New Robotic Hand

Parallel Gripper with Auto-Grip Changer

Gripper change makes it highly versatile.
Gripping Only
Parallel Gripper with Auto-Grip Changer

Model WPW-C

Changing grippers (levers) enables to handle a wider variety of workpieces only with one robotic hand.

- Gripper Change allows for multi-size workpieces.

Grippers are prepared by customer.
• Grippers can be changed in sequence by air control of each port.

Locating Repeatability of Gripper: ±0.05mm

- Release Port for Gripper Change
- Gripper Installation Confirmation Port
- Lock Port for Gripper Change
- Each port on the opposite side.

Pull Bolt Connecting Hole

Pull bolt connecting part is equipped with self-locking spring

Self-locking spring enables to hold the gripper (lever)
even when air is accidentally cut off.
※ Make sure to supply lock air when operating the parallel gripper.

- Air Blow-out Hole for Gripper Installation Confirmation
Gripper installation can be detected by using air sensor.

• High Versatility: Design Multi-Hand by each customer.

Equipped with extra ports and mounting holes
that can be freely used by customer. You can install
a vacuum pad or another actuator to expand the usage
of WPW handling various jobs with one hand.

• High Accuracy and Rigidity

The linear guide function allows for high rigidity
and high accuracy opening/closing function.
Repeatability: ±0.01mm

• Auto Switch Capability

Easy to install and adjust auto switches
for gripper detection.
Model No. Indication (Parallel Gripper with Auto-Grip Changer)

WPW 050 0 - C

1 Cylinder Inner Diameter

050 :  \( \phi 50 \text{ mm} \)
060 :  \( \phi 60 \text{ mm} \)

2 Design No.

0 : Revision Number

3 Gripping Direction

C : Gripping Only

Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>WPW0500-C</th>
<th>WPW0600-C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cylinder Inner Diameter ( \text{#1} )</td>
<td>mm</td>
<td>50</td>
</tr>
<tr>
<td>Gripping Force ( \text{#2} )</td>
<td>( \text{Gripping Side} ) N</td>
<td>829</td>
</tr>
<tr>
<td>(Air Pressure : At 0.5MPa)</td>
<td>Full Stroke</td>
<td>mm</td>
</tr>
<tr>
<td></td>
<td>Repeatability ( \text{#3} )</td>
<td>Parallel Gripper Part</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gripper Change Part</td>
</tr>
<tr>
<td>Stroke Error</td>
<td>mm</td>
<td>Opened State : -0.5 ~ +1 / Closed State : -1 ~ +0.5</td>
</tr>
<tr>
<td>Allowable Gripper Length L (Air Pressure : at 0.5MPa) ( \text{#4} )</td>
<td>mm</td>
<td>60</td>
</tr>
<tr>
<td>Allowable Gripper Offset Distance H (Air Pressure : at 0.5MPa) ( \text{#4} )</td>
<td>mm</td>
<td>15</td>
</tr>
<tr>
<td>Maximum Cycle / min.</td>
<td></td>
<td>60</td>
</tr>
<tr>
<td>Maximum Operating Pressure</td>
<td>MPa</td>
<td>0.5</td>
</tr>
<tr>
<td>Minimum Operating Pressure ( \text{#5} )</td>
<td>MPa</td>
<td>0.3 ( \text{#5} )</td>
</tr>
<tr>
<td>Withstanding Pressure</td>
<td>MPa</td>
<td>0.75</td>
</tr>
<tr>
<td>Air Pressure for Gripper Installation Confirmation</td>
<td>MPa</td>
<td>0.1 ~ 0.2</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>°C</td>
<td>5 ~ 60</td>
</tr>
<tr>
<td>Usable Fluid</td>
<td></td>
<td>Dry Air</td>
</tr>
<tr>
<td>Weight</td>
<td>kg</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Notes:

\( \text{\#1} \) Gripping force cannot be calculated from the cylinder inner diameter. Please refer to the gripping force curve.

\( \text{\#2} \) Gripping force indicates the calculated value of the tip of primary parallel base.

\( \text{\#3} \) Repeatability under the same condition (no load).

\( \text{\#4} \) L : Allowable Gripper Length (mm), H : Allowable Gripper Offset Distance (mm). (Air Pressure : at 0.5MPa)

\( \text{\#5} \) Air pressure supplied to the lock port and release port for gripper change must be equal to or greater than air pressure supplied to the open port and close port for chucking.
Gripping Force Performance Curve : Gripping Side

F : Gripping Force (N)
L : Gripper Length (mm)

Notes:
1. This table and graph show the relationship among F: Gripping Force (N), L: Gripper Length (mm) and P: Air Pressure (MPa).
2. WPW-C is the robotic hand for gripping side only. Opening side has no gripping force to hold workpieces.

