Operation Panel / Control Unit

Model YMB080

Mold Change Operation Panel with User-Friendly Controls
Separated operation panel and control unit enables flexibility when selecting mounting methods.

Model No. Indication

<table>
<thead>
<tr>
<th>YMB08 0 - V</th>
<th>GE</th>
<th>10 -</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Design No.</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Revision Number</td>
<td>Mold Change Method</td>
<td>Applicable Clamp Model No.</td>
<td>Pressure Source</td>
</tr>
</tbody>
</table>

1. **Design No.**
   - Revision Number

2. **Mold Change Method**
   - V: Vertical Mold Change System

3. **Applicable Clamp Model No.**
   - GB: GKB / GKC Clamp
   - GE: GKE / GKF Clamp

4. **Pressure Source**
   - 10: With Pressure Switch in the Clamp Circuit

5. **Mold Confirmation Limit Switch**
   - Blank: None
   - E: With Mold Confirmation Limit Switch
   - H: With Mold Confirmation Proximity Switch (8-8 pcs. on each side)

6. **Language of Operation Panel**
   - Blank: Standard (Operation Panel in Japanese)
   - N: Operation Panel in English
   - C: Operation Panel in Chinese

Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>YMB080-V□□10□</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic Source</td>
<td>Kosmek Hydraulic Unit</td>
</tr>
<tr>
<td>Control Unit Voltage</td>
<td>DC24V (Supplied with the attached power supply.)</td>
</tr>
<tr>
<td>Attached Power Supply</td>
<td>PS Pressure: AC100 ~ 240V (50/60Hz)</td>
</tr>
<tr>
<td></td>
<td>PS Capacity: 30W</td>
</tr>
<tr>
<td>Abnormal High Pressure Confirmation</td>
<td>The pressure switch, which is built in the hydraulic unit, detects a sudden temperature increase and an abnormal mold opening force.</td>
</tr>
<tr>
<td>One Cycle Stop Signal</td>
<td>When an abnormal high pressure is detected, the alarm activates in conjunction with the flashing of the &quot;Error&quot; and &quot;High Pressure Error&quot; lamps on the control unit and send a &quot;One Cycle Stop Signal&quot; to the die casting machine.</td>
</tr>
</tbody>
</table>

Notes:
1. Requested specifications other than those listed above will be treated as custom made.
2. Signals are sent and received via dry contacts.
3. The molding machine output contact should be for fine current (DC24V / 10mA).
4. The output contact of Operation Panel/Control Unit is DC24V/0.5A.
5. Molding machine terminology may differ depending on the machine manufacturer.
Interlock Input and Output

<table>
<thead>
<tr>
<th>Machine Input</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mold Change Mode [1]</td>
<td>A signal that ensures the machine is in low-speed Mold Change Mode.</td>
</tr>
<tr>
<td>Mold Closed (Pressurized) [1]</td>
<td>A signal that ensures the mold is completely closed. Required for clamp lock / release to prevent the mold from falling.</td>
</tr>
<tr>
<td>Ejector Back</td>
<td>A signal that ensures the ejector plate is in the back position to prevent damage to the ejector rods during mold removal.</td>
</tr>
<tr>
<td>C-Plate Clamp Released</td>
<td>A signal that indicates the c-plate clamp is in a released state. This prevents damage of the clamp when unloading a mold.</td>
</tr>
<tr>
<td>Safety Door Closed</td>
<td>A signal that indicates the safety door is completely closed. This ensures safe operation during mold change.</td>
</tr>
</tbody>
</table>

**Machine Input**

<table>
<thead>
<tr>
<th>Machine Input</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mold Open OK [1]</td>
<td>A signal that indicates the clamping system is ready for mold opening.</td>
</tr>
<tr>
<td>Mold Close OK [1]</td>
<td>A signal that indicates the clamping system is ready for mold closing.</td>
</tr>
<tr>
<td>Mold Change &quot;ON&quot; [1]</td>
<td>A signal that indicates the clamp system is in &quot;Mold Change Mode&quot;.</td>
</tr>
<tr>
<td>Clamp Error [1]</td>
<td>When an error in the clamp circuit occurs, this signal is sent to make an emergency stop of the machine.</td>
</tr>
<tr>
<td>One Cycle Stop [1]</td>
<td>A signal that indicates abnormal force against the clamp during molding. After one cycle of the machine, the machine is stopped.</td>
</tr>
<tr>
<td>Movable Side Locked</td>
<td>A signal that enables the operation of the C-plate clamp when clamps on the movable side are locked.</td>
</tr>
</tbody>
</table>

**Note:**

[1] The above signals are the standard input and output interlocks. Please contact us for other interlocks.

