To Use This Product Safely

Be sure to read this before use.
Refer to Intro 17 for general information on electric actuators.

Individual Precautions: Electric actuator FGRC Series

During Design / Selection

1. Common

DANGER

■ Do not use in places where dangerous goods such as ignitable substances, inflammable substances or explosives are present.
There is a risk of ignition, fire, or explosion.

■ Ensure that the product is free of water droplets and oil droplets.
This can cause fire or malfunction.

■ When mounting the product, be sure to securely hold and fix (including the workpiece) it.
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 specified operating range.

■ Provide a safety fence to prevent entry to the movable range of the electric actuator. In addition, install the emergency stop button switch as a device in a location which is easy to operate in an emergency situation. The emergency stop push button must have a structure and wiring that does not automatically reset and cannot be carelessly reset by a person.

■ If the moving workpiece poses a possible risk to personnel or if fingers could be caught, take safety measures.

■ It may take several seconds to complete an emergency stop, depending on the travel speed and load.

■ If the machine stops in the event of a system failure such as emergency stop or power outage, equipment damage or injury do not occur. Design a safety circuit or device.

■ Install indoors with low humidity.
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 an environment will cause damage and malfunction.

■ Make sure that the product is D type grounded (ground resistance of 100 Ω or less).
If an electric leakage occurs, there is a risk of electric shock or malfunction.

■ Use and store in accordance with the working/storage temperatures and where there is no condensation.
(Storage Temperature: -10°C to 50°C, Storage Humidity: 35% to 80%, Operating Temperature: 0°C to 40°C, 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 this product in a location where the ambient temperature could suddenly change and cause dew to condense.

■ Install in a location free from direct sunlight, dust, and corrosive gas/explosive gas/inflammable gas/combustibles, and away from heat sources. In addition, this product has not been considered for chemical resistance.
This can cause malfunction, explosion, or fire.

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

■ Take possibility of power source breakdown into consideration.
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.

■ Take the operational status into consideration if the machine is reactivated after emergency or abnormal stops.
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.

■ Avoid using this product where vibration and impact are present.

■ Do not apply a load to the product that is greater than or equal to the allowable load listed in the materials for selection.

■ Use a safe design that takes load fluctuation, rising/lowering operation (wall-mounted), and changes in frictional resistance into consideration. The operating speed will increase, which can cause injury to people or damage to machinery.

■ The pressing torque may decrease during a power outage or similar. Use a safe design that takes this into consideration. When used in a clamping mechanism, the clamping force may decrease due to power outages, etc., and the workpiece may come off, so please incorporate a safety device to prevent injury to people or damage to machinery.

■ Sudden stops during table rotation may generate load torque larger than the theoretical value. Please design with safety in mind.

■ Backlash may cause vibration when stopping or increased positioning time. When stopping precision is required, use an external stopper, etc., and complete positioning with pressing operation.

Caution

■ Never disassemble or modify the product.

■ The customer is responsible for the compatibility of CKD products with the customer's systems, machines and equipmentfor details.

■ For UL compatibility, use a Class2 power supply unit conforming to UL1310 for the combination DC power supply.

■ Set up the wiring so as not to apply inductive noise.
Avoid places where large currents or strong magnetic fields are generated. Do not use the same wiring 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.

■ Be sure to separate the power supply of the output of this product and the power supply of 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 which provides ample capacity based on the number of installed products. If there is not enough capacity, it may malfunction.

■ Fix the fixing cable so that it does not easily move, as it cannot be used in applications involvingrepeated bending. For use in locations involving repeated bending, please use a flexible cable.

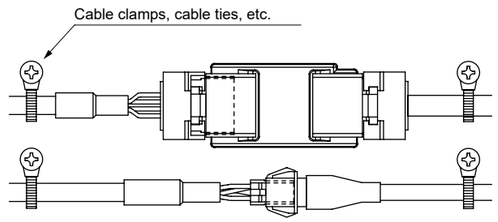
■ Use movable/fixed cables with a bending radius of 63 mm or more.
The bending radius cannot accommodate bending of the connector part, so it is recommended to fix it near the connector.

■ The origin position is recognized when the power supply is turned ON. If an external stopper or holding mechanism (brake, etc.) is attached, an unintended position may be recognized as the origin 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.

■ Use a cable within 10 m to connect the IF connector.

■ Do not hold the product's movable parts or cables during transportation and installation.
This can cause injury or disconnection.

■ Do not move the cable leading out of the actuator. Fix the cable part. Furthermore, use cables with a bending radius of 40 mm or more.



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

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