Pneumatic components

Safety Precautions

Be sure to read this section before use.
Refer to page 2 for general information of the cylinder, and to page 320 for general information of the cylinder switch.

Linear slide cylinder LCM Series

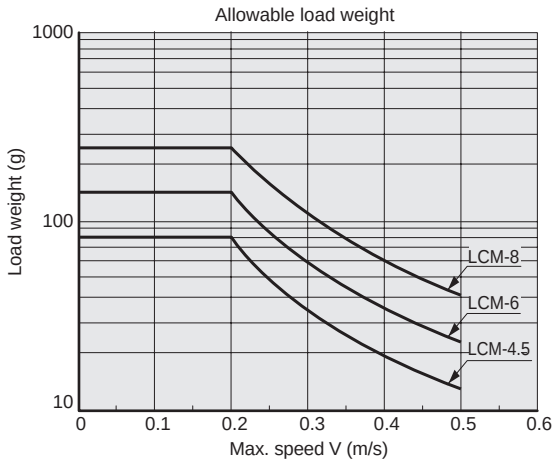
Design & selection

1. Common

⚠ CAUTION

- When selecting a cylinder, follow the "LCM selection guide" on page 101.
- Protect the cylinder with a cover to prevent damage and malfunction in a place where it is exposed to water or oil drops, or corrosive conditions.
- The stainless steel body and slide table may rust in some environments. Apply an appropriate amount of rust proofing agent oil periodically.
- Switches may accidentally function near a magnetic field. A magnetic substance near the switch may also cause an accidental operation. When setting a magnetic workpiece on the slide table, adjust the size so that it does not get closer to the switch across the table end.
- Putting a strong magnet close to the product may cause magnetization of the product, which may result in an accidental operation of the switch.
- Use the cylinder within the allowable absorbed energy in the table below. If kinetic energy exceeds these values, consider using a separate shock absorber.

Bore size	ø4.5	ø6	ø8
Allowable energy absorption J	1.59×10^{-3}	2.83×10^{-3}	5.02×10^{-3}



Mounting, installation & adjustment

1. Common: when piping

- Apply adhesive to the M3 plug (hexagon socket set screw) when changing the piping port position. (Low strength adhesives such as LOCTITE 222/221 or Three Bond 1344 is recommended) Tighten the plug up to a halfway point so that the screw does not protrude from the port surface and does not reach the bottom of the port.
- As compatible fittings are limited, refer to the table below to select a fitting.

Recommended fittings

Bore size	Recommended fittings
All port sizes	CG-S2-M3
	CG-S2-M3-S
	CG-L2-M3
	FTS4-M3-P80 *2
	FTL4-M3-P80 *2

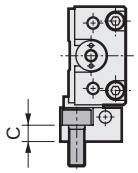
*1: FTL4-M3 is not available for ø4.5 clean room specifications dust collection port.
*2: Copper-based materials are used. Please refer to page 946 of this catalog.

- Do not damage the surface flatness by denting or scratching the body mounting surface or the slide table surface. Make sure that the flatness of the mating surface for mounting is 0.02 mm or less. Poor flatness may result in lower performance of the guide, higher rolling resistance or shorter service life.
- Use a clearance-fit stepped pin (option) for positioning. If a press-fit pin is used, the load of press fitting may damage the guide and result in failure. Also, if the pin is not stepped, it will interfere with the body since the pin hole is through, which may result in failure.
- The slide table and end plate are supported by balls. When fixing a jig with bolts, be sure to hold the slide table and end plate while tightening. Otherwise a large moment will be applied to the guide, resulting in low accuracy of the guide.

Mounting, installation and adjustment

■ Observe the following bolt insertion lengths and tightening torque when installing the jig on the body, slide table or end plate.

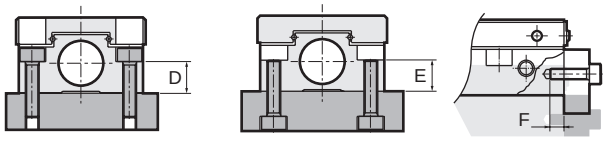
● Installing the body (side installation)



Note: Do not use a washer, etc. Otherwise the mounting bolt contacts the guide, resulting in damage.

