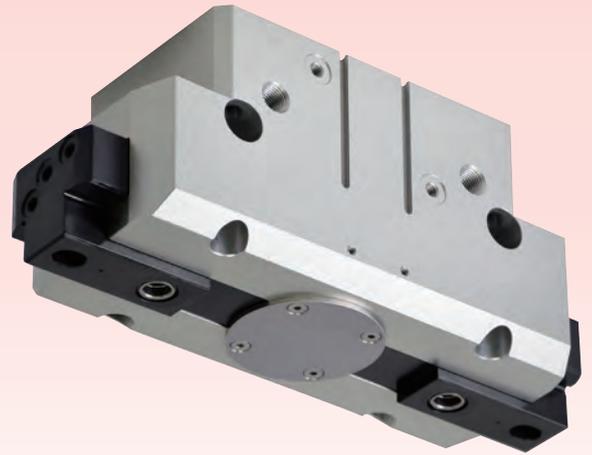


Parallel Gripper with Auto-Grip Changer

Closing Side Only

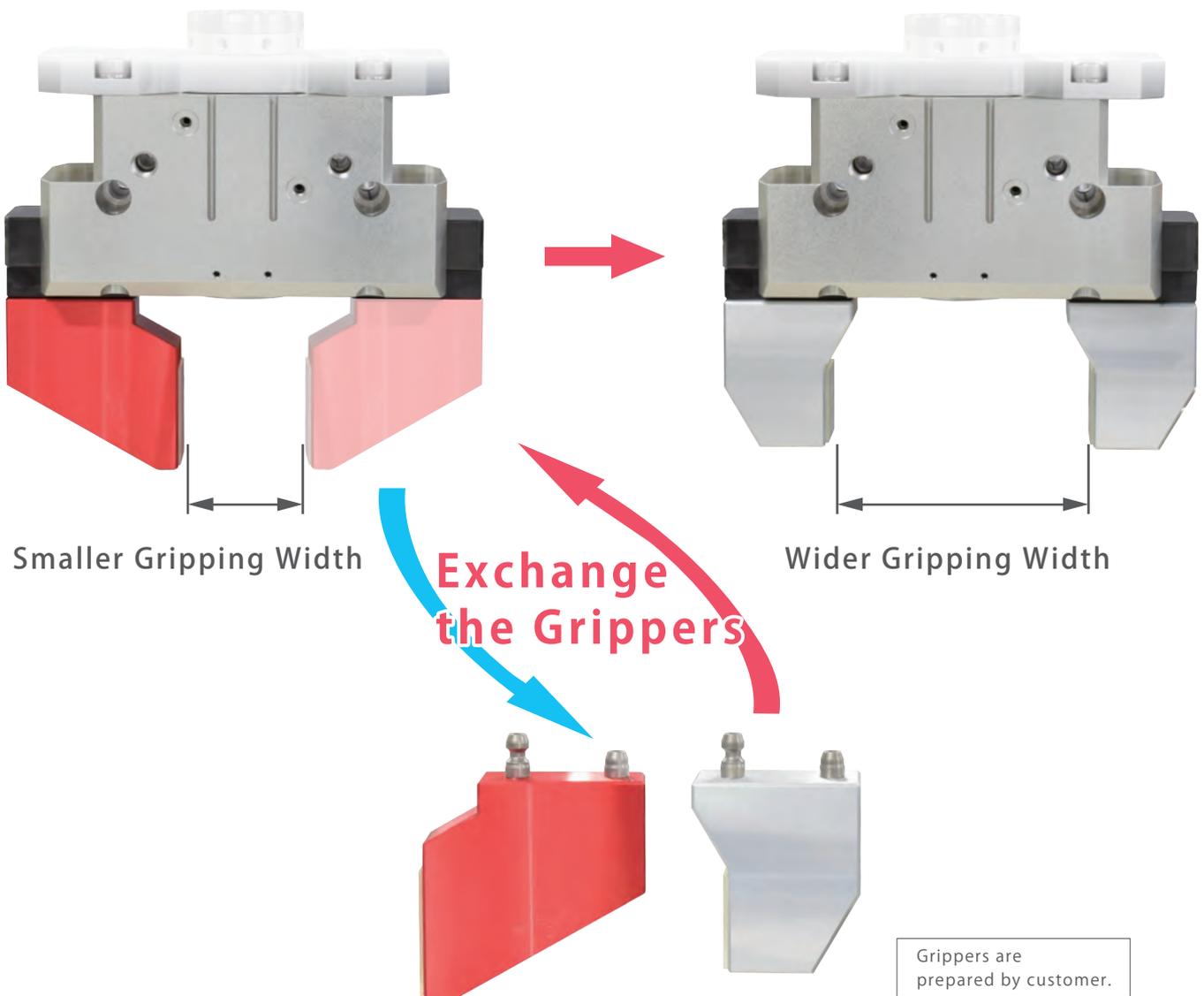
Model WPW-C



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

PAT.P.

- Gripper Change allows for multi-size workpieces.

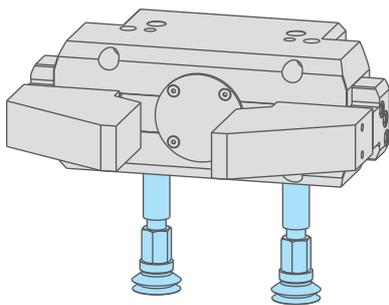


- Grippers can be changed in sequence by air control of each port.

Locating Repeatability of Gripper : $\pm 0.05\text{mm}$



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



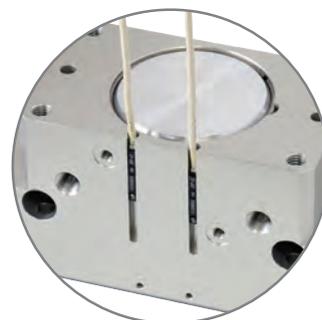
Equipped with extra ports and mounting holes that can be freely used by customer. You can install a vacuum pad or another actuator to expand the usage of WPW handling various jobs with one hand.

- High Accuracy and Rigidity

The linear guide function allows for high rigidity and high accuracy opening/closing function.
Repeatability : $\pm 0.01\text{mm}$

- Auto Switch Capability

Easy to install and adjust auto switches for gripper detection.

Locating
+
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating
Pin Clamp

SWP

High-Power
Pull Stud Clamp

WPT

JES

FA Pneumatic
Hole Clamp

WKH

Lifting
Hole Clamp

SWJ

Ball Lock
Cylinder

WKA

Pneumatic
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch
Proximity Switch

JEP

High-Power Pneumatic
Hole Clamp

SWE

High-Power Pneumatic
Swing Clamp

WHE

High-Power Pneumatic
Link Clamp

WCE

Pneumatic
Hole Clamp

SWA

Pneumatic
Swing Clamp

WHA

Double Piston
Pneumatic
Swing Clamp

WHD

Pneumatic
Link Clamp

WCA

Air Flow
Control Valve

BZW

Manifold
Block

WHZ-MD

Model No. Indication (Parallel Gripper with Auto-Grip Changer)

WPW **050** **0** - **C**

1 **2** **3**

1 Cylinder Inner Diameter

050 : ϕ 50 mm
060 : ϕ 60 mm

3 Gripping Direction

C : Closing Only

2 Design No.

0 : Revision Number

Specifications

Model No.		WPW0500-C	WPW0600-C		
Cylinder Inner Diameter ^{※1}		mm	50	60	
Gripping Force ^{※2} (Air Pressure : At 0.5MPa)	Closing Side	N	829	1219	
	Full Stroke	mm	26	30	
Repeatability ^{※3}	Parallel Gripper Part	mm	± 0.01		
	Gripper Change Part	mm	± 0.05		
Stroke Error		mm	Opened State : $-0.5 \sim +1$ / Closed State : $-1 \sim +0.5$		
Allowable Gripper Length L (Air Pressure : at 0.5MPa) ^{※4}		mm	60	80	
Allowable Gripper Offset Distance H (Air Pressure : at 0.5MPa) ^{※4}		mm	15	20	
Maximum Cycle / min.			60		
Cylinder Capacity (Clamping w/o Workpiece)	Parallel Gripper Part	Closing Side	cm ³	26.8	46.5
		Opening Side	cm ³	30.8	52.3
	Gripper Change Part (Total of Two Parts)	Lock	cm ³	1.5	2.9
		Release	cm ³	0.8	1.6
Maximum Operating Pressure		MPa	0.5		
Minimum Operating Pressure ^{※5}		MPa	0.3 ^{※5}		
Withstanding Pressure		MPa	0.75		
Air Pressure for Gripper Installation Confirmation		MPa	0.1 ~ 0.2		
Operating Temperature Range		°C	5 ~ 60		
Usable Fluid			Dry Air		
Weight		kg	1.3	2.2	

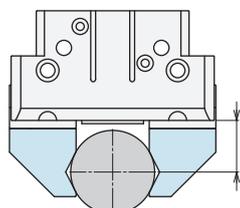
Notes : ^{※1}. Gripping force cannot be calculated from the cylinder inner diameter. Please refer to the gripping force curve.

^{※2}. Gripping force indicates the calculated value based on the gripper length (L).

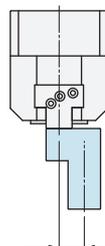
^{※3}. Repeatability under the same condition (no load).

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

^{※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.

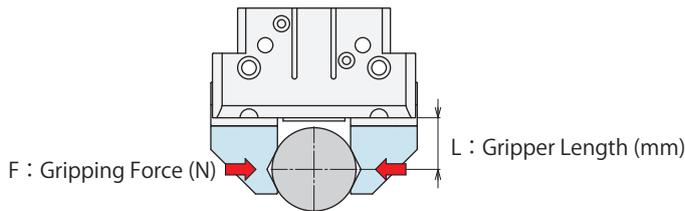


L : Allowable Gripper Length (mm)



H : Allowable Gripper Offset Distance (mm)

● Gripping Force Performance Curve : Closing Side

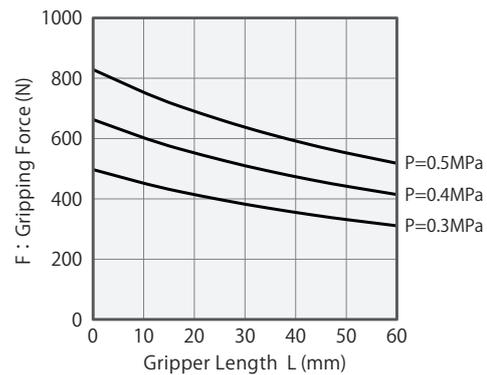


Notes:

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 closing side only. Opening side has no gripping force to hold workpieces.

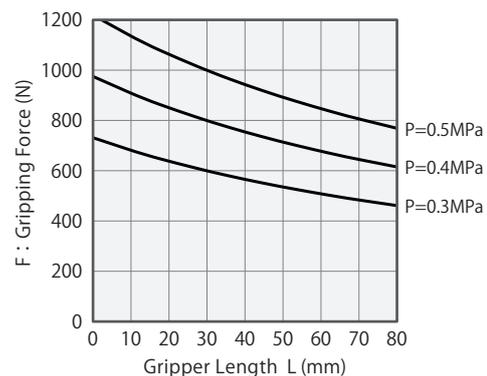
WPW0500-C

Air Pressure (MPa)	Gripping Force (N)						Max. Gripper Length (L) (mm)
	Gripper Length L (mm)						
	10	20	30	40	50	60	
0.5	753	691	638	592	553	518	60
0.4	603	553	510	474	442	414	
0.3	452	414	383	355	332	311	



WPW0600-C

Air Pressure (MPa)	Gripping Force (N)								Max. Gripper Length (L) (mm)
	Gripper Length L (mm)								
	10	20	30	40	50	60	70	80	
0.5	1136	1063	999	943	892	847	806	769	80
0.4	909	851	800	754	714	678	645	615	
0.3	681	638	600	566	535	508	484	461	



● Model No. Indication (Pull Bolt • Locating Pin)

WPWZ 50 0 - P1

1 2 3

1 Corresponding WPW Parallel Gripper with Auto-Grip Changer **Model No.**

50 : For WPW0500-C

60 : For WPW0600-C

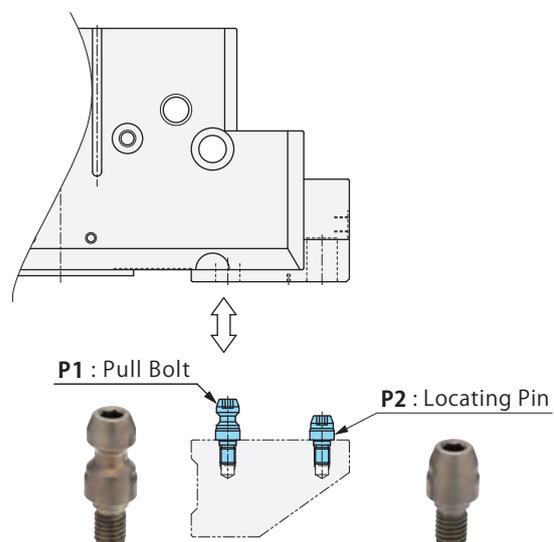
2 Design No.

