



To Use This Product Safely

Be sure to read this before use.

For general information on cylinders, please see Intro 41, and for cylinder switches, please see P. 808.

Individual Precautions : Low profile linear slide cylinder LCX series

During Design / Selection

1. Common

Caution

■ For cylinder selection, follow the "LCX Selection Guide" on P. 300 to P. 302.

■ If the cylinder is used in a place exposed to water droplets or oil droplets, a place where there is a risk of corrosion, or a place with a lot of dust, it may cause damage or malfunction, so protect the product with a cover, etc.

■ Precautions for products with switches

- For straight type lead wires with 30 strokes or less, and L-shaped type lead wires with 20 strokes or less, one switch is included to each of the two grooves on the main body, so pay attention to the lead wire extraction direction during design.

■ If the ambient temperature of the cylinder is 5°C or less, use a supply pressure of 0.5 MPa or more.

■ Please consult us if using in a constantly low temperature (5°C or less) or high temperature (40°C or more) environment.

■ Three types of stoppers with stroke adjustment function are available.

- Rubber cushion type stopper
Stopper with built-in urethane cushion rubber.
To stabilize the stop position, stoppers that make metal contact at a pressure of 0.4 MPa or more are also available, so please consult us.
- Metal type stopper
Since there is no cushion mechanism, use for light loads and low speeds. There is no change in the stop position due to deformation of the rubber cushion.
- Shock absorber type stopper
It has high energy absorption capacity, provides smooth stopping, and the stop position is determined by metal contact.

2. Drop prevention type LCX-Q

Caution

■ Do not use 3-position valves.

Avoid using in combination with 3-position valves (especially closed center metal seal type). If pressure is trapped in the port on the side with the lock mechanism, the lock will not engage. Also, even if locked once, air leaking from the valve may enter the cylinder, and the lock may be released over time.

■ Keep the cylinder load factor at 50% or less.

If the load factor is high, the lock may not be released, or it may lead to damage to the lock part.

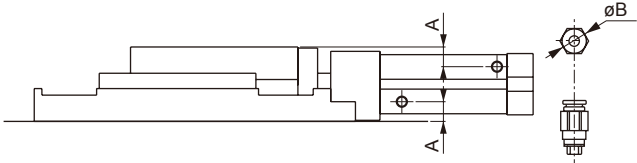
During Use

1. Common; During piping

Caution

■ Precautions for piping fittings

Be sure to use a speed controller when piping. Also, the usable fittings are as follows.



| Item | Port Size | Port position dimension A | Usable fittings | Fitting outer diameter B |
|------|-----------|---------------------------|--|--------------------------|
| ø25 | M5 | 9.5 | SC3W-M5-4 SC3W-M5-6 GWS4-M5-S GWS4-M5 GWL4-M5 GWS6-M5-S GWS6-M5 GWL6-M5 | ø17 or less |
| ø32 | | 9 | | |

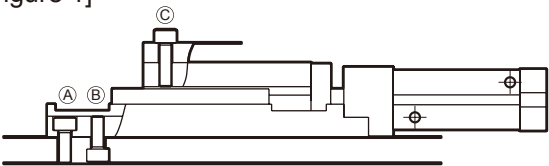
2. Common; During installation

Caution

■ To obtain high-precision linear motion, the mounting surfaces of the base and table of this product are precision machined. Therefore, by finishing the flatness of the mounting surface of equipment, etc. to a high precision by grinding, etc., stable high accuracy can be obtained. (Flatness : 0.01 mm or less) Also, do not make dents or scratches that may impair the flatness of the mounting surface.

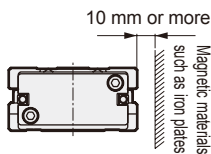
■ Observe the following values for the bolt screw-in length and tightening torque when mounting a jig to the table and base.

[Figure 1]

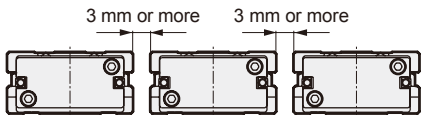


| Item | A | | B | | | C | | |
|--------|-----------|-------------------------|-----------|-------------------------|----------------------|-----------|-------------------------|----------------------|
| | Bolt used | Tightening torque (N·m) | Bolt used | Tightening torque (N·m) | Max. screw-in length | Bolt used | Tightening torque (N·m) | Max. screw-in length |
| LCX-25 | M6 | 4.3 to 5.2 | M6 x 1.0 | 4.3 to 5.2 | 9.5 mm | M6 x 1.0 | 4.3 to 5.2 | 11 mm |
| LCX-32 | | | | | | | | |

■ If there is a magnetic material such as an iron plate near the cylinder switch, it may malfunction. You can use it safely by keeping it 10 mm or more away from the cylinder surface or by changing the mounting surface of the cylinder switch. (Common to all bore sizes)



■ If cylinders are adjacent, the cylinder switch may malfunction. Maintain the following distance from the cylinder surface. (Common to all bore sizes)



■ Treat our Shock absorbers as consumable parts. Replace when a decrease in energy absorption capacity is observed or when operation is no longer smooth.

