New

Leakless Coupler

Model JWC/JWD

Pressure Maintaining Coupler
Makes a System More Simple

KOSMEK
Harmony in Innovation
Enables to **maintain clamping force** since it keeps the air pressure **even if a coupler is disconnected**.

*Usable for negative pressure. Please contact us.*

**Problems of Pallet Transfer**

**Air Pressure Needs to be Provided All the Time**

Air pressure needs to be continuously provided in order to transfer a workpiece to the next station with air clamps in a locked state.

**Leakless Coupler May Solve the Problem**

**No Need to Provide Air Pressure when Disconnected from Air Source**

Leakless coupler can be disconnected while pressure is provided. Enables to remain air clamps in a locked state and transfer a workpiece to the next station.

Disconnect couplers under pressure. The couplers can maintain the air pressure inside the circuit. **Not necessary to provide the air pressure during pallet transfer.** Easy robot teaching without air tubing.
No need to prepare air tubing or pressure source during each process.

Device engineering is limited and sometimes placing air tubing might be difficult.

Possible to transfer a pallet to the next station while clamp is in a locked state.

Additional Air Supply is Not Required!

After the operation is completed, connect couplers to release air out. (Provide air pressure to unclamp port to unload a workpiece.)
**Action Description**

- **Before loading a pallet**
  - Pressure Maintaining Side (Model JWD)
  - Pressure Source Side (Model JWC)

- **Loading a pallet**
  - Coupler reaction force is generated.
  - It is about 1.5mm away from connected dimension. Air circuit (passage) is not open yet.

- **Connected**
  - Coupler reaction force is generated.
  - Air circuit (passage) is connected by pressing couplers till the connection setting dimension with a pallet clamp force or other external force. When pressure is provided, a reaction force is generated by air pressure and built-in spring.

- **Disconnected under pressure**
  - Disconnect couplers while pressure is provided. **Pallet side can maintain the pressure.**

**Using with Location Clamp / Pallet Clamp**

- Connect Leakless Coupler with a location clamp or a pallet clamp.
- When auto couplers get connected/separated using pallet clamps under pressure, please lock the clamps with the reaction force shown in the specification.

**Air Pressure Maintaining Test Data**

**KOSMEK internal test data to verify pressure maintaining for 48 hours**

Testing data of measuring elapsed time and pressure change when Leakless Coupler is disconnected. Sealing part is equipped with Soft Seal. It enables a great pressure maintaining ability.

※ Testing data with stable surrounding temperature.
Model No. Indication

**JW D 020 0 - W - S B10**

1. **Coupler Side**
   - C : Pressure Source Side
   - D : Pressure Maintaining Side

2. **Design No.**
   - 0 : Revision Number

3. **Applicable Location/Pallet Clamp Model**
   - Blank : 1 C selected
   - S : 1 D selected
   - Please contact us when using Hydraulic Double Acting Pallet Clamp (model VT).

4. **Location/Pallet Clamp Block Model**
   - Blank : 1 C selected
   - B02 : SWTB020 / VS020
   - B06 : SWTB030 / VS060
   - B10 : SWTB050 / VS060
   - J01 : SWTJ010
   - J02 : SWTJ020 / VSJ020
   - J06 : SWTJ030 / VSJ060
   - J10 : SWTJ050 / VSJ100
   - **D** selected
     - When not using with a location or pallet clamp, select model no. from Dimension List on P.5.

Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Pressure Source Side</th>
<th>JWC0200-W</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pressure Maintaining Side</td>
<td>JWD0200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-W-SJ01</td>
</tr>
<tr>
<td>Max. Operating Pressure MPa</td>
<td>0.5 ①</td>
<td></td>
</tr>
<tr>
<td>Withstanding Pressure MPa</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Min. Passage Area mm²</td>
<td>12.6</td>
<td></td>
</tr>
<tr>
<td>Offset Tolerance mm</td>
<td>±0.5</td>
<td></td>
</tr>
<tr>
<td>Angle Error Tolerance deg.</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature °C</td>
<td>0 ~ 70</td>
<td></td>
</tr>
<tr>
<td>Usable Fluid</td>
<td>Air</td>
<td></td>
</tr>
<tr>
<td>Reaction Force N</td>
<td>at 0.5 MPa</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>at 0.3 MPa</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>at P MPa</td>
<td>154 × P + 48</td>
</tr>
<tr>
<td>Mass g</td>
<td>JWC</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>JWD</td>
<td>50</td>
</tr>
<tr>
<td>Applicable Clamp Model</td>
<td>SWT</td>
<td>SWT0010</td>
</tr>
<tr>
<td></td>
<td>WVS</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>VS</td>
<td>–</td>
</tr>
<tr>
<td>Applicable Block Model</td>
<td>Block for SWT</td>
<td>SWT0100</td>
</tr>
<tr>
<td></td>
<td>Block for WVS</td>
<td>–</td>
</tr>
</tbody>
</table>

Note:
① Usable for negative pressure. Please contact us.