0 : Revision Number

3 Function

P1 : Pull Bolt

P2 : Locating Pin



Locating
+
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating
Pin Clamp

SWP

High-Power
Pull Stud Clamp

WPT

JES

FA Pneumatic
Hole Clamp

WKH

Lifting
Hole Clamp

SWJ

Ball Lock
Cylinder

WKA

Pneumatic
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch
Proximity Switch

JEP

High-Power Pneumatic
Hole Clamp

SWE

High-Power Pneumatic
Swing Clamp

WHE

High-Power Pneumatic
Link Clamp

WCE

Pneumatic
Hole Clamp

SWA

Pneumatic
Swing Clamp

WHA

Double Piston
Pneumatic
Swing Clamp

WHD

Pneumatic
Link Clamp

WCA

Air Flow
Control Valve

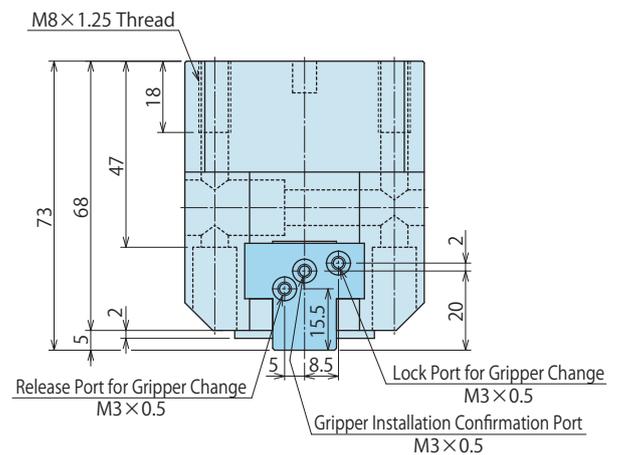
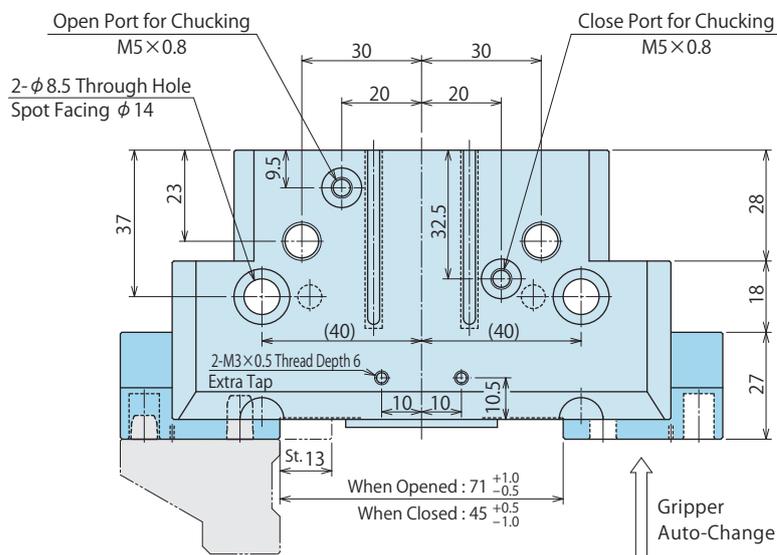
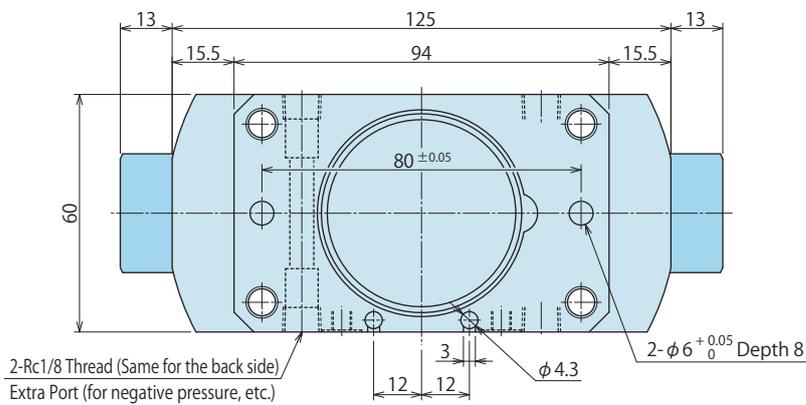
BZW

Manifold
Block

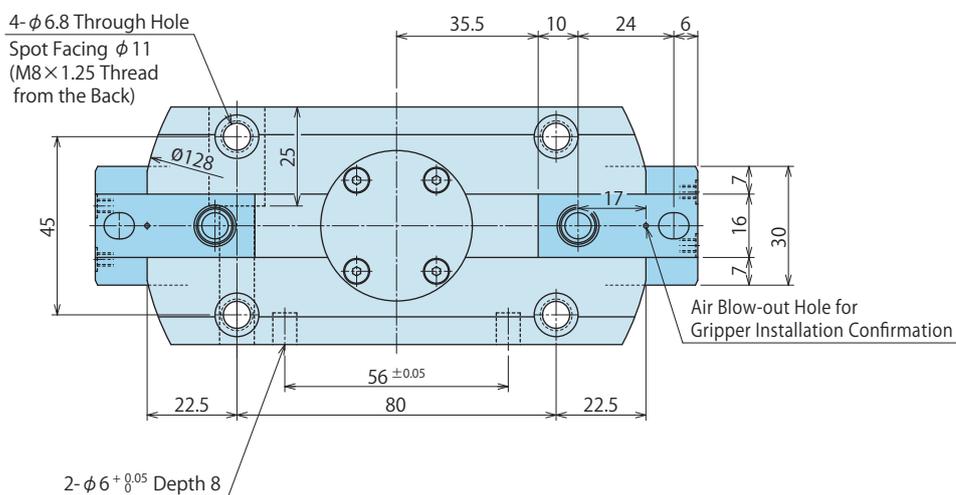
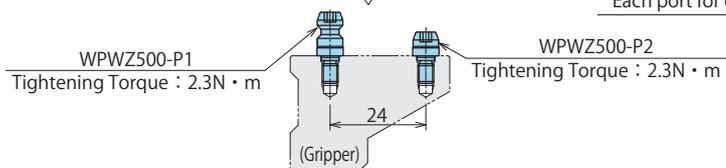
WHZ-MD

External Dimensions : WPW0500-C

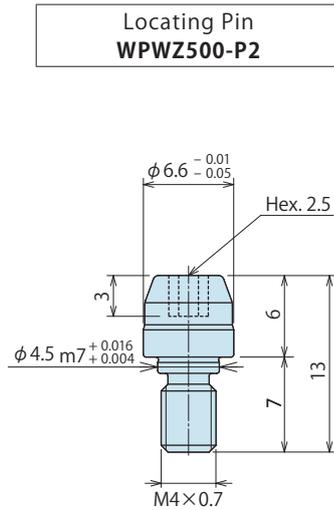
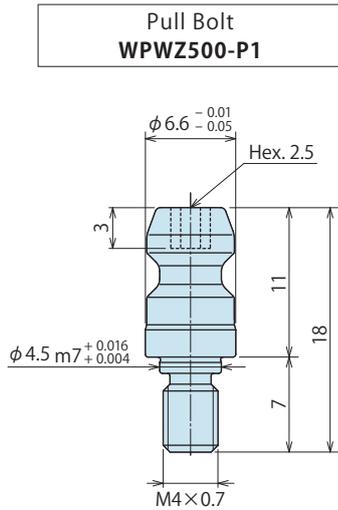
※ The drawing shows the opened state of WPW0500-C.



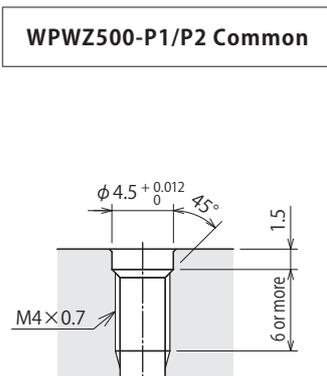
Each port for gripper change on both sides are common.



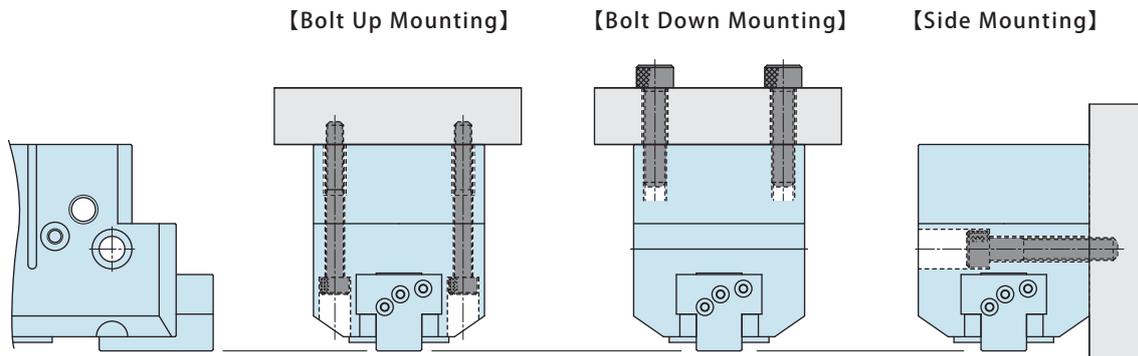
External Dimensions : WPWZ500-P1/P2



Machining Dimensions of Mounting



Installation Method and Tightening Torque



Model No.	Mounting Direction	Mounting Bolt Nominal × Pitch	Number of Bolts	Tightening Torque (N · m)
WPW0500-C	Bolt Up Mounting	M6×1	4	7.9
	Bolt Down Mounting	M8×1.25	4	15.4
	Side Mounting	M8×1.25	2	15.4

Locating
+
Clamp

Locating

Hand · Clamp

Support

Valve · Coupler

Cautions · Others

Pallet Gripper

WVA

Locating
Pin Clamp

SWP

High-Power
Pull Stud Clamp

WPT

JES

FA Pneumatic
Hole Clamp

WKH

Lifting
Hole Clamp

SWJ

Ball Lock
Cylinder

WKA

Pneumatic
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch
Proximity Switch

JEP

High-Power Pneumatic
Hole Clamp

SWE

High-Power Pneumatic
Swing Clamp

WHE

High-Power Pneumatic
Link Clamp

WCE

Pneumatic
Hole Clamp

SWA

Pneumatic
Swing Clamp

WHA

Double Piston
Pneumatic
Swing Clamp

WHD

Pneumatic
Link Clamp

WCA

Air Flow
Control Valve

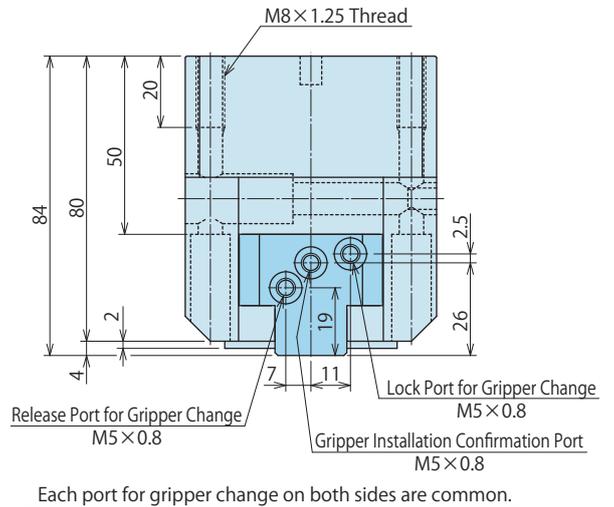
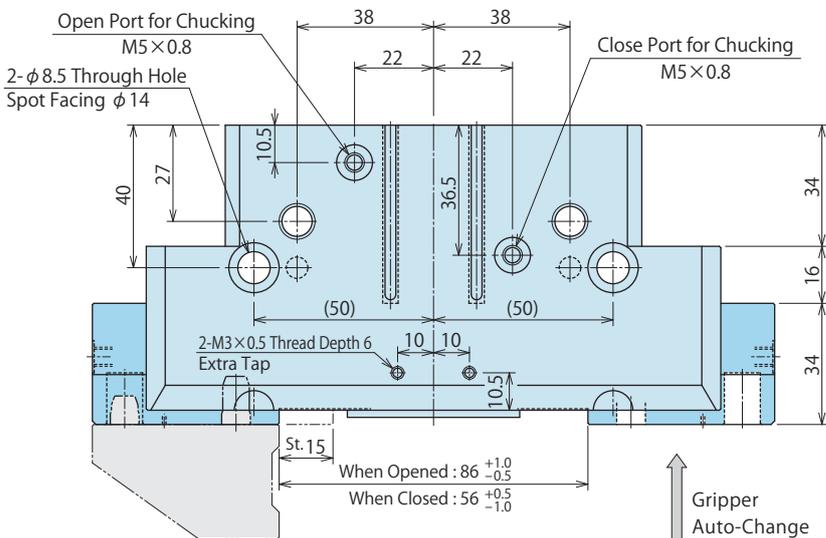
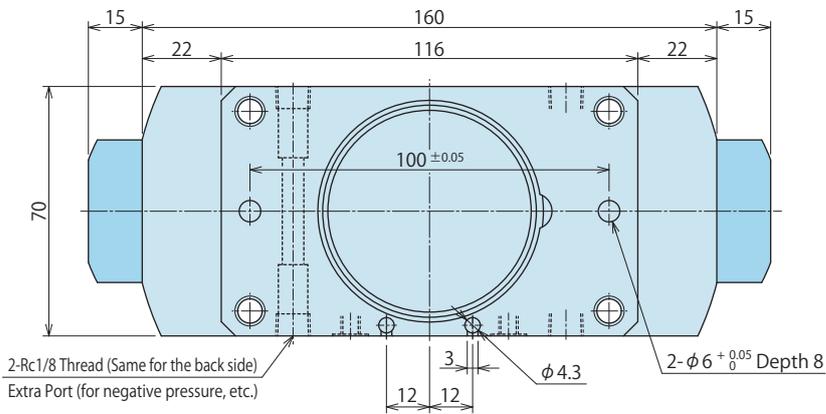
BZW

