removing it.
   - If pulling on air tube, the clamp will fall off leading to injury.
   - Also, rivet part of the hose will be loosened leading to air leakage.
● Maintenance/Inspection

1) Removal of the Machine and Shut-off of Pressure Source
● Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the pressure source and make sure no pressure exists in the air circuit.
● Make sure there is no abnormality in the bolts and respective parts before restarting.

2) Regularly clean the area around the product.
● If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning, and fluid leakage.

3) Regularly tighten pipes, bolts, snap rings, etc. to ensure proper use.

4) Make sure to supply filtered clean dry air.

5) Make sure there is smooth action and no air leaks.
● Especially when it is restarted after being left unused for a long period, make sure it can be operated properly.

6) The products should be stored in the cool and dark place without direct sunshine or moisture.

7) Please contact us for overhaul and repair.

● Warranty

1) Warranty Period
● The product warranty period is 18 months from shipment from our factory or 12 months from initial use, whichever is earlier.

2) Warranty Scope
● If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense.
Defects or failures caused by the following are not covered.

① If the stipulated maintenance and inspection are not carried out.
② If the product is used while it is not suitable for use based on the operator’s judgment, resulting in defect.
③ If it is used or handled in inappropriately by the operator.
   (Including damage caused by the misconduct of the third party.)
④ If the defect is caused by reasons other than our responsibility.
⑤ If repair or modifications are carried out by anyone other than Kosmek, or without our approval and confirmation, it will void warranty.
⑥ Other damages caused by natural disasters or calamities not attributable to our company.
⑦ Parts or replacement expenses due to parts consumption and deterioration. (Such as rubber, plastic, seal material and some electric components.)

Damages excluding from direct result of a product defect shall be excluded from the warranty.
Revolutionary Long Stroke Design Means

Die Variation Possible!!

Presenting the World's First Long Stroke Lever Clamp!

In the Past…

<table>
<thead>
<tr>
<th>Die</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolster</td>
<td>50</td>
</tr>
<tr>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

Die standardization held back plans for converting to auto-clamping…

To introduce auto clamping when plates were not standardized…

- Milling of a Clamping Pocket
- Addition of Spacer Plates in Clamping Area

 dies had to be modified to accommodate the auto clamps.

The Future is Now!

With T-slot clamps,

Die width variance is possible.

With the GBC clamp long stroke,

Die clamping plate thickness variance is also possible!

- For 5 mm Variance : 0100 ~ 0400 Size
- For 10 mm Variance : 0630 ~ 5000 Size

* For Customer Dies with Non-Standardized Dimensions
* No Accidents Caused by Incorrect Spacer Thickness

An existing system can be converted to a long stroke system by replacing only the clamps.
Announcing, for Kosmek's basic hydraulic clamp line,

**A Full Model Change!!**

Disassembly and assembly possible **with only standard tools!**

Redesigned from the ground up with ease of maintenance in mind.

Since no special tools are required, **no clamp-specific knowledge is required.**

Since anyone can assemble and disassemble the clamp, **only a seal kit is needed to perform on-site maintenance.**

Disassembly and assembly of the lever and cylinder **required special tools and jigs…**
For Hand Change of Transfer Robots!

The World's Only
Robotic Hand Changer with **Zero Backlash**

Model SWR

---

**KOSMEK Exclusive Non-Backlash Mechanism**

Before Connection

- Backlash of Changer Causes Electrode Error
- Noise and Continuity Failure due to Friction of Contact Probe

When Connected

- Detaching Function

Zero-Backlash Connection with Dual Contact

- Kosmek Hand Changer with No Backlash Prevents Electrode Error
- No Noise

- No Continuity Failure of Electrode
- Sharp Decline of Moment Stop
Secures the Aimed Position
When Connected, Locating Repeatability is 3 \( \mu \)m

Even with long tools or hands, fluctuation of the edge is extremely small. It secures high accuracy processing even after tool change.

24-Hour Continuous Operation is Possible

Unequaled **Rigidity** and **Durability**

Strong to "bending" and "torsion" with high rigidity obtained by non-backlash function. Also, high strength material is used in all the contact part of the master and tool so that it ensures high durability and 3 \( \mu \)m locating repeatability even after 1 million use.

High Accuracy Exchange of Transfer Arm

Transfers a workpiece to the next process.

---

**General Changer**

- Backlash on Changer Part
- Some Clearance (Backlash)

**Kosmek Robotic Hand Changer**

- No Backlash on Changer Part
- Minimal Fluctuation
- No Backlash Prevents errors on attaching and detaching products.
Product Line-up

We have various types of hydraulic and pneumatic products. Please let us know your requirements, and we will make it happen.

- **QUICK DIE CHANGE SYSTEMS**
  - FOR PRESS MACHINES

- **FA - ROBOTIC AUTOMATION PRODUCTS**
  - FOR FACTORY AUTOMATION

- **QUICK MOLD CHANGE SYSTEMS**
  - FOR INJECTION MOLDING MACHINES

- **DIECAST CLAMPING SYSTEMS**
  - FOR DIECAST MACHINES

- **KOSMEK WORK CLAMPING SYSTEMS**
  - MACHINE TOOL RELATED PRODUCTS

---

**KOSMEK**
Harmony in Innovation

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