External Dimensions : Operation Panel

![Operation Panel Diagram]

- Mounting Bracket
- Display Lights
- Press Button Switches
- Ring Hanger

External Dimensions : Control Unit

![Control Unit Diagram]

- Key Switch (Mold Close Bypass)
- Key Switch (Power)
- Mounting Bracket

**Notes:**

1. The bracket can be mounted in any direction.
2. The bracket is shipped mounted as shown in the drawings above.
Mounting Method: Operation Panel

Top Mounted

Bottom Mounted

Left Mounted

Right Mounted

Mounting Method: Control Unit

Top Mounted

Bottom Mounted

Left Mounted

Right Mounted
Accessory : Protection Box for Operation Panel

Model No. Indication

YZ0520-P1

External Dimensions

Notes:
1. L-form bracket can be mounted in any direction.
2. This product does not include YMB080 Operation Panel and Connector for Flexible Cable.
3. This product is not dust-proof.

Accessory : Bracket for Flexible Cable for Operation Panel

Model No. Indication

YZ0520-P2

External Dimensions

Notes:
1. Attached Bracket for YMB080 Operation Panel can be installed in this product.
2. This product does not include YMB080 Operation Panel and Connector for Flexible Cable.
3. This product is not dust-proof.
Accessory : Protection Box for Control Unit

Model No. Indication

YZ0520-U1

External Dimensions

![Diagram of YZ0520-U1 External Dimensions]

Examples of Mounting to Kosmek Hydraulic Unit

**Hydraulic Unit : CTB/CTD**

![Diagram of CTB/CTD Mounting]

**Hydraulic Unit : CTC/CTE**

![Diagram of CTC/CTE Mounting]

**Hydraulic Unit : CUC/CUE**

![Diagram of CUC/CUE Mounting]

Notes:
1. L-form bracket can be mounted in any direction.
2. This product does not include YMB080 Operation Panel and Connector for Flexible Cable.
3. This product is not dust-proof.
Accessory: Bracket for Flexible Cable for Control Unit

Model No. Indication

YZ0520-U2

External Dimensions

Examples of Mounting to Kosmek Hydraulic Unit

Hydraulic Unit: CTB/CTD

Hydraulic Unit: CTC/CTE

Hydraulic Unit: CUC/CUE

Notes:
1. L-form bracket can be mounted in any direction.
2. This product does not include YMB080 Operation Panel and Connector for Flexible Cable.
3. This product is not dust-proof.
Cautions

1) Check Specifications
   ● Please use each product according to its specifications.
   ● Operating hydraulic pressure is 25 MPa.
     Do not use clamps with excessive operating pressure.
     Falling down of the mold due to the damage on clamps leads to injury accident.
     In order to reduce clamping force, use them with lower operating pressure.

2) Check the thickness of the mold clamping part.
   ● Please check the thickness of the mold clamping part.
     If using molds other than specified, clamps cannot conduct locking action normally leading to injury accident.

3) The clamp surface and T-slot must be parallel to mounting surface of the mold.
   ● 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 accident.

4) Make sure that advance/retraction of the clamp is smoothly conducted.
   (model GKE / GKF)
   ● Please control air cylinder for slide with two-position double solenoid (with detent).
   ● Supply more than 0.4MPa air pressure to air cylinder.
   ● Please adjust the moving speed of the clamp with speed controller to fully stroke within 1 to 2 seconds.
   ● Do not set the limit switch to the mold surface near the U-slot, because it is used as forward-end detection.
   ● The clamp sliding surface must be smooth (without any bumps).

5) Make sure that dust, sand, cutting chips or blank pieces do not enter the clamp.
   ● Clamp does not operate smoothly and may be damaged.

6) When the clamp cylinder sticks out of U-slot or T-slot, please use it within the allowable protrusion amount.

Model GKB / GKC / GKE / GKF

<table>
<thead>
<tr>
<th>Allowable Protrusion Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model No.</td>
</tr>
<tr>
<td>GKB0100 / GKC0100</td>
</tr>
<tr>
<td>GKB0160 / GKC0160</td>
</tr>
<tr>
<td>GKB0250 / GKC0250</td>
</tr>
<tr>
<td>GKB0400 / GKC0400 / GKE0400 / GKF0400</td>
</tr>
<tr>
<td>GKB0630 / GKC0630 / GKE0630 / GKF0630</td>
</tr>
<tr>
<td>GKB1000 / GKC1000 / GKE1000 / GKF1000</td>
</tr>
<tr>
<td>GKB1600 / GKC1600 / GKE1600 / GKF1600</td>
</tr>
<tr>
<td>GKB2500 / GKC2500 / GKE2500 / GKF2500</td>
</tr>
<tr>
<td>GKB4000 / GKC4000 / GKE4000 / GKF4000</td>
</tr>
<tr>
<td>GKB5000 / GKC5000 / GKE5000 / GKF5000</td>
</tr>
</tbody>
</table>
- **Installation Notes**

1) Check the fluid to use.
   - Please use the appropriate fluid by referring to the Hydraulic Fluid List.
   - If using hydraulic oil having viscosity higher than viscosity grade ISO VG-32, action time will be longer.
   - If using at a low temperature, action time will be longer because the viscosity of hydraulic oil becomes higher.

