

Compliance Light

θ -free (parallel type)

Can be used for automatic alignment of errors in workpiece insertion position and "press fitting process".

- Light and smooth operation by linear guide adoption
- Optimal for robot hands due to compact and lightweight design
- Maximum load capacity of 20 kg [44.092 lb]
- Complies with ISO9409-1 (JIS B 8436) installation standards
- Sensor switch installation specifications provided
- Three size variations (plate diameters)
 $\phi 50$ mm [1.969 in.], $\phi 63$ mm [2.480 in.], $\phi 80$ mm [3.150 in.]



$\phi 50$ mm [1.969 in.]



$\phi 63$ mm [2.480 in.]

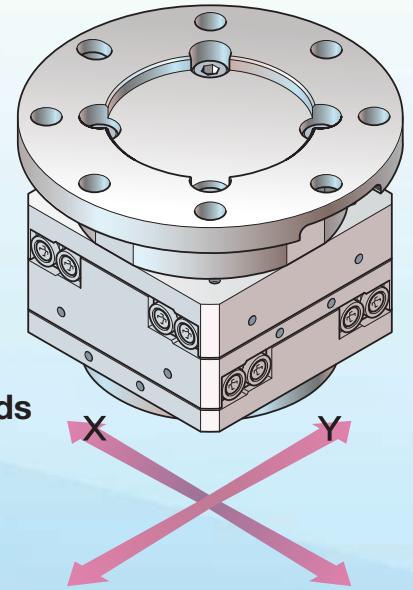


$\phi 80$ mm [3.150 in.]

θ -free (parallel type)

Movement range: X/Y

For workpiece insertion/press fitting and workpiece handling
Absorbs the position error of the **X/Y axis**



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- Complies with ISO9409-1 (JIS B 8436) installation standards
- Sensor switch installation specifications provided

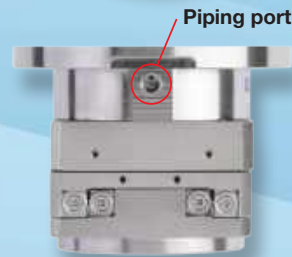
Position information can also be retrieved by using a linear magnetic sensor controller

● Top surface



Locating dowel pin hole
Standard settings

● Front surface

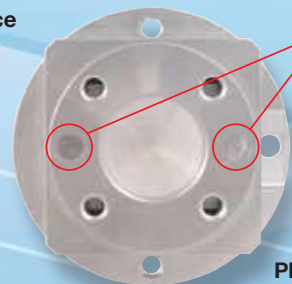


Piping port

● Side surface



● Bottom surface



Locating dowel pin hole
Standard settings

Photo: CPLG50F

Description of operation

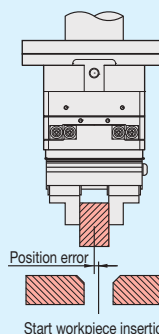
● When air pressure applied

An internal piston retains the position of the main unit and plate in the center.

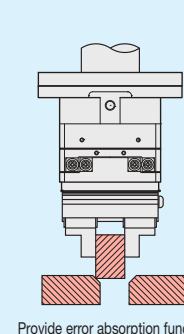
● When air pressure not applied

With the θ -free type, both the X and Y axis can move freely when air pressure is not applied, because there is no centripetal force.

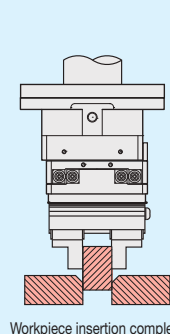
Air pressure applied
Locked state



Air pressure not applied
Unlocked state



Air pressure not applied
Unlocked state



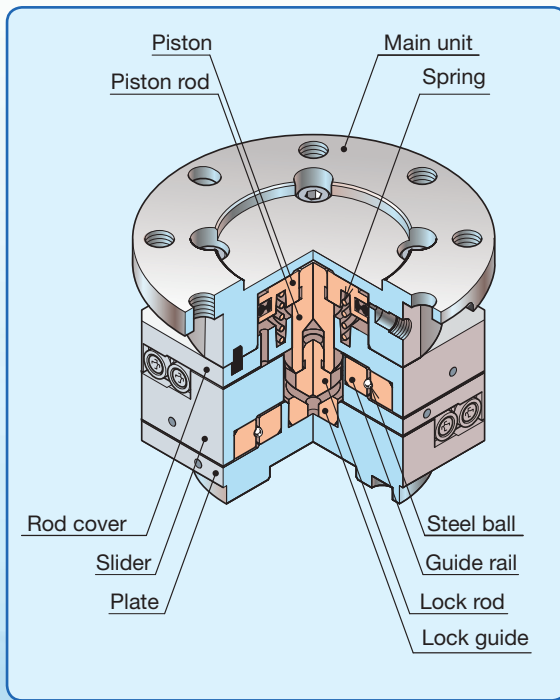
Position error

Start workpiece insertion

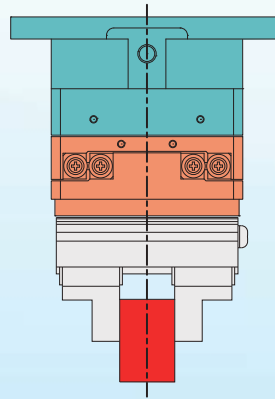
Provide error absorption function

Workpiece insertion complete

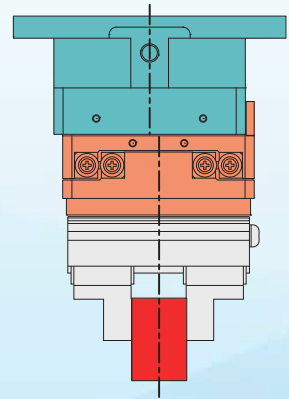




Air pressure applied
Locked in center position
of X/Y axis

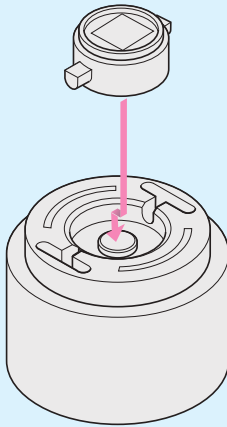


Air pressure not applied
X/Y axis in free state



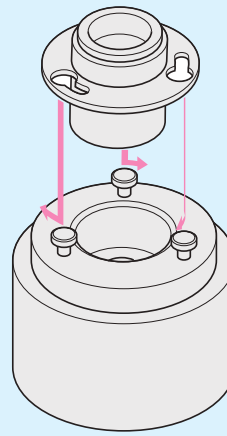
Usage example

(1)



To prevent components
with a correct orientation
from being turned in the θ
direction when being
inserted.