Supply Pressure—Reaction Force Graph
- It shows reaction force at pressurized state.

Flow Rate—Pressure Loss Characteristic Graph
- The fluid used on this data is air (25°C).
External Dimensions (JWC/JWD)

Dimension List (mm)

<table>
<thead>
<tr>
<th>Model No. Side</th>
<th>JWD0200-W</th>
<th>JWD0200-W-SJ01</th>
<th>JWD0200-W-SJ02</th>
<th>JWD0200-W-SJ06</th>
<th>JWD0200-W-SJ10</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>21.5</td>
<td>16</td>
<td>24.5</td>
<td>17.5</td>
<td>28</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>1</td>
<td>3.5</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>C</td>
<td>10.5</td>
<td>5</td>
<td>11</td>
<td>6.5</td>
<td>11</td>
</tr>
<tr>
<td>D</td>
<td>17</td>
<td>11.5</td>
<td>20</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>E</td>
<td>16.5</td>
<td>11</td>
<td>19.5</td>
<td>12.5</td>
<td>23</td>
</tr>
</tbody>
</table>

Note:
1. ※1 in the JWC dimension shows when air pressure is provided at disconnected state.
   (About 0.5mm retracted when air pressure is not provided.)

Connected State Dimension when Using with Location Clamp/Pallet Clamp

Connected State Dimension List when Using with Location Clamp/Pallet Clamp (mm)

<table>
<thead>
<tr>
<th>Clamp Model No.</th>
<th>SWT0010</th>
<th>SWT0020</th>
<th>SWT0030</th>
<th>SWT0050</th>
</tr>
</thead>
<tbody>
<tr>
<td>When using SWTB / VSB Block BA</td>
<td>-</td>
<td>11.5</td>
<td>13</td>
<td>15.5</td>
</tr>
<tr>
<td>When using SWTJ / VSJ Block BB</td>
<td>17</td>
<td>20</td>
<td>23.5</td>
<td>26</td>
</tr>
</tbody>
</table>

Notes:
2. When auto couplers get connected/separated using pallet clamps under pressure, please lock the clamps with the reaction force shown in the specification.
※2. This drawing shows when using SWT.

Reference Connection Drawing when Using SWTB010
Spot facing shown in the below drawing is required only when using JWC/JWD with the combination of SWT0010 and SWTB010.
Application Example

High-Power Pneumatic Clamp

Model WHE/WCE/SWE

Locating, clamping and automatic connecting coupler function!
Locating Repeatability 3 μm

High-Power Pneumatic Pallet Clamp

Provide Air Pressure

Leakless Coupler
Connect/Disconnect air circuit

Notes for Usage (JWC/JWD)

1. When maintaining pressure in JWD after disconnecting under pressure, make sure the device has a method and condition that it can connect with a greater force than a reaction force.
   
   Even when using with Pallet Clamps, it is required to press with a greater force than a reaction force before locking action.

2. Do not use a device or coupler that might leak in the pressure maintaining circuit.

3. JWD cannot maintain pressure when the check valve is contaminated.

4. Since JWC is a metal seal, there may be slight air leakage when pressurized under disconnected state.

5. Do not connect the coupler when each connecting surface is contaminated.

   When there are cutting chips or coolant, install a cover or remove all contaminants with air blow.

6. Exceeding allowable offset leads to damage on internal parts. It is recommended to install a guide pin.

   (This may also cause air leakage when disconnected under pressure.)

7. When pressing to the connection limit, a pressing force should be higher than a reaction force and lower than 4.0kN.

8. It is recommended to set a pressure gauge to a pressure maintaining circuit.

Circuit Reference

Air Solenoid Valve
(3 Position=Exhaust Center)

Pressure Gauge

- It is able to decrease pressure on both circuits to zero for maintenance by using a three-position exhaust center for a circuit control air solenoid valve.

(Please note that the air will be released from the center open when the power stops at the auto coupler connected state.)

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, 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.