2) Procedure before piping
   - The pipeline, piping connector and fixture circuits should be cleaned by thorough flushing. The dust and cutting chips in the circuit may lead to fluid leakage and malfunction.
   - (The filter which removes contaminant in the hydraulic piping or hydraulic system is not provided.)

3) 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 into products.
   - Pieces of the sealing tape can lead to air leaks and malfunction.

4) Air bleeding in the hydraulic circuit
   - If the hydraulic circuit has excessive air, the action time may become very long. If air enters the circuit after connecting the hydraulic port or under the condition of no air in the oil tank, please conduct air bleeding with the end of the piping.

   1. Reduce hydraulic supply pressure to less than 2 MPa.
   2. Please loosen the cap nut of pipe fitting that is closest to clamps by one full turn.
   3. Wiggle the pipeline to loosen the outlet of pipeline fitting. The hydraulic fluid mixed with air comes out.

4) Tighten the cap nut after bleeding.
5) It is more effective to bleed air at the highest point inside the circuit or at the end of the circuit.

5) Checking Looseness and Retightening
   - At the beginning of the machine installation, the bolt/nut may be tightened lightly.
   - Check torque and re-tighten as required.

6) Mounting the Clamp
   - After setting the clamp in the T-slot, use attached hex. socket bolts and tighten it with the torque shown below (model GKE / GKF).

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Thread Size</th>
<th>Tightening Torque (N·m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GKE0400 / GKF0400</td>
<td>M5 × 0.8</td>
<td>6.3</td>
</tr>
<tr>
<td>GKE0630 / GKF0630</td>
<td>M6 × 1</td>
<td>10</td>
</tr>
<tr>
<td>GKE1000 / GKF1000</td>
<td>M8 × 1.25</td>
<td>25</td>
</tr>
<tr>
<td>GKE1600 / GKF1600</td>
<td>M10 × 1.5</td>
<td>50</td>
</tr>
<tr>
<td>GKE2500 / GKF2500</td>
<td>M12 × 1.75</td>
<td>80</td>
</tr>
<tr>
<td>GKE4000 / GKF4000</td>
<td>M16 × 2</td>
<td>200</td>
</tr>
<tr>
<td>GKE5000 / GKF5000</td>
<td>M16 × 2</td>
<td>200</td>
</tr>
</tbody>
</table>

7) Wiring of the Forward-End Confirmation Switch
   - Make sure there is enough slack in the wire so that the clamp can complete the sliding action without putting tension on the wire.
Cautions

- **Notes on Hydraulic Cylinder Speed Control Unit**

  Please pay attention to the cautions below. Design the hydraulic circuit for controlling the action speed of hydraulic cylinder. Improper circuit design may lead to malfunctions and damages. Please review the circuit design in advance.

- **Flow Control Circuit for Single Acting Cylinder**
  For spring return single acting cylinders, restricting flow during release can extremely slow down or disrupt release action. The preferred method is to control the flow during the lock action using a valve that has free-flow in the release direction. It is also preferred to provide a flow control valve at each actuator.

  ![Flow Control at the Release Side](image)

  Accelerated clamping speed by excessive hydraulic flow to the cylinder may sustain damage. In this case add flow control to regulate flow.

- **Flow Control Circuit for Double Acting Cylinder**
  Flow control circuit for double acting cylinder should have meter-out circuits for both the lock and release sides. Meter-in control can have adverse effect by presence of air in the system.

  ![Flow Control Valve](image)

  ![Sequence Valve](image)

  In the case of meter-out circuit, the hydraulic circuit should be designed with the following points.

  1. Single acting components should not be used in the same flow control circuit as the double acting components. The release action of the single acting cylinders may become erratic or very slow.

  Refer to the following circuit when both the single acting cylinder and double acting cylinder are used together.

  - Separate the control circuit.

  ![Flow Control Valve](image)

  Reduce the influence of double acting cylinder control unit. However, due to the back pressure in tank line, single action cylinder is activated after double action cylinder works.