Manifold
Block

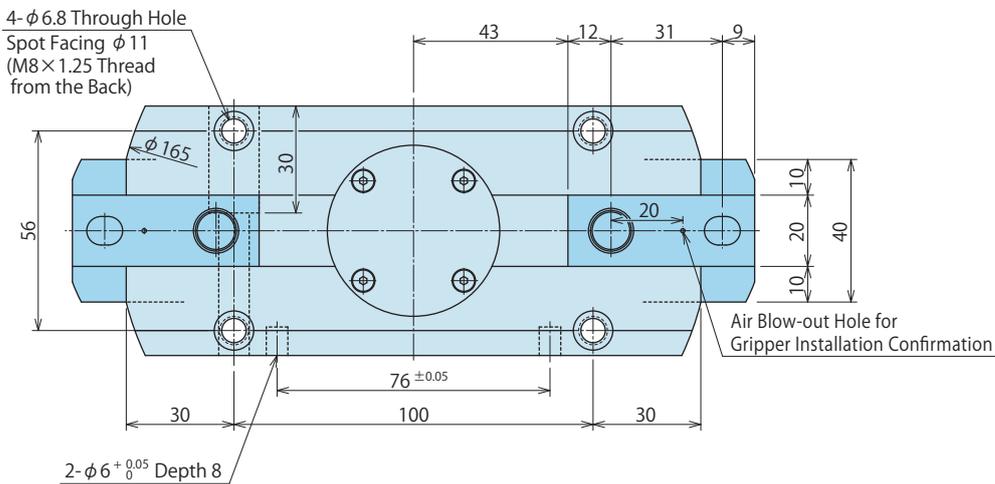
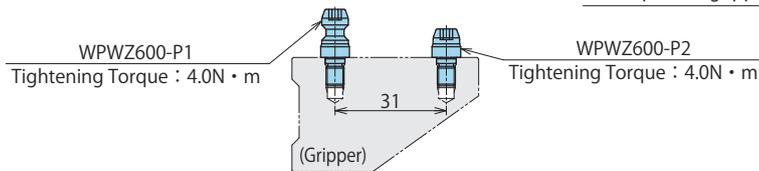
WHZ-MD

External Dimensions : WPW0600-C

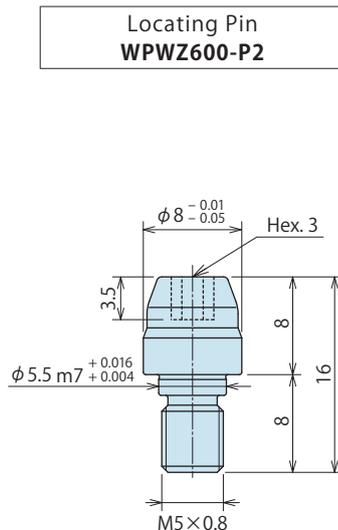
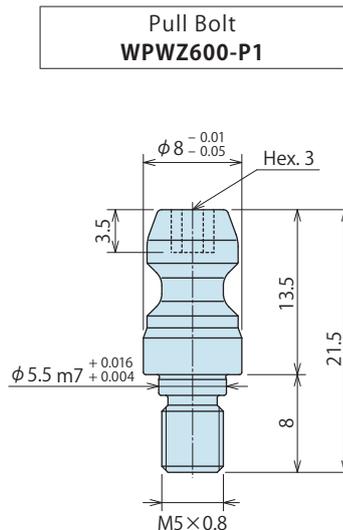
※ The drawing shows the opened state of WPW0600-C.



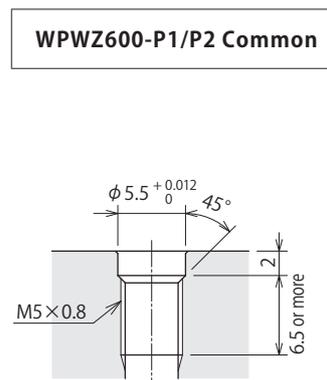
Each port for gripper change on both sides are common.



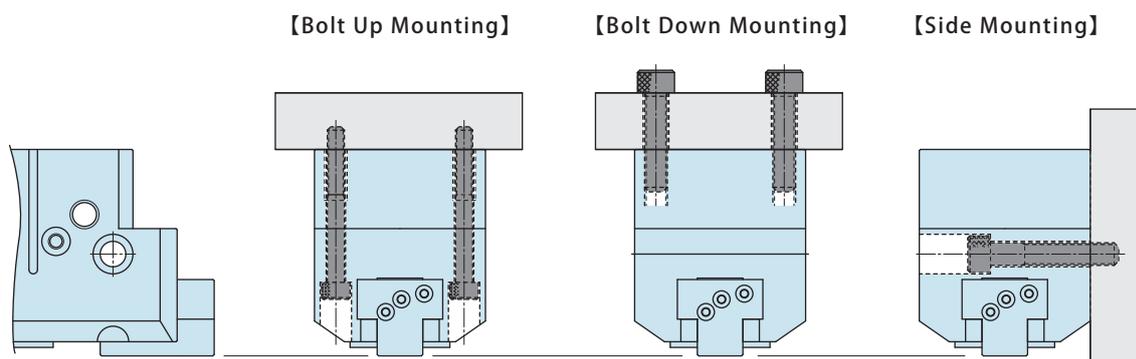
External Dimensions : WPWZ600-P1/P2



Machining Dimensions of Mounting



Installation Method and Tightening Torque



Model No.	Mounting Direction	Mounting Bolt Nominal × Pitch	Number of Bolts	Tightening Torque (N · m)
WPW0600-C	Bolt Up Mounting	M6 × 1	4	7.9
	Bolt Down Mounting	M8 × 1.25	4	15.4
	Side Mounting	M8 × 1.25	2	15.4

Locating
+
Clamp

Locating

Hand · Clamp

Support

Valve · Coupler

Cautions · Others

Pallet Gripper

WVA

Locating
Pin Clamp

SWP

High-Power
Pull Stud Clamp

WPT

JES

FA Pneumatic
Hole Clamp

WKH

Lifting
Hole Clamp

SWJ

Ball Lock
Cylinder

WKA

Pneumatic
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch
Proximity Switch

JEP

High-Power Pneumatic
Hole Clamp

SWE

High-Power Pneumatic
Swing Clamp

WHE

High-Power Pneumatic
Link Clamp

WCE

Pneumatic
Hole Clamp

SWA

Pneumatic
Swing Clamp

WHA

Double Piston
Pneumatic
Swing Clamp

WHD

Pneumatic
Link Clamp

WCA

Air Flow
Control Valve

BZW

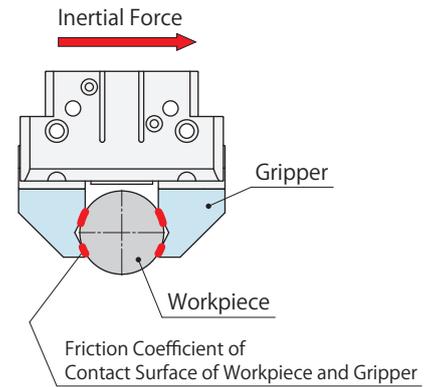
Manifold
Block

WHZ-MD

● Gripper Length/Workpiece Weight Graph

● Inertial Force • Friction Coefficient • Safety Factor Selection List

Inertial Force		Friction Coefficient ※1	Safety Factor
Low Speed	Stops after 0.1 sec at the speed of 0~100mm/sec.	Large	5 times
		Small	10 times
Middle Speed	Stops after 0.1 sec at the speed of 100~300mm/sec.	Large	10 times
		Small	15 times
	Stops after 0.1 sec at the speed of 300~500mm/sec.	Large	15 times
		Small	20 times
High Speed	Stops after 0.1 sec at the speed of 500~1000mm/sec.	-	30 times



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

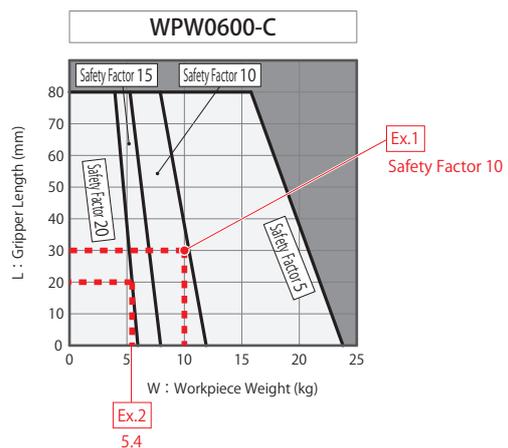
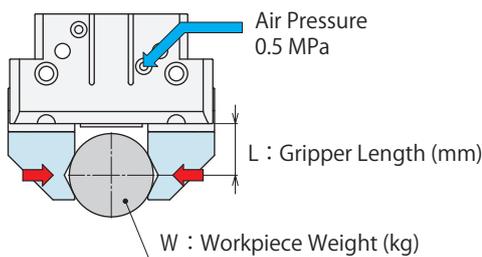
The selection method is a reference. It is recommended to consider the actual conditions (environment) when selecting the product. The graph shows when air pressure is 0.5MPa.

【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.

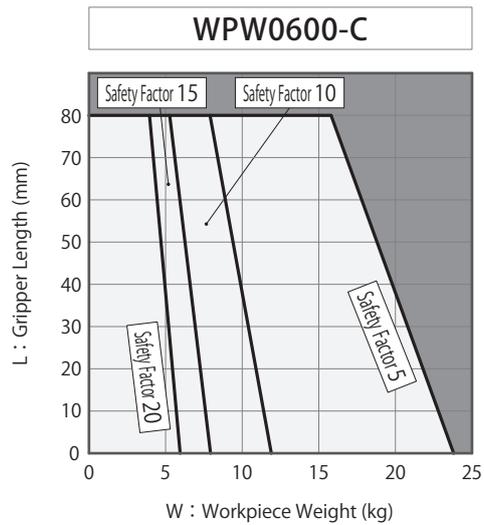
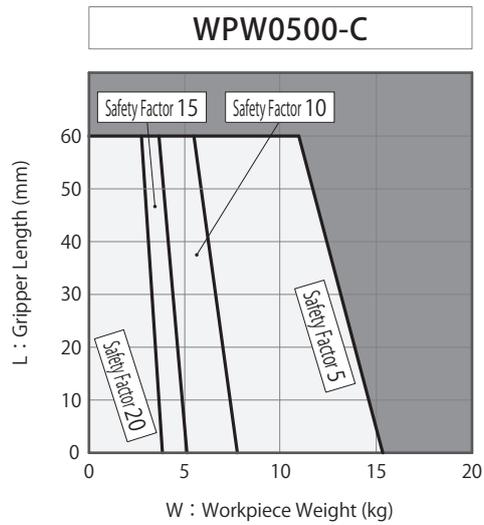
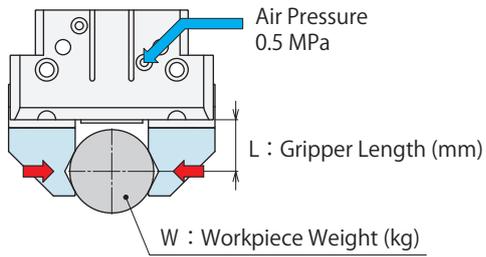


● Relationship between Workpiece Weight and Robotic Hand Gripping Force

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

Locating
+
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating
Pin Clamp

SWP

High-Power
Pull Stud Clamp

WPT

JES

FA Pneumatic
Hole Clamp

WKH

Lifting
Hole Clamp

SWJ

Ball Lock
Cylinder

WKA

Pneumatic
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch
Proximity Switch

JEP

High-Power Pneumatic
Hole Clamp

SWE

High-Power Pneumatic
Swing Clamp

WHE

High-Power Pneumatic
Link Clamp

WCE

Pneumatic
Hole Clamp

SWA

Pneumatic
Swing Clamp

WHA

Double Piston
Pneumatic
Swing Clamp

WHD

Pneumatic
Link Clamp

WCA

Air Flow
Control Valve

BZW

Manifold
Block

WHZ-MD

Cautions

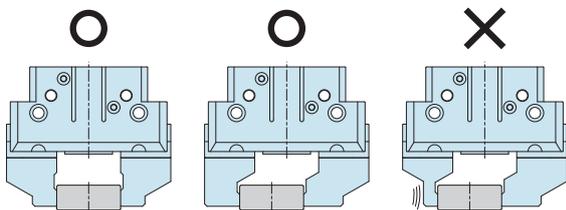
● Notes for Design

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 provide appropriate air pressure in order to avoid deformation, galling or air leakage caused by overload applied to the robotic hand.
- model WPW is a parallel gripper with auto grip changer for closing-side use only.

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 an impact on the gripper (prepared by customer).

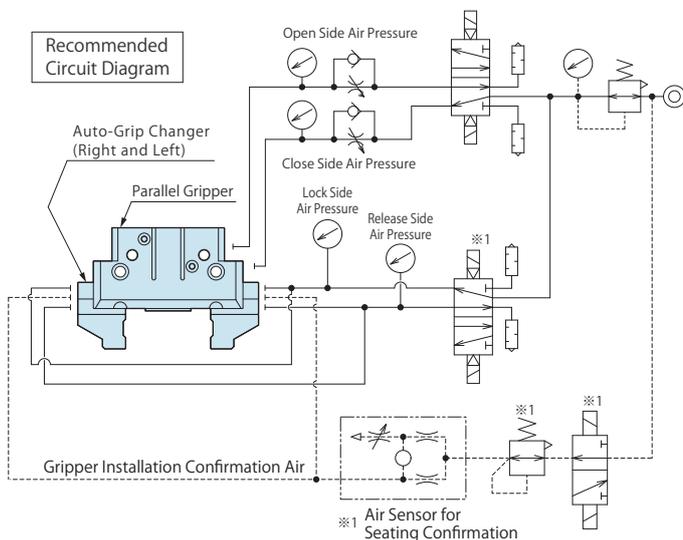
- Otherwise, it may result in breakage of the product.

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 to or greater than that of Parallel Gripper. When using Parallel Gripper, continuously supply air pressure to the lock side of Auto-Grip Changer.



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

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 contaminants. 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 a protection cover.

