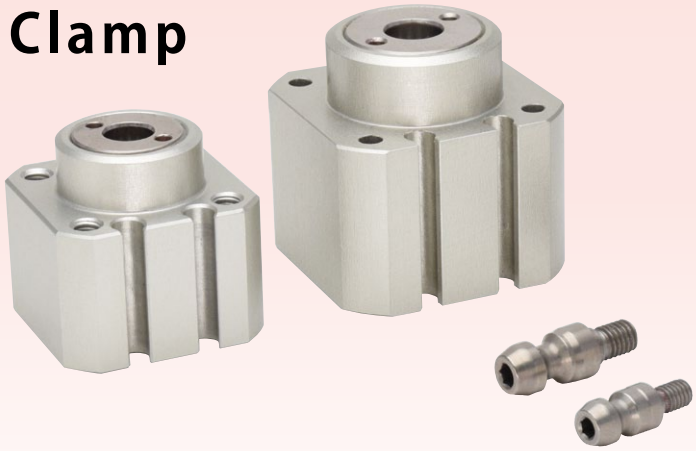
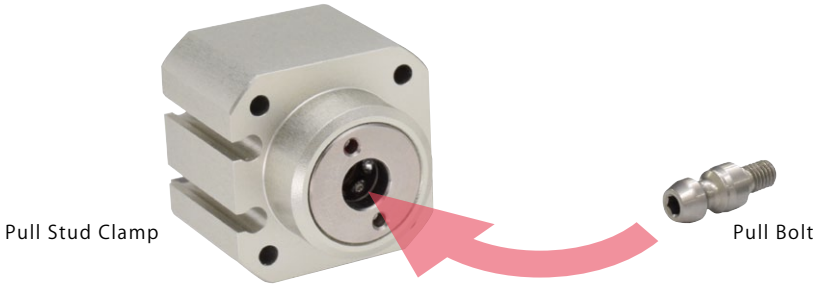
High-Power Pull Stud Clamp

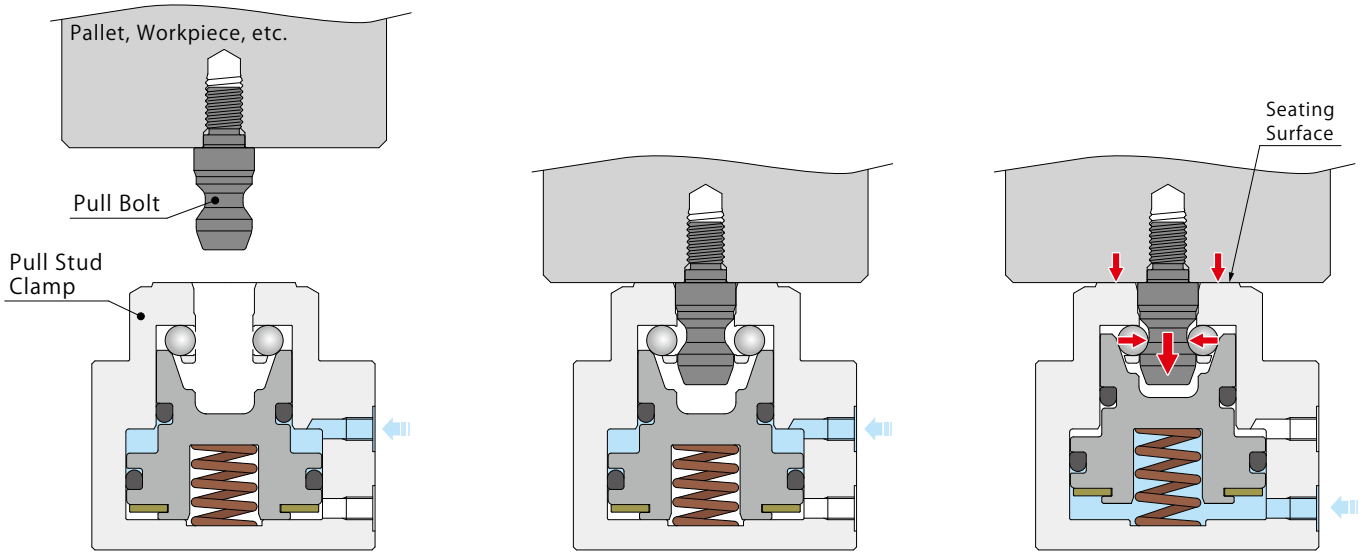
Model **WPT**



Clamps with the Pull Bolt. Compact Body with Powerful Holding Force For Various Applications: Pallet Transfer, Robotic Hand Gripper Change, etc.

• Connect the Pull Bolt with the Pull Stud Clamp





Detached (Released) State

Release Air Pressure : ON
Lock Air Pressure : OFF

Provide release air pressure, allowing for pulling in and out the pull bolt.

Workpiece Setting (Before Connected)

Release Air Pressure : ON
Lock Air Pressure : OFF

Insert the pull bolt.

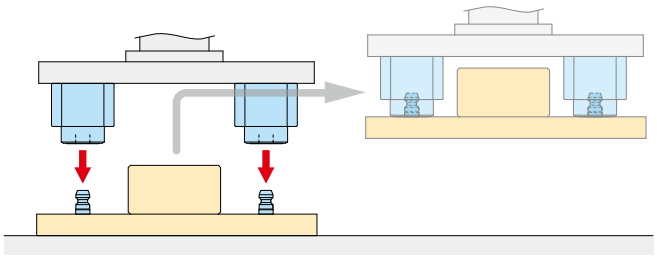
Connected (Locked) State

Release Air Pressure : OFF
Lock Air Pressure : ON

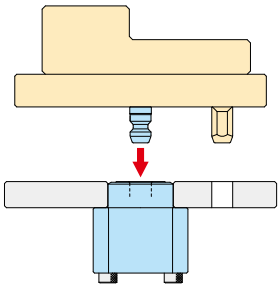
The pull bolt is pulled in by the piston and steel balls with lock air + spring force to complete the locking operation.

※ Simplified internal structure. Actual components are different.

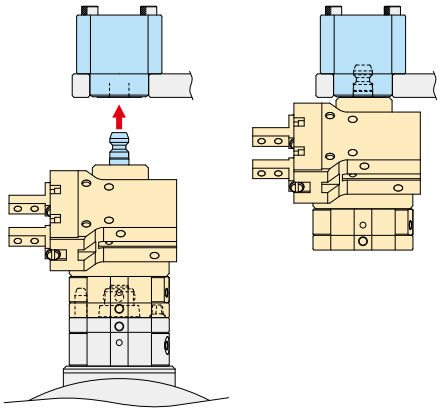
Application Examples



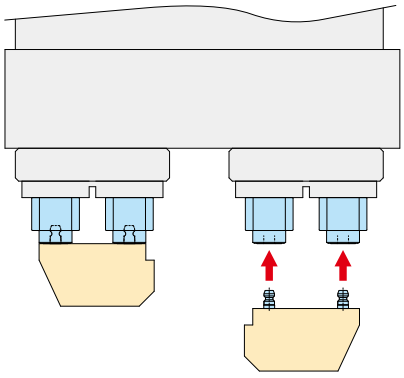
Pallet/Workpiece/Application Transfer. Allows for more compact hand.※1



