Protective cover offers excellent dust and water resistance

Series **MY1**

Series Variations

<table>
<thead>
<tr>
<th>Series</th>
<th>Guide type</th>
<th>Cover</th>
<th>Bore size (mm)</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>MY1MW</td>
<td>Slide bearing</td>
<td>With protective cover</td>
<td>16 20 25 32 40 50 63</td>
<td></td>
</tr>
<tr>
<td>MY1MWK</td>
<td>Slide bearing</td>
<td>With protective cover</td>
<td>16 20 25 32 40 50 63</td>
<td>• Centralized piping</td>
</tr>
<tr>
<td></td>
<td>With side seal</td>
<td></td>
<td></td>
<td>• Stroke adjusting unit</td>
</tr>
<tr>
<td>MY1CW</td>
<td>Cam follower guide</td>
<td>With protective cover</td>
<td>16 20 25 32 40 50 63</td>
<td>• Side support</td>
</tr>
<tr>
<td>MY1CWK</td>
<td>Cam follower guide</td>
<td>With protective cover</td>
<td>16 20 25 32 40 50 63</td>
<td></td>
</tr>
</tbody>
</table>
Dustproof and water resistant features are improved for using in locations where the cylinder is exposed to power dust and water drop or splash.

Side seals provide greater lateral dustproof and water resistance.

The cover in no way interferes with the installation of base cylinder option.

Cover units and side seal units can be installed on the already existing Series MY1M/MY1C.

Protective cover only minimally adds to overall length.

Water-resistant solid state switches can be mounted onto the ø25 to ø40 models.

Items marked with an "*" are for Series MY1□WK (with side seal) only.
1. To obtain the best results from the cover, horizontal mounting is recommended.
   • With horizontal mounting (shown below), the entry of dirt and dust from the bottom of the cover is much less compared to other mounting orientations, making it much more efficient.

2. When the cylinder is mounted from the top side or when strokes are to be adjusted by installing a stroke adjusting unit, the protective cover must be removed for these purposes.
   • For detailed assembly step, refer to page 8-12-4.

**Caution**

**Centralized Piping Port Variations**

• Head cover piping connection can be freely selected to best suit different piping conditions.

### Applicable Cylinder

<table>
<thead>
<tr>
<th>MY1MW16/20/50/63</th>
<th>MY1CW16/20/50/63</th>
</tr>
</thead>
</table>

### Port Variations

- **This port is not available for use**.
  - (Except ø50)

- **Slide table operating direction**

### MY1MW25/32/40

<table>
<thead>
<tr>
<th>MY1MW25/32/40</th>
</tr>
</thead>
</table>

| MY1CW25/32/40 |

### Operating Environment

**Caution**

2. Because of floating particles such as paper dust and coolant mist that may enter the inside of the cover.
   • Since there is a gap between the bottom of the cover and cylinder tube, take precautions when operating cylinders in environments where there is exposure to excessive amount of floating particles, water/oil splash, or chip spattering. If they enter inside the cover, malfunction may occur.
**Assembly Procedure**

1. **Component check**
   Check the components.

2. **Removal of cover**
   Remove the hexagon socket head button bolts and cover.

3. **Body mounting/adjustment**
   Mount the cylinder body.
   For cylinders with protective cover only (i.e., without side seal), reinstall the cover after the cylinder is mounted and adjusted. (Refer to Step 6 “Cover installation”.)

4. **Temporary cover installation**
   1. Remove the hexagon socket head cap screws and one of the end plates.
   2. Place the cover and temporarily secure it with the hexagon socket button head bolts.

5. **Side seal installation**
   Slide the side seal assembly into the place from one end of the cylinder.
   **Note** Move the slide table to the end of the insertion side.

6. **Cover installation**
   Reinstall the end plate and secure it.

---

### Cover tightening torque [N·m]

<table>
<thead>
<tr>
<th>Bore (mm)</th>
<th>Thread size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 to 40</td>
<td>M3</td>
<td>0.6</td>
</tr>
<tr>
<td>50, 63</td>
<td>M4</td>
<td>1.4</td>
</tr>
</tbody>
</table>

### End plate tightening torque [N·m]

<table>
<thead>
<tr>
<th>Bore (mm)</th>
<th>Thread size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>M3</td>
<td>0.6</td>
</tr>
<tr>
<td>20</td>
<td>M4</td>
<td>1.4</td>
</tr>
<tr>
<td>25</td>
<td>M5</td>
<td>2.8</td>
</tr>
<tr>
<td>32</td>
<td>M6</td>
<td>4.8</td>
</tr>
<tr>
<td>40</td>
<td>M6</td>
<td>4.8</td>
</tr>
<tr>
<td>50</td>
<td>M8</td>
<td>12</td>
</tr>
<tr>
<td>63</td>
<td>M10</td>
<td>24</td>
</tr>
</tbody>
</table>

---

**Note** The adjustment of the stroke adjusting unit (optional) should also be done at this time.
Series **MY1□W**

**Model Selection 1**

This section illustrates the standard model selection procedure to help you choose the most suitable cylinders from Series MY1MW/MY1CW for your application needs.

