⚠ Precautions

Be sure to read this before handling.
Refer to the back of page 1 for Safety Instructions and "Precautions for Handling Pneumatic Devices" (M-03-E3A) for Common Precautions.

⚠ Caution

Clamp Arm Mounting

1. Use a clamp arm that is available as an option. To fabricate a clamp arm, make sure that the allowable bending moment and the inertial moment will be within the specified range. If a clamp arm that exceeds the specified value is installed, the internal mechanism in the cylinder could become damaged.

Ensuring Safety

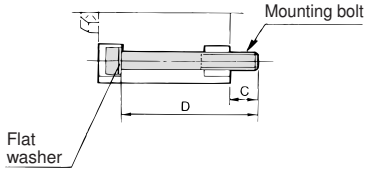
1. If one side of the piston is pressurized by supplying air with the clamp arm attached, the piston will move vertically while the clamp arm rotates. This operation could be hazardous to personnel, as their hands or feet could get caught by the clamp arm, or could lead to equipment damage. Therefore, it is important to secure as a danger zone a cylindrical area with the length of the clamp arm as its radius, and the stroke plus 20 mm as its height.

Installation and Adjustment/ Clamp Arm Removal and Reinstallation

1. During the removal or reinstallation of the clamp arm, make sure to use a wrench or a vise to secure the clamp arm before removing or tightening the bolt. This is to prevent the bolt tightening torque from being applied to the piston rod, which could damage the cylinder's internal mechanism.

Mounting Bolt for MK2B

Mounting: Mounting bolt for through-hole type is available.
Ordering: Add the word "MK2B" to the mounting bolt size.
Example) **M5 x 75 L (MK2B)**



Note) Be sure to use a flat washer to mount cylinders via through-holes.

Cylinder model	C	D	Mounting bolt size
MK2B20-10	8.5	75	**M5 x 75 L**
MK2B20-20		85	**M5 x 85 L**
MK2B25-10	10.5	80	**M5 x 80 L**
MK2B25-20		90	**M5 x 90 L**
MK2B32-10	10	90	**M5 x 90 L**
MK2B32-20		100	**M5 x 100 L**
MK2B40-10	6	80	**M5 x 80 L**
MK2B40-20		90	**M5 x 90 L**
MK2B50-20	10.5	105	**M6 x 105 L**
MK2B50-50	10.5	135	**M6 x 135 L**
MK2B63-20	9	105	**M8 x 105 L**
MK2B63-50		135	**M8 x 135 L**

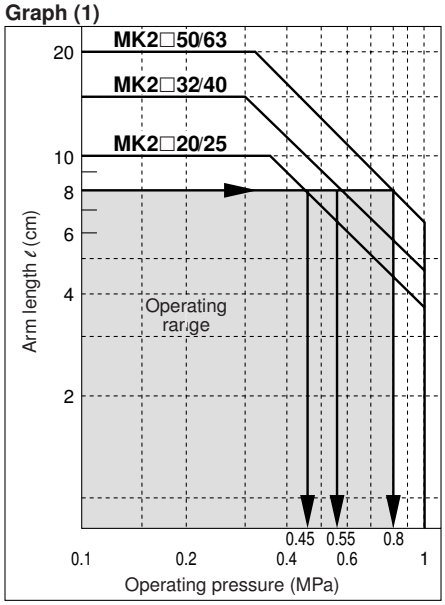
Precautions for Designing and Mounting Arms

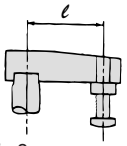
When arms are to be made separately, their length and weight should be within the following range.

1. Allowable bending moment

Use the arm length and operating pressure within Graph (1) for allowable bending moment loaded piston rod.

Graph (1)



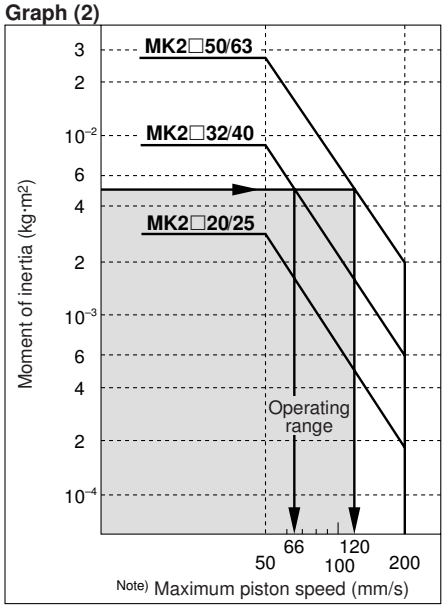


When arm length is 8 cm, pressure should be less than
MK2□20/25: 0.45 MPa
MK2□32/40: 0.55 MPa
MK2□50/63: 0.8 MPa.

2. Moment of inertia

When the arm is long and heavy, damage of internal parts may be caused due to inertia. Use the inertia moment and cylinder speed within Graph (2) based on arm requirements.

Graph (2)



When arm's moment of inertia is 5 x 10^{-3} kg·m², cylinder speed should be less than
MK2□32/40: 66 mm/s
MK2□50/63: 120 mm/s.
For calculating moment of inertia, refer to front matter 1, 2, back page 8.

Note) Maximum piston speed is equivalent to approximately 1.6x the average piston speed. (Rough indication)

- To attach and detach the arm to and from the piston rod, fix the arm with a wrench or vise and then tighten the bolt. (If an excessive force is applied in the rotary direction, it may bring about the damage to the internal mechanism.) Refer to the following table for the tightening torque for mounting.

(N·m)

Bore size (mm)	Proper tightening torque
20, 25	4 to 6
32, 40	8 to 10
50, 63	14 to 16