Pallet Setup by Using with Locating Pin



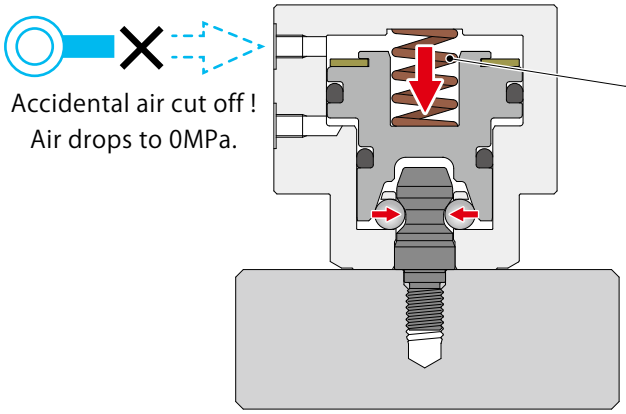
Stocker for Robotic Hands



Gripper Change for Robotic Hands ※1

Note :
※1. Use **WPWZ□-P1S** when clamping one workpiece with two or more High-Power Pull Stud Clamps.
The accumulated mounting distance accuracy of pull bolts and clamps needs to be within ±0.1mm.

Fall Prevention with Self-Locking Spring



Accidental air cut off !
Air drops to 0MPa.

Safe Self-Locking Spring

Self-locking spring enables to hold a workpiece even when air is accidentally cut off.

※ Make sure to supply lock air for normal use.

Compact, Light, yet Powerful

Exerts Powerful Clamping Force and Holding Force with Mechanical Lock

Action Detection with Sensor

Actions of the Pull Stud Clamp can be detected by using with the Sensor for Air Cylinder.

Refer to P.286 for further information.

Model No. Indication (High-Power Pull Stud Clamp)

WPT 050 0 - □
1 2 3

1 Size

050 : External Dimension □29mm
060 : External Dimension □35mm
080 : External Dimension 40×41mm
100 : External Dimension □45mm

2 Design No.

0 : Revision Number

3 Operating Temperature (Sealing Material)

Blank : Standard (Operating Temp. 0 ~ 70℃)
Sealing Material：Nitrile Rubber

V : High Temp. (Operating Temp. 0 ~ 120℃)
Sealing Material：Fluor Rubber

Note :
1. WPT does not include Pull Bolt (WPWZ).
Please order separately.

Model No. Indication (Pull Bolt)

WPWZ 50 0 - P1
1 2 3

1 Corresponding WPT High-Power Pull Stud Clamp Model No.

50 : For WPT0500
60 : For WPT0600
80 : For WPT0800
100 : For WPT1000

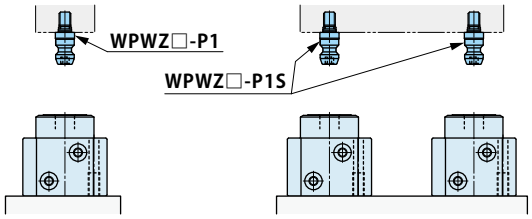
2 Design No.

0 : Revision Number

3 Function

P1 : Pull Bolt
P1S : Pull Bolt (Slim Option)※1

Note :
※1. Use **WPWZ□-P1S** when clamping one workpiece with two or more High-Power Pull Stud Clamps.
The accumulated mounting distance accuracy of pull bolts and clamps needs to be within ±0.1mm.



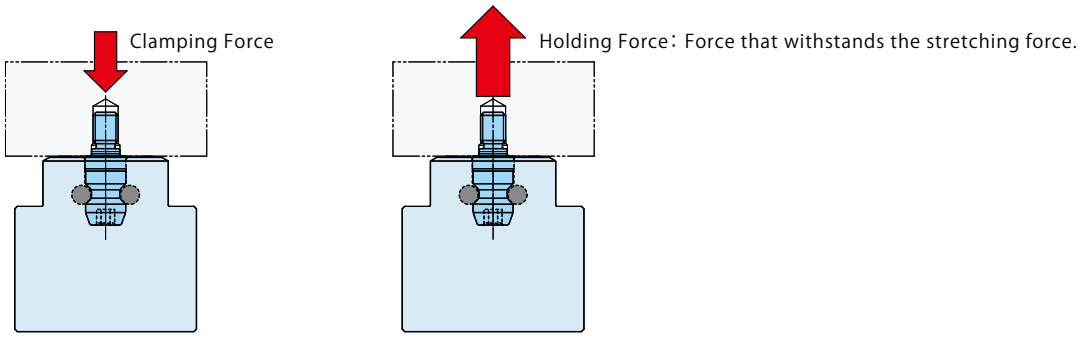
Specifications

Model No.			WPT0500	WPT0600	WPT0800	WPT1000
Clamping Force (at 0.5MPa)		N	374	602	934	1187
Holding Force (at 0.5MPa)		N	768	1234	1918	2436
Residual Holding Force (at 0MPa)※2		N	(100)	(170)	(250)	(300)
Cylinder Capacity	Lock Side	cm³	0.77	1.45	2.62	3.81
	Release Side		0.41	0.80	1.45	1.75
Maximum Operating Pressure		MPa	0.5			
Minimum Operating Pressure		MPa	0.3			
Withstanding Pressure		MPa	0.75			
Operating Temperature Range	3 Blank	℃	0 ~ 70			
	3 V	℃	0 ~ 120※3			
Usable Fluid			Dry Air			
Weight		g	55	95	155	215

Notes : ※2. Residual holding force means the holding force when air pressure drops to 0MPa after locking, and above number of residual holding force is just a reference value.
※3. For action detection, be careful with the specification (temperature) of a switch or a sensor.

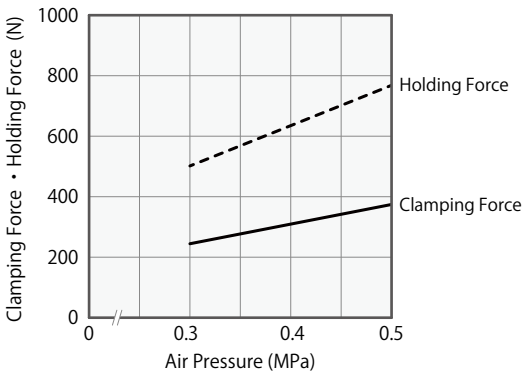
Model No.		WPWZ500-P1□	WPWZ600-P1□	WPWZ800-P1□	WPWZ1000-P1□
Weight	g	3	5	10	20