---

### Standards for Tentative Model Selection

<table>
<thead>
<tr>
<th>Cylinder model</th>
<th>Guide type</th>
<th>Standards for guide selection</th>
<th>Graphs for related allowable values</th>
</tr>
</thead>
<tbody>
<tr>
<td>MY1MW</td>
<td>Slide bearing guide</td>
<td>Slide table accuracy: ( \pm 0.12 \text{ mm} )</td>
<td>P. 8-12-8</td>
</tr>
<tr>
<td>MY1CW</td>
<td>Cam follower guide type</td>
<td>Slide table accuracy: ( \pm 0.05 \text{ mm} )</td>
<td>P. 8-12-9</td>
</tr>
</tbody>
</table>

Note 1) These accuracy values for each guide should be used only as a guide during selection. Please contact SMC when guaranteed accuracy for MY1CW is required.

Note 2) "Accuracy" here means displacement of the slide table (at stroke end) when 50% of the allowable moment shown in the catalog is applied. (reference value).

---

### Selection Flow Chart

1. **Operating Conditions**
   - m: Load weight (kg)
   - V: Speed (mm/s)
   - P: Operating pressure (MPa)

2. **Tentative Selection of Cylinder Model**
   - MY1MW: Slide bearing type
   - MY1CW: Cam follower guide type

3. **Load weight**
   - \( m \leq m_{\text{max}} \)

4. **Determination of allowable moment**
   - \( \sum \alpha \leq 1 \)

5. **Examination of cushioning mechanism at stroke end**

6. **Air cushion**
   - NG
   - OK

7. **Type L stroke adjusting unit**
   - NG
   - OK

8. **Examination of port variations and auto switch mounting (type)**
   - NG
   - OK

9. **External cushioning unit**
   - NG
   - OK

10. **Model selected**

---

* For external cushioning unit, the installation of a suitable cushioning mechanism near the load center of gravity by the customer's side is recommended.

The model selection step described in this page is applicable to all mechanically jointed rodless cylinders. Refer to the separate instruction manual for further details. If you have any questions, please contact SMC.
Types of Moment Applied to Rodless Cylinders

Multiple moments may be generated depending on the mounting orientation, load, and position of the center of gravity.

### Coordinates and Moments

- **M₁**: Pitching
- **M₂**: Rolling
- **M₃**: Yawing

### Static Moment

<table>
<thead>
<tr>
<th>Mounting orientation</th>
<th>Horizontal mounting</th>
<th>Ceiling mounting</th>
<th>Wall mounting</th>
<th>Vertical mounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static load (m)</td>
<td>m₁</td>
<td>m₂ × g × X</td>
<td>m₃ × g × Y</td>
<td>m₄ × g × Z</td>
</tr>
<tr>
<td>Static moment</td>
<td>M₁ = m₁ × g × X</td>
<td>M₂ = m₂ × g × Y</td>
<td>M₃ = m₃ × g × Z</td>
<td>M₄ = m₄ × g × Y</td>
</tr>
</tbody>
</table>

Note) "m₄" is a weight movable by thrust. Use 0.3 to 0.7 times the thrust (varies depending on the operating speed) as a guide for actual use.

### Dynamic Moment

- **M₄**

\[
M₄ = \frac{1}{3} \times F_x \times Y
\]

**Note** Regardless of the mounting orientation, dynamic moment is calculated using the formulas above.

- **M₅**

\[
M₅ = \frac{1}{3} \times F_x \times Z
\]

**Note** Dynamic moment M₅E is not generated.

- **M₆**

\[
M₆ = \frac{1}{3} \times F_x \times Z
\]

**Note** Dynamic moment M₆E is not generated.

- **M₇**

\[
M₇ = \frac{1}{3} \times F_x \times Y
\]