(2)



To install components with
a correct orientation
rotated to a specific angle
at a constant moment* after
insertion.

*The moment must be performed
within the allowable moment
(yawing).

Variations

P = 0.5 MPa	CPLG50F	CPLG63F	CPLG80F
● Retaining force with pressure applied	145 N	271 N	457 N
● Maximum load capacity	6kg [13.228 lb]	10kg [22.046 lb]	20kg [44.092 lb]
● Size variations (plate diameter)	φ50 mm [1.969 in.] 	φ63 mm [2.480 in.] 	φ80 mm [3.150 in.] 

*Retaining force values are based on the KOGANEI measurement method (reference values)

Before selecting and using the products, please read all the Safety Precautions carefully to ensure proper product use.

The safety precautions described below are to help you use the product safely and correctly, and to prevent injury or damage to you, other people, and assets.

Always adhere to ISO4414 (Pneumatic fluid power - General rules and safety requirements for systems and their components), JIS B 8370 (Pneumatic system general rules), and other safety regulations.

The directions are ranked according to degree of potential danger or damage: "DANGER", "WARNING", "CAUTION", and "ATTENTION"

 DANGER	Indicates situations that can be clearly predicted as dangerous. Failure to avoid the indicated danger creates the risk of death or serious injury. It could also result in damage or destruction of assets.
 WARNING	Indicates situations that, while not immediately dangerous, could become dangerous. Failure to avoid the indicated danger creates the risk of death or serious injury. It could also result in damage or destruction of assets.
 CAUTION	Indicates situations that, while not immediately dangerous, could become dangerous. Failure to avoid the indicated danger creates the risk of minor or semi-serious injury. It could also result in damage or destruction of assets.
 ATTENTION	While there is little chance of injury, this content refers to points that should be observed for appropriate use of the product.

■ **This product was designed and manufactured for use in general industrial machinery.**

- When selecting and handling equipment, the system designer or another person with sufficient knowledge and experience should always read the safety precautions, catalog, instruction manual, and other documentation before commencing operation. Improper handling is dangerous.
- After reading the instruction manual, and other documentation, always store them in a location that allows easy availability for reference to users of this product.
- Whenever transferring or lending the product to another person, always attach instruction manual, and other information to the product where they are easily visible in order to ensure that the new user can use the product safely and properly.
- The danger, warning and caution items listed under these safety precautions do not cover all possible contingencies. Read the catalog and instruction manual carefully, and always keep safety first.



DANGER

- Do not use the product for the purposes listed below:
 1. Medical equipment related to maintenance or management of human lives or bodies
 2. Mechanisms or machinery designed for the purpose of moving or transporting people
 3. Critical safety components in machinery

This product has not been planned or designed for purposes that require high levels of safety. Using the product in any of the ways described above creates the risk of loss of human life.
- Do not use in locations with or near dangerous substances such as flammable or ignitable substances. This product is not explosion-proof. It could ignite or burst into flames.
- When installing the product, make sure to firmly support and secure it (including workpieces) in place. Dropping or falling of the product or abnormal operation could result in injury.
- Never attempt to modify the product. It could result in abnormal operation and lead to injury.
- Never attempt inappropriate disassembly, assembly, or repair of the product's basic structure, or of its performance or functions. This could result in injury.
- Do not splash water on the product. Splashing it with water, washing it, or using it underwater could result in abnormal operation of the product and lead to injury, etc.
- While the product is in operation, avoid touching it with your hands or otherwise approaching too close. In addition, do not make any adjustments to internal or attached mechanisms (removal of piping tubes) while in operation.
The actuator could abruptly move, and cause injury.



WARNING

- Do not use the product in excess of its specification range. Doing so creates the risk of product breakdown, loss of function, or damage. It could also drastically reduce its life.
- Before supplying air to the product and before starting operation, always conduct a safety check of the range of operation. Unintentional supply of air or electricity could result in injury caused by contact with moving parts.
- Check the catalog and other reference materials for the correct product piping. Incorrect piping may cause abnormal operation in the actuator, etc.
- Do not throw the product into fire.
The product could explode and/or release poisonous gas.
- Do not sit on the product, place your foot on it, or place other objects on it.
Doing so could result in a fall, injury due to the product falling down or falling over, damage to the product, or malfunction or runaway, etc. due to damage.

- When conducting any kind of operation on the product, such as maintenance, inspection, repair, or replacement, always turn off the air supply completely and confirm that residual pressure inside the product and piping connected to the product is zero before proceeding.
In particular, be aware that residual air will still be in the air compressor or air tank. The actuator could abruptly move if residual air pressure remains inside the piping, and cause injury.
- Do not use an actuator as a device for absorbing the shocks and vibrations of machinery. Doing so could possibly result in injury or damage to the machines or equipment.
- Use the product within the maximum load capacity. Using it at or above the maximum load capacity may result in injury or damage to the machinery.
- Design safety circuits or equipment to ensure that damage to the product or injury does not occur if the device stops in the event of a system error such as an emergency stop or power failure.
- In the first operation after the equipment has been idle for 48 hours or more, or has been in storage, sliding parts may have got stuck, resulting in equipment operation delays or sudden movements. For these first operations, always run a test operation before use to check that operating performance is normal.
- Do not use the product in locations where ozone may be generated, such as near mercury lamps, on beaches, or in other places subject to direct sunlight. Ozone can cause rubber parts to deteriorate, which can lead to a decrease in performance and functionality, or cause the product to stop functioning.
- Because KOGANEI products are used under diverse conditions, the person responsible for system design must decide their compatibility with a system by performing adequate evaluation. The system designer that makes decisions on system compatibility is responsible for guaranteeing the expected performance and safety of the system. Conduct an adequate investigation and evaluation of the specifications based on the latest catalog and technical materials, consider the possibility of device failure, and construct a system that ensures the safety and reliability of failsafes, etc.
- Do not use the product in locations that are subject to direct sunlight (ultraviolet rays); locations with dust, salt, or iron powder, or mediums or atmospheres including high humidity organic solvents, phosphate ester type hydraulic oil, sulfur dioxide, chlorine gas, acids, etc. It could lead to early shutdown of some functions, a sudden decrease in performance, and a reduced life. For information about materials, see "Major parts and materials."

