Air Sequence Valve
Model BWD

Activates multiple air actuators in sequence.
Delay time: 1 ~ 10 sec
Suitable for environment where the electric use is not allowed or when the number of ports is limited.

- **Best Suited for Machining Centers**
  It controls the air flow by using a check valve, flow control valve, air tank, switching valve and activates multiple actuators in sequence. This has a compact and high performance sealing structure and can be built into fixtures for machining centers.

- **Electric control is not required.**
  It can be installed in places where there is limited use of electricity such as explosion proof surroundings because electricity control is not required.

- **Air pilot port is not required.**
  The actuators can be actuated with no air pilot port and minimum number of ports.

![Circuit Symbol]

- Supply filtered clean dry air to prevent any contaminants.
< Incoming Side >
① Primary actuator operates first.

< Delayed Time Control >
② Set delayed time from 1~10 sec.

< Outgoing Side >
② Work support operates after delayed time.

**Operating Procedure**

<table>
<thead>
<tr>
<th><strong>Locking</strong></th>
<th><strong>Releasing</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pressure is ON.</td>
<td>Air pressure is OFF.</td>
</tr>
<tr>
<td>Actuator ① is activated.</td>
<td>Actuator ① and Work Support ② release at the same time.</td>
</tr>
<tr>
<td>The built-in switching valve activates once the tank in the air sequence valve is full with air.</td>
<td>Releasing action is completed.</td>
</tr>
<tr>
<td>Work Support ② is activated.</td>
<td>Machining Process, etc.</td>
</tr>
<tr>
<td>Locking action is completed.</td>
<td></td>
</tr>
</tbody>
</table>

**Note**:
① Supply filtered clean dry air to prevent any contaminants.

**Hydraulic Non-Leak Coupler**
- BGA/RBG
- BGC/RGD
- BGP/BGS
- BBP/BB5
- BNP/BNS
- BJP/BJ5
- BFP/BF5

**Auto Coupler**
- JTA/3TB
- JTC/3TD
- JVA/3VB
- JVC/3VD
- JVE/3VF
- JNA/3NB
- JNC/3ND
- JLP/3LS

**Hydraulic Valve**
- BK
- BEQ
- BT
- BLS/BLG
- BLB
- JSS/JS
- JKA/JKB
- BMA/BMG
- AU/AU-M
- BU
- BP/JPB
- BX
- BEP/BSP
- BH
- BC

**Air Hydraulic Unit**
- CV
- CK
- CP/CPB
- CPC/CQC
- CB
- CC
- AB/AB-V
- AC/AC-V
Model No. Indication

BWD 010 0

Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>BWD0100</th>
</tr>
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<tbody>
<tr>
<td>Max. Operating Pressure MPa</td>
<td>0.6</td>
</tr>
<tr>
<td>Min. Operating Pressure MPa</td>
<td>0.2</td>
</tr>
<tr>
<td>Withstanding Pressure MPa</td>
<td>1.5</td>
</tr>
<tr>
<td>Delayed Time sec</td>
<td>1 ~ 10</td>
</tr>
<tr>
<td>Min. Passage Area mm²</td>
<td>4.0</td>
</tr>
<tr>
<td>Operating Temperature °C</td>
<td>0 ~ 70</td>
</tr>
<tr>
<td>Usable Fluid</td>
<td>Dry Air</td>
</tr>
<tr>
<td>Weight kg</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Notes:
1. Depending on the down time, the time delay of initial action may be longer.
2. The time delay can be extended by adding a tank to T port and increasing its capacity.
3. If actuators on the outgoing side do not operate after the time delayed setting, verify setting after pressure returns to zero.
4. The confirmation for delayed time should be done after fastening the lock nut of the delayed time adjusting screw.

Performance Curve

(Adjusting Screw Turn Ratio and Time Delay at Various Operating Pressures)

Notes:
1. This graph shows the relationship of the delayed time adjusting thread opening degree and the delayed time.
2. Depending on the circuit condition, the actual delayed time changes. (This graph should be for reference only.)
**External Dimensions**

Note:
1. Depending on the circuit condition, the actual delayed time changes.
   Do not fasten the adjusting screw too tight or loosen it too much. The product may be damaged.
Cautions

- **Notes on Handling**

1. It should be operated by qualified personnel.
   - The hydraulic machine and air compressor should be operated and maintained by qualified personnel.

2. Do not operate 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 safety devices are in place.

3. Before the product is removed, make sure that the above-mentioned safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.