**Note** Dynamic moment M₇E is not generated.

**g**: Gravitational acceleration, \(vₐ\): Average speed

**M₁E**, **M₂E**, **M₃E**
### Maximum Allowable Moment/Maximum Load Weight

<table>
<thead>
<tr>
<th>Model</th>
<th>Bore size (mm)</th>
<th>Maximum allowable moment (N·m)</th>
<th>Maximum load weight (kg)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M1</td>
<td>M2</td>
<td>M3</td>
</tr>
<tr>
<td>MY1MW</td>
<td>16</td>
<td>6.0</td>
<td>3.0</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>10</td>
<td>5.2</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>15</td>
<td>9.0</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>30</td>
<td>15</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>59</td>
<td>24</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>115</td>
<td>38</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>140</td>
<td>60</td>
<td>19</td>
</tr>
<tr>
<td>MY1CW</td>
<td>16</td>
<td>6.0</td>
<td>3.0</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>10</td>
<td>5.0</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>15</td>
<td>8.5</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>30</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>60</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>115</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>150</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

The above values are the maximum allowable values for moment and load. Refer to each graph regarding the maximum allowable moment and maximum allowable load for a particular piston speed.

#### Load weight (kg)

**Caution**
- The cylinder should be mounted in m1 orientation if maximum dustproofing is required.

#### Moment (N-m)

**<Calculation of guide load factor>**

1. Three factors must be considered when computing calculations for selection: (1) Maximum load weight, (2) Static moment, (3) Dynamic moment (at the time of impact with stopper).

2. Reference formula [Dynamic moment at impact]

   - To evaluate, use \( \bar{U} \) (average speed) for (1) and (2), and \( U \) (collision speed) \( U = 1.4 \bar{U}a \) for (3).
   - Calculate mmax for (1) from the maximum allowable load graph (m1, m2, and m3), and Mmax for (2) and (3) from the maximum allowable moment graph (M1, M2, and M3).

3. For detailed selection procedures, refer to pages 8-11-12 to 8-11-13.
## Maximum Allowable Moment/Maximum Load Weight

### Maximum Allowable Moment: MY1MW

<table>
<thead>
<tr>
<th>MY1MW/M1</th>
<th>MY1MW/M2</th>
<th>MY1MW/M3</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Graph" /></td>
<td><img src="image2.png" alt="Graph" /></td>
<td><img src="image3.png" alt="Graph" /></td>
</tr>
</tbody>
</table>

### Maximum Load Weight: MY1MW

<table>
<thead>
<tr>
<th>MY1MW/m1</th>
<th>MY1MW/m2</th>
<th>MY1MW/m3</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image4.png" alt="Graph" /></td>
<td><img src="image5.png" alt="Graph" /></td>
<td><img src="image6.png" alt="Graph" /></td>
</tr>
</tbody>
</table>
Maximum Allowable Moment/Maximum Load Weight

Maximum Allowable Moment: MY1CW

Maximum Load Weight: MY1CW

MY1CW/M1

MY1CW/M2

MY1CW/M3

MY1CW/m1

MY1CW/m2

MY1CW/m3

Model Selection Series MY1\textsuperscript{W}
Cushion Capacity

Cushion Selection

<Air cushion>
Air cushions are a standard feature on mechanically jointed rodless cylinders. The air cushion mechanism is incorporated to prevent excessive impact of the piston at the stroke end during high speed operation. The purpose of air cushion, thus, is not to decelerate the piston near the stroke end. The ranges of load and speed that air cushions can absorb are within the air cushion limit lines shown in the graphs.

<Stroke adjusting unit with shock absorber>
Use this unit when operating with a load or speed exceeding the air cushion limit line, or when cushioning is required outside of the effective air cushion stroke range due to stroke adjustment.

L unit
Use this unit when the cylinder stroke is outside of the effective air cushion range even if the load and speed are within the air cushion limit line, or when the cylinder is operated in a load and speed range above the air cushion limit line or below the L unit limit line.

⚠️ Caution
1. Refer to the figure below when using the adjusting bolt to perform stroke adjustment.
When the effective stroke of the shock absorber decreases as a result of stroke adjustment, the absorption capacity decreases dramatically. Secure the adjusting bolt at the position where it protrudes approximately 0.5 mm from the shock absorber.

2. Do not use a shock absorber together with air cushion.

Air Cushion Stroke

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>Cushion stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>32</td>
<td>19</td>
</tr>
<tr>
<td>40</td>
<td>24</td>
</tr>
<tr>
<td>50</td>
<td>30</td>
</tr>
<tr>
<td>63</td>
<td>37</td>
</tr>
</tbody>
</table>

Absorption Capacity of Air Cushion and Stroke Adjusting Units

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>Load weight (kg)</th>
<th>Collision speed (mm/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>2000</td>
<td>1500</td>
</tr>
<tr>
<td>20</td>
<td>1500</td>
<td>1000</td>
</tr>
<tr>
<td>25</td>
<td>1000</td>
<td>500</td>
</tr>
<tr>
<td>32</td>
<td>500</td>
<td>0</td>
</tr>
<tr>
<td>40</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>50</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>63</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
**Cushion Capacity**