Safety Precautions (Compliance Light)



CAUTION

- When mounting the product, leave room for adequate working space around it. Failure to do so will make it more difficult to conduct routine maintenance, which could eventually lead to system shutdown or damage to the product.
- Sitting on the product, placing your foot on it, or placing other objects on it may damage, dent, or deform the moving parts. It could damage or break it, causing the product to stop operating or a decrease in performance.
- When performing installation or adjustment work, indicate that work is being performed to ensure that air or power is not unintentionally supplied, etc. It could cause electrocution or injury due to sudden actuator operation.
- The properties of the lubrication oil can change when used in dry air where dew-point temperatures is lower than -20°C [-4°F]. This can lead to a decrease in performance or cause the product to stop functioning.



ATTENTION

- When considering the possibility of using this product in situations or environments not specifically noted in the catalog or instruction manual, or in applications where safety is an important requirement such as in an aircraft facility, combustion equipment, leisure equipment, safety equipment, and other places where human life or assets may be greatly affected, take adequate safety precautions such as the application with enough margins for ratings and performance or failsafe measures.
Be sure to consult us with such applications.
- Isolate the moving parts of machinery, etc. with a protective cover, etc. to ensure that they do not come into contact with the human body.
- Configure the control so that the workpiece does not fall down in the event of a power failure.
Implement fall prevention control for workpieces, etc. in the event of a power failure or emergency stop of the machines or equipment.
- When handling the product, wear protective gloves, protective goggles, safety shoes etc. as required to maintain safety.
- When the product becomes unusable or unnecessary, dispose of it properly as industrial waste.
- The performance and functionality of pneumatic equipment decreases with age. Perform routine maintenance on pneumatic equipment to confirm that the system requirements are met in order to prevent accidents.
- For inquiries about the product, contact your nearest KOGANEI sales office or the KOGANEI overseas group. The addresses and telephone numbers are shown on the back cover of this catalog.



Others

- Make sure to follow the items below.
 1. When using this product in pneumatic systems, always use genuine KOGANEI parts or compatible parts (recommended parts).
When conducting maintenance and repairs, always use genuine KOGANEI parts or compatible parts (recommended parts).
Always observe the prescribed methods and procedures.
 2. Never attempt inappropriate disassembly or assembly of the product's basic construction, or of its performance or functions.

KOGANEI shall not be held responsible for any problems that occur as a result of these items not being properly observed.



Design/Selection

WARNING

1. Check the specifications.

Use the product correctly after carefully reading the specifications, as using the product at a voltage, current, temperature, or subject to shocks outside the range of specifications may cause damage or operation failure.

2. Be aware of products approaching each other.

When using two or more products in parallel, the sensor switch may malfunction due to mutual magnetic interference.

3. Ensure that wires are as short as possible.

Ensure that non-contact sensor switches are within 30 m [98.425 ft.], as indicated in the EN standard. When the load is inductive or capacitive, install a protective circuit as indicated in each catalog.

4. Ensure that repeated bending or pulling force is not applied to the lead wire.

Repeated bending stress or pulling force applied to the lead wire may cause a wiring disconnection.

5. Be aware of leakage current.

Ensure that the following condition is met for a two-wire non-contact sensor switch, as current for operating the internal circuits (leakage current) flows to the load even when input is off.

Input off current of programmable controller > leakage current
If the above condition cannot be satisfied, select a three-wire non-contact sensor switch. When n sensor switches are connected in parallel, the leakage current will be multiplied by n.

CAUTION

1. Do not use the product in combination with non-KOGANEI products.

The sensor switch is designed to be used in combination with KOGANEI products. It may not operate normally when used in combination with other products.



Installation/Adjustment

WARNING

1. Do not apply an external magnetic field to the sensor switch during product operation.

Unintended operation may cause damage to the product or injury.

CAUTION

1. Be aware of the product installation environment.

Do not use the sensor switch in locations where large currents and strong magnetic fields are emitted. It could result in malfunction. Do not use magnetic installation materials. It could result in malfunction.

2. Install the sensor switch in the middle of the range of operation.

Adjust the installation position of the sensor switch to be in the middle of the range of operation (the range where it is on). Operation will be unstable if it is installed on the edge of the range of operation (the boundary between on and off). Also take into consideration the fact that the range of operation varies according to the temperature.

3. Follow the indicated tightening torque when installing the sensor switch.

Tightening in excess of the allowable tightening torque may cause damage to the mounting screw, mounting fitting, or sensor switch, etc. Insufficient tightening torque may cause displacement in the sensor switch position, which can lead to unstable operation. Ensure that the tightening torque of screws is about 0.1 to 0.2 N·m [0.9 to 1.8 in·lbf].

4. Do not transport the product with the lead wire attached to the sensor switch.

Do not transport the product by gripping the lead wire after the sensor switch is attached to the product. Never do this, as it will cause stress inside the sensor switch and damage the internal elements, in addition to causing disconnection of the lead wire.

5. Do not drop or strike the product.

Do not apply excessive shocks when handling the product by impacting, dropping, or striking the product (294.2 m/s² [29.999 G] or higher).

6. Ensure that there is slack in the wiring when installing the sensor switch.

Be aware that the wiring does not hinder the error absorption (compliance).



Wiring

DANGER

1. Be aware of contact when there is a movable object near a sensor switch.

When the product is movable or there is a movable object near it, do not allow them to contact each other. In particular, wear or damage to a lead wire may cause unstable operation of the sensor switch. Or lead to electric leakage or electrocution in the worst case.

2. Make sure to turn the power off when performing wiring work.

Performing wiring work with the power on may lead to accidental electrocution. The sensor switch may also be immediately damaged if it is miswired. Turn the power on after wiring work is complete.