WPW0500-C

<table>
<thead>
<tr>
<th>Air Pressure (MPa)</th>
<th>Gripping Force (N)</th>
<th>Max. Gripper Length (L) (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>753 691 638</td>
<td>592 553 518</td>
</tr>
<tr>
<td>0.4</td>
<td>603 553 510</td>
<td>474 442 414</td>
</tr>
<tr>
<td>0.3</td>
<td>452 414 383</td>
<td>355 332 311</td>
</tr>
</tbody>
</table>

WPW0600-C

<table>
<thead>
<tr>
<th>Air Pressure (MPa)</th>
<th>Gripping Force (N)</th>
<th>Max. Gripper Length (L) (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>1136 1063 999</td>
<td>943 892 847</td>
</tr>
<tr>
<td>0.4</td>
<td>909 851 800</td>
<td>754 714 678</td>
</tr>
<tr>
<td>0.3</td>
<td>681 638 600</td>
<td>566 535 508</td>
</tr>
</tbody>
</table>

Model No. Indication (Pull Bolt • Locating Pin)

WPWZ 50 0 - P1

1. Corresponding WPW

   WPW0500-C: 50
   WPW0600-C: 60

2. Design No.

   0: Revision Number

3. Function

   P1: Pull Bolt
   P2: Locating Pin
**External Dimensions : WPW0500-C**

※ The drawing shows the opened state of WPW0500-C.

2-Ø6.8 Through Hole
Spot Facing φ 11
(M8 × 1.25 Thread
from the Back)

Air Blow-out Hole for
Gripper Installation Confirmation

2-Ø6 * 8mm Depth 8

2-Ø10 Thread (Same for the back side)
Extra Port (for negative pressure, etc.)

Open Port for Chucking
M8 × 0.8

Close Port for Chucking
M5 × 0.8

M8 × 1.25 Thread

4-Ø6.8 Through Hole
Spot Facing φ 11

Release Port for Gripper Change
M3 × 0.5

Gripper Installation Confirmation Port
M3 × 0.5

Lock Port for Gripper Change
M3 × 0.5

Each port for gripper change on both sides are common.

WPWZ500-P1
Tightening Torque : 2.3N * m

WPWZ500-P2
Tightening Torque : 2.3N * m

Gripper Auto-Change

When Opened : 71 ± 0.0
When Closed : 45 ± 0.1
External Dimensions: WPZ500-P1/P2

Pull Bolt
WPZ500-P1

Locating Pin
WPZ500-P2

Machining Dimensions of Mounting
WPZ500-P1/P2 Common

Installation Method and Tightening Torque

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Mounting Direction</th>
<th>Mounting Bolt Nominal × Pitch</th>
<th>Number of Bolts</th>
<th>Tightening Torque (N·m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPW0500-C</td>
<td>Bolt Up Mounting</td>
<td>M6 × 1</td>
<td>4</td>
<td>7.9</td>
</tr>
<tr>
<td></td>
<td>Bolt Down Mounting</td>
<td>M8 × 1.25</td>
<td>4</td>
<td>15.4</td>
</tr>
<tr>
<td></td>
<td>Side Mounting</td>
<td>M8 × 1.25</td>
<td>2</td>
<td>15.4</td>
</tr>
</tbody>
</table>
**External Dimensions : WPW0600-C**

*The drawing shows the opened state of WPW0600-C.*

---

**Open Port for Chucking**

- M5 × 0.8
- 2-φ 8.5 Through Hole
- Spot Facing 14

**Close Port for Chucking**

- M5 × 0.8

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**Gripper Auto-Change**

- WPW2600-P1
  - Tightening Torque: 4.0N·m
- WPW2600-P2
  - Tightening Torque: 4.0N·m

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**Lock Port for Gripper Change**

- M5 × 0.8
- Gripper Installation Confirmation Port
  - M5 × 0.8

*Each port for gripper change on both sides are common.*

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**Air Blow-out Hole for Gripper Installation Confirmation**

- 2-φ 6.8 Through Hole
  - Spot Facing 11 (M8 × 1.25 Thread from the Back)

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**Thread (Same for the back side)**

- 2-φ 11/4 Depth 8
- Extra Port (for negative pressure, etc.)
External Dimensions: **WPWZ600-P1/P2**