10) Fall Prevention Measures

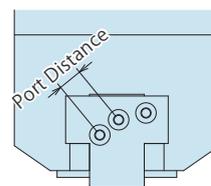
- In case of accident such as detachment of a workpiece, please prepare fall prevention measures for safety.

11) Gripper Installation Confirmation

- Gripper installation confirmation is available by using a 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 ISA3-F, ISA3-G, ISA2-G
CKD Corporation : Air Catch Sensor Series GPS2-05-15
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.



Model No.	Port Thread Size	Port Distance
WPW0500	M3×0.5	About 6.7 mm
WPW0600	M5×0.8	About 9.8 mm

※Recommended Fitting : Nihon Pisco Co., Ltd. Tube Fitting Mini Series Fitting, etc.

13) For Use of Auto Switch

- Select an auto switch depending on the environment.
- An auto switch may be stuck out of the robotic hand depending on the installation position and direction.
- **2-wire reed auto switch cannot be used.**

● Installation Notes

1) Check the Fluid to Use

- Please supply filtered clean dry air. (Install a 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) Preparation for 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

- Wrap with tape 1 to 2 times following the screwing direction. Pieces of the sealing tape can lead to air leaks and malfunction. When piping, be careful that contaminant such as sealing tape does not enter the products.

4) Installation of the Product

- Please use hexagonal socket bolts (with tensile strength of A2-70 or greater), and tighten the product with the tightening torque listed on P.330 and P.332.
- The tightening torque for the pull bolt and the locating pin is shown below.

Model No.	Bolt Size	Tightening Torque (N · m)
WPWZ500-P□	M4×0.7	2.3
WPWZ600-P□	M5×0.8	4.0

- Installation failure causes air leakage, deformation and damage of the robotic hand.

5) Trial Operation Method

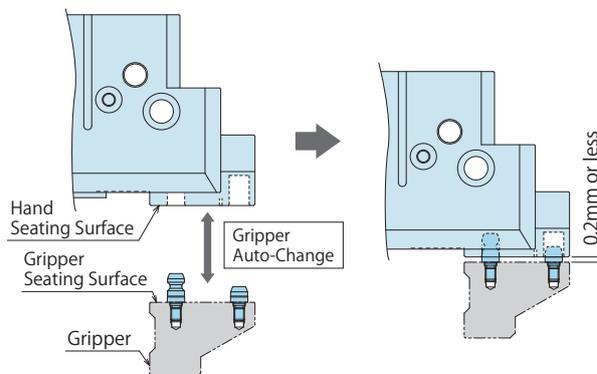
- Avoid supplying large air flow right after the installation. The operating time will be very fast and the robotic hand may be seriously damaged. Please install the speed controller near the air source and gradually supply air pressure.

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.

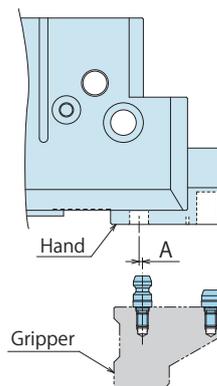
7) Allowable Offset during Gripper Change

- For gripper change, the gap between the seating surfaces of hand and gripper should be 0.2mm or less.



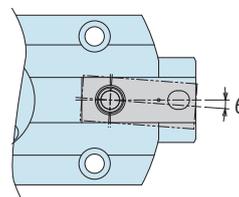
- Allowable position offset of hand and gripper while teaching must be within the allowable position offset range. At this time, the changing gripper shouldn't be completely fixed and should have space within the range of allowable offset. Also, please consider individual differences in opening/gripping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

① Allowable Position Offset in Horizontal Direction



Model No.	Allowable Offset Amm
WPW0500-C	A = ±0.5 mm
WPW0600-C	A = ±0.7 mm

② Allowable Position Offset in Rotation Direction



Model No.	Allowable Offset θ
WPW0500-C	θ = ±1 deg
WPW0600-C	θ = ±1 deg

8) For Use of Auto Switch

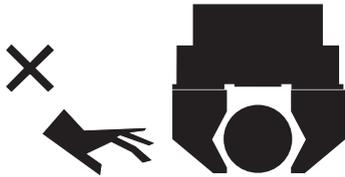
- The detection part (magnet) of the auto switch of WPW operates according to the internal piston movement, so it does not detect the gripper (lever) movement directly.

Locating + Clamp
Locating
Hand + Clamp
Support
Valve + Coupler
Cautions + Others
Pallet Gripper
WVA
Locating Pin Clamp
SWP
High-Power Pull Stud Clamp
WPT
JES
FA Pneumatic Hole Clamp
WKH
Lifting Hole Clamp
SWJ
Ball Lock Cylinder
WKA
Pneumatic Robotic Hands
WPW-C
WPS-C
WPA
WPH
WPP
WPQ
Auto Switch Proximity Switch
JEP
High-Power Pneumatic Hole Clamp
SWE
High-Power Pneumatic Swing Clamp
WHE
High-Power Pneumatic Link Clamp
WCE
Pneumatic Hole Clamp
SWA
Pneumatic Swing Clamp
WHA
Double Piston Pneumatic Swing Clamp
WHD
Pneumatic Link Clamp
WCA
Air Flow Control Valve
BZW
Manifold Block
WHZ-MD

● 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 safety protocols are ensured.
 - ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
 - ② 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 circuits.
 - ③ After stopping the product, do not remove until the temperature drops.
 - ④ Make sure there is no trouble/issue in the bolts and respective parts before restarting the machine or equipment.
- 3) Do not touch the robotic hand or the robot while it is working. Otherwise, your hands may be injured.



- 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

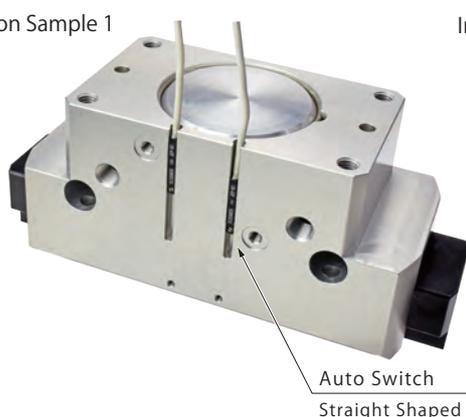
- 1) Removal of the Product and Shut-off of Air Source
 - Before removing the product, make sure that safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
 - Make sure there is no trouble/issue in the bolts and respective parts before restarting.
- 2) Regularly clean the product.
 - 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 pipe, mounting bolt and others to ensure proper use.
- 4) 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.
- 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.

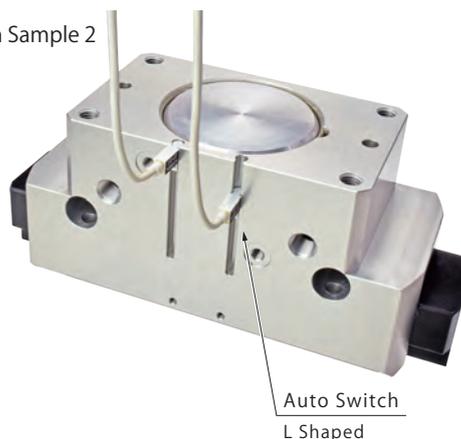
Auto Switch

Able to detect the closing and opening actions of Parallel Gripper with an auto switch (prepared by customer).

Installation Sample 1

Auto Switch
Straight Shaped

Installation Sample 2

Auto Switch
L Shaped

Note :

- 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 / High-Accuracy Sensor for Air Cylinder】

Switch Type	Model No.	Output Method	Wiring Method	Cable Length	Shape	Protection Grade
Auto Switch	JEP0000-B2	Non-Contact : NPN Output	3-Wire	1m	Straight 	IP67
	JEP0000-B2L			3m		
	JEP0000-B3C			1m	L Shaped 	
	JEP0000-B3CL			3m		
	JEP0000-B3B	Non-Contact	2-Wire	1m	L Shaped 	
	JEP0000-B3BL			3m		
High-Accuracy Sensor for Air Cylinder ^{※1}	JES0000-02GN	Non-Contact : NPN Output N-Pole Sensor ^{※2}	3-Wire	1m	Straight 	IP67
	JES0000-02GS	Non-Contact : NPN Output S-Pole Sensor ^{※2}				
	JES0000-02GPN	Non-Contact : PNP Output N-Pole Sensor ^{※2}				
	JES0000-02GPS	Non-Contact : PNP Output S-Pole Sensor ^{※2}				
	JES0000-02LGN	Non-Contact : NPN Output N-Pole Sensor ^{※2}			L Shaped 	
	JES0000-02LGS	Non-Contact : NPN Output S-Pole Sensor ^{※2}				
	JES0000-02LGPN	Non-Contact : PNP Output N-Pole Sensor ^{※2}				
	JES0000-02LGPS	Non-Contact : PNP Output S-Pole Sensor ^{※2}				

Notes :

- For further information, please refer to the following product pages.

Auto Switch (JEP) : P.405-P.414, High-Accuracy Sensor for Air Cylinder (JES) : P.287-P.290
When using an auto switch not made by Kosmek, check specifications of each manufacturer.

- Auto Switch / High-Accuracy Sensor for Air Cylinder may be stuck out of the robotic hand depending on the installation position and direction.

※1. The detection range of High-Accuracy Sensor for Air Cylinder (JES) is different from Auto Switch (JEP), and even small stroke can be securely detected by JES. Refer to "Performance Curve" on the JES catalog for further information.

※2. When detecting both lock and release actions with High-Accuracy Sensor for Air Cylinder (JES), both N-pole sensor and S-pole sensor are required.

Locating
+
Clamp

Locating

Hand · Clamp

Support

Valve · Coupler

Cautions · Others

Pallet Gripper

WVA

Locating
Pin Clamp

SWP

High-Power
Pull Stud Clamp

WPT

JES

FA Pneumatic
Hole Clamp

WKH

Lifting
Hole Clamp

SWJ

Ball Lock
Cylinder

WKA

Pneumatic
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch
Proximity Switch

JEP

High-Power Pneumatic
Hole Clamp

SWE

High-Power Pneumatic
Swing Clamp

WHE

High-Power Pneumatic
Link Clamp

WCE

Pneumatic
Hole Clamp

SWA

Pneumatic
Swing Clamp

WHA

Double Piston
Pneumatic
Swing Clamp

WHD

Pneumatic
Link Clamp

WCA

Air Flow
Control Valve

BZW

Manifold
Block

WHZ-MD

Model No. Indication

JEP 000 0 - A1 L

1 2 3



1 Design No.

0 : Revision Number

2 Switch Type

- A1** : 2-Wire Reed Auto Switch
- A2** : 2-Wire Reed Auto Switch
- A2V** : 2-Wire L-Shaped Reed Auto Switch
- B1** : 3-Wire Solid State Auto Switch^{※2}
- B2** : 3-Wire Solid State Auto Switch^{※2}
- B3C** : 3-Wire L-Shaped Solid State Auto Switch^{※2}
- B3B** : 2-Wire L-Shaped Solid State Auto Switch
- P** : 3-Wire Proximity Switch for Gripping Detection (Length 32mm)^{※1}
- P2** : 3-Wire Proximity Switch for Gripping Detection (Length 16mm)^{※1}

Notes :
 ※1. Please contact us for PNP output.
 ※2. Please consider using model JES for PNP output.

3 Electric Cable Length^{※3}

Blank : 1m
L : 3m

Note :
 ※3. **3** Electric Cable Length is chosen only for A□/B□ Auto Switch of **2** Switch Type. For P□: Proximity Switch for Gripping Detection, electric cable length is all 2m.

Application Table

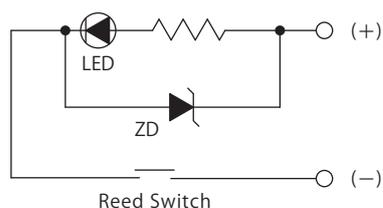
Switch Type	2-Wire Reed Auto Switch		3-Wire Solid State Auto Switch			2-Wire Solid State Auto Switch	Switch Type	3-Wire Proximity Switch for Gripping Detection	
	Model No.	JEP0000-A1□ JEP0000-A2□ JEP0000-A2V□	JEP0000-B1□	JEP0000-B2□	JEP0000-B3C□	JEP0000-B3B□		Model No.	JEP0000-P
SWJ2000				●	●	●	WPP0300	●	●
SWP050□				●	●	●	WPP0400	●	●
SWP100□				●	●	●	WPP0500	●	●
WCC □□		●		●	●	●	WPP0600	●	●
WCG □□-T		●		●	●	●	WPP0800	●	●
WFC □□		●		●	●	●	WPP1000	●	●
WHC □□		●		●	●	●	WPP1250	●	●
WHG □□-T		●		●	●	●	WPQ0200	●	●
WKH200□				●	●	●	WPQ0250	●	●
WKK100□				●	●	●	WPQ0300	●	
WKK200□				●	●	●	WPQ0400	●	
WPA0120		●		●	●	●	WPQ0500	●	
WPA0160		●		●	●	●	WPQ0600	●	
WPA0200		●		●	●	●	WPQ0800	●	
WPA0250		●		●	●	●	WPQ1000	●	
WPB0160		●		●	●	●			
WPB0200		●		●	●	●			
WPB0250		●		●	●	●			
WPE0160		●		●	●	●			
WPE0200	●		●						
WPE0300	●		●						
WPE0400	●		●						
WPE0500	●		●						
WPE0800	●		●						
WPF0100			Not Applicable						
WPF0120		●		●	●	●			
WPF0160		●		●	●	●			
WPF0200	●		●						
WPF0300	●		●						
WPH0100		●		●	●	●			
WPH0160		●		●	●	●			
WPH0200	●		●						
WPJ0120			Not Applicable						
WPJ0160		●		●	●	●			
WPJ0200	●		●						
WPJ0250	●		●						
WPJ0300	●		●						
WPJ0400	●		●						
WPS0160-C		●		●	●	●			
WPS0200-C		●		●	●	●			
WPW0500-C				●	●	●			
WPW0600-C				●	●	●			
WVGT □□-T				●	●	●			