WARNING

1. Check the catalog and other reference materials for the correct sensor switch wiring.

Incorrect wiring may cause abnormal operation.

2. Do not perform wiring together with a power line or high voltage line.

Avoid parallel wiring and use of the same wiring pipe as a power line or high voltage line.

Noise may cause abnormal operation in the sensor switch or control circuit.

3. Ensure that repeated bending or pulling force is not applied to the lead wire.

Repeated bending stress or pulling force applied to the lead wire may cause a wiring disconnection.

4. Be aware of the wiring polarity.

Ensure that the polarity is correct when wiring sensor switches with the polarity indicated (+, -, output). Incorrect polarity may cause damage to the sensor switch.

CAUTION

1. Do not short the load.

Turning the sensor switch on with the load shorted will immediately damage the sensor switch due to overcurrent.

Example of shorting the load: Directly connecting the output lead wire of the sensor switch to the power supply.

Safety Precautions (Linear Magnetic Sensor Controller)

DANGER

- Do not use the linear magnetic sensor controller or sensor head in locations with or near dangerous substances such as flammable or ignitable substances. These sensors are not explosion-proof. It could ignite or burst into flames.
- Do not perform adjustment of the attached mechanisms (connecting or disconnecting wiring connectors, installing or positioning the sensor head, etc.) during product operation. Abnormal operation could result in injury.

WARNING

- Do not damage the cords such as the lead wire of the sensor head.
Damaging, forcibly bending, pulling, winding, or placing heavy objects on, or pinching cords could result in fire or electrocution due to electric leakage or conduction failure, or cause abnormal operation, etc.
- Do not apply an external magnetic field to the controller or sensor head during operation of the linear magnetic sensor controller. Unintended operation may cause damage to the product or injury.
- Avoid parallel wiring and use of the same wiring pipe with a power line or high voltage line. Noise may cause the linear magnetic sensor controller to malfunction.
- Be aware of the correct wiring polarity when wiring.
Incorrect polarity may cause damage to the linear magnetic sensor controller and sensor head.
- When installing two or more products with the sensor head of the linear magnetic sensor controller installed in parallel, ensure that the gap between the products is not less than 40 mm [1.575 in.]. The products may malfunction if the gap between them is not 40 mm [1.575 in.] or larger.

CAUTION

- Do not use the linear magnetic sensor controller and sensor head in locations where large currents and strong magnetic fields are emitted. It could result in malfunction.
- Do not apply excessive force to the cords such as the lead wire of the sensor head and linear magnetic sensor controller by pulling them, holding them to transport a product, or placing a heavy object on top of them. Doing so may cause fire, electrocution, or abnormal operation due to electric leakage or conduction failure.
- Make sure to use the specified sensor head for the corresponding product.
Using another one could result in malfunction or damage.
- Do not apply excessive shocks (294.2 m/s^2 [29.999 G] or stronger) when handling the linear magnetic sensor controller and sensor head by impacting, dropping, or striking them. Internal components may be damaged and cause malfunction, even if the exterior is not damaged.
- Do not short the load.
Turning the switch output on with the load shorted may damage the linear magnetic sensor controller due to overcurrent.
Example of shorting the load: Directly connecting the output lead wire of the switch output to the power supply.
- Use a tightening torque of 0.2 N·m [1.8 in·lbf] when installing the sensor head.
Tightening in excess of the tightening torque may cause damage to the sensor head, etc.
Make sure to connect the sensor head and controller with the power turned off. Connecting the sensor head with the power on may cause the controller to malfunction due to surge voltage, etc.
- Ensure that there is slack in the wiring when installing the sensor head.
Be aware that the wiring does not hinder the error absorption (compliance).

Handling Instructions and Precautions



General Precautions

Piping

1. Before performing piping work to the product, thoroughly flush the inside of the pipes with compressed air. Chips that occur during piping work, sealing tape, or rust, etc. may cause operation failure due to an air leak, etc.

Air supply

1. Use air as the medium, and contact your nearest KOGANEI sales office when using another medium.
2. Use clean air that does not include substances such as deteriorated compressor oil. Install an air filter (with a filtration rating of 40 µm or less) near the product to remove any drainage or foreign material. Also drain the air filter periodically. Drainage or foreign material entering the product may cause operation failure.

Lubrication

1. The cylinder can be used without oil supply, but when supplying oil with a lubricator, etc., use a product equivalent to type 1 turbine oil (ISO VG32). Avoid the use of spindle oil or machine oil.
2. The guide can be used without oil supply.

Environment

1. When using the product in locations subject to water droplets or oil droplets, or dusty locations, protect it with a cover, etc.
2. Do not use the product in atmospheres that may cause corrosion. Use in such environments may cause damage and operation failure.
3. Do not use the product in an excessively dry state.
4. Do not use the product when the ambient temperature exceeds 60°C [140°F], as doing so may cause damage or operation failure, etc. Also implement measures to prevent freezing, as temperatures at or below 5°C [41°F] may cause damage or operation failure due to moisture freezing.

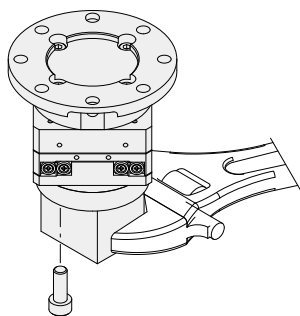
During use

1. Confirm that there is no residual pressure inside the product before performing maintenance work.
2. Do not apply displacement at or above the travel distance in each direction. It could damage or break the product, causing it to stop operating or a decrease in performance.
3. The error absorption (compliance) function is locked/unlocked by switching the air pressure between applied and not applied. Have the product in the unlocked state with air pressure not applied when performing insertion/pushing, and in the locked state with air pressure applied when moving. Also install shock absorbers, etc. on the travel edge to ensure as smooth stopping as possible. Sudden stopping may cause unlocking and adversely affect the centripetal precision.
4. Use the product within the range of the maximum load capacity. Use in excess of the maximum load capacity may cause wear or deterioration in the sliding parts.
5. The product can be used under another product. Ensure that the installation load is within the maximum load capacity.
6. There is no force to retain the center position in the state where pressure is not applied.
7. Because a limited orbit guide is used, continuous use will cause the position of the steel ball to become displaced due to micro slips and this may prevent error absorption even within the movement range of the plate. Therefore, manually move the entire range to restore the steel ball to its proper position periodically or every certain number of operations.
8. If the jig or hand, etc. shakes when air is applied to lock after error absorption, use a speed controller with meter-in control. Adjust the piston speed when locked.
9. When performing straight travel or turning travel with a robot or other actuator, excessive moment may occur due to the inertia of the installation load. Ensure adequate slack even when the product is within the range of allowable moment.