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>Unit</th>
<th>Tightening torque (N·m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>A</td>
<td>0.6</td>
</tr>
<tr>
<td>20</td>
<td>L</td>
<td>1.5</td>
</tr>
<tr>
<td>25</td>
<td>A</td>
<td>3.0</td>
</tr>
<tr>
<td>32</td>
<td>A</td>
<td>5.0</td>
</tr>
<tr>
<td>40</td>
<td>A</td>
<td>12.0</td>
</tr>
<tr>
<td>50</td>
<td>A</td>
<td>12.0</td>
</tr>
<tr>
<td>63</td>
<td>A</td>
<td>24.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>Unit</th>
<th>Tightening torque (N·m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>L</td>
<td>1.2</td>
</tr>
<tr>
<td>32</td>
<td>L</td>
<td>3.3</td>
</tr>
<tr>
<td>40</td>
<td>L</td>
<td>3.3</td>
</tr>
</tbody>
</table>

**Calculation of Absorbed Energy for Stroke Adjusting Unit with Shock Absorber (N·m)**

\[
K = \frac{1}{2} m \cdot \nu^2
\]

\[
T = F_s = m \cdot g \cdot s
\]

\[
A = E_1 + E_2
\]

**Precautions**

Be sure to read before handling. For Safety Instructions and Actuator Precautions, refer to pages 8-34-3 to 8-34-6.

**Caution**

Use caution not to get your hands caught in the unit.
- When using a product with stroke adjusting unit, the space between the slide table (slider) and the stroke adjusting unit becomes narrow at the stroke end, causing a danger of hands getting caught. Install a protective cover to prevent direct contact with the human body.

**Note**

Although the lock plate may slightly bend due to tightening of the lock plate holding bolt, this does not affect the shock absorber and locking function.
Series **MY1 □ W**

**Model Selection 2**

This section illustrates the standard model selection procedure using the actual operating conditions as one of the examples.

## Calculation of Guide Load Factor

### 1. Operating Conditions

- **Cylinder** ………………….. MY1MW40-500
  - Average operating speed \( \nu_a \) ……… 200 mm/s
  - Mounting orientation ……….. Horizontal mounting

**Wa**: Connection plate \( t = 10 \) (880 g)

**Wc**: MHL2-16D1 (795 g)

**Wb**: MGGLB25-200 (4.35 kg)

**Wd**: Workpiece (500 g)

### 2. Load Blocking

![Diagram of load blocking](image)

- **Wa**: Connection plate \( t = 10 \) (880 g)
  - Center of gravity: \( Y = 0 \) mm, \( Z = 111 \) mm

- **Wc**: MHL2-16D1 (795 g)
  - Center of gravity: \( Y = 0 \) mm, \( Z = 210 \) mm

- **Wb**: MGGLB25-200 (4.35 kg)
  - Center of gravity: \( Y = 0 \) mm, \( Z = 210 \) mm

- **Wd**: Workpiece (500 g)
  - Center of gravity: \( Y = 0 \) mm, \( Z = 210 \) mm

### 3. Composite Center of Gravity Calculation

\[
\begin{align*}
\mathbf{m}_1 &= \Sigma \mathbf{m}_n \\
&= 0.88 + 4.35 + 0.795 + 0.5 = 6.525 \text{ kg} \\
\mathbf{X} &= \frac{1}{\mathbf{m}_1} (\Sigma \mathbf{m}_n x \mathbf{x}_n) \\
&= \frac{1}{6.525} (0.88 \times 65 + 4.35 \times 150 + 0.795 \times 150 + 0.5 \times 150) = 138.5 \text{ mm} \\
\mathbf{Y} &= \frac{1}{\mathbf{m}_1} (\Sigma \mathbf{m}_n x \mathbf{y}_n) \\
&= \frac{1}{6.525} (0.88 \times 0 + 4.35 \times 0 + 0.795 \times 111 + 0.5 \times 210) = 29.6 \text{ mm} \\
\mathbf{Z} &= \frac{1}{\mathbf{m}_1} (\Sigma \mathbf{m}_n x \mathbf{z}_n) \\
&= \frac{1}{6.525} (0.88 \times 5 + 4.35 \times 42.5 + 0.795 \times 42.5 + 0.5 \times 42.5) = 37.4 \text{ mm}
\end{align*}
\]

