



# 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.

## Magnet rodless cylinder MRL2 Series

### Design & selection

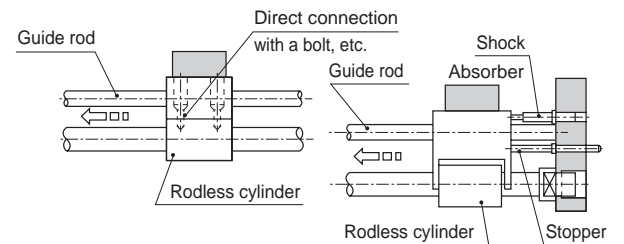
#### 1. Common

##### CAUTION

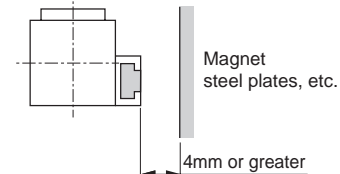
- Be careful of the gap between the end plate and the slider.  
Please be careful when operating the cylinder as getting a hand or finger caught in the unit may lead to injury.
- Do not apply a load to the cylinder which is greater than or equal to the allowable load listed in the selection guide.
- Do not use the product with the slider fixed.  
Use the cylinder with the end plate fixed. Avoid use of the product with the slider fixed.
- When fixing the basic (guide combined) with switch with the guide, configure the rotational angle of the slider to be less than or equal to  $\pm 1^\circ$ .
- Mount so that the slider functions with the min. operating pressure value of all processes.  
When the flatness of the surface for cylinder installation is poor, the min. operating pressure will rise due to guide unit torsion and cause early wear of the bearing section. For this reason, install the unit so that the slider functions with the min. operating pressure value of all processes. Although mounting mating surfaces should be highly flat, adjust with shims when this cannot be confirmed.
- Be careful to avoid scratching or denting the outer peripheral surface of the cylinder tube.  
This will cause damage to the lube keeping structure, scraper, and slider wear ring and may lead to defective operation.
- With the basic MRL2, be careful of the rotation of the slider.  
Either connect with an external bearing or consider the use of MRL2-G or MRL2-W.
- Do not use the product in a state where the slider is displaced.  
If the slider becomes displaced due to an external force greater than the magnetic holding force, use your hand to push the stroke end back to its original position.

#### Do not apply an eccentric load to the slider.

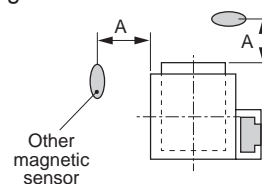
When the load and cylinder are direct mounted, their respective shaft center eccentricities cannot be absorbed, and lateral load applies, leading to misoperation (figure below left). Use with consideration for a connection method which enables absorption of this eccentricity and the self-weight deflection of the cylinder. The figure below right shows recommended mounting.



- The cylinder switch may malfunction if there is a magnetic substance such as a metal plate installed adjacently. Check that a distance of 4 mm is provided from the switch surface.



- When using cylinders adjacent with each other or when using other magnetic sensors nearby, in order to prevent malfunctioning due to the leaked magnetic field of the cylinder embedded magnet, keep the minimum distance from the surface of the slider to the other magnetic sensors as shown in the listed below.



| Port size | A (mm) |
|-----------|--------|
| ø6        | 10     |
| ø10       | 20     |
| ø16       | 20     |
| ø20       | 37     |
| ø25       | 50     |
| ø32       | 80     |

When this distance is dimension A or less, malfunctions can be prevented by placing a magnetic substance (steel plate with thickness of 2 mm or more) between the slider and the others.

#### 2. With rubber-air cushion MRL2-\*C

- Note that because of its structure the stroke end position cannot be retained if the supply of air is stopped. When detecting the stroke end by switch, set the switch position with pneumatic pressure applied, as otherwise the position may be out of the detection range.

### Use & maintenance

#### 1. Common

##### WARNING

- The magnetic force of the embedded magnet is strong. Do not disassemble the product.

- With bore size of ø16 or less, because of changes in the cushion rigidity when left for long periods, the stroke length may become slightly shorter than the standard value with the low pressure setting. Perform a trial run, such as operating several times and performing back-and-forth operation at high supply pressure.