Handling instructions and Precautions

Installation

1. Use the product in a level position when air is not applied (when unlocked). Make sure the installation surface is a flat surface. Twisting or bending during installation may cause air leaks or operation failure, as well as adversely affect accuracy.
2. Be aware that scratching or denting the installation surface of the product will adversely affect the flatness.
3. Secure the product main unit and mounting bolts with sufficient strength.
4. Consider measures such as locking when there is a danger of shocks or vibrations loosening the bolts. Be aware of adhesive wraparound. Adhesive entering the product may cause operation failure.
5. When installing a hand, etc. to the installation surface of the product, take care not to hinder the error absorption (compliance) due to the piping or wiring.
6. Ensure that there is slack in the wiring when installing the sensor switch. Be aware that the wiring does not hinder the error absorption (compliance).
7. When installing a jig or hand to the plate, support the plate with an adjustable spanner, etc. to ensure that force at or above the allowable moment is not applied to the plate. See page ⑨ for the tightening torque of mounting bolts.



Repeat accuracy

Apply air after moving the plate in an arbitrary direction in the state without load or pressure applied, and measure the plate stop position. Perform this measurement 10 times and derive the maximum difference. The repeat accuracy is plus or minus half the derived maximum difference.

Sensor Rail and Magnet Installation

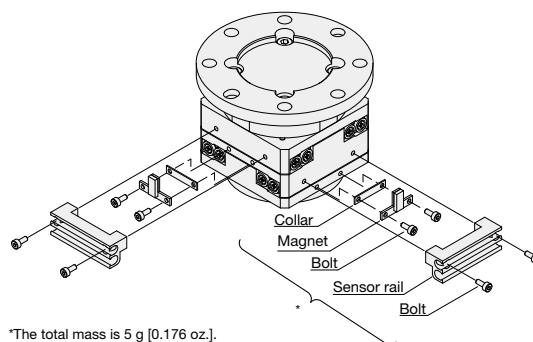
There are screw holes on the four surfaces for sensor rails and magnet installation, which enable the sensor rail to be repositioned or retrofitted.

Correctly tighten the bolts within the allowed torque range.

A collar of 0.5 mm [0.020 in.] thickness is required between the main unit and magnet.

Take care not to lose or forget installing it.

Bolt used	Maximum tightening torque (N·m [in·lbf])
M2 x 0.4	0.3 [2.7]



When a linear magnetic sensor (-ZLL1 or -ZLL2) is selected

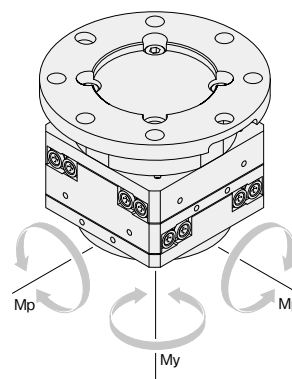
The sensor head, controller, front protective cover, and power supply/SW cable are included.

For information on the plate position and linear magnetic sensor indicated value, see page ⑭.

Allowable moment

Ensure that the moment of error absorption does not exceed the value in the specifications chart.

Calculate the allowable moment as the distance from the guide center position to the installation load center position.



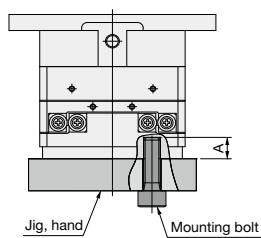
Handling instructions and Precautions

Tightening torque

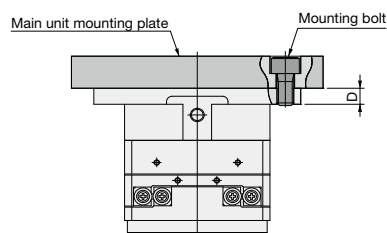
● Joint

Screw size	Tightening torque (N·m [in·lbf])
M5 x 0.8	1.0 to 1.5 [8.9 to 13.3]
Rc1/8	7 to 9 [62.0 to 79.7]

● Installation of jig and hand



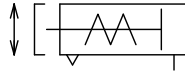
● Installation of main unit



Installation direction	Type	Type	Bolt used	Maximum tightening torque (N·m [in·lbf])	A (mm [in.])	D (mm [in.])
Installation of jig and hand	Parallel type	CPLG50F	M6 x 1	5.2 [46.0]	8 [0.315]	-
		CPLG63F				-
		CPLG80F				-
Installation of main unit	Parallel type	CPLG50F	M6 x 1	5.2 [46.0]	-	6 [0.236]
		CPLG63F	M8 x 1.25	12.5 [110.6]	-	8 [0.315]
		CPLG80F			-	

Compliance light

θ -free parallel type



Specifications

Basic type			CPLG50F	CPLG63F	CPLG80F
Item					
Outer dimensions	Flange	mm [in.]	φ74 [2.913]	φ96 [3.780]	φ116 [4.567]
	Plate diameter	mm [in.]	φ50 [1.969]	φ63 [2.480]	φ80 [3.150]
Height		mm [in.]	54 [2.126]	58 [2.283]	65 [2.559]
Mass		g [oz.]	500 [17.637]	800 [28.219]	1500 [52.911]
Cylinder diameter		mm [in.]	32 [1.260]	40 [1.575]	50 [1.969]
Operation type			Single-acting type		
Medium			Air		
Operating pressure range		MPa	0.2 to 0.7		
Guaranteed withstand force		MPa	1.05		
Operating temperature range		°C [°F]	0 to 60 [32 to 140]		
Piping connection diameter			M5 x 0.8	Rc1/8	
Supply	Cylinder		Not required		
	Sliding parts		Not required		
Maximum load capacity		kg [lb]	6 [13.228]	10 [22.046]	20 [44.092]
Travel distance	X - Y	mm [in.]	φ4 [0.157]	φ6 [0.236]	φ6 [0.236]
Repeat accuracy ¹ (X - Y direction)		mm [in.]	±0.05 [±0.002]		
Basic dynamic rated load ²		N	3780	5713	6765
Basic static rated load ³		N	6492	9703	12349
Allowable moment	Pitching (Mp)	N·m [in·lbf]	2.0 [17.7]	4.0 [35.4]	7.0 [62.0]
	Yawing (My)	N·m [in·lbf]	1.0 [8.9]	2.0 [17.7]	4.0 [35.4]
Allowable maximum compressive load ⁴		N	1300	1900	2100

*1 Repeat accuracy: The maximum difference in plate stop position when air is applied after moving the plate in an arbitrary direction in the state where load or pressure is not applied.