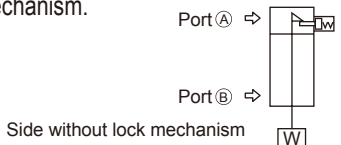
■ When using locating holes, use pins with dimensions that do not result in a press fit. Using press-fit dimension pins may cause damage to the linear guide part due to press-fitting load or accuracy deterioration due to distortion. The recommended tolerance for pins is JIS tolerance m6 or less.

■ For the guide part, apply AFF grease (manufactured by THK CO., LTD.) to the guide rail raceway surface every 6 months or 1 million operations, whichever comes first.

3. Drop prevention type LCX-Q

Warning

■ In the locked state, if pressure is supplied to port ① from a state where both side ports are not pressurized, the lock may not be released, or the lock may suddenly be released and the piston rod may fly out, which is very dangerous. When releasing the lock mechanism, always supply pressure to port ② and release it from a state where no load is applied to the lock mechanism.



■ When using a quick exhaust valve to increase the lowering speed, the cylinder body may start moving before the lock pin operates, and normal release may not be possible. Do not use a quick exhaust valve with a drop prevention type cylinder.

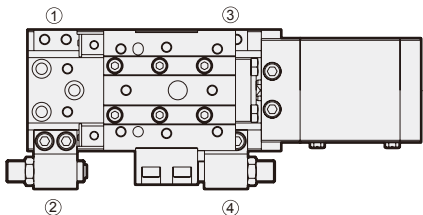
Caution

■ The lock mechanism works at the stroke end. Do not install stoppers at stopper positions ③, ④. Also, if an external stopper is applied in the middle of the stroke, the lock mechanism may not work and there is a risk of falling. When setting the load, be sure to confirm that the lock mechanism is working before installing.

■ Supply pressure equal to or higher than the minimum operating pressure for each model to the port on the side with the lock mechanism.

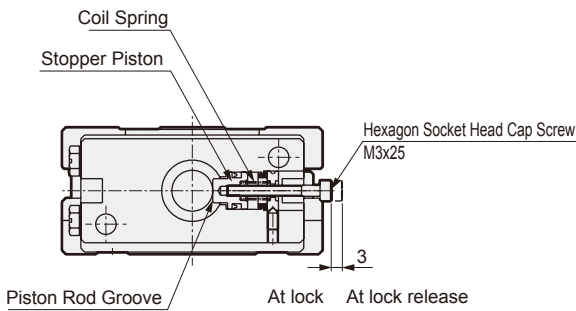
■ If the piping on the side with the lock mechanism is thin and long, or if the speed controller is far from the cylinder port, the exhaust speed may be slow and it may take time for the lock to engage, so please be careful. Also, clogging of the silencer included to the EXH. port of the solenoid valve will lead to similar results.

● Stopper position



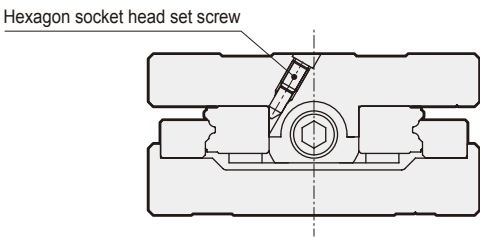
- If back pressure is applied to the lock mechanism side, the lock may be released, so use a single solenoid valve or a manifold with individual exhaust.
- After manually operating the lock mechanism, return the lock mechanism to its original state. Also, do not perform manual operations other than during adjustment, as it is dangerous.
- Release the lock when installing or adjusting the cylinder. If installation work, etc. is performed while the lock is engaged, the lock part may be damaged.
- Do not use multiple cylinders synchronized.
Do not use a method where two or more fall prevention type cylinders are synchronized to move one workpiece. The lock of one of the cylinders may become unremovable.
- Use the speed controller with meter-out control.
Lock may not be released with meter-in control.
- On the side with the lock, be sure to use the cylinder to the stroke end.
If the cylinder piston has not reached the stroke end, the lock may not engage, or it may not be possible to release the lock.

- Release method
Screw a hexagon socket head cap screw (M3x25) into the stopper piston and pull the bolt with a force of 20N or more for 3 mm, the stopper piston will move and the lock will be released. (No-load horizontal mounting, rod port pressurization)
Also, when you release your hand, the built-in spring returns the stopper piston, and if it enters the piston rod groove, the cylinder will be locked.



4. Long stroke LCX-□L

- The linear guide has optimal preload adjustment.
Do not loosen or retighten the hexagon socket set screws, as it may degrade product performance.



MEMO

For precautions regarding mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components Product website (<https://www.ckd.co.jp/kiki/en/>) → "Model No." → [Instruction Manual](#)