To Use This Product Safely

Be sure to read this before use.

For general information on electric actuators, please see Intro 17.

Individual Precautions: Electric Actuator G Series

During Design and Selection

1. Common

Danger

■ Do not use in places where hazardous materials such as flammable, ignitable, or explosive substances are present.
There is a risk of ignition, fire, or explosion.

■ Do not allow water droplets, oil droplets, etc. to come into contact with the product.
This can cause fire or malfunction.

■ When installing the product, be sure to hold and fix it securely (including the workpiece).
There is a risk of injury due to the product tipping over, falling, malfunctioning, etc. As a general rule, please fix the product using all mounting holes.

Warning

■ Use within the product's specific specification range.

■ Install a safety fence to prevent entry into the movable range of the electric actuator. Also, in preparation for emergencies, install an emergency stop push button switch for the device in an easily accessible location. The emergency stop push button must have a structure and wiring that does not automatically reset and cannot be carelessly reset by a person.

■ When an emergency stop is performed, it may take several seconds to stop depending on the speed during movement and the mounted load.

■ In the event of a system abnormality such as an emergency stop or power failure, if the machine stops, design the safety circuit or device to prevent damage to the equipment, personal injury, etc.

■ Install in a dry indoor location.
In places where it is exposed to rainwater or in humid places (humidity of 85% or more, places with condensation), there is a risk of electric leakage or fire. Oil drops and oil mist are also strictly prohibited. Use in such environments can cause damage or malfunction.

■ The product must be subjected to Class D grounding work (grounding resistance of 100 Ω or less).
If an electric leakage occurs, there is a risk of electric shock or malfunction.

■ If using the actuator in an installation other than horizontal, select the one with a brake.
If it does not have a brake, when the servo is OFF (including emergency stop and alarm) or when the power is OFF, the movable part may fall, causing injury or damage to the workpiece.

■ The brake cannot completely hold the actuator in all cases. When performing maintenance on applications that move the slider with an unbalanced load, or when stopping the machine for a long time, if safety needs to be ensured, be sure to bring it to a balanced state or provide a mechanical locking mechanism.

■ When using the actuator in a vertical installation, position the motor as high as possible.
If the motor is on the lower side, there is no problem in normal operation, but if it is stopped for a long period of time, the grease may separate and flow into the motor, which may cause a malfunction in rare cases.

■ Observe the operating and storage temperatures, and use and store in a condensation-free state.
(Storage Temperature: -10°C to 50°C, Storage Humidity: 35% to 80%, Operating Temperature: 0°C to 40°C (10°C to 40°C for EBS-G and EBR-G), Operating Humidity: 35% to 80%) It may cause abnormal shutdown of the product or decrease its service life. Ventilate if heat builds up.

■ Do not use in places where condensation occurs due to sudden changes in ambient temperature.

■ Install in a location free from direct sunlight, dust, heat sources, corrosive gases, explosive gases, flammable gases, and combustible materials. In addition, this product has not been considered for chemical resistance.
This can cause malfunction, explosion, or fire.

■ Use and store in a location free from strong electromagnetic waves, ultraviolet rays, and radiation.
This can cause malfunction or failure.

■ Consider the possibility of power source failure.
Take measures to ensure that even if a failure occurs in the power source, it does not cause injury or damage to people or equipment.

■ Consider the operating state when restarting after an emergency stop or abnormal stop.
Design it so that restarting does not cause harm to people or equipment. Also, if it is necessary to reset the electric actuator to the starting position, design a safe control device. Consider the possibility of failure of the installed motor. Take measures to ensure that even if a failure occurs in the power source, it does not cause harm to people or equipment.

■ Do not use in places with impact or vibration.

■ Do not apply a load to the product that exceeds the allowable value in the selection data.

■ If there is a risk of danger to the human body, please install a protective cover.
If the drive part of the actuator may pose a danger to the human body, please install a protective cover. Please make the structure such that it is not possible to enter the drive range of the actuator or for the human body to directly touch that area.

■ Take necessary measures in advance so that this product does not adversely affect people or things if it malfunctions.

Caution

■ Please use within a range where the moving table and rod, fingers do not collide at the stroke end.

■ The product is manufactured in accordance with various standards. Never disassemble or modify.

■ Please confirm the suitability of our products for the system, machine, and equipment you use at your own responsibility.

■ Use wiring that does not induce induction noise.
Avoid places where large currents or strong magnetic fields are generated. Do not use the same wiring (with multi-core cables) as the power lines for large motors other than this product. Do not use the same wiring as the inverter power supply and wiring part used for robots, etc., apply a frame ground to the power supply, and insert a filter in the output part.

■ Do not use in an environment where strong magnetic fields are generated.
This can cause malfunction.

■ Separate the power supply for the output part of this product from the power supply for inductive loads that generate surges, such as solenoid valves and relays.
If the power supply is shared, surge current will flow into the output part, causing damage. If a separate power supply cannot be used, connect a surge absorbing element directly in parallel to all inductive loads.

■ Select a power supply with sufficient capacity for the number of products installed. If there is not enough capacity, it may malfunction.
[In case of ECG series]
(□35...2.4 A/unit, □42...2.7 A/unit, □56...4.0 A/unit)

■ Fixed cables cannot be used for applications involving repeated bending, so please fix them so that they do not move easily. For use in locations involving repeated bending, please use a flexible cable.

