New Compliance Module

model WRC

Correct Misalignment during Robot Transfer
for Factory Automation

Compliance Module

Model WRC

Ultra-Smooth Action

High Lock Holding Force

Quick Mount Directly Mounted to KOSMEK Robotic Hand Changer model SWR

Compliance Module to Correct Misalignment during Robot Transfer

Easy to Correct the Misalignment of Robot Transfer

Correct the misalignment between a robotic hand and a workpiece, or a hole and a part during transfer and assembly process with a robot.
Program correction with a force sensor is not required.
Mechanical floating function allows for simple installation.

Directly Mounted to Robotic Hand Changer

Compliance Module can be directly mounted to the tool adapter of Robotic Hand Changer, model SWR (Payload 7kg ~ 25kg).
Using with the Robotic Hand Changer enables to change a highly flexible hand equipped with the Compliance Module and a high-accuracy operating tool not equipped with the Compliance Module, allowing for various operations.
Cross Section • Action Description

Misalignment of Workpiece is Corrected by the Floating Top Plate

Floating State  
Air OFF
The top plate can be floated when not supplying lock air pressure. When not receiving a load, the top plate returns to the center with the magnet.

Center Locking State  
Air ON
The top plate is centered and locked by supplying lock air pressure.
Model No. Indication

**WRC 012 0 - 2 T**


   - **007**: SWR0070-T-
   - **012**: SWR0120-T-
   - **025**: SWR0250-T-

   (ex.) In case of using WRC0070-2T with Robotic Hand Changer:
   WRC0070-2T can be directly mounted to the tool adapter of Robotic Hand Changer: SWR0070-T-.

2. Design No.

   - **0**: Revision Number

3. Floating Direction

   - **T**: Misalignment Correction in $\theta$-direction
## Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>WRC0070-2T</th>
<th>WRC0120-2T</th>
<th>WRC0250-2T</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>[At 0MPa]</strong> Floatable State</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offset Stroke (X, Y)(^1) (\text{mm})</td>
<td>±2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top Plate Rotation Angle (\theta)(^1)</td>
<td>(\pm 9^\circ)</td>
<td>(\pm 8^\circ)</td>
<td>(\pm 6^\circ)</td>
</tr>
<tr>
<td>Allowable Load (Z) (N) (\text{Stretching})</td>
<td>147</td>
<td>245</td>
<td>539</td>
</tr>
<tr>
<td>Allowable Load (Z) (N) (\text{Compressive})</td>
<td>147</td>
<td>245</td>
<td>539</td>
</tr>
<tr>
<td>Allowable Moment (N \cdot m) (\text{Bending (}\alpha\text{)})</td>
<td>0.6</td>
<td>1.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Allowable Moment (N \cdot m) (\text{Twisting (}\theta\text{)})</td>
<td>15</td>
<td>25</td>
<td>45</td>
</tr>
<tr>
<td>Starting Resistance (N)</td>
<td>2.1 or less</td>
<td>3.6 or less</td>
<td>7.5 or less</td>
</tr>
<tr>
<td><strong>[At Air Lock]</strong> Center Lock State</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatability (\text{mm})</td>
<td>0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allowable Load (X, Y)(^2) (N)</td>
<td>Refer to P.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allowable Moment (N \cdot m) (\text{Bending (}\alpha\text{)})</td>
<td>Refer to P.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allowable Moment (N \cdot m) (\text{Twisting (}\theta\text{)})</td>
<td>Refer to P.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Air Pressure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Pressure (\text{MPa})</td>
<td>0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum Pressure (\text{MPa})</td>
<td>0.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withstanding Pressure (\text{MPa})</td>
<td>0.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cylinder Capacity (\text{cm}^3)</td>
<td>1.0</td>
<td>1.3</td>
<td>2.2</td>
</tr>
<tr>
<td>Operating Temperature (^\circ\text{C})</td>
<td>0 ~ 70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usable Fluid</td>
<td>Dry Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product Weight (\text{g})</td>
<td>About 200</td>
<td>About 300</td>
<td>About 520</td>
</tr>
</tbody>
</table>

**Notes:**
- \(^1\) Exceeding the operating ranges will lead to a damage to the product.
- \(^2\) The top plate may be activated when excessive load more than the maximum value is applied.
Compliance Module

