



To Use This Product Safely

Be sure to read this before use. For general cylinder information, see Intro 41, and for cylinder switches, see P. 1512.

Individual Precautions: Rotary Actuator Rack & Pinion RRC Series

Design / Selection

CAUTION

■ Do not apply torque exceeding rated output to the product.

If an external force exceeding the rated output of the product is applied to the product, it will cause damage to the product.

■ If oscillating angle repeatability is required, directly stop external load.

Even for products with angle adjustment, the initial oscillation angle may change.

■ If the axial load (thrust load) on the shaft exceeds the allowable value, faulty operation could occur. Therefore, do not apply a load in excess of the allowable value. If unavoidable, use a structure with a thrust bearing as shown in Figure 1.

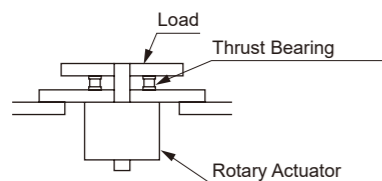


Figure 1

■ Avoid applying bending (radial) load exceeding the allowable value onto the shaft end, or operation faults could occur.

If unavoidable, use a mechanism where only rotational force is transmitted, as shown in Figure 2. To prevent shaft breakage, bearing wear/seizure, etc., connect the shaft tip and load with a flexible coupling, etc., that does not cause prying at any position within the oscillation range.

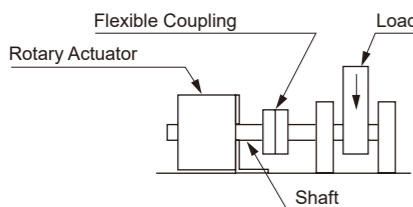


Figure 2 Radial Load

■ Install the external stopper in a position far from the rotary shaft.

If a stopper is installed near the rotating shaft, the reaction force acting on the stopper due to the torque generated by the product itself will be applied to the rotating shaft, causing damage to the rotating shaft and bearings, which may cause injury or damage to personnel, equipment, and devices.

■ If the load weight is large and oscillation is fast, large inertia could be generated and allowable absorbed energy exceeded, possibly damaging the rotary actuator.

Install a shock absorber to absorb inertia.

■ The retention torque of the oscillating end is about half that of the effective torque, so a load factor of 50% or less should be used.

■ Generally, select a model so that the output torque is twice or more the torque required by the load. Since the RRC series adopts a double piston method, if the oscillation angle is adjusted with a stopper bolt, the holding torque at the oscillation end will be half the effective torque. is included.

■ Even if the required torque of the load is small during oscillating motion, the inertial force of the load may cause damage to the actuator. Be sure to consider the moment of inertia of the load, kinetic energy, and oscillation time, and use below the allowable energy.

During Use

CAUTION

■ When installing a load or jig, etc., on the rotary actuator shaft, check that load is not applied to the body as shown in Fig.3.

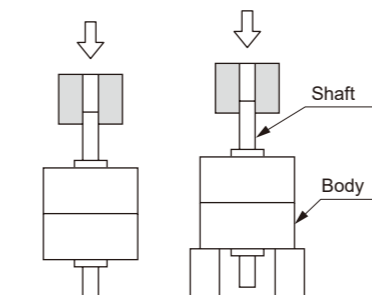


Fig. 3

■ When adjusting the angle by supplying pressure, do not rotate the device too much in advance.

Adjustment by supplying pressure may cause rotation and falling during adjustment depending on the mounting posture of the device, etc., which may cause injury or damage to personnel, equipment, and devices.

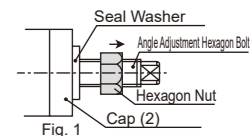
■ Do not loosen the angle adjustment Hexagon Bolt beyond the adjusting range.

Loosening beyond the adjustment range may cause the angle adjustment Hexagon Bolt to come off, which may cause injury or damage to personnel, equipment, and devices. Turning the angle adjustment Hexagon Bolt clockwise reduces the cylinder oscillation angle.

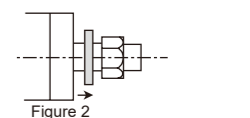
■ Observe steps to when adjusting the angle. If adjustment is not performed by this method, the seal washer will be damaged after 1 or 2 adjustments.

[Angle Adjustment Procedure]

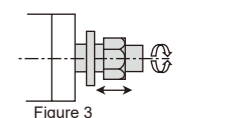
(1) First, loosen the Hexagon Nut to the state shown in Figure 1.



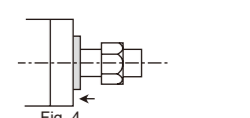
(2) Next, release the seal washer from the cap (2) by hand to the state shown in Figure 2.



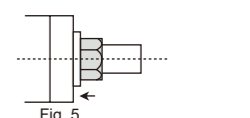
(3) Turn the angle adjustment Hexagon Bolt, Hexagon Nut, and seal washer together as shown in Fig.3, and adjust the angle. At this time, be careful not to let the rubber part of the seal washer get caught in the threaded part.



(4) After angle adjustment, first bring the seal washer close to the cap (2) by hand as shown in Figure 4.



(5) Then, securely tighten with the Hexagon Nut as shown in Figure 5. At this time, be careful not to let the rubber part of the seal washer get caught in the threaded part.



■ Securely tighten the Hexagon Nut after adjusting the angle. If tightening is insufficient, the Hexagon Nut will loosen during use, causing external leakage.

For precautions during mounting, installation, adjustment, use, and maintenance, refer to "During Use" in this catalog and the CKD Components Product website (<https://www.ckd.co.jp/kiki/en/>) -> "Model No." -> [Instruction Manual](#).