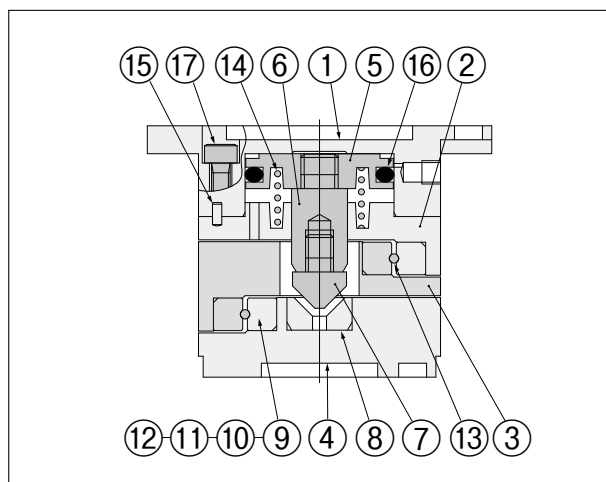
For details, see page ⑧.

*2 The basic dynamic rated load is a load of a constant size in a direction that can logically withstand 50 x 10³ m [164041.995 ft.] travel, when a group of the same linear guides are made to travel separately. (Excerpt from technical material by Nippon Thompson Co., Ltd.)

*3 The basic static rated load is a static load that causes a constant level of contact stress in the contact area center of the guide rail and steel ball receiving the maximum load, and is the allowable load limit for performing normal rolling motion. (Excerpt from technical material by Nippon Thompson Co., Ltd.)

*4 Use the product at a load at or below the allowable maximum compressive load value when press fitting.