  ![Flow Control Valve](image)

  2. In the case of meter-out circuit, the inner circuit pressure may increase during the cylinder action because of the fluid supply. The increase of the inner circuit pressure can be prevented by reducing the supplied fluid beforehand via the flow control valve. Especially when using sequence valve or pressure switches for clamping detection, if the back pressure is more than the set pressure then the system will not work as it is designed to.
Notes on Handling

1) When stopping a machine, make sure no load is applied on clamps. Otherwise, a mold may fall causing an injury accident.
2) It should be handled by qualified personnel.
   • The hydraulic machine should be handled and maintained by qualified personnel.
3) Do not handle or remove the machine unless the safety protocols are ensured.
   1. The machine and equipment can only be inspected or prepared when it is confirmed that the preventive devices are in place.
   2. Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic circuit.
   3. After stopping the machine, do not remove until the temperature cools down.
   4. Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.
   5. Do not touch clamps while they are working.
   • Otherwise, your hands may be injured due to clinching.

5) If there is a change for mold width, make sure to check the allowable protrusion amount.
   • If exceeding the allowable protrusion amount, excessive force is applied on clamps leading to deformation or dislocation which cause falling of a mold or an injury accident.
   Please refer to "Notes for Design 6" for allowable protrusion amount.
6) Please hold the main body of the clamp when moving or removing it.
   • If pulling on hydraulic hose or air tube, the clamp will fall off leading to injury accident. Also, rivet part of the hose will be loosened leading to fluid leakage.

7) Do not disassemble or modify.
   • If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.
8) Do not get water or oil onto the equipment.
   • It may lead to malfunction or deterioration of the product and cause an accident.

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 air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
   • Make sure there is no abnormality in the bolts and respective parts before restarting.
2) Regularly clean the area around the equipment.
   • If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning, fluid leakage and air leaks.

3) If disconnecting by couplers on a regular basis, air bleeding should be carried out daily to avoid air mixed in the circuit.
4) Regularly tighten bolts and pipe line, mounting bolts, nuts, circlips and cylinders to ensure proper use.
5) Make sure the hydraulic fluid has not deteriorated.
6) Make sure there is smooth action and no abnormal noise.
   • Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.
7) The products should be stored in the cool and dark place without direct sunshine or moisture.
8) 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 inappropriate way 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, without our approval and confirmation, it will void warranty.
    6. Other 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.
## Sales Offices

### Sales Offices across the World

<table>
<thead>
<tr>
<th>Country</th>
<th>TEL.</th>
<th>FAX.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>+81-78-991-5162</td>
<td>+81-78-991-8787</td>
</tr>
<tr>
<td>KOSMEK LTD.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>+1-630-620-7650</td>
<td>+1-630-620-9015</td>
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<tr>
<td>KOSMEK (USA) LTD.</td>
<td></td>
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</tr>
<tr>
<td>Mexico</td>
<td>+52-442-161-2347</td>
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<tr>
<td>KOSMEK USA Mexico Office</td>
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<tr>
<td>Europe</td>
<td>+43-463-287587</td>
<td>+43-463-287587-20</td>
</tr>
<tr>
<td>KOSMEK EUROPE GmbH</td>
<td></td>
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</tr>
<tr>
<td>China</td>
<td>+86-21-54253000</td>
<td>+86-21-54253709</td>
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<tr>
<td>KOSMEK (CHINA) LTD.</td>
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<tr>
<td>India</td>
<td>+91-9880561695</td>
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<tr>
<td>KOSMEK LTD. - INDIA</td>
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<tr>
<td>Thailand</td>
<td>+66-2-300-5132</td>
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<tr>
<td>Thailand Representative Office</td>
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<tr>
<td>Taiwan</td>
<td>+886-2-82261860</td>
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<td>+62-21-5814857</td>
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<tr>
<td>P.T PANDU HYDRO PNEUMATICS</td>
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### Sales Offices in Japan

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<th>TEL.</th>
<th>FAX.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head Office</td>
<td>078-991-5115</td>
<td>078-991-8787</td>
</tr>
<tr>
<td>Osaka Sales Office</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overseas Sales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tokyo Sales Office</td>
<td>048-652-8839</td>
<td>048-652-8828</td>
</tr>
<tr>
<td>Nagoya Sales Office</td>
<td>0566-74-8778</td>
<td>0566-74-8808</td>
</tr>
<tr>
<td>Fukuoka Sales Office</td>
<td>092-433-0424</td>
<td>092-433-0426</td>
</tr>
</tbody>
</table>

**Notes:**
- Overseas Affiliates and Sales Offices: Distributors
- For further information on unlisted specifications and sizes, please call us.
- Specifications in this catalog are subject to change without notice.
Global Network

Asia Detailed Map

- Overseas Affiliates and Sales Offices
- Distributors

Locations:
- Europe
- Canada U.S.A.
- Asia
- Mexico
- Brazil
- Australia
- India
- Singapore
- Malaysia
- Thailand
- Indonesia
- China
- Japan
- Korea
- Taiwan
- Philippines

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