● JEP0000-A□□ (2-Wire Reed Auto Switch)

● Specifications

Model No.	JEP0000-A1	JEP0000-A1L	JEP0000-A2	JEP0000-A2L	JEP0000-A2V	JEP0000-A2VL
Name	Reed Auto Switch					
Wiring Type	2-Wire					
Applicable Load	Relay, Programmable Logic Controller (PLC)					
Load Voltage / Load Current	Less than DC24V / 40mA Less than AC100V / 20mA					
Internal Voltage Drop	Less than 3V					
Operating Time	1ms					
Ambient Temperature	-10 ~ 60°C					
Withstand Voltage	AC1500V (There should be no abnormalities in 1 min. application.)					
Leakage Current	0					
Shock Resistance	30G					
Protection Circuit	None					
Protection Grade	IP67 (IEC Standard)					
Indicator Light	Red LED illuminates when turned ON					
Electric Cable Length	1m	3m	1m	3m	1m	3m

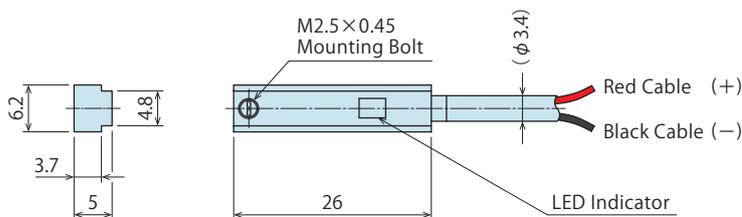
● Electric Circuit Diagram



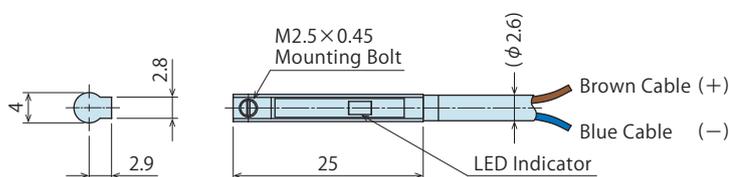
Note :

1. Auto switch will instantly break due to over loading current if turning on the auto switches without connecting the load. (Refer to Notes on Wiring 4) and 5) on P.413.)

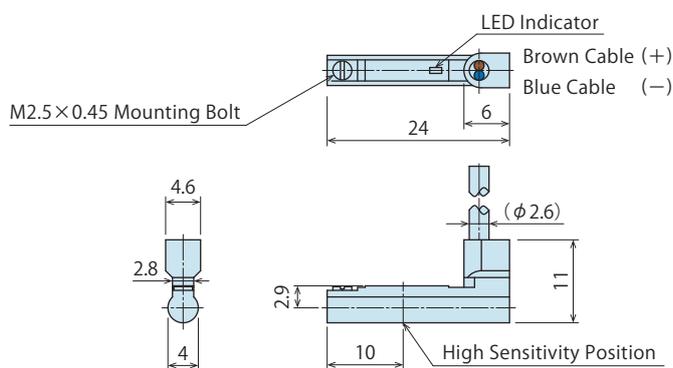
● External Dimensions : JEP0000-A1 / A1L



● External Dimensions : JEP0000-A2 / A2L



● External Dimensions : JEP0000-A2V / A2VL



Locating + Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating Pin Clamp

SWP

High-Power Pull Stud Clamp

WPT

JES

FA Pneumatic Hole Clamp

WKH

Lifting Hole Clamp

SWJ

Ball Lock Cylinder

WKA

Pneumatic Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch Proximity Switch

JEP

High-Power Pneumatic Hole Clamp

SWE

High-Power Pneumatic Swing Clamp

WHE

High-Power Pneumatic Link Clamp

WCE

Pneumatic Hole Clamp

SWA

Pneumatic Swing Clamp

WHA

Double Piston Pneumatic Swing Clamp

WHD

Pneumatic Link Clamp

WCA

Air Flow Control Valve

BZW

Manifold Block

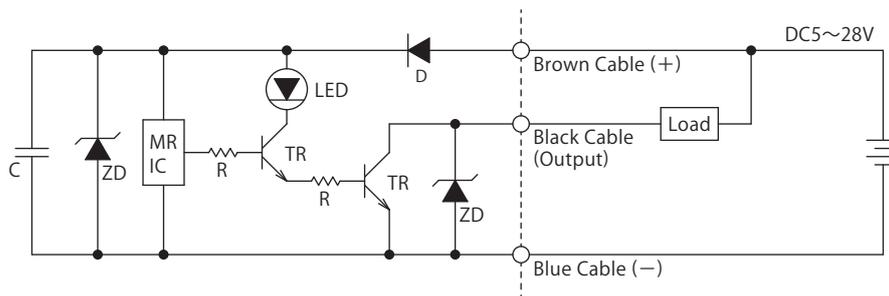
WHZ-MD

● JEP0000-B1 / B1L / B2 / B2L (3-Wire Solid State Auto Switch)

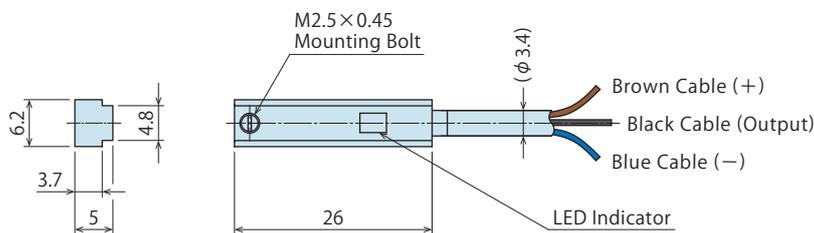
● Specifications

Model No.	JEP0000-B1	JEP0000-B1L	JEP0000-B2	JEP0000-B2L
Name	Solid State Auto Switch			
Wiring Type	3-Wire			
Applicable Load	Relay, Programmable Logic Controller (PLC)			
Output Type	NPN			
Load Voltage / Load Current	Less than DC5 ~ 28V / 50mA			
Internal Voltage Drop	Less than 0.8V			
Leakage Current	Less than 0.1mA			
Current Consumption	Less than 10mA			
Operating Time	Less than 1ms			
Ambient Temperature	-10 ~ 60°C			
Withstand Voltage	AC1500V (There should be no abnormalities in 1 min. application.)			
Insulation Resistance	More than 50MΩ / DC500V (Between the Case and Signal Cable)			
Shock Resistance	30G			
Protection Grade	IP67 (IEC Standard)			
Indicator Light	Red LED illuminates when turned ON			
Electric Cable Length	1m	3m	1m	3m

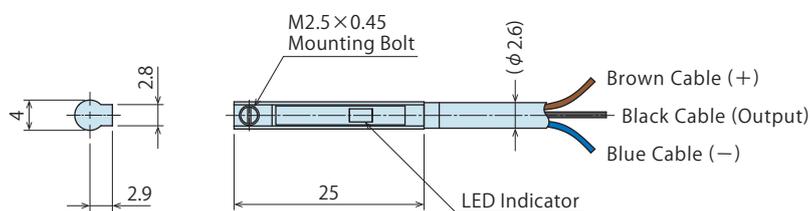
● Electric Circuit Diagram



● External Dimensions : JEP0000-B1 / B1L



● External Dimensions : JEP0000-B2 / B2L

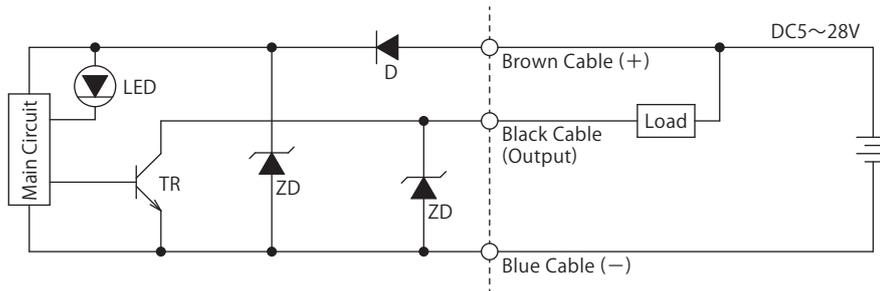


JEP0000-B3C / B3CL (3-Wire L-Shaped Solid State Auto Switch)

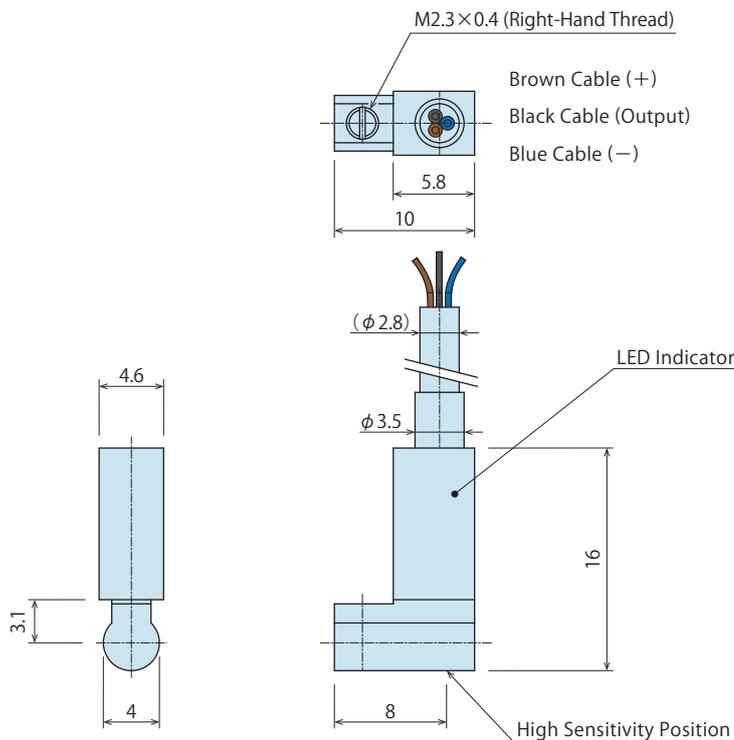
Specifications

Model No.	JEP0000-B3C	JEP0000-B3CL
Name	Solid State Auto Switch	
Wiring Type	3-Wire	
Applicable Load	Relay, Programmable Logic Controller (PLC)	
Output Type	NPN	
Load Voltage / Load Current	DC5 ~ 28V / 50mA	
Internal Voltage Drop	Less than 0.8V	
Leakage Current	Less than 0.1mA	
Current Consumption	Less than 10 mA	
Operating Time	Less than 1ms	
Ambient Temperature	-10 ~ 60°C	
Withstand Voltage	AC1500V (There should be no abnormalities in 1 min. application.)	
Insulation Resistance	More than 100MΩ / DC500V (Between the Case and Signal Cable)	
Shock Resistance	30G	
Protection Grade	IP67(IEC Standard)	
Indicator Light	Red LED illuminates when turned ON	
Electric Cable Length	1m	3m

Electric Circuit Diagram



External Dimensions : JEP0000-B3C / B3CL



Locating + Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating Pin Clamp

SWP

High-Power Pull Stud Clamp

WPT

JES

FA Pneumatic Hole Clamp

WKH

Lifting Hole Clamp

SWJ

Ball Lock Cylinder

WKA

Pneumatic Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch Proximity Switch

JEP

High-Power Pneumatic Hole Clamp

SWE

High-Power Pneumatic Swing Clamp

WHE

High-Power Pneumatic Link Clamp

WCE

Pneumatic Hole Clamp

SWA

Pneumatic Swing Clamp

WHA

Double Piston Pneumatic Swing Clamp

WHD

Pneumatic Link Clamp

WCA

Air Flow Control Valve

BZW

Manifold Block

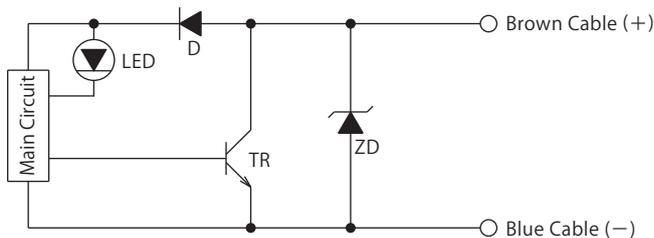
WHZ-MD

● JEP0000-B3B/B3BL (2-Wire L-Shaped Solid State Auto Switch)

● Specifications

Model No.	JEP0000-B3B	JEP0000-B3BL
Name	Solid State Auto Switch	
Wiring Type	2-Wire	
Applicable Load	Relay, Programmable Logic Controller (PLC)	
Load Voltage / Load Current	Less than DC10~28V / 50mA	
Internal Voltage Drop	Less than 5V	
Leakage Current	Less than 1mA	
Current Consumption	Less than 10 mA	
Operating Time	Less than 1ms	
Ambient Temperature	-10~60°C	
Withstand Voltage	AC1500V (There should be no abnormalities in 1 min. application.)	
Insulation Resistance	More than 50MΩ / DC500V (Between the Case and Signal Cable)	
Shock Resistance	30G	
Protection Grade	IP67 (IEC Standard)	
Indicator Light	Red LED illuminates when turned ON	
Electric Cable Length	1m	3m

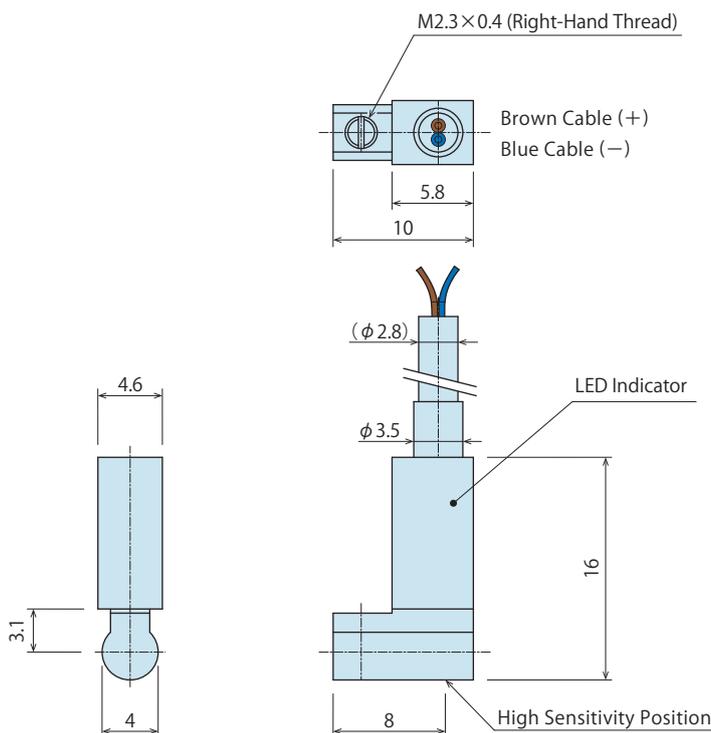
● Electric Circuit Diagram



Note :

1. Auto switch will instantly break due to over loading current if turning on the auto switches without connecting the load. (Refer to Notes on Wiring 4) and 5) on P.413.)