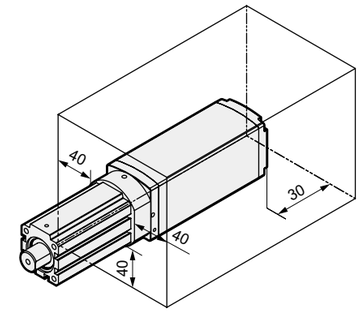
■ Please use the fixed/flexible cable with a bending radius of 51 mm or more. (For GCKW Series, bending radius 63mm or more)
The bending radius cannot accommodate bending of the connector part, so it is recommended to fix it near the connector.

■ Please use a cable of 10 m or less to connect to the IF connector.

■ When the power is turned on, to recognize the home position, if there is an external stopper or holding mechanism (brake, etc.), there is a possibility that an unintended position will be recognized as the home position. After turning on the power, please pay attention to the placement of external stoppers, etc., so that the home position can be reliably detected.

■ When using GSSD2, GSTK, GSTG Series, do not apply a magnetic field with a magnetic flux density of 0.7 mT or more to the product surface of the motor section.
This can cause damage to the product or malfunction.

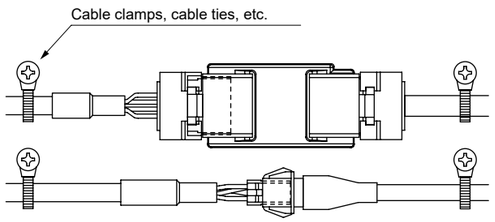
■ When using multiple GSSD2, GSTK, GSTG series units, please install them with the motor parts separated by the distance shown in the figure below or more.
Installation at close intervals can cause malfunction.



■ When transporting or installing, do not hold the movable parts or cable parts of the product.
This can cause injury or disconnection.

■ Do not fix the cable coming out of the actuator in a taut state.
This may lead to damage to the internal parts of the actuator.

■ Do not move the cable coming out of the actuator. Please fix the cable part. In addition, please use the cable with a bending radius of 40 mm or more.

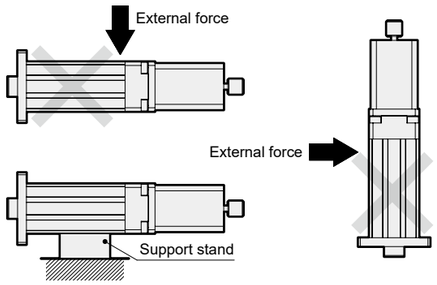


2. GSSD2 Series

Caution

■ In the case of flange (option) mounting, do not apply external force to the main body. External force may cause malfunction or component damage.
When mounting on the front in a horizontal installation, provide a support base. Depending on the operating conditions and the surrounding installation environment, vibrations may occur and cause damage to the actuator body. If external force is applied to the main body, use the mounting holes on the main body base to fix the main body. Avoid fixing only with the mounting holes on the flange part.

[In case of flange mounting]



■ To prevent breakage of the piston rod end thread, wear of the bushing, seizure, etc., connect the piston rod end and the load with a free joint or simple flow controller so that there is no twisting at any position of the stroke.

■ If the clearance between the clevis and the mating bearing is large, a bending action will be applied to the pin or shaft. Therefore, do not make this clearance too large.
(Recommended fit H10/e8)

3. GSTK Series

Caution

■ When a load directly connected to an actuator, etc., is stopped midway by a stopper actuator.
● The operating range is only for stopping pallets on a conveyor. When stopping a load directly connected to a cylinder, etc., with a stopper cylinder, the cylinder thrust becomes a lateral load, so please select an actuator so that it is within the range of allowable absorption energy and allowable lateral load.

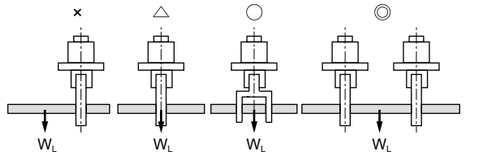
4. GCKW Series

Warning

■ The gripping force may decrease due to power outages, etc., so please perform a safety design that takes this into consideration. The gripping force may decrease due to power outages, etc., and the workpiece may come off, so please incorporate a safety device that will not cause injury to people or damage to machinery.

Caution

■ When gripping long or large workpieces, gripping the center of gravity is a prerequisite for stable gripping, but it is also necessary to stabilize it by increasing the size or using multiple units.

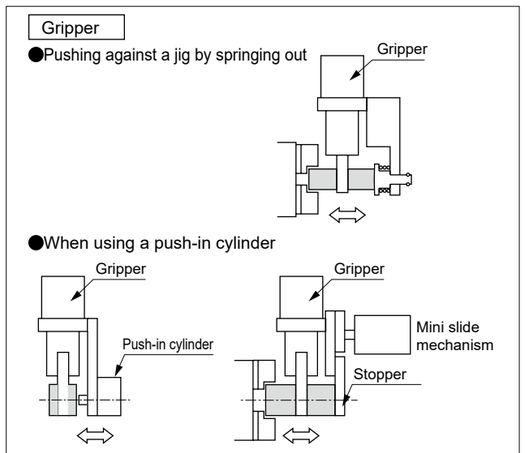


◎: Excellent, ○: Good, △: Conditional, X : Not Applicable

■ Select a model with sufficient gripping force for the workpiece mass.

■ Select a model with a sufficient opening/closing width for the size of the workpiece. Variations in the opening/closing width and workpieces can cause the gripping position to become unstable. Also, when opening from gripping operation, increase the stroke by the amount of backlash.

■ When inserting a workpiece directly into a jig with a gripper, please design with clearance in mind. The gripper may also be damaged.



Note) The workpiece is slid along the top of the attachment, so chuck life could drop markedly. Sufficient consideration must be given to the shape of the attachments.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site (https: //www.ckd.co.jp/kiki/en/) → 'model No.' → Instruction Manual

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