Clamping Force / Holding Force Curve



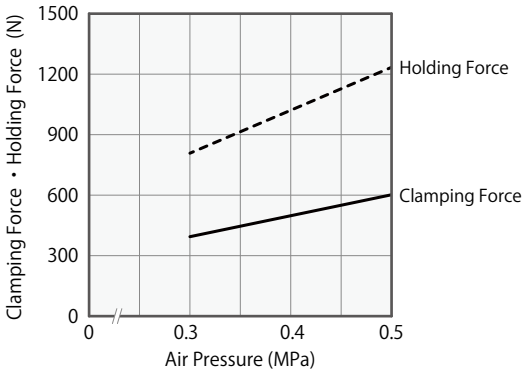
WPT0500

Air Pressure	Clamping Force (N)	Holding Force (N)
at 0.5MPa	374	768
at 0.4MPa	308	633
at 0.3MPa	243	499
at 0MPa	–	(100)※4



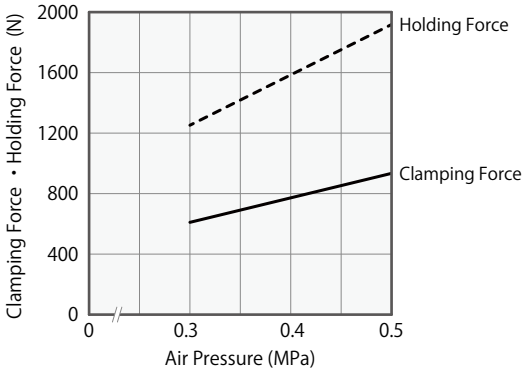
WPT0600

Air Pressure	Clamping Force (N)	Holding Force (N)
at 0.5MPa	602	1234
at 0.4MPa	497	1019
at 0.3MPa	393	806
at 0MPa	–	(170)※4



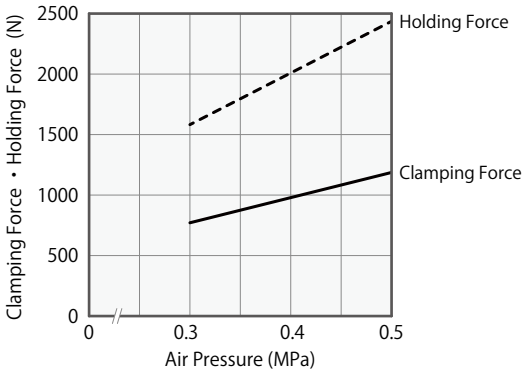
WPT0800

Air Pressure	Clamping Force (N)	Holding Force (N)
at 0.5MPa	934	1918
at 0.4MPa	772	1585
at 0.3MPa	610	1252
at 0MPa	–	(250)※4



WPT1000

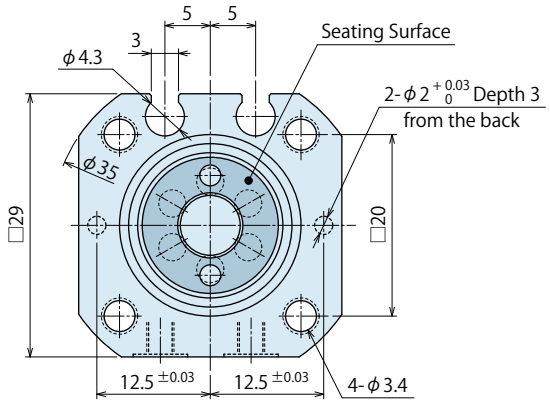
Air Pressure	Clamping Force (N)	Holding Force (N)
at 0.5MPa	1187	2436
at 0.4MPa	979	2009
at 0.3MPa	771	1582
at 0MPa	–	(300)※4



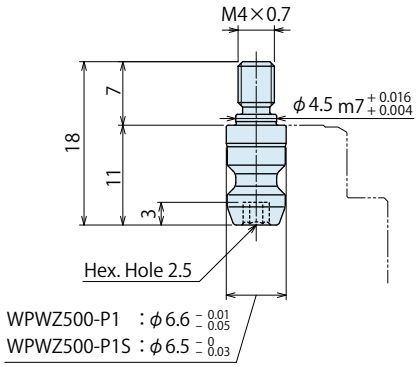
Note : ※4. Residual holding force means the holding force when air pressure drops to 0MPa after locking, and above number of residual holding force is just a reference value.

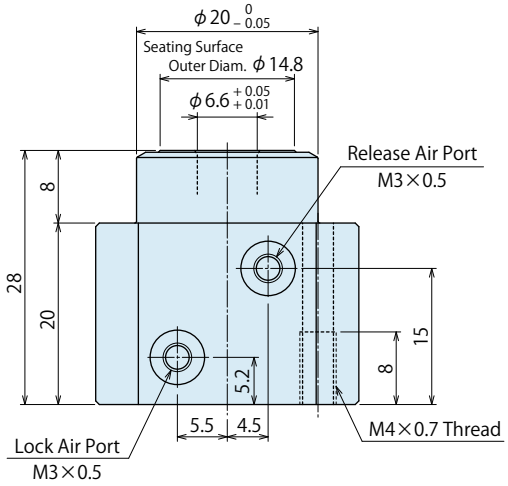
External Dimensions：WPT0500, WPWZ500-P1□

High-Power Pull Stud Clamp
WPT0500

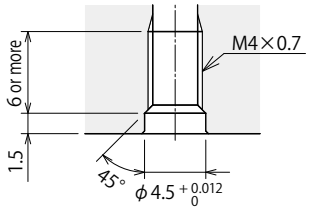


Pull Bolt
WPWZ500-P1□





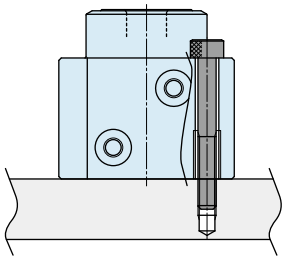
Machining Dimensions of Pull Bolt (WPWZ500-P1□)



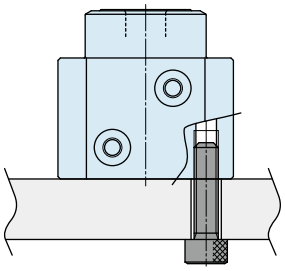
Tightening Torque when Mounting WPWZ500-P1□
2.3 N・m

Note :
1. WPT does not include Pull Bolt (WPWZ). Please order separately.

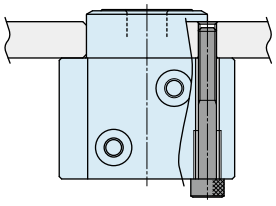
WPT0500 Installation Method and Tightening Torque