4. After stopping the product, do not remove until the temperature drops.

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

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

- **Maintenance and Inspection**

1. Removal of the Machine and Shut-off of Pressure Source
   - Before the machine is removed, make sure that safety devices and preventive devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.

2. Regularly clean the area around the piston rod and plunger.
   - If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning and fluid leakage.

3. Please clean out the reference surfaces on a regular basis (taper reference surface and seating surface) of the locating products. (VS/VT/VFL/VFM/VFJ/VS/WS/WKM/VX/VXE/VXF)
   - The locating products, except VX/VXE/VXF model, can remove contaminants with cleaning functions. However, hardened cutting chips, adhesive coolant and others may not be removed. Make sure there are no contaminants before installing a workpiece/pallet.

4. Continuous use with contaminant on components will lead to locating accuracy failure, malfunction and fluid leakage.

5. If disconnecting by couplers, air bleeding should be carried out on a regular basis to avoid air mixed in the circuit.

6. Regularly tighten nut, bolt, pin, cylinder, pipe line and others to ensure proper use.

7. Make sure the hydraulic fluid has not deteriorated.

8. Make sure there is a smooth action without an irregular noise.
   - Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.

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

10. 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 operated in an 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, or 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>Address</th>
<th>TEL.</th>
<th>FAX.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>JAPAN</strong></td>
<td>KOSMEK LTD. 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241</td>
<td>+81-78-991-5162</td>
<td>+81-78-991-8787</td>
</tr>
<tr>
<td><strong>Overseas Sales</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>United States of America</strong></td>
<td>KOSMEK (USA) LTD. 650 Springer Drive, Lombard, IL 60148 USA</td>
<td>+1-630-620-7650</td>
<td>+1-630-620-9015</td>
</tr>
<tr>
<td><strong>Mexico</strong></td>
<td>KOSMEK USA Mexico Office Av. Santa Fe #103 int 59 Col. Santa Fe Juriquilla C.P. 76230 Queretaro, Qro Mexico</td>
<td>+52-442-161-2347</td>
<td></td>
</tr>
<tr>
<td><strong>Europe</strong></td>
<td>KOSMEK EUROPE GmbH Schleppenplatz 2 9020 Klagenfurt am Wörthersee Austria</td>
<td>+43-463-287587</td>
<td>+43-463-287587-20</td>
</tr>
<tr>
<td><strong>China</strong></td>
<td>KOSMEK (CHINA) LTD. Room601, RIVERSIDE PYRAMID No.55, Lane21, Pusan Rd, Pudong Shanghai 200125, China</td>
<td>+86-21-54253000</td>
<td>+86-21-54253709</td>
</tr>
<tr>
<td><strong>India</strong></td>
<td>KOSMEK LTD - INDIA F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore -560052 India</td>
<td>+91-9880561695</td>
<td></td>
</tr>
<tr>
<td><strong>Thailand</strong></td>
<td>KOSMEK Thailand Representation Office 67 Soi 5B, RAMA 9 Rd., Suanluang, Suanluang, Bangkok 10250, Thailand</td>
<td>+66-2-300-5132</td>
<td>+66-2-300-5133</td>
</tr>
<tr>
<td><strong>Taiwan</strong></td>
<td>Full Life Trading Co., Ltd. 16F-4, No.2, Jian Ba Rd, Zhonghe District, New Taipei City Taiwan 23511</td>
<td>+886-2-82261860</td>
<td>+886-2-82261890</td>
</tr>
<tr>
<td><strong>Philippines</strong></td>
<td>PHILIPPINES (Philippines Exclusive Distributor) Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427</td>
<td>+63-2-310-7286</td>
<td>+63-2-310-7286</td>
</tr>
<tr>
<td><strong>PT. Yamata Machinery</strong></td>
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## Sales Offices in Japan

<table>
<thead>
<tr>
<th>City</th>
<th>Address</th>
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<th>FAX.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Head Office</strong></td>
<td></td>
<td>078-991-5162</td>
<td>078-991-8787</td>
</tr>
<tr>
<td>Osaka Sales Office</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Overseas Sales</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Tokyo Sales Office</strong></td>
<td></td>
<td>048-652-8839</td>
<td>048-652-8828</td>
</tr>
<tr>
<td><strong>Nagoya Sales Office</strong></td>
<td></td>
<td>0566-74-8778</td>
<td>0566-74-8808</td>
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<tr>
<td><strong>Fukuoka Sales Office</strong></td>
<td></td>
<td>092-433-0424</td>
<td>092-433-0426</td>
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Global Network

For further information on unlisted specifications and sizes, please call us.
Specifications in this catalog are subject to change without notice.