● External Dimensions : JEP0000-B3B/B3BL

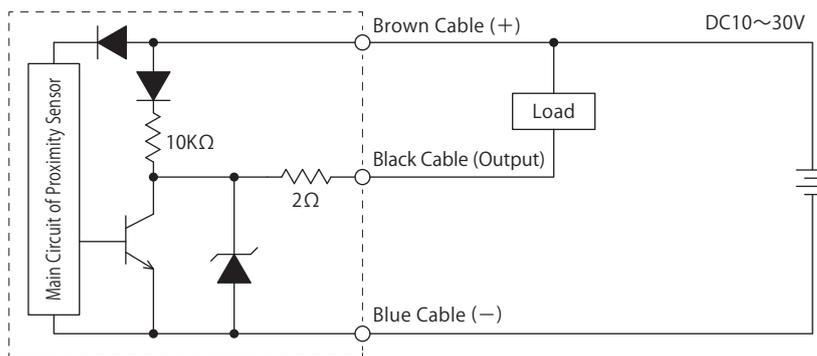


● JEP0000-P / P2 (3-Wire Proximity Switch for Gripping Detection)

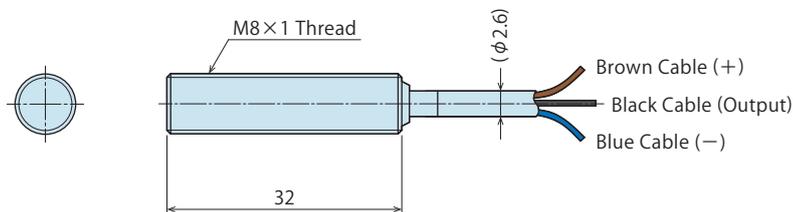
● Specifications

Model No.	JEP0000-P	JEP0000-P2
Name	Proximity Switch for Gripping Detection	
Wiring Type	3-Wire	
Output Type	NPN	
Moving Distance	1mm ± 10%	
Voltage Range	DC10 ~ 30V	
Opening / Closing Voltage	Less than 200mA	
Current Consumption	Less than 10mA	
Response Frequency	800Hz	
Ambient Temperature	-25 ~ 70°C	
Withstand Voltage	AC2000V (There should be no abnormalities in 1 min. application.)	
Protection Grade	IP67 (IEC Standard)	
Indicator Light	Red LED illuminates when turned ON	
Electric Cable Length	2m	

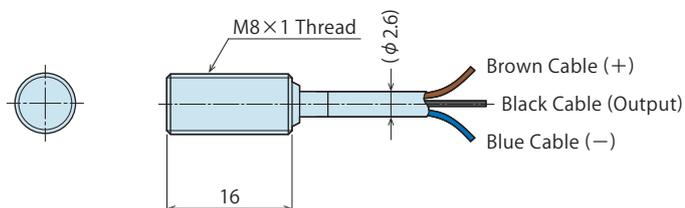
● Electric Circuit Diagram



● External Dimensions : JEP0000-P



● External Dimensions : JEP0000-P2



Locating + Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

Locating Pin Clamp

SWP

High-Power Pull Stud Clamp

WPT

JES

FA Pneumatic Hole Clamp

WKH

Lifting Hole Clamp

SWJ

Ball Lock Cylinder

WKA

Pneumatic Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPK

Auto Switch Proximity Switch

JEP

High-Power Pneumatic Hole Clamp

SWE

High-Power Pneumatic Swing Clamp

WHE

High-Power Pneumatic Link Clamp

WCE

Pneumatic Hole Clamp

SWA

Pneumatic Swing Clamp

WHA

Double Piston Pneumatic Swing Clamp

WHD

Pneumatic Link Clamp

WCA

Air Flow Control Valve

BZW

Manifold Block

WHZ-MD

Cautions

● Notes for Design

- 1) Check the Specifications
 - Please use each product according to the specifications.
The product may be damaged or malfunction if used outside the range of load or specifications.
- 2) Notes on Use in the Interlock Circuit
 - When the auto switch is used for an interlock signal that requires high reliability, please use a double interlock system by providing a mechanical protection function. Or by using another safety switch (sensor) together with the auto switch. Also, please perform periodic maintenance and confirm proper operation.
- 3) Wiring should be prepared as short as possible.
 - For the reed auto switch, if the wiring length to the load is excessively long, inrush current to the auto switch increases and the operational life span will be shortened. (Remains ON)
 - If the wiring length of the solid state auto switch is long, we recommend installing the ferrite core on both ends of the electric cable for noise control.
- 4) Notes when connecting to a load that generates surge voltage.
 - When connecting a load that generates surge voltage such as relay, please use the auto switch equipped with junction protective circuit or use a junction protective element connecting to the auto switch in parallel.
 - If surge voltage is repeatedly generated even with the auto switch equipped with junction protective circuit, it may damage the contact. In this case, please reduce the surge voltage by connecting a surge-absorption element to a surge-generating source (load) in parallel.
- 5) Notes when connecting auto switches in series.
 - Due to voltage drop (refer to internal voltage drop on the specifications) caused by LED, voltage drop of n auto switches connected in series will be multiplied by n times. As a result, in some cases the load will not activate even if the auto switch drives properly.
- 6) Be careful with the polarity when wiring.
 - When connected reversely, the auto switch may malfunction or be damaged.
- 7) When multiple cylinders or robotic hands are placed close together.
 - Please provide enough space when using multiple actuators such as cylinders or robotic hands equipped with auto switches. (If allowable distance of each actuator is specified please follow specified instructions.) If they are too close, auto switches may malfunction due to magnetic interference.
- 8) Secure space for maintenance and inspection
 - Please secure space for maintenance and inspection of auto switches when setting actuators such as cylinders and robotic hands equipped with auto switches.

● Notes on Operating Environment

- 1) Never use the product in an atmosphere with explosive gases.
 - Auto switches are not designed to prevent explosion. Do not use the product in an atmosphere with explosive gases since it may cause serious explosions.
- 2) Do not use the product in an area where a magnetic field is generated.
 - Auto switches may malfunction, or internal magnet actuators, such as cylinders or robotic hands, equipped with auto switches will be demagnetized.
- 3) Do not use the product in an environment where the auto switches are continuously exposed to water or coolant.
 - Although IEC standard IP67 structure is satisfied, please avoid using auto switches in an environment where continuously exposed to water or coolant. This may cause insulation failure or malfunction.
- 4) Do not use the product in an environment with oil or chemicals.
 - If auto switches are used in an environment with coolant or cleaning solvent, even in a short time, they may be adversely affected by improper insulation, malfunction due to swelling of potting resin and/or hardening of electric cable.
- 5) Do not use the product in an environment subject to large temperature cycle.
 - Heat cycles other than ordinary changes in temperature may adversely affect the internal structure of auto switches.
- 6) Avoid accumulation of steel dust and close connection of magnetic materials.
 - An amount of steel chips or steel dusts, such as sputters of welding accumulate around an actuator. Cylinders, robotic hand equipped with auto switches and or magnetic materials (those attracted by magnet) are gathered closely to the actuator. These can weaken internal magnet actuators.
- 7) Do not use the product in an environment with excessive impact.
 - Under the condition of the excessive impact of more than 30G, the contact of the reed auto switch will malfunction and the indicator light may signal or may be disconnected.

● Installation Notes

- 1) Do not drop or bump.
 - Do not drop, bump or apply excessive impact on auto switches. The auto switches may be damaged and cause malfunction.
- 2) Tighten auto switches with appropriate tightening torque.
 - Please follow the tightening torque below. Excessive tightening torque may damage the mounting screw, fitting or main body of the auto switch. Also, mounting position may be shifted due to insufficient tightening torque.

Mounting Screw Size	Tightening Torque (N·m)
M2.3×0.4	0.15
M2.5×0.45	0.25

- 3) Do not carry cylinders or robotic hands by holding the electric cable of the auto switch.
 - It may break the electric cable or damage the internal element.
- 4) Do not fix auto switches with the mounting screws other than attached in main body of the auto switches.
 - Using non-designated screws may damage auto switches.
- 5) Install the auto switches at the center of the operating area.
 - Installation position of auto switches should be adjusted so that a detected object (piston etc.) stops at the center of operating range. (Installation position shown in the catalog shows the most suitable fixed position of stroke end.) Please refer to P.345 for WPS, P.355 for WPA, P.363 for WPH, P.375 for WPP and P.391 for WPQ. If the auto switches are installed at the edge of operating range (near the boundary of ON and OFF), output movement may be unstable.
- 6) Installation position of the auto switches should be adjusted by checking actual operating state.
 - Depending on the installation environment, actuators such as cylinders and robotic hands may not operate properly even if they are installed to the appropriate position. Make sure to check the operating condition even when mounting them at the middle of the stroke.

 Locating
+
Clamp

Locating

Hand + Clamp

Support

Valve + Coupler

Cautions + Others

Pallet Gripper

WVA

 Locating
Pin Clamp

SWP

 High-Power
Pull Stud Clamp

WPT

JES

 FA Pneumatic
Hole Clamp

WKH

 Lifting
Hole Clamp

SWJ

 Ball Lock
Cylinder

WKA

 Pneumatic
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

 Auto Switch
Proximity Switch

JEP

 High-Power Pneumatic
Hole Clamp

SWE

 High-Power Pneumatic
Swing Clamp

WHE

 High-Power Pneumatic
Link Clamp

WCE

 Pneumatic
Hole Clamp

SWA

 Pneumatic
Swing Clamp

WHA

 Double Piston
Pneumatic
Swing Clamp

WHD

 Pneumatic
Link Clamp

WCA

 Air Flow
Control Valve

BZW

 Manifold
Block

WHZ-MD

Cautions

● Notes on Wiring

- 1) Check the insulation of wiring.
 - Insulation failure (interference with other circuit, ground fault, and insulation failure between terminals) may send excessive voltage or current to the auto switches causing damage.
- 2) Do not place wires and auto switch cables close to other cables and high voltage cables.
 - Otherwise, surge voltages will be induced creating noise and leading to malfunctions.
- 3) Repeated bending stress or stretching force should be avoided on electric cables.
 - Wiring with bending stress or stretching force repeatedly applied on electric cables will prematurely breakdown.
Bending stress or stretching force applied on the connecting area of electric cables and main body of the auto switches will damage the electric cables.
Auto switches or wires should not be moving especially near the connecting areas.
- 4) Make sure to check the load state (connection and current value) before turning on the power.
 - For 2-Wire Type
Auto switches will instantly break due to over loading current if turning on the auto switches without connecting the load (Shorted Load Circuit). The above statement is also applied to the condition when the brown cable (+, output) of 2-wire type is directly connected to the (+) power terminal of a fixture and etc.
- 5) Avoid shorted load circuit.
 - Reed Auto Switch
Auto switches will instantly break due to over loading current if turning on the auto switch in load short circuit condition.
 - Solid State Auto Switch
Be aware of auto switch breakages when products with PNP output is not equipped with short-circuit protection.
- 6) Avoid wrong wiring
 - Reed Auto Switch
The electric circuit has polarities. The reed switch can operate even with reversed connection, but LED light will not illuminate. Also, flowing excessive current will damage LED and it will not operate properly.
 - Solid State Auto Switch
In case of 2-wire type, even if connected reversely, the auto switch will not be damaged due to protection circuit, but it is always ON.
If reversely connected under short circuit condition, the auto switch will be damaged.
In case of 3-wire type, even if the connections are reversed (power supply line "+" and "-"), the auto switch will be protected by a protection circuit.
However, if connecting the power supply "+" to the blue cable and "-" to the black cable, the auto switch will be damaged.

● Notes on Handling

- 1) It should be operated by qualified personnel.
 - Machines and devices with hydraulic and pneumatic equipment should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
 - ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
 - ② 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.
 - ③ After stopping the product, do not remove until the temperature drops.
 - ④ Make sure there is no trouble/issue in the bolts and respective parts before restarting the machine or equipment.
- 3) Do not disassemble or modify.
 - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

● Maintenance • Inspection

Conduct the below maintenances and inspections periodically in order to avoid unintended malfunctions and to ensure the safety.