【DWG 1：Bolt Down Mounting】



【DWG 2：Bolt Up Mounting】



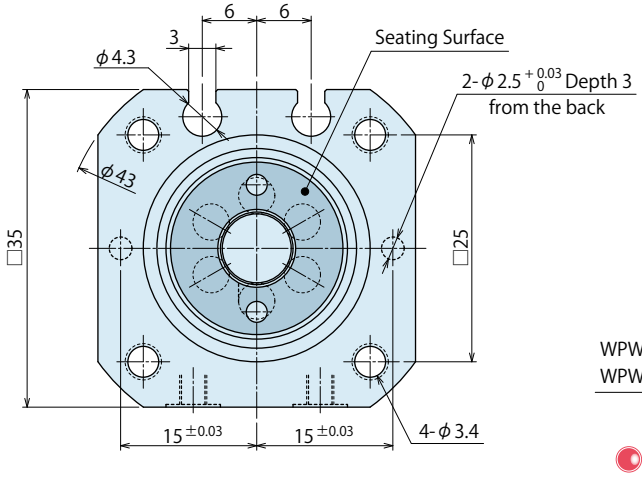
【DWG 3：Bolt Up Mounting】

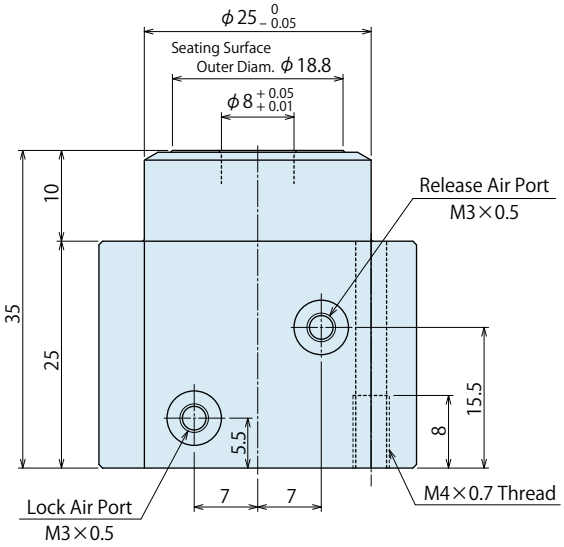
Model No.	Mounting Direction	Mounting Bolt Nominal × Pitch	Number of Bolts	Tightening Torque (N・m)
WPT0500	DWG 1：Bolt Down Mounting	M3×0.5	4	1
	DWG 2：Bolt Up Mounting	M4×0.7	4	2.3
	DWG 3：Bolt Up Mounting	M3×0.5	4	1

Note :
1. Mounting bolt and locating pin are not included. Please order separately.

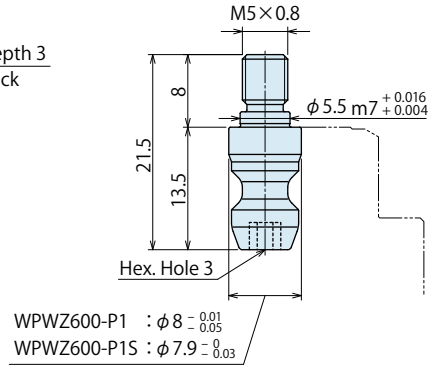
External Dimensions : WPT0600, WPWZ600-P1□

High-Power Pull Stud Clamp
WPT0600

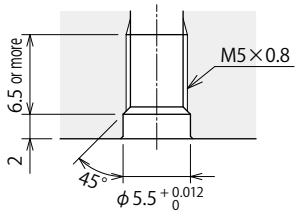




Pull Bolt
WPWZ600-P1□



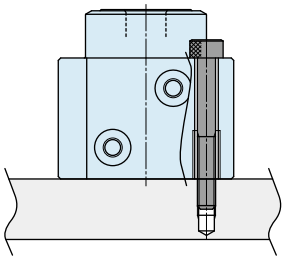
Machining Dimensions of Pull Bolt (WPWZ600-P1□)



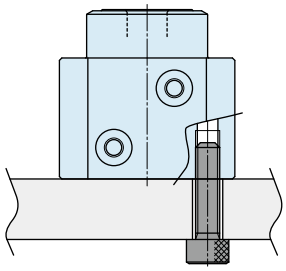
Tightening Torque when Mounting WPWZ600-P1□
4.0 N・m

Note :
1. WPT does not include Pull Bolt (WPWZ). Please order separately.

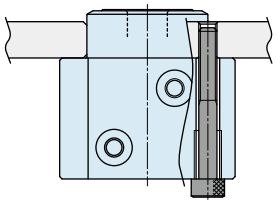
WPT0600 Installation Method and Tightening Torque



【DWG 1 : Bolt Down Mounting】



【DWG 2 : Bolt Up Mounting】



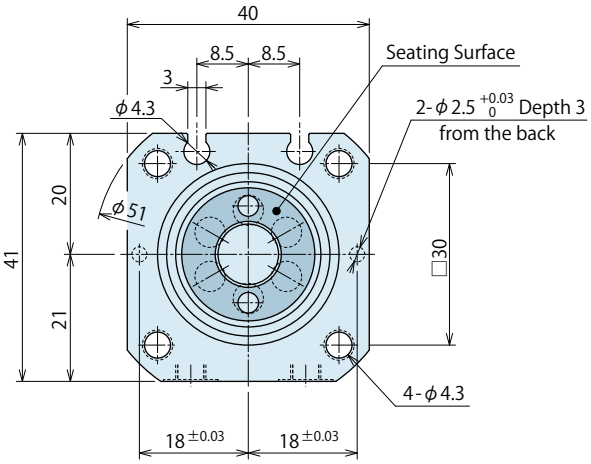
【DWG 3 : Bolt Up Mounting】

Model No.	Mounting Direction	Mounting Bolt Nominal × Pitch	Number of Bolts	Tightening Torque (N・m)
WPT0600	DWG 1 : Bolt Down Mounting	M3×0.5	4	1
	DWG 2 : Bolt Up Mounting	M4×0.7	4	2.3
	DWG 3 : Bolt Up Mounting	M3×0.5	4	1

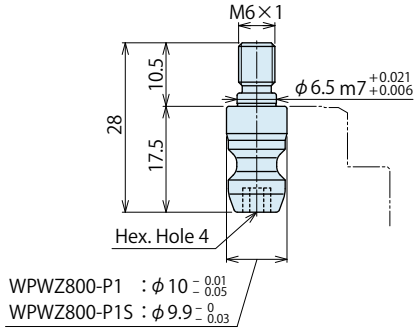
Note :
1. Mounting bolt and locating pin are not included. Please order separately.

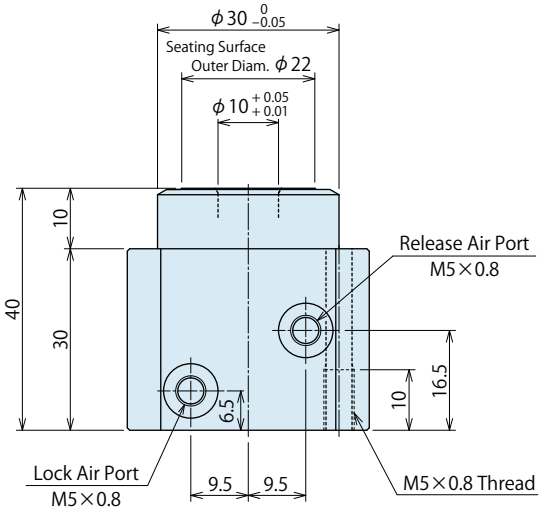
External Dimensions：WPT0800, WPWZ800-P1□

High-Power Pull Stud Clamp
WPT0800

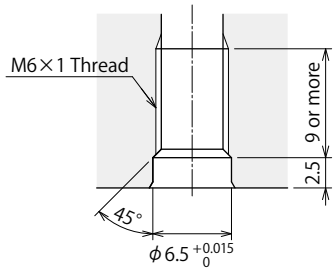


Pull Bolt
WPWZ800-P1□





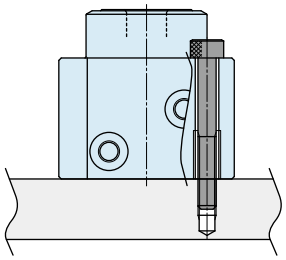
Machining Dimensions of Pull Bolt (WPWZ800-P1□)



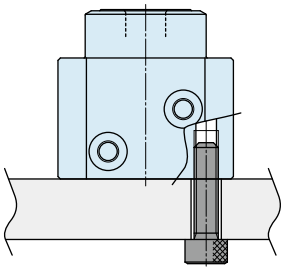
Tightening Torque when Mounting WPWZ800-P1□
9.0 N・m

Note :
1. WPT does not include Pull Bolt (WPWZ). Please order separately.