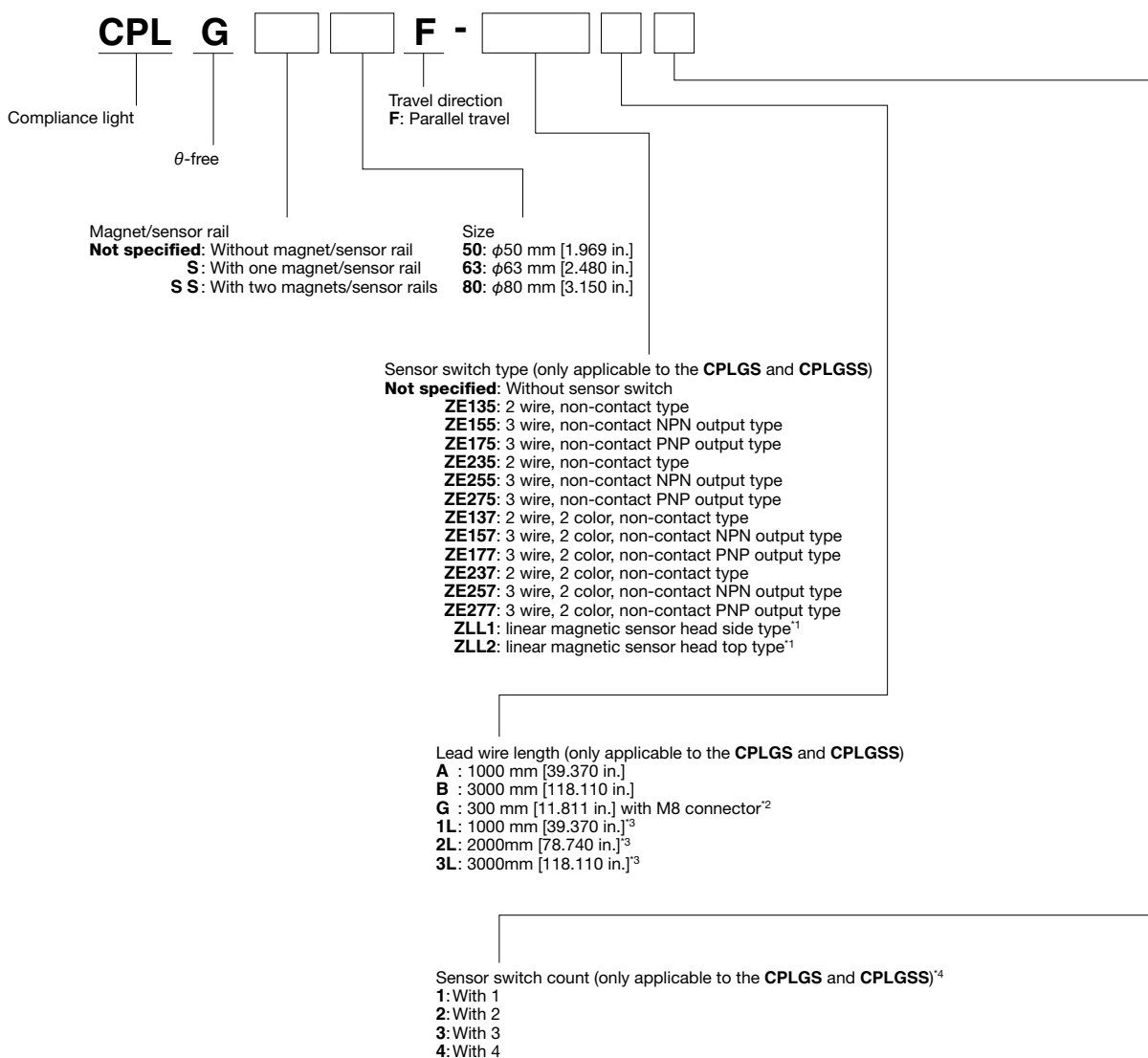
Internal structure



Major parts and materials

No.	Type	CPLG50F	CPLG63F	CPLG80F
①	Main unit	Aluminum alloy (electroless nickel plated)		
②	Rod cover	Aluminum alloy (electroless nickel plated)		
③	Slider	Aluminum alloy (electroless nickel plated)		
④	Plate	Aluminum alloy (electroless nickel plated)		
⑤	Piston	Aluminum alloy (anodized)		
⑥	Piston rod	Steel (chrome plated)		
⑦	Lock rod	Stainless steel (heat treated)		
⑧	Lock guide	Stainless steel (heat treated)		
⑨	Guide rail	Stainless steel (heat treated)		
⑩	Stopper	Stainless steel		
⑪	Small screw	Stainless steel		
⑫	Bolt	Stainless steel		
⑬	Steel ball	Steel		
⑭	Spring	Piano wire		
⑮	Parallel pin	Stainless steel		
⑯	Seal	Synthetic rubber (NBR)		
⑰	Bolt	Stainless steel		

Order Codes



- *1 : With controller
 2: **ZE175**, **ZE275**, **ZE177**, and **ZE277** only
 3: **ZLL1** and **ZLL2** only
 4: A maximum of two sensor switches can be installed to one magnet sensor rail.

■ Additional Parts

- Sensor rail (sensor rail x 1, mounting bolt x 2)

S-CPLG1

Applicable product
CPLG50F
CPLG63F
CPLG80F

- Magnet (magnet assembly x 1, mounting bolt x 2, collar x 1)

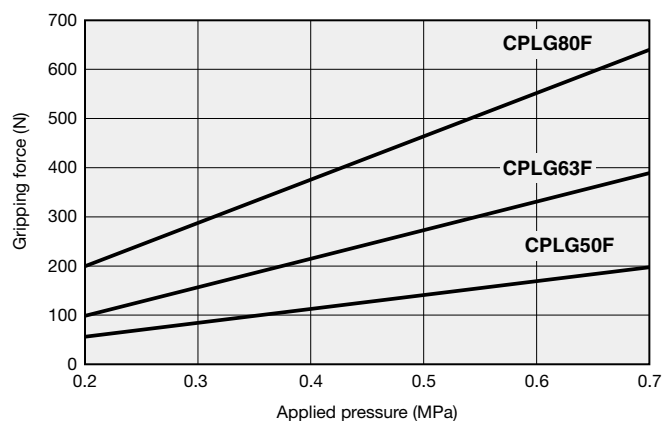
M-CPLG1

Applicable product
CPLG50F
CPLG63F
CPLG80F

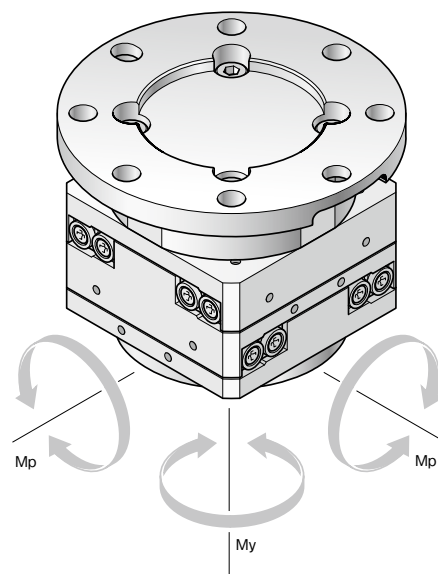
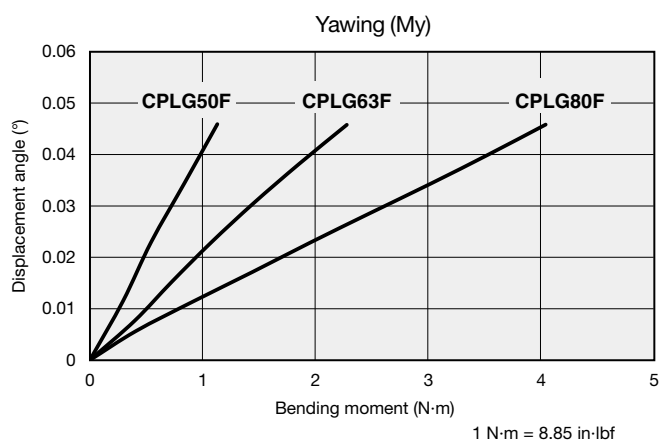
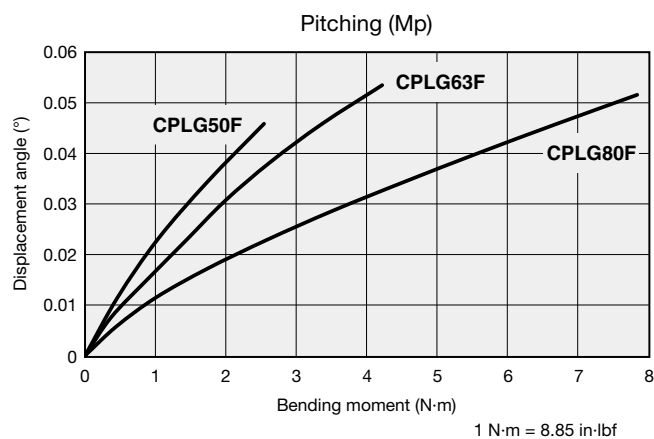
Graph (reference values)

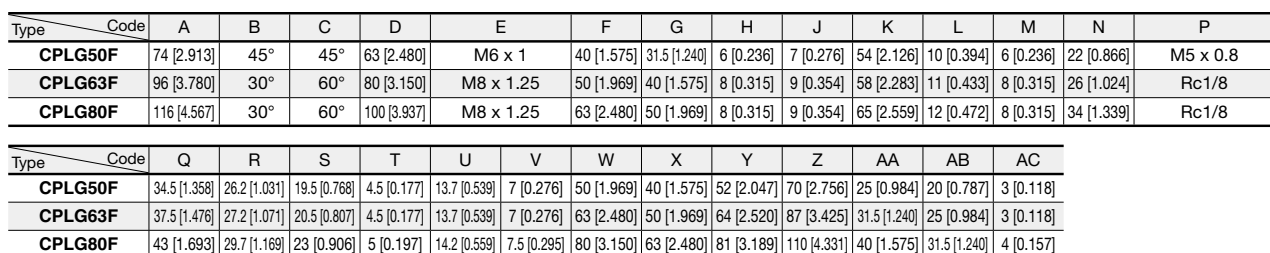
●Retaining force

*Retaining force: The force holding the center position in the X-Y direction when air is applied.