- 1) Removal of the Product and Shut-off of Pressure Source
 - Before removing the product, 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.
 - Make sure there is no trouble/issue in the bolts and respective parts before restarting.
- 2) Never touch terminals while the power is on.
 - It will cause electric shock, malfunction and damage to the auto switches.
- 3) Retightening of Mounting Screws
 - Retighten the screws after adjusting the mounting position when the mounting position of the auto switches is shifted due to the looseness of the mounting screws.
- 4) Check if the electric cable is damaged or not.
 - Damaged cables may cause insulation failure. Exchange the auto switch or repair the reed if there is damage on the electric cable.
- 5) Check the setting position of the detector.
 - Confirm the set position is stopped at the center of the detecting range (the area that red LED illuminates).
- 6) Cleaning Auto Switches
 - The auto switch should be clean. Do not use benzene, paint thinner or alcohol for cleaning. Doing so will cause scratches on the product and indications may be erased. If it is hard to remove stains from the product, wipe it out with a cloth soaked in a neutral detergent diluted with water. Wipe with a dry cloth to remove wet residue.
- 7) Product Storage
 - Keep the product out of direct sunlight in a cool area where it is protected from water and humidity.
- 8) Please contact us for auto switch replacements.

Locating
+
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating
Pin Clamp

SWP

High-Power
Pull Stud Clamp

WPT

JES

FA Pneumatic
Hole Clamp

WKH

Lifting
Hole Clamp

SWJ

Ball Lock
Cylinder

WKA

Pneumatic
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch
Proximity Switch

JEP

High-Power Pneumatic
Hole Clamp

SWE

High-Power Pneumatic
Swing Clamp

WHE

High-Power Pneumatic
Link Clamp

WCE

Pneumatic
Hole Clamp

SWA

Pneumatic
Swing Clamp

WHA

Double Piston
Pneumatic
Swing Clamp

WHD

Pneumatic
Link Clamp

WCA

Air Flow
Control Valve

BZW

Manifold
Block

WHZ-MD

※ Please refer to P.716 for common cautions.

• Warranty

Model No. Indication

JES 000 0 - 02L GN

1 2 3



1 Design No.

0 : Revision Number

2 Shape

02 : Straight (Round Body)

02L : L Shaped (Round Body)

01 : Straight (Rectangular Body)

01L : L Shaped (Rectangular Body)



3 Output Format • Detection Polarity

GN : NPN Output N-Pole Sensor (Cable Color:Black) ※1

GS : NPN Output S-Pole Sensor (Cable Color:Gray)

GPN : PNP Output N-Pole Sensor (Cable Color:Black) ※1

GPS : PNP Output S-Pole Sensor (Cable Color:Gray)

※1. The N-pole sensor cannot be used for the models WCC, WFC and WHC (marked with ※2 in the application table).

For detecting both lock and release actions, both the N-pole sensor and the S-pole sensor are required. However, for the models WCC, WFC and WHC (marked with ※2 in the application table), use two S-pole sensors.

Application Table ● = can be installed.

Shape	Round Body	Rectangular Body
Model No.	JES0000-02G□ JES0000-02GP□ JES0000-02LG□ JES0000-02LGP□	JES0000-01G□ JES0000-01GP□ JES0000-01LG□ JES0000-01LGP□
SWJ2000	●	Not Applicable
SWP050□	●	Not Applicable
SWP100□	●	Not Applicable
WCC□	●※2 (S-pole sensor only)	Not Applicable
WCG□-T	●	Not Applicable
WFC□	●※2 (S-pole sensor only)	Not Applicable
WHC□	●※2 (S-pole sensor only)	Not Applicable
WHG□-T	●	Not Applicable
WKH200□	●	Not Applicable
WKK100□	●	Not Applicable
WKK200□	●	Not Applicable
WPA0120	●	Not Applicable
WPA0160	●	Not Applicable
WPA0200	●	Not Applicable
WPA0250	●	Not Applicable
WPB0160	●	Not Applicable
WPB0200	●	Not Applicable
WPB0250	●	Not Applicable
WPE0160	●	Not Applicable
WPE0200	Not Applicable	●
WPE0300	Not Applicable	●
WPE0400	Not Applicable	●
WPE0500	Not Applicable	●
WPE0800	Not Applicable	●

Shape	Round Body	Rectangular Body
Model No.	JES0000-02G□ JES0000-02GP□ JES0000-02LG□ JES0000-02LGP□	JES0000-01G□ JES0000-01GP□ JES0000-01LG□ JES0000-01LGP□
WPF0100	Not Applicable	
WPF0120	●	Not Applicable
WPF0160	●	Not Applicable
WPF0200	Not Applicable	●
WPF0300	Not Applicable	●
WPH0100	●	Not Applicable
WPH0160	●	Not Applicable
WPH0200	Not Applicable	●
WPJ0120	Not Applicable	
WPJ0160	●	Not Applicable
WPJ0200	Not Applicable	●
WPJ0250	Not Applicable	●
WPJ0300	Not Applicable	●
WPJ0400	Not Applicable	●
WPS0160-C	●	Not Applicable
WPS0200-C	●	Not Applicable
WPT□	●	Not Applicable
WPW□-C	●	Not Applicable
WVA□-M	●	Not Applicable
WVB□-M	●	Not Applicable
WVGT□-T	●	Not Applicable

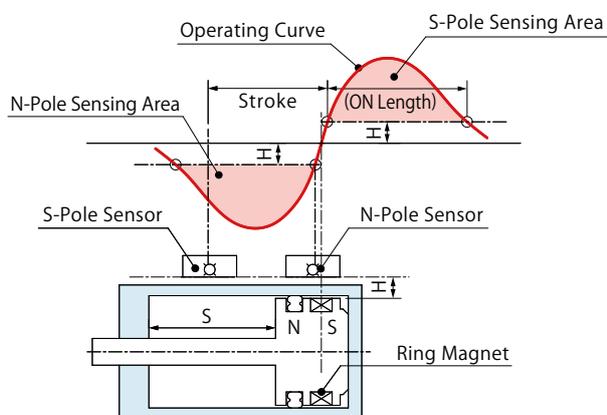
Note: ※2. Please use the S-pole sensor. (N-pole sensor cannot be used.)

Specifications

Model No.	JES0000-02G N S	JES0000-01G N S	JES0000-02GP N S	JES0000-01GP N S
	JES0000-02LG N S	JES0000-01LG N S	JES0000-02LGP N S	JES0000-01LGP N S
Body Shape	Round	Rectangular	Round	Rectangular
Output Specification	NPN (ON when in proximity)		PNP (ON when in proximity)	
Output Current	20mA Max.		80mA Max.	
Current Consumption	8mA Max.		8mA Max.	
Wiring Method	3-Wire			
Applicable Load	Relay, Programmable Logic Controller (PLC)			
Voltage	DC 5 ~ 24V			
Response Speed	16 μsec or less			
Material	Case : GF Reinforced PBT Black Set Screw : Brass			
Indicator Light	Red			
Withstand Voltage	AC1000V (1 minute / Packaged Charging Part / between the Case)			
Insulation Resistance	DC250V (20MΩ or more in Megohms, between the Case)			
Operating Temperature	-20°C ~ +85°C (Make sure no condensation)			
Operating Humidity	20 ~ 95%RH			
Protection Grade	IP67			
Cable Length	1m			

Performance Curve

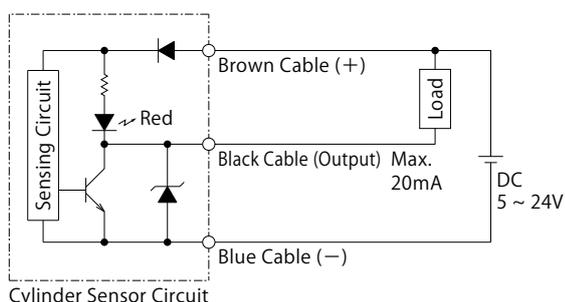
JES detects only the magnetic force that is vertical to the detection surface. The operating curve is shown below. Operating point is on the steep part of the operating curve, so even small stroke can be surely detected.



Electric Circuit Diagram

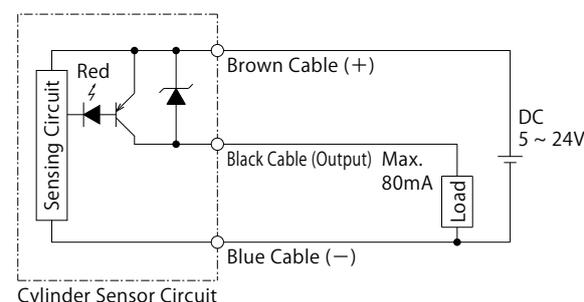
NPN Output

JES0000-02G□、JES0000-02LG□
JES0000-01G□、JES0000-01LG□



PNP Output

JES0000-02GP□、JES0000-02LGP□
JES0000-01GP□、JES0000-01LGP□

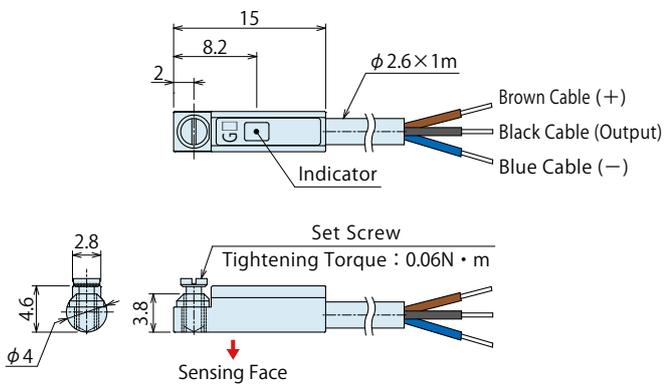


Locating + Clamp
Locating
Hand + Clamp
Support
Valve + Coupler
Cautions + Others
Pallet Gripper
WVA
Locating Pin Clamp
SWP
High-Power Pull Stud Clamp
WPT
JES
FA Pneumatic Hole Clamp
WKH
Lifting Hole Clamp
SWJ
Ball Lock Cylinder
WKA
Pneumatic Robotic Hands
WPW-C
WPS-C
WPA
WPH
WPP
WPQ
Auto Switch Proximity Switch
JEP
High-Power Pneumatic Hole Clamp
SWE
High-Power Pneumatic Swing Clamp
WHE
High-Power Pneumatic Link Clamp
WCE
Pneumatic Hole Clamp
SWA
Pneumatic Swing Clamp
WHA
Double Piston Pneumatic Swing Clamp
WHD
Pneumatic Link Clamp
WCA
Air Flow Control Valve
BZW
Manifold Block
WHZ-MD

External Dimensions

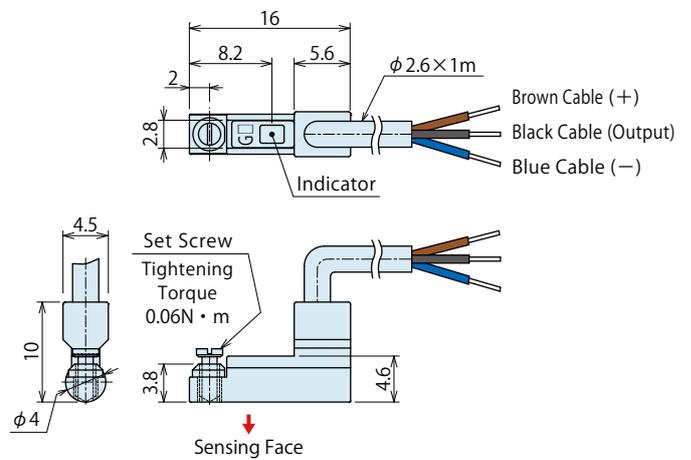
2 Shape 02 : Straight (Round Body)

JES0000-02G□、JES0000-02GP□



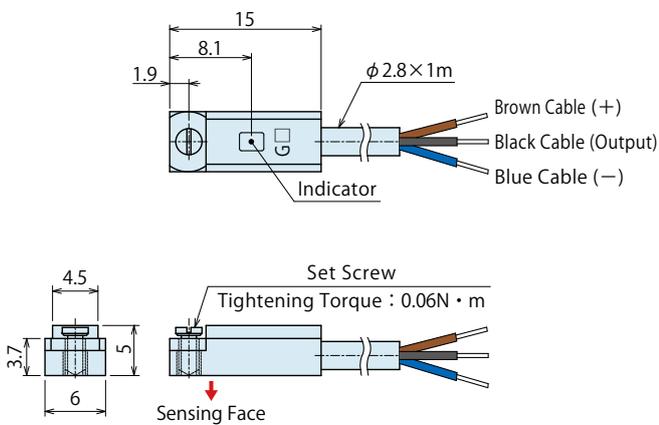
2 Shape 02L : L Shaped (Round Body)

JES0000-02LG□、JES0000-02LGP□



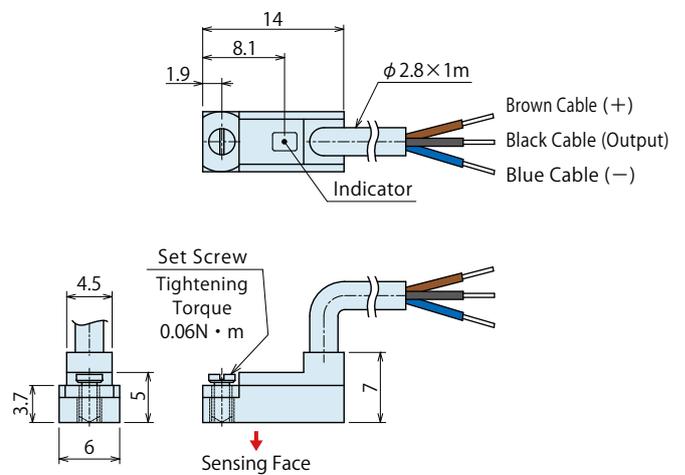
2 Shape 01 : Straight (Rectangular Body)

JES0000-01G□、JES0000-01GP□



2 Shape 01L : L Shaped (Rectangular Body)

JES0000-01LG□、JES0000-01LGP□



● Cautions

● Notes for Design

- 1) Check the Specifications
 - Please use each product according to the specifications. The product may be damaged or malfunction if used outside the range of load or specifications.
- 2) Notes on Use in the Interlock Circuit
 - When the sensor is used for an interlock signal that requires high reliability, please use a double interlock system by providing a mechanical protection function. Or by using another sensor together with the product. Also, please perform periodic maintenance and confirm proper operation.
- 3) Please avoid using loads that generate surge voltage.
 - If driving a relay, put a Zener diode in parallel for surge protection.