- **Pull Bolt**
  - WPWZ600-P1
  - Dimensions:
    - φ 8.5
    - Hex. 3
    - 3.5
    - 13.5
    - 2.5
    - 8
    - M5 × 0.8

- **Locating Pin**
  - WPWZ600-P2
  - Dimensions:
    - φ 5.5
    - 3
    - 4
    - M5 × 0.8

Machining Dimensions of Mounting

WPWZ600-P1/P2 Common

Installation Method and Tightening Torque

- **Bolt Up Mounting**
- **Bolt Down Mounting**
- **Side Mounting**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Mounting Direction</th>
<th>Mounting Bolt Nominal × Pitch</th>
<th>Number of Bolts</th>
<th>Tightening Torque (N ⋅ m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPW0600-C</td>
<td>Bolt Up Mounting</td>
<td>M6 × 1</td>
<td>4</td>
<td>7.9</td>
</tr>
<tr>
<td></td>
<td>Bolt Down Mounting</td>
<td>M8 × 1.25</td>
<td>4</td>
<td>15.4</td>
</tr>
<tr>
<td></td>
<td>Side Mounting</td>
<td>M8 × 1.25</td>
<td>2</td>
<td>15.4</td>
</tr>
</tbody>
</table>
Gripper Length/Workpiece Weight Graph

- Inertial Force • Friction Coefficient • Safety Factor Selection List

<table>
<thead>
<tr>
<th>Speed</th>
<th>Inertial Force</th>
<th>Friction Coefficient</th>
<th>Safety Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Stops after 0.1 sec at the speed of 0~100mm/sec.</td>
<td>Large</td>
<td>5 times</td>
</tr>
<tr>
<td></td>
<td>Stops after 0.1 sec at the speed of 100~300mm/sec.</td>
<td>Large</td>
<td>10 times</td>
</tr>
<tr>
<td></td>
<td>Stops after 0.1 sec at the speed of 300~500mm/sec.</td>
<td>Small</td>
<td>15 times</td>
</tr>
<tr>
<td>High</td>
<td>Stops after 0.1 sec at the speed of 500~1000mm/sec.</td>
<td>-</td>
<td>30 times</td>
</tr>
</tbody>
</table>

Note:
※1. Indicates the friction coefficient of contact surface of workpiece and gripper.
Refer to the condition below.
Friction Coefficient : Small (Approximately \( \mu =0.1 \)) … When contact surface is flat.
Friction Coefficient : Large (More than \( \mu =0.15 \)) … When contact surface is serration or spike shape.

- How to Read Gripper Length/Workpiece Weight Graph

The selection method is a reference. It is recommended to consider the actual conditions (environment) when selecting the product.
The graph shows when air pressure is 0.5MPa.

[Ex. 1]
When using WPW0600-C with 10kg workpiece and 30mm gripper, the safety factor should be 10 times.
When using it with lower speed which is indicated in Inertial Force • Friction Coefficient • Safety Factor Selection List, the friction coefficient of contact surface can be small. When using it with middle speed (stops after 0.1 sec at the speed of 100~300mm/sec), contact surface should be serration or spike shape to secure larger friction coefficient.

[Ex. 2]
When using it with middle speed (stops after 0.1 sec at the speed of 300~500mm/sec) and when friction coefficient is small due to flat contact surface, the safety factor should be 20 times.
When using WPW0600-C with 20 times safety factor and 20mm gripper, the maximum workpiece weight is 5.4kg.

- Relationship between Workpiece Weight and Robotic Hand Gripping Force

The safety factor of robotic hand gripping force to workpiece weight should be approximately 16 times for each robot manufacturer, but it differs according to the conditions. Refer to the following contents when selecting the product.

1. Workpiece Gravity Center and Gripping Position
   - It is recommended to design the gripper so that it grips the workpiece gravity center with the center of robotic hand.
2. Gripper Length
   - The load applied on the robotic hand body depends on the gripper length. It is recommended to design the gripper so that the workpiece gravity center is as close as possible to the robotic hand.
● WPW-C : Gripping Side

![Diagram of WPW-C gripping side](image)

- **Air Pressure**: 0.5 MPa
- **L**: Gripper Length (mm)
- **W**: Workpiece Weight (kg)

---

**WPW0500-C**

<table>
<thead>
<tr>
<th>Safety Factor 15</th>
<th>Safety Factor 10</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Graph" /></td>
<td></td>
</tr>
</tbody>
</table>

**WPW0600-C**

<table>
<thead>
<tr>
<th>Safety Factor 15</th>
<th>Safety Factor 10</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Graph" /></td>
<td></td>
</tr>
</tbody>
</table>

**W**: Workpiece Weight (kg)
**Cautions**

**Notes for Design**

1) Check Specifications

- Model WPW: Maximum operating air pressure is 0.5 MPa. Minimum operating air pressure is 0.3 MPa.
- However, the maximum operating pressure and gripping force may change depending on the gripper length.
- Please use with appropriate air pressure in order to avoid deformation, galling or air leakage caused by overload applied to the robotic hand.
- Parallel Gripper with Auto-Grip Changer (model WPW) grips with the close side.

