



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

WP Series: Warnings and Cautions

Be sure to read this section before use.

Refer to "Air Preparation Unit/Auxiliary components (RJ-007)" for general and product-specific precautions.

Product-specific cautions: FRL pressure gauge (Outdoor Series)

*For product-specific cautions other than those below, refer to Safety Precautions of the F.R.L. unit (modular design) and F.R.L. unit (compact type) in "Air Preparation Unit / Auxiliary Components (No. RJ-007AA)".



WARNING

■ Design / Consideration

- This product is for industrial use. Do not use for medical purposes, or in any equipment or circuit that concerns human life.
- Be sure to attach a safety device where output pressure exceeding the regulator's set pressure value will cause damage or malfunction of the secondary side equipment.

■ Working environment

- This product has outdoor specifications, but should not be used in the following environments.
 - When ambient temperature exceeds the specifications. (The product temperature is at risk of exceeding the ambient temperature when exposed to direct sunlight.)
 - When air freezes.
 - In atmospheres containing corrosive gases, liquids and chemicals.
 - Locations with vibration or impact.

■ Precautions for use in cold climates

- When using this product in a cold climate, take the necessary measures to prevent freezing.
Freezing can cause leakage or operation failure. Conduct appropriate dew point management of air quality.

■ Use / Maintenance

- Do not disassemble the filter/regulator or regulator cover.



CAUTION

■ Design / Selection

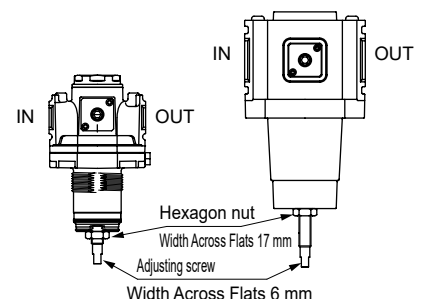
- Use the auto-drain under the working conditions below. This may cause malfunction.
NO auto-drain (exhaust without pressurized): For "F"
 - Use a compressor with a capacity of 0.75 kw {90 L/min [ANR]} or more.
 - Set the working pressure to 0.1 MPa or more. (Air is purged with initial drainage until pressure reaches 0.1 MPa.)

NC auto-drain (no exhaust without pressurized) For "F1"

- A compressor with a capacity of 0.75 kw or less can also be used.
- Set the working pressure to 0.15 MPa or more.
- Set the working flow to less than the max. working flow.
- Avoid use of this in places with high vibration, such as where a compressor is installed, because air could leak from the drain outlet when the float vibrates.
- Avoid drain overflow, which may lead to malfunctions.

■ Use / Maintenance

- Except when adjusting the pressure, tighten the hex nut and secure the adjusting screw.
Please. (Use without tightening may lead to damage.)
- Do not apply a load to the product unless it is within the parameters of use. (Do not climb/step onto the product.)
- Using the regulator with the cover facing downward may cause the pressure regulation to fail due to freezing. It is possible. Be especially careful in low-temperature environments.
- The set pressure changes from the initial set point due to the working environment and conditions, as well as aging of part materials. Check the pressure regularly, and reset if conditions have changed.
- Perform regular maintenance every six months to one year.
- Consumable parts (metal bowl assembly, valve assembly, bottom spring, element, mantle assembly, O-rings) should be replaced every other year. Contact a CKD sales representative for details regarding consumable parts.
- When the set pressure is high, the operating force for rotating the adjusting screw (knob) will increase.



■ Working fluids

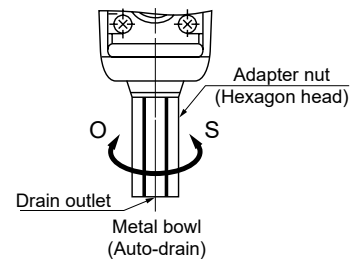
- Use only compressed air. Air containing corrosive gases, fluids or chemicals could result in improper pressure adjustment due to body damage or rubber deterioration.

Outdoor Series

CAUTION

■ Other

- This product guarantees outdoor use, but not corrosion resistance (no rust or discoloration).
- Fix the hex side of the adaptor nut before screwing the fitting, etc., into the drain outlet of the auto-drain with metal cup. If the hex side of the adaptor nut is not fixed, the product may break due to excessive screw-in of the adaptor nut. When using the metal bowl with auto-drain, if the drain is piped with a tightening fitting, manual operation is not possible.
- Piston drain uses automatic discharge for intermittent flow. Drainage is not discharged under working conditions where air flows constantly.



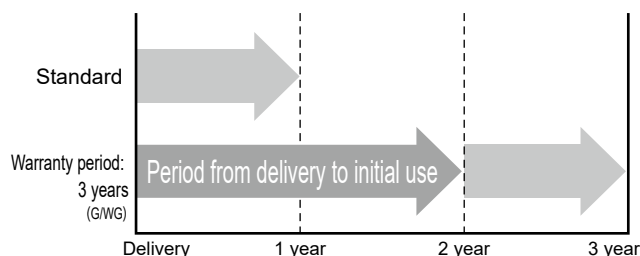
■ 3-year warranty after delivery (Option G)

When ordering the above options, we will prepare a specification sheet with the following information. Please fill in the date of commencement of use, sign it, and return it to us through the supplier. Please indicate the date of commencement of use to within 3 years from the date of delivery.

Scheduled date of service life: / / _____ sign
Warranty period: The warranty provided is 3 years from the date of delivery or 1 year from initial use, whichever comes first.

*Please return the specification sheet after entering the scheduled start date. The warranty for 3 years will not apply if there is no indication or no return.

*Includes inspection certificate, inspection guidelines, drawings, specifications, traceability system diagram



*Chart shows case of 2 years of storage and 1 year of use.

Related products

Outdoor products WP Series

■ Proven durability for outdoor use

Accelerated weathering test: 3-year acceleration or equivalent

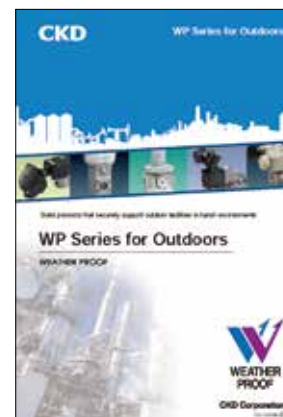
Compound cycle test: Equivalent to 7-year acceleration

Ozone exposure test: 400 hours

■ Lineup of products compatible with min. ambient temperature -20°C

■ Each product has a maximum warranty of 3 years

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