● Notes on Operating Environment

- 1) Never use the product in an atmosphere with explosive gases.
 - Sensor for Air Cylinder is not designed to prevent explosion. Do not use the product in an atmosphere with explosive gases since it may cause serious explosions.
- 2) The product may malfunction if an intense magnetic field is applied to a pole body.
- 3) Make sure to prepare shield measures when using in the following environments.
 - Where large current and/or strong magnetic field are generated.
 - Where noise occurs due to static electricity, etc.
 - Where magnetic powder or dust such as iron powder occurs or scatters.
- 4) Do not use the product in an environment where it is continuously exposed to coolant or chemical liquid.
 - Although IEC standard IP67 structure is satisfied, please avoid using sensors in an environment where continuously exposed to coolant or chemical liquid. This may cause insulation failure or malfunction.
- 5) Do not use the product in an environment with oil or chemicals.
 - If sensors are used in an environment with coolant or cleaning solvent, even in a short time, they may be adversely affected by improper insulation, malfunction due to swelling of potting resin and or hardening of electric cable.
- 6) Do not use the product in an environment with excessive vibrations or impacts.

● Installation Notes

- 1) Electric Wiring Reverse Connection Protection
 - Follow the electric circuit diagram on P.287 and make sure to connect properly. Never connect the power reversely.
- 2) Tighten sensors with appropriate tightening torque.
 - Use the set screw mounted on the sensor body and tighten it with the following torque.
JES0000 : 0.06N · m
- 3) Wiring
 - Do not damage the cables. Damaged, forcibly bended, stretched, winded, load applied or pinched cables will cause fire, electric shock, and/or malfunction due to electric leakage and/or continuity failure.
 - Do not apply excessive stress on the cable port of the sensor.
 - Minimum bending radius of the cable port is R7.
 - If cables are to move, fix the middle of the cables so that no stress is applied to the cable port.
- 4) Mounting position of the sensor should be adjusted by checking actual operating state.

 Locating
+
Clamp

Locating

Hand · Clamp

Support

Valve · Coupler

Cautions · Others

Pallet Gripper

WVA

 Locating
Pin Clamp

SWP

 High-Power
Pull Stud Clamp

WPT

JES

 FA Pneumatic
Hole Clamp

WKH

 Lifting
Hole Clamp

SWJ

 Ball Lock
Cylinder

WKA

 Pneumatic
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPPQ

 Auto Switch
Proximity Switch

JEP

 High-Power Pneumatic
Hole Clamp

SWE

 High-Power Pneumatic
Swing Clamp

WHE

 High-Power Pneumatic
Link Clamp

WCE

 Pneumatic
Hole Clamp

SWA

 Pneumatic
Swing Clamp

WHA

 Double Piston
Pneumatic
Swing Clamp

WHD

 Pneumatic
Link Clamp

WCA

 Air Flow
Control Valve

BZW

 Manifold
Block

WHZ-MD

Cautions

● Notes on Handling

- 1) It should be operated by qualified personnel.
 - The hydraulic and pneumatic equipment should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
 - ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
 - ② 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.
 - ③ After stopping the product, do not remove until the temperature drops.
 - ④ Make sure there is no trouble/issue in the bolts and respective parts before restarting the machine or equipment.
- 3) Do not disassemble or modify.
 - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.
Never modify the product as it contains a powerful magnet.
- 4) Keep more than one meter away from this product if you have a heart pacemaker, etc. It may be malfunctioned by strong magnetism.
- 5) This sensor is made by ASA Electronics Industry Co. Ltd.
Please contact us or ASA Electronics Industry for further inquiries.

● Maintenance and Inspection

- 1) Removal of the Product and Shut-off of Pressure Source
 - Before removing the product, 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.
 - Make sure there is no trouble/issue in the bolts and respective parts before restarting.
- 2) Never touch terminals while the power is on.
 - Otherwise it will cause electric shock, malfunction and damage to the sensor for air cylinder.
- 3) Retightening of Set Screw
 - When mounting position of the sensor for air cylinder is shifted due to looseness of set screw, retighten it after adjusting the mounting position.
- 4) Check if the electric cable is damaged or not.
 - Damaged cables may cause insulation failure.
Replace a sensor for air cylinder or repair the reed if the electric cable is damaged.
- 5) Product Storage
 - The products should be stored in the cool and dark place without direct sunshine or moisture.


MEMO

 Locating
+
Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Pallet Gripper

WVA

Locating
Pin Clamp

SWP

**High-Power
Pull Stud Clamp****WPT****JES**FA Pneumatic
Hole Clamp

WKH

Lifting
Hole Clamp

SWJ

Ball Lock
Cylinder

WKA

Pneumatic
Robotic Hands

WPW-C

WPS-C

WPA

WPH

WPP

WPQ

Auto Switch
Proximity Switch

JEP

High-Power Pneumatic
Hole Clamp

SWE

High-Power Pneumatic
Swing Clamp

WHE

High-Power Pneumatic
Link Clamp

WCE

Pneumatic
Hole Clamp

SWA

Pneumatic
Swing Clamp

WHA

Double Piston
Pneumatic
Swing Clamp

WHD

Pneumatic
Link Clamp

WCA

Air Flow
Control Valve

BZW

Manifold
Block

WHZ-MD

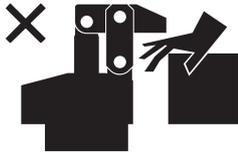
※ Please refer to P.716 for common cautions.

• Warranty

● Cautions

● Notes on Handling

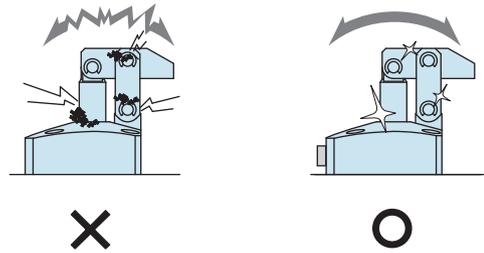
- 1) It should be operated by qualified personnel.
 - The hydraulic machine and air compressor should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
 - ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
 - ② 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.
 - ③ After stopping the product, do not remove until the temperature drops.
 - ④ Make sure there is no trouble/issue in the bolts and respective parts before restarting the machine or equipment.
- 3) Do not touch a clamp (cylinder) while it is working. Otherwise, your hands may be injured.



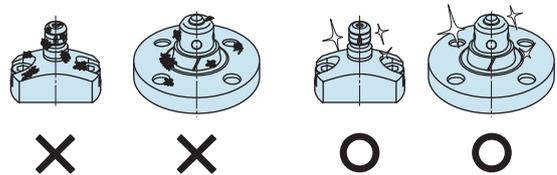
- 4) Do not disassemble or modify.
 - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

● Maintenance and Inspection

- 1) Removal of the Machine and Shut-off of Pressure Source
 - Before removing the product, make sure that the safety devices are in place. Shut off the pressure and power source and make sure no pressure exists in the air and hydraulic circuits.
 - Make sure there is no trouble/issue in the bolts and respective parts before restarting.
- 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, fluid leakage.



- 3) Regularly clean the reference surfaces (taper reference surface and seating surface) of locating products (SWT/SWQ/SWP/VRA/VRC/VX/VXE/VXF/WVS/VWH/VWM/VWK).
 - Locating products (except VRA/VRC/VX/VXE/VXF and SWR without air blow port) can remove contaminants with the cleaning function. When installing a workpiece or a pallet, make sure there are no contaminants such as thick sludge.
 - Continuous use with dirt on components will lead to locating failure, fluid leakage and malfunction.



- 4) Regularly tighten pipe, mounting bolt, nut, snap ring, cylinder and others to ensure proper use.
- 5) Make sure the hydraulic fluid has not deteriorated.
- 6) 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.
- 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 Failure caused by the use of the non-confirming state at the user's discretion.
- 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.

Locating
+
Clamp

Locating

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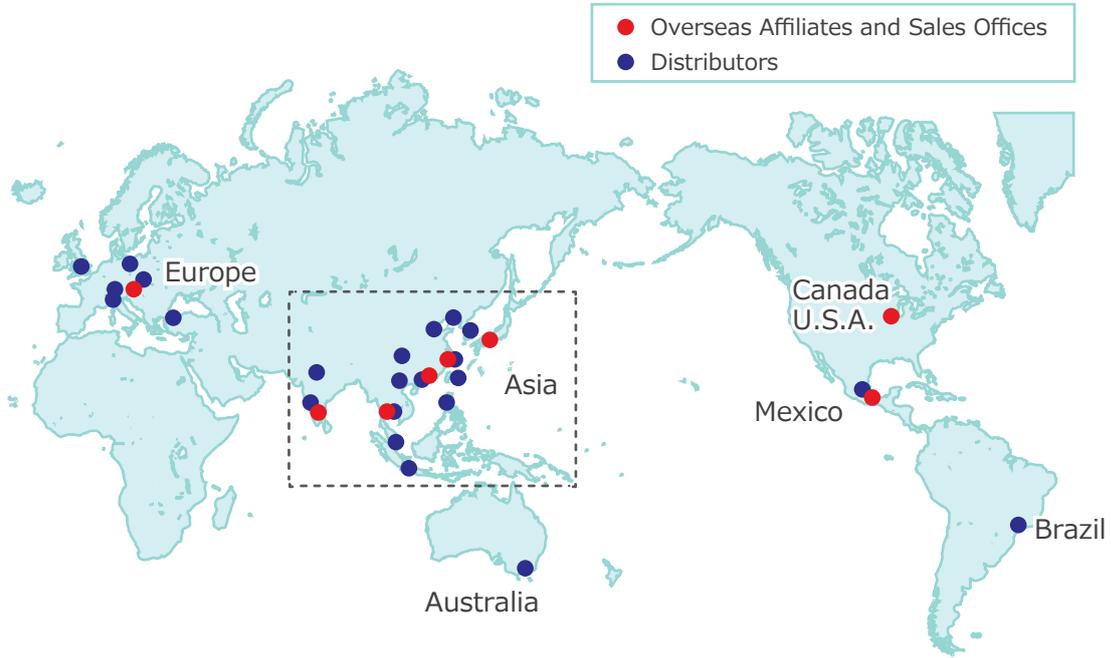
Sales Offices across the World

JAPAN HEAD OFFICE Overseas Sales	TEL. +81-78-991-5162	FAX. +81-78-991-8787
	KOSMEK LTD. 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241 〒651-2241 兵庫県神戸市西区室谷2丁目1番5号	
United States of America SUBSIDIARY KOSMEK (USA) LTD.	TEL. +1-630-620-7650	FAX. +1-630-620-9015
	650 Springer Drive, Lombard, IL 60148 USA	
MEXICO REPRESENTATIVE OFFICE KOSMEK USA Mexico Office	TEL. +52-442-161-2347	
	Av. Santa Fe #103 int 59 Col. Santa Fe Juriquilla C.P. 76230 Queretaro, Qro Mexico	
EUROPE SUBSIDIARY KOSMEK EUROPE GmbH	TEL. +43-463-287587	FAX. +43-463-287587-20
	Schleppeplatz 2 9020 Klagenfurt am Wörthersee Austria	
CHINA KOSMEK (CHINA) LTD. 考世美(上海)貿易有限公司	TEL. +86-21-54253000	FAX. +86-21-54253709
	Room601, RIVERSIDE PYRAMID No.55, Lane21, Pusan Rd, Pudong Shanghai 200125, China 中国上海市浦东新区浦三路21弄55号银亿滨江中心601室 200125	
INDIA BRANCH OFFICE KOSMEK LTD - INDIA	TEL. +91-9880561695	
	F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore -560052 India	
THAILAND REPRESENTATIVE OFFICE KOSMEK Thailand Representation Office	TEL. +66-2-300-5132	FAX. +66-2-300-5133
	67 Soi 58, RAMA 9 Rd., Suanluang, Suanluang, Bangkok 10250, Thailand	
TAIWAN (Taiwan Exclusive Distributor) Full Life Trading Co., Ltd. 盈生貿易有限公司	TEL. +886-2-82261860	FAX. +886-2-82261890
	16F-4, No.2, Jian Ba Rd., Zhonghe District, New Taipei City Taiwan 23511 台湾新北市中和區建八路2號 16F-4 (遠東世紀廣場)	
PHILIPPINES (Philippines Exclusive Distributor) G.E.T. Inc, Phil.	TEL. +63-2-310-7286	FAX. +63-2-310-7286
	Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427	
INDONESIA (Indonesia Exclusive Distributor) PT. Yamata Machinery	TEL. +62-21-29628607	FAX. +62-21-29628608
	Delta Commercial Park I, Jl. Kenari Raya B-08, Desa Jayamukti, Kec. Cikarang Pusat Kab. Bekasi 17530 Indonesia	

Sales Offices in Japan

Head Office Osaka Sales Office Overseas Sales	TEL. 078-991-5162	FAX. 078-991-8787
	〒651-2241 兵庫県神戸市西区室谷2丁目1番5号	
Tokyo Sales Office	TEL. 048-652-8839	FAX. 048-652-8828
	〒331-0815 埼玉県さいたま市北区大成町4丁目81番地	
Nagoya Sales Office	TEL. 0566-74-8778	FAX. 0566-74-8808
	〒446-0076 愛知県安城市美園町2丁目10番地1	
Fukuoka Sales Office	TEL. 092-433-0424	FAX. 092-433-0426
	〒812-0006 福岡県福岡市博多区上牟田1丁目8-10-101	

Global Network



Asia Detailed Map



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