Model No.	Applicable bolts	Max. tightening torque N·m	C mm
LCM-A-4.5	M3 × 0.5	1.14	5
LCM-A-6	M3 × 0.5	1.14	5
LCM-A-8	M4 × 0.7	2.7	4

● Mounting body

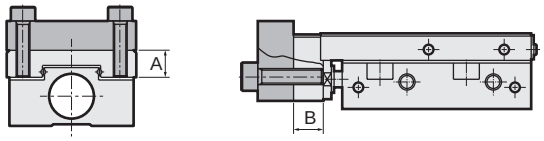


Model No.	Applicable bolts	Max. tightening torque N·m	D mm
LCM-*-4.5	M2 × 0.4	0.32	3.5
LCM-*-6	M2.5 × 0.45	0.65	5
LCM-*-8	M2.5 × 0.45	0.65	5.5

Model No.	Applicable bolts	Max. tightening torque N·m	E mm
LCM-*-4.5	M2.5 × 0.45	0.65	3.5
LCM-*-6	M3 × 0.5	1.14	5
LCM-*-8	M3 × 0.5	1.14	5.5

Model No.	Applicable bolts	Max. tightening torque N·m	Max. screw depth F mm
LCM-*-4.5	M2 × 0.4	0.32	2.5
LCM-*-6	M2.5 × 0.45	0.65	2.5
LCM-*-8	M3 × 0.5	1.14	3

● Attaching a jig



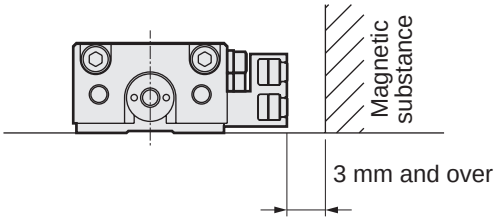
Model No.	Applicable bolts	Max. tightening torque N·m	Max. screw depth A mm	Max. screw depth B mm
LCM-*-4.5	M3 × 0.5	0.63	4	4.5
LCM-*-6	M3 × 0.5	0.63	4	5.5
LCM-*-8	M3 × 0.5	0.63	5	5.5

Note: Keep the length of the bolt for mounting a workpiece within the max. screw depth. Otherwise it may contact and damage the body.

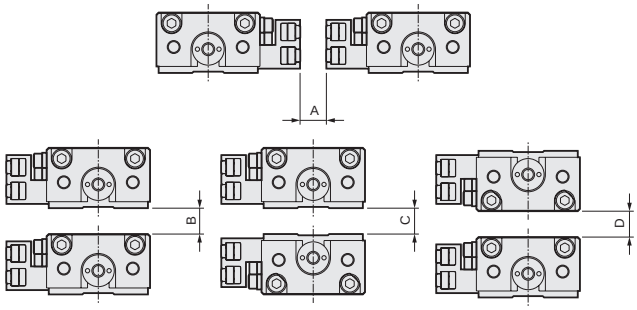
■ This series can be modified to the type with switch. Also, the switch mounting surface can be changed. Observe the following tightening torque of bolts for fixing the switch rail. Note that the port on the switch mounting surface is not used and should be plugged before the switch rail is installed.

Model No.	Applicable bolts	Max. tightening torque N·m
LCM-*-4.5	M2 × 0.4	0.17
LCM-*-6	M2 × 0.4	0.17
LCM-*-8	M2 × 0.4	0.17

■ The cylinder switch may malfunction if there is a magnetic substance such as a metal plate installed adjacently. Confirm that a distance of at least 3 mm is allocated from the surface of the switch rails. (Same for all bore sizes)



■ The cylinder switches may accidentally function if the cylinders are close to each other. Keep A, B, C and D 3 mm and over. (Same clearance for all bore sizes)



During use & maintenance

⚠ CAUTION

■ Apply CGL grease (IKO) to the guide rail every six months or three million operations, whichever comes first.