



# Safety Precautions

Be sure to read this section before use.

When designing and manufacturing a device using CKD products, the manufacturer is obligated to check that device safety mechanism, pneumatic control circuit, or water control circuit and the system operated by electrical control that controls the devices is secured.

It is important to select, use, handle and maintain the product appropriately to ensure that the CKD product is used safely.

Observe warnings and precautions to ensure device safety.

Check that device safety is ensured, and manufacture a safe device.

## WARNING

- 1** This product is designed and manufactured as a general industrial machine part. It must be handled by an operator having sufficient knowledge and experience.
  - 2** Use this product in accordance with specifications.  
This product must be used within its stated specifications. In addition, never modify or additionally machine this product. This product is intended for use in general industrial machinery equipment or parts. It is not intended for use outdoors (except for products with outdoor specifications) or for use under the following conditions or environments. (Note that this product can be used when CKD is consulted prior to its usage and the customer consents to CKD product specifications. The customer should provide safety measures to avoid danger in the event of problems.)
    - 1** Use for applications requiring safety, including nuclear energy, railways, aircraft, marine vessels, vehicles, medical devices, devices or applications in contact with beverages or foodstuffs, amusement devices, emergency cutoff circuits, press machines, brake circuits, or safety devices or applications.
    - 2** Use for applications where life or assets could be significantly affected, and special safety measures are required.
  - 3** Observe organization standards and regulations, etc., related to the safety of device design and control, etc. ISO4414, JIS B 8370 (Pneumatics fluid power - General rules and safety requirements for systems and their components) JFPS2008 (Principles for pneumatic cylinder selection and use) Including the High Pressure Gas Safety Act, Industrial Safety and Health Act, other safety rules, organization standards and regulations, etc.
  - 4** Do not handle, pipe, or remove devices before confirming safety.
    - 1** Inspect and service the machine and devices after confirming safety of all systems related to this product.
    - 2** Note that there may be hot or charged sections even after operation is stopped.
    - 3** When inspecting or servicing the device, turn OFF the energy source (air supply or water supply), and turn OFF power to the facility. Discharge any compressed air from the system, and pay attention to possible water leakage and leakage of electricity.
    - 4** When starting or restarting a machine or device that incorporates pneumatic components, make sure that the system safety, such as pop-out prevention measures, is secured.
  - 5** Observe warnings and cautions in the following pages to prevent accidents.
- The precautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.

 **DANGER:** When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, and when there is a high degree of emergency to a warning.

 **WARNING:** If handled incorrectly, a dangerous situation may occur, resulting in death or serious injury.

 **CAUTION:** When a dangerous situation may occur if handling is mistaken leading to minor injuries or physical damage.

Note that some items described as "CAUTION" may lead to serious results depending on the situation. Every item provides important information and must be observed.

## Warranty

- 1** **Warranty period**  
The product specified herein is warranted for one (1) year from the date of delivery to the location specified by the customer.
- 2** **Warranty coverage**  
If the product specified herein fails for reasons attributable to CKD within the warranty period specified above, CKD will promptly provide a replacement for the faulty product or a part thereof or repair the faulty product at one of CKD's facilities free of charge. However, following failures are excluded from this warranty:
  - 1) Failure caused by handling or use of the product under conditions and in environments not conforming to those stated in the catalog, the Specifications, or the Instruction Manual.
  - 2) Failure caused by use of the product exceeding its durability (cycles, distance, time, etc.) or caused by consumable parts.
  - 3) Failure not caused by the product.
  - 4) Failure caused by use not intended for the product.
  - 5) Failure caused by modifications/alterations or repairs not carried out by CKD.
  - 6) Failure caused by reasons unforeseen at the level of technology available at the time of delivery.
  - 7) Failure caused by acts of nature and disasters beyond control of CKD.The warranty stated herein covers only the delivered product itself. Any loss or damage induced by failure of the delivered product is excluded from this warranty.  
Note: For details on the durability and consumable parts, contact your nearest CKD sales office.
- 3** **Compatibility check**  
The customer is responsible for confirming the compatibility of CKD products with the customer's systems, machines and equipment.

**Safety precautions (excerpt)**

Be sure to read the Instruction Manual before use.

**Design/Selection**

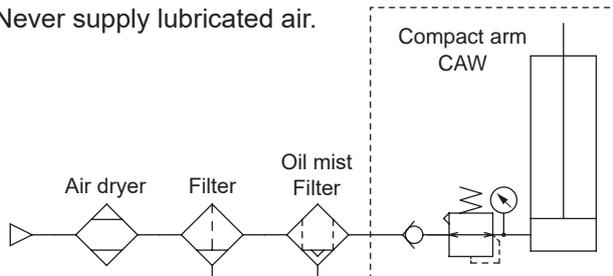
**⚠ WARNING**

- This product is a pneumatic assistive device, intended for use as a mechanical device with a tool or tools attached to the end of the device. When using the machine, please be sure to conduct a risk assessment of the entire machine and equipment to ensure safety before use. In addition, the end user should conduct a risk assessment of the user side based on the residual risk information of the entire machine and determine a safe operation method before use.

**⚠ CAUTION**

**[Pneumatic source]**

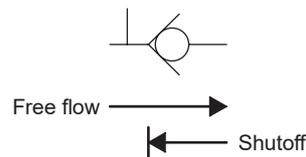
- Working fluid must be clean air from which solids and water/oil have been sufficiently removed using a dryer, filter and oil mist filter. Never supply lubricated air.



- Keep the pressure difference between the primary and secondary sides of the precision regulator to 0.1MPa or more. For the pressure required for load, refer to the graph of "Load capacity under pressure".

**[Pneumatic piping]**

- Check IN.OUT display indicating the air inlet and outlet of the precision regulator before connecting. A reverse connection could result in malfunction.
- When handling the precision regulator, do not move or swing it by the adjustment knob.
- If the pneumatic piping on the secondary side of the precision regulator is dislocated during use, the arm may fall, creating a hazard. Connect with reliable methods to prevent the pneumatic piping from dislocating.
- Check JIS symbols on the body before connecting the module check valve.



- Use sealing tape when piping. Do not use liquid or solid sealant. In addition, ensure that the sealing tape does not enter the piping.

**[Product installation]**

- When mounting the product, mount it on a vertical plane.

**Use/Maintenance**

**⚠ WARNING**

- If abnormal noises are heard, personal safety should be the first priority, and joints should be locked only when it is safe to do so. Failure to do so may result in fatal accidents or total damage to the product.
- Do not modify the product or device without the manufacturer's approval.
- Do not put hands or fingers into product gaps.
- When the operator's hand is removed from the tool, the horizontal position may not be maintained due to tilt during product installation or deflection of the arm due to the weight of the tool or other parts. When not in use, the position can be held by tightening the lock lever at each joint. It is recommended to install a "home position" where the tool is stored in the specified location when not in use.

- Do not use in excess of the maximum load capacity.
- Do not use in excess of the maximum moment load.
- Do not put weight on the arm or hang the product from the arm.

**⚠ CAUTION**

- Before relocation or maintenance, remove the cylinder and arm sections.
- Do not use this product with the cover removed.

**Precautions for export**

- Contact the nearest CKD Sales Office for information on the EAR assessment.