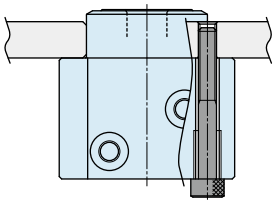
WPT0800 Installation Method and Tightening Torque



【DWG 1：Bolt Down Mounting】



【DWG 2：Bolt Up Mounting】



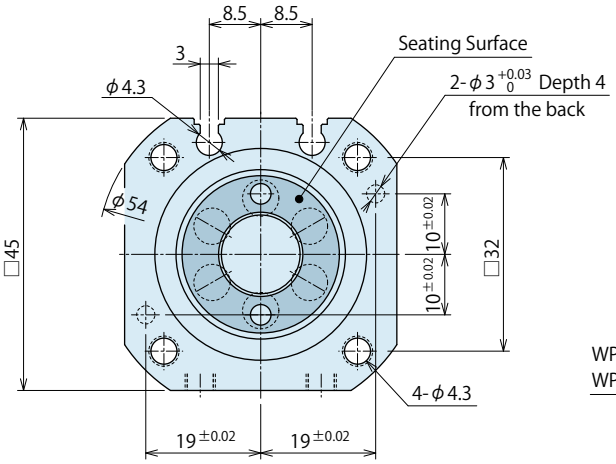
【DWG 3：Bolt Up Mounting】

Model No.	Mounting Direction	Mounting Bolt Nominal × Pitch	Number of Bolts	Tightening Torque (N・m)
WPT0800	DWG 1：Bolt Down Mounting	M4×0.7	4	2.3
	DWG 2：Bolt Up Mounting	M5×0.8	4	4.6
	DWG 3：Bolt Up Mounting	M4×0.7	4	2.3

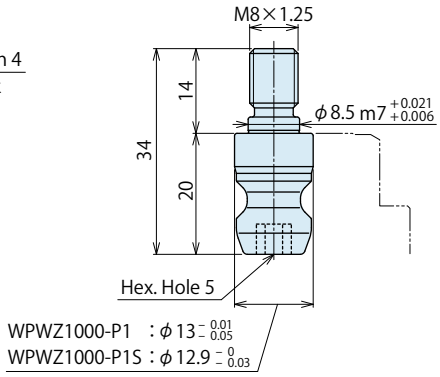
Note :
1. Mounting bolt and locating pin are not included. Please order separately.

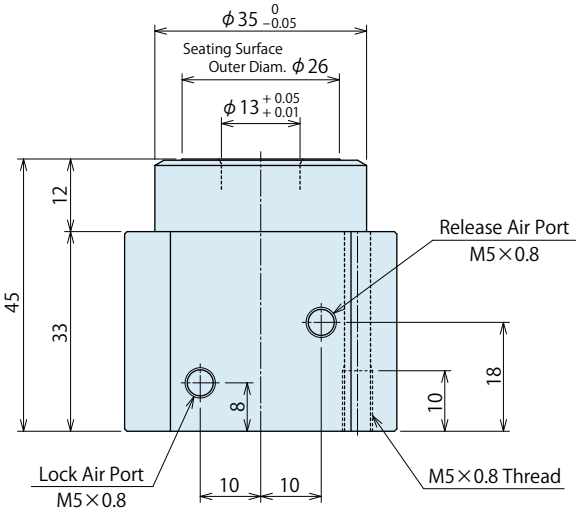
External Dimensions : WPT1000, WPWZ1000-P1□

High-Power Pull Stud Clamp
WPT1000

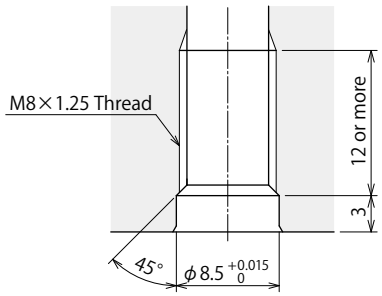


Pull Bolt
WPWZ1000-P1□





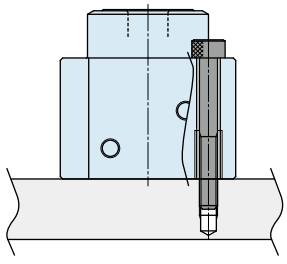
Machining Dimensions of Pull Bolt (WPWZ1000-P1□)



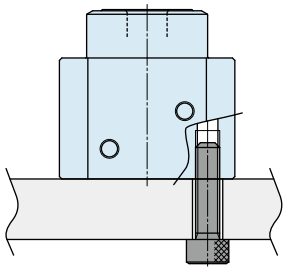
Tightening Torque when Mounting WPWZ1000-P1□
18 N・m

Note :
1. WPT does not include Pull Bolt (WPWZ). Please order separately.

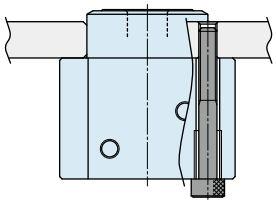
WPT1000 Installation Method and Tightening Torque



【DWG 1 : Bolt Down Mounting】



【DWG 2 : Bolt Up Mounting】



【DWG 3 : Bolt Up Mounting】

Model No.	Mounting Direction	Mounting Bolt Nominal × Pitch	Number of Bolts	Tightening Torque (N・m)
WPT1000	DWG 1 : Bolt Down Mounting	M4×0.7	4	2.3
	DWG 2 : Bolt Up Mounting	M5×0.8	4	4.6
	DWG 3 : Bolt Up Mounting	M4×0.7	4	2.3

Note :
1. Mounting bolt and locating pin are not included. Please order separately.

Cautions

Notes for Design

1) Check Specifications
- Model WPT：Maximum operating air pressure is 0.5 MPa. Minimum operating air pressure is 0.3 MPa. Applying excessive load on the Pull Stud Clamp leads to deformation, galling and air leakage.

2) Do not apply impact on a workpiece, etc. connected to Pull Bolt.
- Otherwise, it may result in breakage of the product.

3) 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.

4) Please supply filtered clean dry air.
- Oil supply with a lubricator etc. is unnecessary.

5) Operating Environment
- WPT has no function that prevents contaminants. Do not use under environment with coolant and cutting chips.

