Safety Precautions

Always read this section before use.

Design & selection

⚠WARNING

■ Do not constantly push down or apply a load onto the push-ring of the push-in fitting.
- The tube may lose its ability to hold.
- When transporting an assembled product, avoid positions in which the push ring is constantly pressed down.

⚠CAUTION

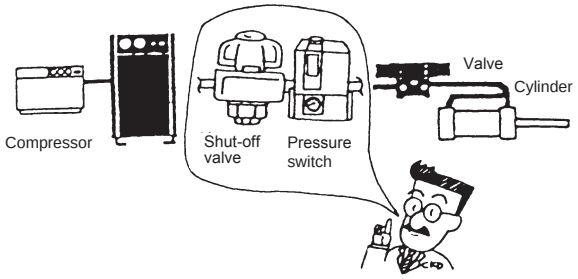
■ Use the product in the range of conditions specified for the product.
Contact CKD when using the product for special applications.
- Use with exceeding the specifications range may result in insufficient performance, and safety cannot be secured.
- This product may not be usable in special applications and environments.
For example, use for applications requiring safety, including nuclear energy, railways, aircraft, vehicles, medical devices, devices in contact with beverages or foodstuffs, amusement devices, emergency cutoff circuits, press machines, brake circuits, or safety devices or applications.

■ Confirm that the product withstands the working environment.
- This product cannot be used in environments where functional obstacles could occur.
Such environments include high temperature, chemical atmosphere, or where chemical, vibration, moisture, water drip or gas is present. Environment where ozone is generated.
- Do not use the product in the place that the product could directly contact with coolant or spatter, etc.

■ Understand compressed air features before designing a pneumatic circuit.
- The same functions as mechanical, hydraulic, and electrical methods cannot be anticipated if instantaneous service interruption and holding are required during an emergency stop.
- Pop-out, air discharge, or leakage due to air compression and expansion could occur.

■ This valve cannot be used as a stop valve that has no leakage. Slight leakage is allowed in product specifications.

■ Install a "pressure switch" and "shut-off valve" on the device's compressed air supply side.
- The pressure switch will disable operation until set pressure is reached.
The residual pressure exhaust-valve will exhaust compressed air in the pneumatic pressure circuit, and will prevent accidents caused by operation of pneumatic components by residual pressure.



■ Indicate the maintenance conditions in the device's instruction manual.
- The product's performance may drop too low to maintain an appropriate safety level depending on usage conditions, working environment and maintenance status. With correct maintenance, the product functions can be used to the fullest.

■ Contact CKD if ozone could occur in supplied air. (Ozone proof products are available.)

■ Rubber parts deteriorate and life is shortened if ultra dry air is used.

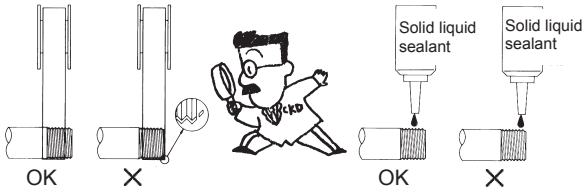
Mounting / Installation / adjustment

Piping

⚠CAUTION

■ Open the package in a clean room.
- The products are wrapped in an antistatic sheet before packaged in a box. If you install the product in a clean room, we recommend you to take it out of the box outside the clean room before you bring it in and to open the package in the clean room.

■ When connecting pipes, wrap sealing tape in the opposite direction from threads starting 2 mm inside from the end of piping threads.
- If sealing tape protrudes from pipe threads, it could be cut when screwed in. This could cause the tape to enter the pneumatic components and lead to faults.



■ M3 and M5 screws are sealed with the gasket.

■ Handling push-in fittings and tubes.
- Refer to WARNING of fitting and tube, and "Safety Precautions" (pages 992 to 994) for handling push-in fittings and tubes.

■ Always flush just before piping pneumatic component.
- Any foreign matter that has entered during piping must be removed so it does not enter the pneumatic component.

■ When supplying compressed air for the first time after connecting pipes, do not apply high pressure suddenly.
- Piping connection could be dislocated or the piping tube jump about leading to accidents.

■ After connecting pipes, check pipe connections for air leaks before supplying compressed air.
- Apply a leakage detection agent on pipe connections with a brush, and check for air leaks.

■ Apply recommended tightening torque when connecting pipes.
- To prevent air leak and to protect threads from damage.
- First tighten the screw by hand to prevent threads are not damaged, then use a tool.
- Do not tighten while pressure is applied.

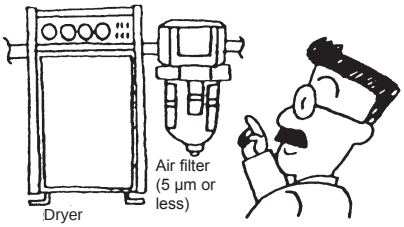
(Recommended tightening torque)

Port thread	Tightening torque N·m
M3	0.3 to 0.6
M5	1.0 to 1.5
Rc1/8	3 to 5
Rc1/4	6 to 8
Rc3/8	13 to 15
Rc1/2	16 to 18

■ Connect piping so that connections are not dislocated by system movement, vibration, or tension, etc.
- Control of actuator speed will be disabled if piping on the exhaust face of the pneumatic circuit is disengaged.
- When using the chuck holding mechanism, the chuck will be released creating a hazardous state.

■ Ensure ample room around the pneumatic component for installation, removal, wiring, and piping work.

■ Install an air filter just before the pneumatic component in the circuit.



■ Check that lock nuts are not loose.
- Actuator speed cannot be controlled if the lock nut is loose.

■ Check the needle valve dial indicator.
- Turning the dial excessively could result in damage although the needle valve has dislocation prevention. Check the number of turns for the product used.

■ Confirm the flow direction.
- If the product is installed in reverse, speed adjustment will not function and the actuator pop out, posing hazards.

■ Fully close the needle, and open to adjust speed.
- If the needle is opened, the actuator could pop out suddenly and pose a danger. Only open the needle after confirming that it is fully closed. Be sure that it is closed and then open it.
- The needle closes when turned to the right and opens when turned to the left.

■ Avoid use in applications involving continuous turning or swaying.
● Joints could be damaged.

■ Avoid using this product in places with high vibration or impact.

During use & maintenance

⚠WARNING

■ Stop air flow and confirm that there is no residual pressure before replacing the tube.