2) Clamping a workpiece in the center of Parallel Gripper

- When rigidity of right and left grippers are different in an offset position, locating repeatability is unstable. If it is necessary to clamp in an offset position, please consider lever rigidity when designing.

3) Do not apply impact on the gripper (prepared by customer).

- Otherwise, it may result in breakage of the product.

4) Locating of the Body

- The Parallel Gripper can be located by using its pin holes.
- Please consider pin position dimension tolerance and pin hole tolerance when using a locating pin.
- Locating pin is not included.

5) Notes for Circuit Design

- Please design the air circuit properly and review the circuit design in advance in order to avoid malfunction or breakage of the device.
- Parallel Gripper and Auto-Grip Changer must be controlled by different circuits. Air pressure of Auto-Grip Changer must be equal or greater than that of Parallel Gripper. When using Parallel Gripper, continuously supply air pressure to the lock side of Auto-Grip Changer.

6) Please supply filtered clean dry air.

- Oil supply with a lubricator etc. is unnecessary.

7) Adjustment of Operating Speed

- If the operating speed of the robotic hand is very fast, it leads to wear-out or malfunction of the parts. Please prepare a speed controller to adjust speed in order not to exceed the appropriate opening and closing time.

8) Operating Environment

- WPW has no function that prevents foreign substances. Do not use under environment with coolant and cutting chips.

9) Protective Cover Installation

- If the moving parts of the robot or robotic hand may endanger human life, please install the protection cover.

10) Fall Prevention Measures

- In case of accident such as detachment of a workpiece, please prepare fall prevention measures for safety.

11) Gripper Installation Confirmation

- Gripper installation confirmation is available by using the gap sensor.
- Supply air to the air sensor must be clean dry air that is filtered through the filter of 5 μm or less. Make sure the gripper securely seals the air blow-out hole for gripper installation confirmation.

【Recommended Sensors】

- SMC Corporation: Air Catch Sensor Series IS-A3-F, IS-A3-G, IS-A2-G
- CKD Corporation: Air Catch Sensor Series GP52-05-15
- Recommended Air Pressure: 0.1 ~ 0.2MPa

12) Auto-Grip Changer: Mounting of Air Supply Fittings

- Be careful with the distance between the air supply ports when selecting fittings.

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**Recommended Circuit Diagram**

- Open Side Air Pressure
- Close Side Air Pressure
- Lock Side Air Pressure
- Yellow Side Air Pressure
- Gripper Installation Confirmation Air
- Air Sensor for Seating Confirmation

---

**Table**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Port Thread Size</th>
<th>Port Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPW0500</td>
<td>M3 × 0.5</td>
<td>About 6.7 mm</td>
</tr>
<tr>
<td>WPW0600</td>
<td>M5 × 0.8</td>
<td>About 9.8 mm</td>
</tr>
</tbody>
</table>

※1. When operating the right and left Auto-Grip Changer individually, please install the valve and sensor (as shown with ※1) to each side.
● Installation Notes

1) Usable Fluid
● Please supply filtered clean dry air. (Install drain removing device.)
● Oil supply with a lubricator etc. is unnecessary. Oil supply with a lubricator may cause loss of the initial lubricant. The operation under low pressure and low speed may be unstable. (When using secondary lubricant, please supply lubricant continuously. Otherwise, the initial grease applied from KOSMEK will be removed from the secondary lubricant.)

2) 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.

3) Applying Sealing Tape
● When using sealing tape, wrap with it 1 to 2 times following the screwing direction. When piping, be careful that contaminant such as sealing tape does not enter in products.
● Pieces of the sealing tape can cause air leaks and malfunction.

4) Product Installation
● Please use hexagon socket bolts (with tensile strength of A2-70 or greater), and tighten the product with the tightening torque listed on P.6 and P.8.
● The tightening torque for pull bolt and locating pin is shown below.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Bolt Size</th>
<th>Tightening Torque (N•m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPWZ50-P</td>
<td>M4×0.7</td>
<td>2.3</td>
</tr>
<tr>
<td>WPWZ60-P</td>
<td>M5×0.8</td>
<td>4.0</td>
</tr>
</tbody>
</table>

● Installation failure causes air leaks, deformation and damage of the robotic hand.