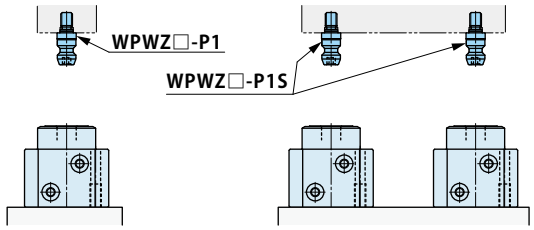
6) Insertion of Pull Bolt
- Please insert the Pull Bolt to the end before providing lock air pressure. (Prevention of clamping failure and damage of Pull Bolt.)

7) Protective Cover Installation
- If the moving parts of the robot or robotic hand may endanger operator, please install the protection cover.

8) Fall Prevention Measures
- In case of accident such as detachment of a workpiece, please prepare fall prevention measures for safety.

9) For Use of Auto Switch
- In order to ensure stable detections, please use the 3-wire sensor of the high accuracy sensor for air cylinder "model **JES0000-02□□**" .

10) When using more than two High-Power Pull Stud Clamps
- Use **WPWZ□-P1S** when clamping one workpiece with two or more High-Power Pull Stud Clamps. The accumulated mounting distance accuracy of pull bolts and clamps needs to be within ±0.1mm.



Using a single WPT　　Using 2 or more WPTs

Installation Notes

1) Usable Fluid

- 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 lubricant, please supply lubricant oil continuously. Otherwise, the initial grease applied by KOSMEK will be removed.)

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 air 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 leakage and malfunction.

4) Installation of the Main Body and the Pull Bolt

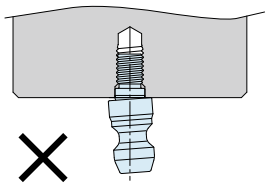
- Please use hexagonal socket bolts (with tensile strength of A2-70 or greater), and tighten the product with the tightening torque listed on P.279 ~ P.282.
- The tightening torque for pull bolt is shown below.

Model No.	Bolt Size	Tightening Torque (N • m)
WPWZ500-P1□	M4×0.7	2.3
WPWZ600-P1□	M5×0.8	4.0
WPWZ800-P1□	M6×1	9.0
WPWZ1000-P1□	M8×1.25	18

- Installation failure causes air leakage, deformation and damage of the Pull Stud Clamp and the Pull Bolt.

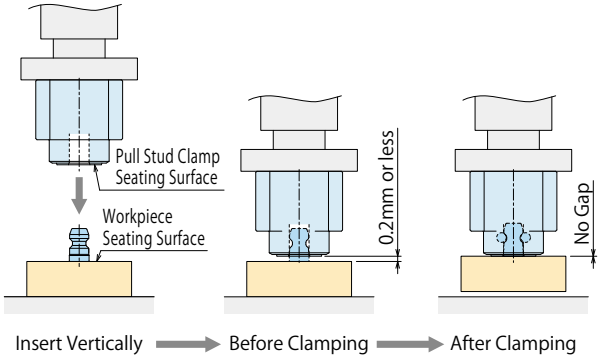
5) Do Not Use Deformed Pull Bolts

- If a Pull Bolt is deformed as shown below, Pull Stud Clamp and Pull Bolt will be broken, and/or will not be able to release properly.



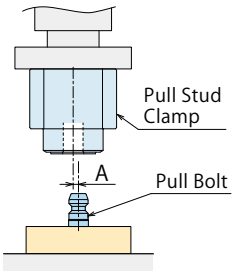
6) Allowable Offset while Clamping

- While clamping, the gap between the seating surfaces of the Pull Stud Clamp and a workpiece, etc. should be 0.2mm or less. At this time, insert the Pull Stud Clamp vertical to the Pull Bolt. After clamping, the Pull Bolt is pulled in and the seating surfaces and workpiece come in contact.



- Allowable position offset of Pull Stud Clamp and Pull Bolt while teaching must be within the allowable position offset range. At this time, the changing workpiece shouldn't be completely fixed and should have space within the range of allowable offset.

Allowable Position Offset in Horizontal Direction



Model No.	Allowable Offset Amm
WPT0500	A=±0.5 mm
WPT0600	A=±0.7 mm
WPT0800	A=±0.8 mm
WPT1000	A=±0.9 mm

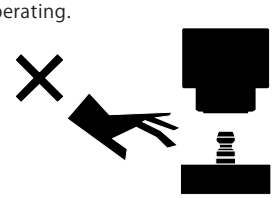
Cautions

Notes on Handling

1) It should be handled 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 preventive devices are in place.
② Before removing the product, 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) In order to avoid injury, please do not touch the clamp while it is operating.



4) When a 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 safety measures 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) 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.

※ Please refer to P.716 for common cautions. ・Warranty

Action Confirmation Method : Sensor for Air Cylinder

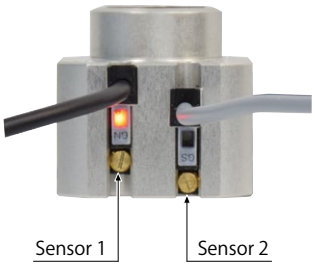
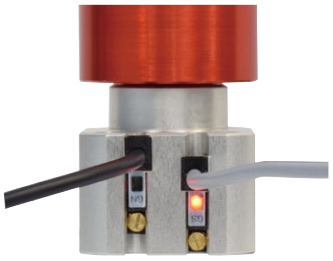
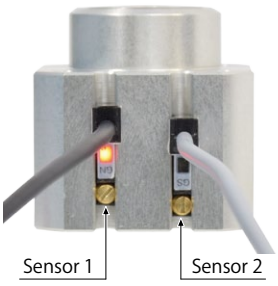
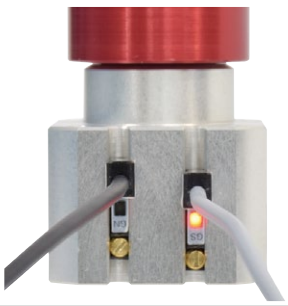
This product (model WPT) is able to detect the locking action and releasing action of Sensor for Air Cylinder (sold separately).

Sensor for Air Cylinder model JES

In order to ensure stable detections, please use the 3-wire sensor of the high accuracy sensor for air cylinder "model JES0000-02□□" .
JES is extremely compact.

Refer to P.287 for detailed specifications of JES.

【The Usage Example of Sensor for Air Cylinder】

State	Released State	Locked State
Mounting Ex. for WPT0500		
Mounting Ex. for WPT0600		
Cylinder Sensor State	Sensor 1 ON Sensor 2 OFF	Sensor 1 OFF Sensor 2 ON

The mounting position and direction of the sensor for air cylinder vary depending on the individual product differences and the magnetic flux change due to the surrounding environment. Please adjust the position of the actual product before use. The sensor for air cylinder may stick out from the installation slot of WPT.