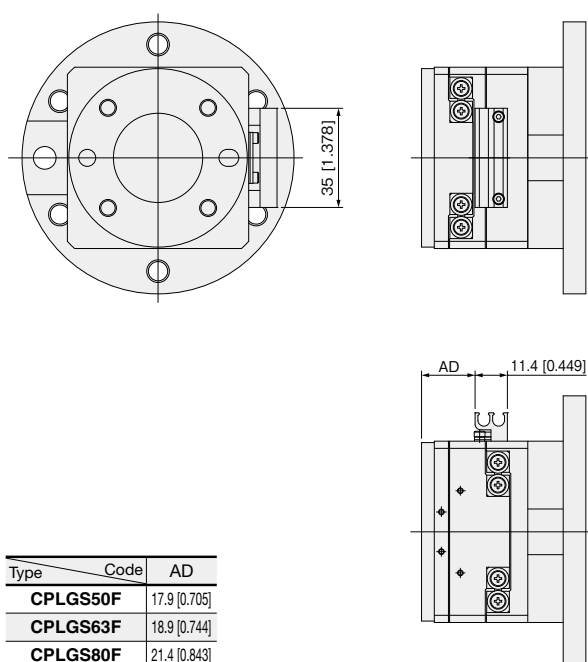


●Plate displacement angle to bending moment





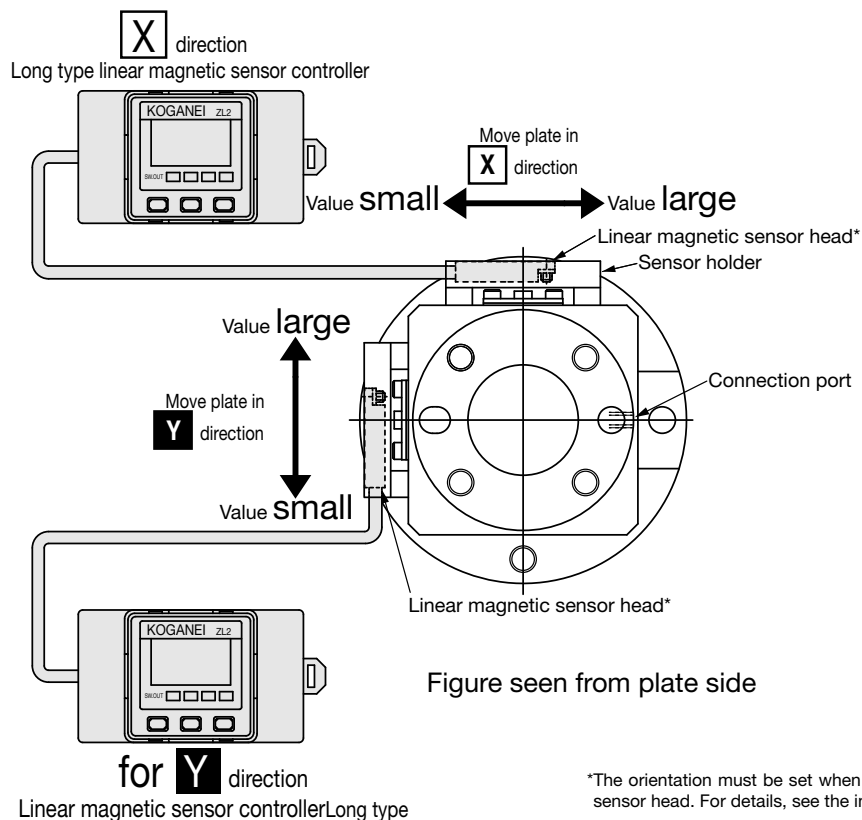
●With one magnet/sensor rail



Relationship between Plate Position and Indicated Value of Linear Magnetic Sensor Controller (for Reference)

- When the θ -free compliance light is used with a linear magnetic sensor (-ZLL1 or -ZLL2) attached, a small value is displayed on the linear magnetic sensor controller if the plate is moved to the left in the X direction without air applied from the state where the plate is locked in the center position. Conversely, a large value is displayed when the plate is moved to the right. The same applies to the Y direction. The size of the indicated value is reversed when the linear magnetic sensor head is facing the other way (for example when the lead wire is on the right of the sensor holder from the X direction).

The linear magnetic sensor controller has a scaling function for detecting the position. When using the linear magnetic sensor controller, it is recommended that the indicated value at the retention position is aligned to 500 ± 20 .



*The orientation must be set when installing the linear magnetic sensor head. For details, see the instruction manual.

Limited Warranty

KOGANEI CORP. warrants its products to be free from defects in material and workmanship subject to the following provisions.

Warranty Period The warranty period is 180 days from the date of delivery.

Koganei Responsibility If a defect in material or workmanship is found during the warranty period, KOGANEI CORP. will replace any part proved defective under normal use free of charge and will provide the service necessary to replace such a part.

Limitations ● This warranty is in lieu of all other warranties, expressed or implied, and is limited to the original cost of the product and shall not include any transportation fee, the cost of installation or any liability for direct, indirect or consequential damage or delay resulting from the defects.

● KOGANEI CORP. shall in no way be liable or responsible for injuries or damage to persons or property arising out of the use or operation of the manufacturer's product.

● This warranty shall be void if the engineered safety devices are removed, made inoperative or not periodically checked for proper functioning.

● Any operation beyond the rated capacity, any improper use or application, or any improper installation of the product, or any substitution upon it with parts not furnished or approved by KOGANEI CORP., shall void this warranty.

● This warranty covers only such items supplied by KOGANEI CORP. The products of other manufacturers are covered only by such warranties made by those original manufacturers, even though such items may have been included as the components.

The specifications are subject to change without notice.

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