5) Trial Operation Method
● Avoid supplying large air flow right after the installation. The operating time will be very fast and the robotic hand may be seriously damaged. Please install the speed controller near the air source and gradually supply air pressure.

6) Adjustment of Operating Speed
● If the operating speed of the robotic hand is very fast, it leads to wear-out or malfunction of the parts.
● Please prepare a speed controller to adjust speed in order not to exceed the appropriate opening and closing time.

7) Allowable Offset while Gripper Change
● For gripper change, the gap between the seating surfaces of hand and gripper should be 0.2mm or less.

![Gripper Auto-Change Diagram]

● Allowable position offset of hand and gripper while teaching must be within the allowable position offset range. At this time, the changing gripper shouldn’t be completely fixed and should have space within the range of allowable offset. Also, please consider individual differences in opening/gripping dimension of the hand.

① Allowable Position Offset in Horizontal Direction

![Horizontal Offset Diagram]

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Allowable Offset A/mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPW0500-C</td>
<td>±0.5 mm</td>
</tr>
<tr>
<td>WPW0600-C</td>
<td>±0.7 mm</td>
</tr>
</tbody>
</table>

② Allowable Position Offset in Rotation Direction

![Rotation Offset Diagram]

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Allowable Offset θ</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPW0500-C</td>
<td>±1 deg</td>
</tr>
<tr>
<td>WPW0600-C</td>
<td>±1 deg</td>
</tr>
</tbody>
</table>

8) For Use of Auto Switch
● The detection part (magnet) of the auto switch of WPW operates according to the internal piston movement, so it does not detect the gripper (lever) movement directly.
Cautions

Notes on Handling

1) It should be handled by qualified personnel.
   • The hydraulic and pneumatic equipment should be handled and maintained by qualified personnel.

2) Do not handle or remove the product unless 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 product 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.
   ③ After stopping the product, do not remove until the equipment cools down.
   ④ Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.

3) In order to avoid injury, please do not touch the robotic hand or robot while they are operating.

4) When the robot is in operation, make sure the safety of environment in case of a workpiece detachment.

5) Do not disassemble or modify.
   • If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.
   • Built-in spring is very strong and can be dangerous.

Maintenance and Inspection

1) Removal of the Product and Shut-off of Pressure Source
   • Before the product 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) Clean the product regularly.
   • Using the product contaminated with dirt may lead to damage of the product or detachment of a workpiece due to lack of gripping force and malfunctioning, etc.

3) Regularly tighten pipings, mounting bolts, etc. to ensure proper use.

4) 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.

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

6) Please contact us for overhaul and repair.
   Built-in spring is very strong and can be dangerous.

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.
Auto Switch

This product (model WPW) is able to detect the close and open action of Parallel Gripper by using an auto switch (prepared by customer).

Installation Sample 1

Installation Sample 2

Note:
1. The detection part (magnet) of the auto switch of WPW operates according to the internal piston movement, so it does not detect the hand (gripper • lever) movement directly.

【Applicable Auto Switch】 (When using an auto switch not made by Kosmek, check specifications of each manufacturer)

<table>
<thead>
<tr>
<th>Auto Switch Model No.</th>
<th>JEP0000-A2</th>
<th>JEP0000-A2L</th>
<th>JEP0000-B2</th>
<th>JEP0000-B2L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch Type</td>
<td>Reed Auto Switch</td>
<td>Solid State Auto Switch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wiring Method</td>
<td>2-Wire</td>
<td>3-Wire</td>
<td>3-Wire</td>
<td>3-Wire</td>
</tr>
<tr>
<td>Cable Length</td>
<td>1m</td>
<td>3m</td>
<td>1m</td>
<td>3m</td>
</tr>
<tr>
<td></td>
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Refer to FA • Industrial Robot Related Products (CATALOG No.FA0020-□□-0）-GB) for detailed specifications or contact us.
Kosmek Products for Automation and Setup Improvement in Every Process

[FA•Industrial Robot Related Products  Complete Catalog]

Products: Robotic Hand Changers, Pneumatic Robotic Hands, Clamps, High Accuracy Locating/Setup Products, Auto Couplers and Supports

You can find details of the Ball Lock Cylinder on this catalog. Please order the catalog from our website.

Ball Lock Cylinder
Model WKA
Temporary Stopper/Falling Prevention for Stocker

Gripper Stocker Example

http://www.kosmek.com