

This instruction manual applies to products with type designations that begin with the following characters.

AC KC NC NX OC OKC ONC OPM ORC OSC OSM RC RX SKC SM SX

1. For Safety

- (1) Be sure to read this manual before use. Store this manual carefully so that it can be referred to at any time.
- (2) Transport, storage, installation, piping, operation, or maintenance of this product should be carried out by an experienced expert.
- (3) In order to prevent product malfunction resulting in bodily accidents or damage to peripheral equipment, be sure to follow the warnings, cautions, and instructions described in this manual.
- (4) Never disassemble or modify this product because doing so is dangerous.
- (5) Instruction manuals for respective series are available on our website. See them while reading this manual. If the instruction manual for your series is not available on our website, contact our sales representative for assistance.


2. Precautions on Transport and Storage

In order to prevent injury to workers, product damage, or fluid leakage, follow the following instructions.

- (1) To transport a product that weighs over 25kg, use appropriate lifting equipment.
- (2) Do not drop or subject the product to undue impact while it is being transported.
- (3) Wrap the product before storing it to prevent the entry of foreign objects.
- (4) Store this product in a dry environment at 10°C to 40°C.
- (5) The storage period should be within a maximum of two years.

3. Precautions on Installation and Pipe Laying

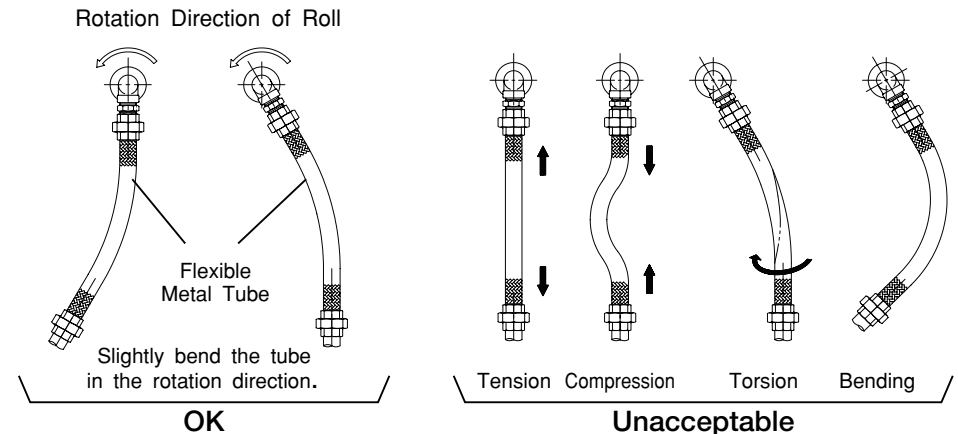
Product adjustment is not required before installation.

 WARNING	<p>In order to prevent bodily accidents or damage to peripheral equipment,</p> <ol style="list-style-type: none"> 1. If your product has an inspection hole, be sure to install it so that the hole faces downward. Also, do not block the hole. 2. Use a hose for product connection suitable for characteristics of fluid used and operating conditions (pressure, temperature).
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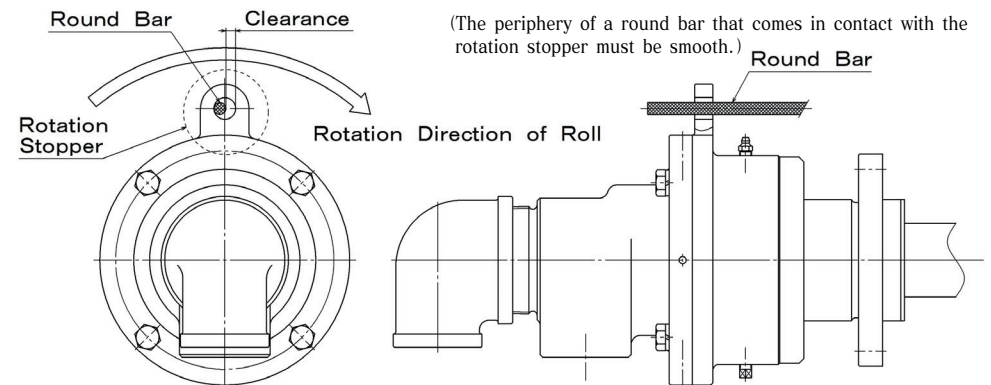
In order to prevent injury to workers, product damage, or fluid leakage, follow the following instructions.

- (1) Take the product weight into consideration before installing the product. Use equipment such as a crane as necessary. This work should be performed by two or more persons.