Allowable Load, Allowable Moment

**WRC0070-2T**

<table>
<thead>
<tr>
<th>Allowable Load</th>
<th>Allowable Moment</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Graph" /></td>
<td><img src="image2" alt="Graph" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Allowable Load</th>
<th>Allowable Moment</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Graph" /></td>
<td><img src="image4" alt="Graph" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Allowable Load</th>
<th>Allowable Moment</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5" alt="Graph" /></td>
<td><img src="image6" alt="Graph" /></td>
</tr>
</tbody>
</table>
**External Dimensions**: WRC0070-2T

- **Lock Air Port**: M3×0.5
- **2·Ø4H7.0.012 Depth 5.5**
- **Top Plate**: Ø34f7·0.025·0.005
- **4-Mounting Bolt (Included)**: M4×0.7×30
- **4-M4×0.7 Thread Depth 5.5**
**External Dimensions: WRC0120-2T**

- Lock Air Port: M3 × 0.5
- 2 × φ4H7×0.012 Depth 5.5
- Top Plate
  - φ54
  - φ40f7×0.025–0.000
- 4-Mounting Bolt (Included)
  - M4×0.7×35
- 4-M4×0.7 Thread Depth 6.5
- PC.d.45
- PC.d.30
- 4×15±0.00
- 2 (Offset Stroke)
External Dimensions: WRC0250-2T

- Lock Air Port M5 × 0.8
- φ 52T9 ~ 0.010
- φ 73
- 2 · φ 4H7 ~ 0.012 Depth 5.5
- 4 · M5 × 0.8 Thread Depth 7
- 4 · M5 × 0.8 Thread Depth 7
- 2 (Offset Stroke)
<table>
<thead>
<tr>
<th>Features</th>
<th>Cross Section</th>
<th>Model No.</th>
<th>Specifications</th>
<th>Performance Curve</th>
<th>External Dimensions</th>
<th>Cautions</th>
</tr>
</thead>
</table>

MEMO
Cautions

- Notes for Design
  1) Check Specifications
     - Please use each product according to the specifications.
     - Maximum Operating Pressure: 0.6MPa
       Minimum Operating Pressure: 0.3MPa

  2) Air Pressure Circuit Reference
     - WRC locks at the center with air pressure supply.
     - Air pressure must be released at air zero state.
       Please use a three-way valve.

  3) Operating Environment
     - Do not use the product in the environment with cutting chips, coolant and others.

  4) Center Lock Function
     - Top plate may be slightly misaligned at air lock state (locked at the center by air supply) and at 0MPa state (returned to the center by magnet). Also, please contact us for a long-time use (locking more than 24 hours).

  5) Magnetic Force
     - This product is equipped with a magnet. Please be careful with the influence of the magnet.

- Installation Notes
  1) Check the Usable Fluid
     - Please supply filtered clean dry air. (Install a drain removing device.)
     - Oil supply with a lubricator, etc. is unnecessary.

  2) Procedure before Piping
     - The pipes, piping connectors and fixture circuits should be cleaned and flushed thoroughly. Dust and cutting chips in the circuit can lead to fluid leakage and malfunction.
     - There is no filter provided with this product for prevention of contaminants in air circuits.

  3) Applying Sealing Tape
     - Wrap with tape 1 to 2 times following the screwing direction.
     - Wrapping in the wrong direction will cause fluid leakage and malfunction. Pieces of the sealing tape can lead to fluid leakage and malfunction.

  4) Installation and Setting
     - For installation, tighten mounting bolts evenly to keep the compliance module level. Also, the product must be parallel to the mounting surface. Tighten the mounting bolt with the following torque.
     - After the installation, make sure there is no gap between the mounting surface and the product before use.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Thread Size</th>
<th>Number of Bolts</th>
<th>Tightening Torque (N・m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRC0070-2T</td>
<td>M4×0.7</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td>WRC0120-2T</td>
<td>M4×0.7</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td>WRC0250-2T</td>
<td>M5×0.8</td>
<td>4</td>
<td>6.3</td>
</tr>
</tbody>
</table>

5) Test Run Method
   - Supplying high pressure just after installation may damage the product severely. Adjust the pressure to be within the operating pressure range before test run.
Notes on Handling
1) It should be operated by qualified personnel.
2) Do not operate or remove the product unless the safety protocols are ensured.
3) Do not touch the compliance module while it is working. Your hands may be caught in the compliance module or other surrounding devices leading to injury.
4) Do not disassemble or modify.

Maintenance • Inspection
1) Removal of the Product and Shut-off of Pressure Source
2) Clean the Product on a Regular Basis
3) Regularly examine and retighten pipes, mounting bolts and others to ensure proper use.
4) Make sure to supply filtered clean dry air.
5) Make sure there is a smooth action without air leakage.
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.
C Caution

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.