Model No. Indication

JES 000 0 - 02L GN

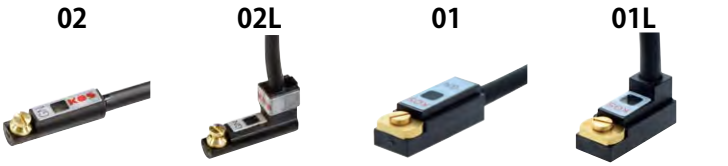
1 2 3

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)



02	02L	01	01L
Straight (Round Body)	L Shaped (Round Body)	Straight (Rectangular Body)	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

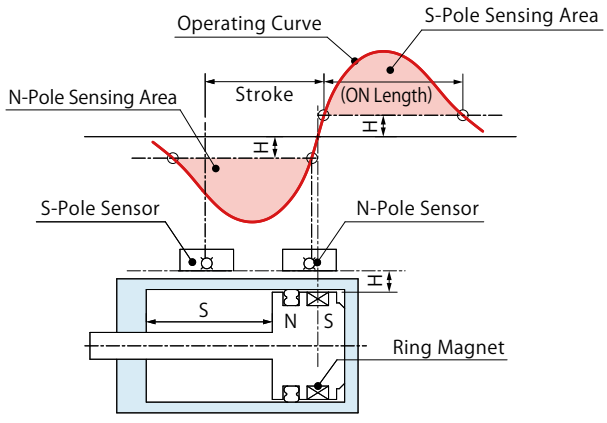
Note: ※2. Please use the S-pole sensor. (N-pole sensor cannot be used.)

Specifications

Model No.	JES0000-02G N S JES0000-02LG N S	JES0000-01G N S JES0000-01LG N S	JES0000-02GP N S JES0000-02LGP N S	JES0000-01GP 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 μ sec 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℃ ~ +85℃ (Make sure no condensation)			
Operating Humidity	20 ~ 95%RH			
Protection Grade	IP67			
Cable Length	1m			

Performance Curve

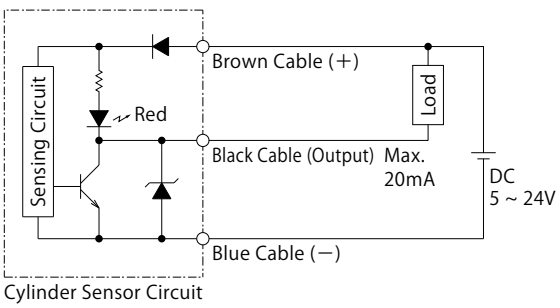
JES detects only the magnetic force that is vertical to the detection surface. The operating curve is shown below.
Operating point is on the steep part of the operating curve, so even small stroke can be surely detected.



Electric Circuit Diagram

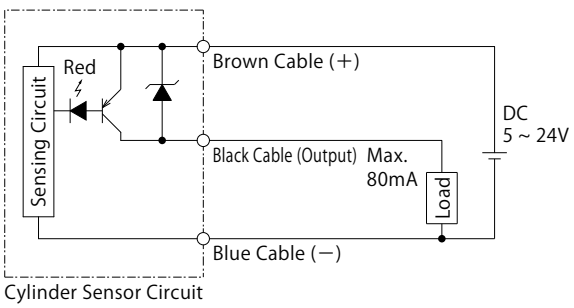
NPN Output

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



PNP Output

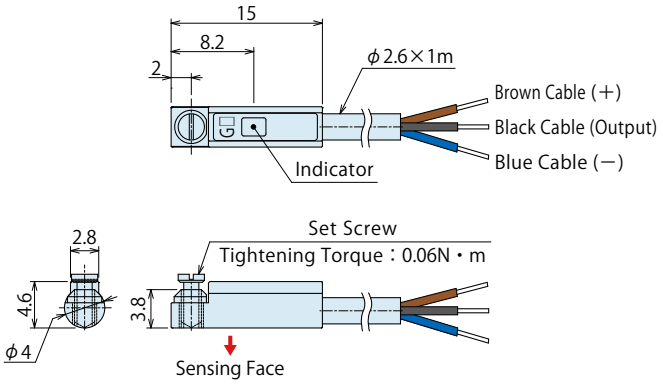
JES0000-02GP□、JES0000-02LGP□
JES0000-01GP□、JES0000-01LGP□



External Dimensions

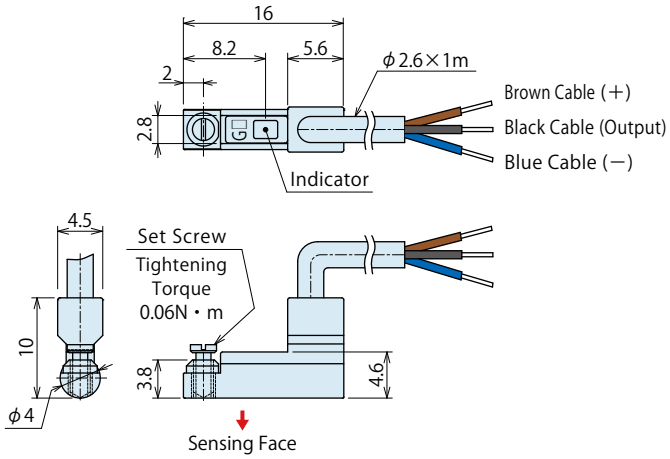
2 Shape 02 : Straight (Round Body)

JES0000-02G□ 、JES0000-02GP□



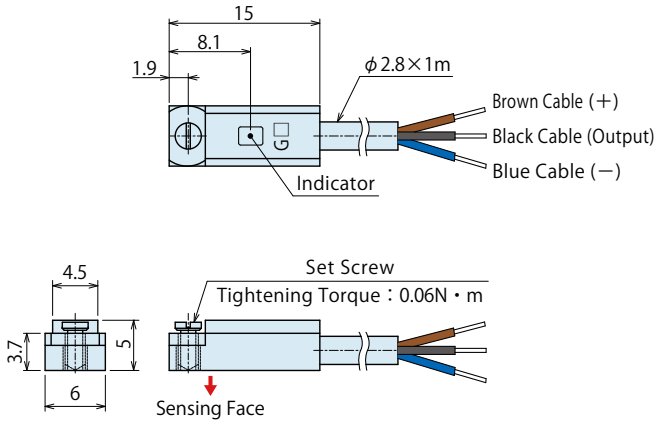
2 Shape 02L : L Shaped (Round Body)

JES0000-02LG□ 、JES0000-02LGP□



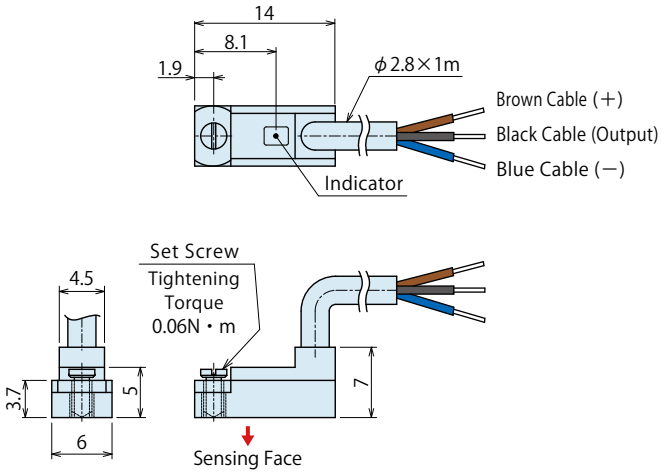
2 Shape 01 : Straight (Rectangular Body)

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.