- (2) Remove any foreign objects in such flow passages as a pipe or a roll before product installation. If the fluid contains foreign objects, install a strainer at the flow passages.
- (3) When inserting an internal pipe into the rotor, do not allow the pipe to hit inner parts.
- (4) Install so that no center misalignment or inclination occurs between the rotation axes of the rotor and a roll.
- (5) Use a flexible metal tube or a rubber hose with adequate flexibility to connect to the product. Steel pipes should not be used for pipe laying.
- (6) Avoid such pipe laying where heavy items such as valves are suspended from the product.
- (7) When installing a flexible metal tube, slightly bend it in the rotation direction of roll. Furthermore, carry out pipe laying work so that excessive "tension", "compression", "torsion", or "bending" is not caused. (See the figure below.)



- (8) Do not secure the rotation stopper to an anti-rotation plate or a round bar. An example of a measure using a round bar is shown below. (Only for products with rotation stoppers)




4. Precautions for Use

- (1) Perform operation within the service conditions. Moreover, do not operate under conditions where both pressure and rotation speed are close to the max. values.
Doing so significantly reduces product lifetime.
- (2) When starting operation, check for abnormal rotation (center runout, abnormal noise, etc.) or fluid leakage from the product while gradually increasing fluid pressure and roll rotational velocity.
- (3) During rotation or high-temperature/pressure fluid flow, keep well away from the product to prevent injuries or burns. Do not directly touch rotating or hot parts during operation.
- (4) If operation is continued under a center runout condition, product damage or fluid leakage may result.
- (5) The occurrence of surging or water hammer can cause product damage or fluid leakage. Avoid such occurrence.
- (6) Do not perform dry operation (operation without fluid flow) for a long time. The product lifetime becomes shortened.
- (7) If the product is left as is for a long time during operation shutdown, rust may occur, causing fluid leakage after operation restart. Clean flow passages for the product, pipes, and roll before restarting operation.

5. Inspection and Maintenance

● Daily inspection

Visually check pipe connections, product connections, and the product for fluid leakage. If fluid leakage is detected, stop operation and immediately repair the product or replace it with a new one.

 WARNING	<ol style="list-style-type: none">1. If operation is continued with fluid leakage not being repaired, bodily accidents or damage to peripheral equipment may result.2. In order to prevent bodily accidents due to residual fluid in the product or pipes, remove the product after fluid has been completely drained from the product or pipes and temperature has dropped to room temperature.
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● Greasing

- (1) Periodic greasing is required for grease-type products with grease nipples. Be sure to remove the grease outlet plug before greasing. Then fill the grease through the grease nipple. Continue to fill until new grease comes out from the grease outlet.
- (2) See our catalog or website for the greasing frequency.
- (3) Use the same brand of grease as the one filled in the product before shipment from our company.

● Repair and replacement of consumables

Contact our sales representative to request consumable repair or replacement.

6. Product Warranty

If a malfunction occurs during the warranty period, contact us or the distributor and send the product to us. Be sure to carefully pack the product for protection before sending it. After receiving the product, we will confirm the malfunction. If the malfunction was clearly caused by the materials of product components or the manufacturing method, we will repair the product in question or replace it with a new one free of charge.

Product Warranty Provision

1. Warranty period
<New products>
One (1) year and six (6) months after shipment (from the manufacturing date) or one (1) year after installation, whichever comes first.
<Repaired products>
Six (6) months after shipment (from the manufacturing date).
2. We charge a fee for repairs in any of the following cases.
 - ① Failure after the warranty period has expired
 - ② Failure caused by use of the product deviating from the service conditions
 - ③ Failure caused by misuse (improper storage, installation, pipe laying, operation or maintenance, etc.)
 - ④ Failure caused by fluid contaminants or foreign objects in the fluid
 - ⑤ Failure caused by relocation, transport, or falling of the product after delivery
 - ⑥ Failure caused by disassembly, repair, or modification done by personnel other than our service personnel
 - ⑦ Failure of the product attributed to using materials or according to standards specified by the customer
 - ⑧ Failure of the product attributed to using materials provided by the customer
 - ⑨ Failure caused due to unavoidable acts of nature such as fires or other natural disasters
3. Scope of responsibility
Our responsibility shall be limited to repairs, replacements, or transport expenses covered by this product warranty provision. Expenses or damages caused by said failures above shall not be covered.
4. Applicable regions
This product warranty provision shall be applicable to products installed in Japan. Contact our sales representative if you install and use our products outside Japan.
5. Another agreement
If another product warranty agreement is made separately with us and clearly states that said agreement shall have priority over this product warranty provision, this provision shall not be applicable.
6. This product warranty provision shall not restrict the customer's legal rights.

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