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

※ Please refer to P.716 for common cautions. • Warranty

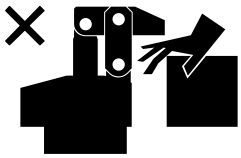
Cautions

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.

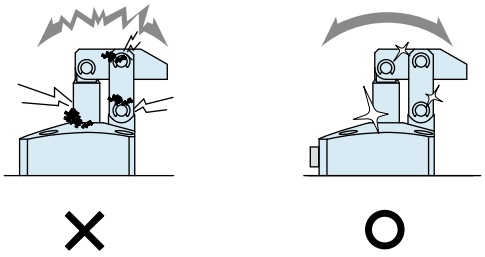


4) Do not disassemble or modify.
- If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

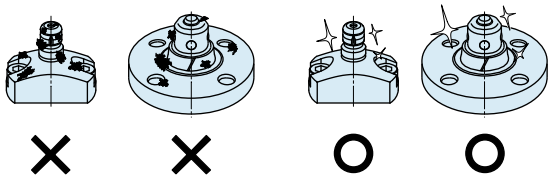
Maintenance and Inspection

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.

Sales Offices

Sales Offices across the World

Japan	KOSMEK LTD. HEAD OFFICE	**TEL. +81-78-991-5162** FAX. +81-78-991-8787 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241
USA	KOSMEK (USA) LTD. Overseas Affiliate	**TEL. +1-630-620-7650** FAX. +1-630-620-9015 650 Springer Drive, Lombard, IL 60148 USA
	KOSMEK (USA) LTD. Atlanta Branch Office	**TEL. +1-630-620-7650** 303 Perimeter Center North, Suite 300, Atlanta, GA 30346 USA
Mexico	KOSMEK (USA) LTD. Mexico Branch Office	**TEL. +52-442-851-1377** Av. Santa Fe 103, Int. 59, col. Santa Fe Juriquilla, Queretaro, QRO, 76230, Mexico
Europe	KOSMEK EUROPE GmbH Overseas Affiliate	**TEL. +43-463-287587** FAX. +43-463-287587-20 Schleppeplatz 2 9020 Klagenfurt am Wörthersee Austria
China	KOSMEK (CHINA) LTD. Overseas Affiliate	**TEL.+86-21-54253000** FAX. +86-21-54253709 Room601, RIVERSIDE PYRAMID No.55, Lane21, Pusan Rd, Pudong Shanghai China
	KOSMEK (CHINA) LTD. Dongguan Office Overseas Affiliate (Sales Office)	**TEL.+86-769-85300880** Room301,AcerBuilding No.15,Dezheng(W)Road,Changan Town Dongguan Guangdong 523843.,P.R.China
	KOSMEK (CHINA) LTD. Wuhan Office Overseas Affiliate (Sales Office)	**TEL.+86-27-59822303** A-502 Jingkai Future City,Zhuankou Economic Development Zone Wuhan Huibei
India	KOSMEK LTD. - INDIA Branch	**TEL. +91-9880561695** 4A/Old No:649, Ground Floor, 4th D cross, MM Layout, Kavalbyrasandra, RT Nagar, Bangalore -560032 India
Thailand	KOSMEK Thailand Representative Office Representative Office	**TEL. +66-2-300-5132** FAX. +66-2-300-5133 67 Soi 58, RAMA 9 Rd., Phatthanakan, Suanluang, Bangkok 10250, Thailand
Taiwan	FULL LIFE TRADING CO., LTD. Taiwan Exclusive Distributor	**TEL. +886-2-82261860** FAX. +886-2-82261890 16F-4, No.2, Jian Ba Rd., Zhonghe District, New Taipei City Taiwan 23511
Philippines	G.E.T. Inc, Phil. Philippines Exclusive Distributor	**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	PT. Yamata Machinery Indonesia Exclusive Distributor	**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

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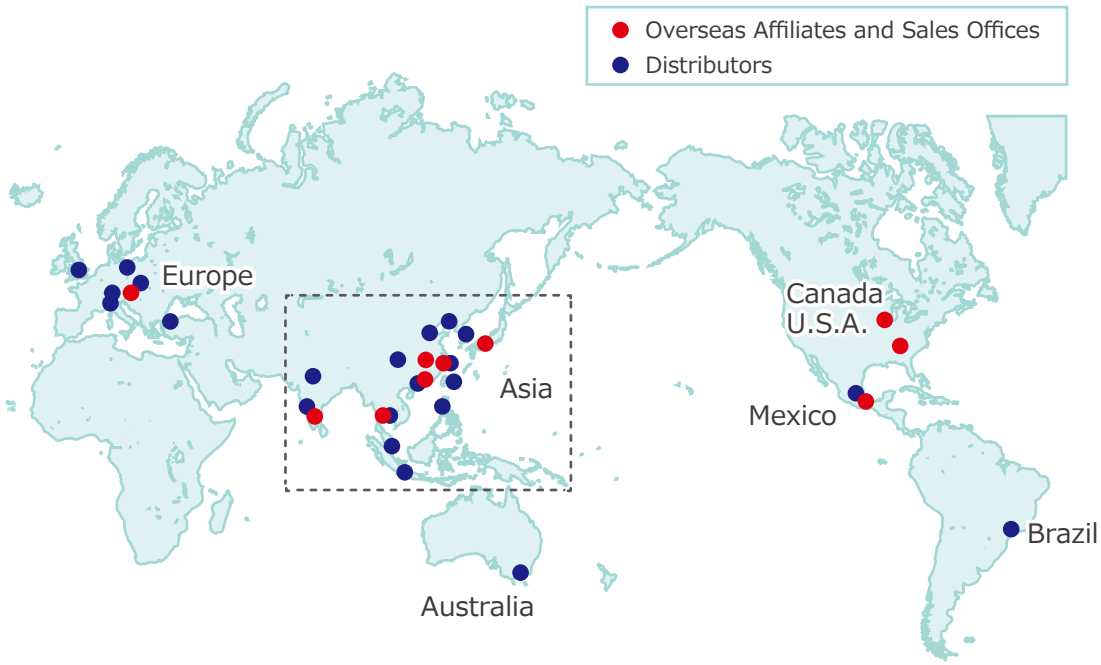
Tokyo Sales Office	**TEL. 048-652-8839** FAX. 048-652-8828 81, 4-chome, Onari-cho, Kita-ku, Saitama City, Saitama, 331-0815, Japan
Nagoya Sales Office	**TEL. 0566-74-8778** FAX. 0566-74-8808 10-1, 2-chome, Misono-cho, Anjo City, Aichi, 446-0076, Japan
Fukuoka Sales Office	**TEL. 092-433-0424** FAX. 092-433-0426 8-10-101, 1-chome, Kamimuta, Hakata-ku, Fukuoka City, Fukuoka, 812-0006, Japan

Global Network



Asia Detailed Map

KOSMEK
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