### 4. Calculation of Load Factor for Static Load

**m**: Weight

\[
\begin{align*}
\mathbf{m}_{\text{max}} &= \text{from 1 of graph MY1MW/\mathbf{m}_1} = 84 \text{ (kg)} \\
\text{Load factor } \mathbf{\alpha}_1 &= \frac{\mathbf{m}_{1}}{\mathbf{m}_{\text{max}}} = 6.525/84 = 0.08
\end{align*}
\]

**M**: Moment

\[
\begin{align*}
\mathbf{M}_{\text{max}} &= \text{from 2 of graph MY1MW/M_{1}} = 59 \text{ (N·m)} \\
\mathbf{M}_1 &= \mathbf{m}_1 \times g \times \mathbf{X} = 6.525 \times 9.8 \times 138.5 \times 10^{-3} = 8.86 \text{ (N·m)} \\
\text{Load factor } \mathbf{\alpha}_2 &= \frac{\mathbf{M}_1}{\mathbf{M}_{\text{max}}} = 8.86/59 = 0.15
\end{align*}
\]
### Calculation of Guide Load Factor

**M₂**: Moment  

\[ M_{\text{max}} \text{ (from 3 of graph MY1MW: } M_2) = 24 \text{ (N·m)} \]

\[ M_3 = m_1 \times g \times Y = 6.525 \times 9.8 \times 29.6 \times 10^{-3} = 1.89 \text{ (N·m)} \]

Load factor \( \alpha_3 = \frac{M_3}{M_\text{max}} = \frac{1.89}{24} = 0.08 \)

**M₁**: Moment  

\[ M_{\text{max}} \text{ (from 4 of graph MY1MW: } M_1 \text{ where} \ 1.4 \upsilon_a = 280 \text{ mm/s) = 42.1 \ (N·m)} \]

\[ M_1 = \frac{1}{3} \times F_E \times Z = \frac{1}{3} \times 179.1 \times 37.4 \times 10^{-3} = 2.23 \ (N·m) \]

Load factor \( \alpha_4 = \frac{M_1}{M_{\text{max}}} = \frac{2.23}{42.1} = 0.05 \)

**M₃**: Moment  

\[ M_{\text{max}} \text{ (from 5 of graph MY1MW: } M_3 \text{ where} \ 1.4 \upsilon_a = 280 \text{ mm/s) = 5.7 \ (N·m)} \]

\[ M_3 = \frac{1}{3} \times F_E \times Y = \frac{1}{3} \times 179.1 \times 29.6 \times 10^{-3} = 1.77 \ (N·m) \]

Load factor \( \alpha_5 = \frac{M_3}{M_{\text{max}}} = \frac{1.77}{5.7} = 0.31 \)

5. Calculation of Load Factor for Dynamic Moment

Equivalent load \( F_E \) at impact

\[ F_E = \frac{1.4 \times \upsilon_a \times g \times m}{100} = \frac{1.4 \times 200 \times 9.8 \times 6.525}{100} = 179.1 \ (N) \]

**M₃**: Moment  

\[ M_{\text{max}} \text{ (from 5 of graph MY1MW: } M_3 \text{ where} \ 1.4 \upsilon_a = 280 \text{ mm/s) = 5.7 \ (N·m)} \]

\[ M_3 = \frac{1}{3} \times F_E \times Y = \frac{1}{3} \times 179.1 \times 29.6 \times 10^{-3} = 1.77 \ (N·m) \]

Load factor \( \alpha_5 = \frac{M_3}{M_{\text{max}}} = \frac{1.77}{5.7} = 0.31 \)

6. Sum and Examination of Guide Load Factors

\[ \sum \alpha = \alpha_1 + \alpha_2 + \alpha_3 + \alpha_4 + \alpha_5 = 0.67 \leq 1 \]

The above calculation is within the allowable value, and therefore the selected model can be used. Select a shock absorber separately.

In an actual calculation, when the total sum of guide load factors \( \sum \alpha \) in the formula above is more than 1, consider either decreasing the speed, increasing the bore size, or changing the product series. This calculation can be easily made using the “SMC Pneumatics CAD System”.

### Load Weight

<table>
<thead>
<tr>
<th>MY1MW/m₁</th>
<th>MY1MW/M₁</th>
<th>MY1MW/M₂</th>
<th>MY1MW/M₃</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Graph" /></td>
<td><img src="image2.png" alt="Graph" /></td>
<td><img src="image3.png" alt="Graph" /></td>
<td><img src="image4.png" alt="Graph" /></td>
</tr>
</tbody>
</table>

### Allowable Moment

<table>
<thead>
<tr>
<th>MY1MW/m₁</th>
<th>MY1MW/M₁</th>
<th>MY1MW/M₂</th>
<th>MY1MW/M₃</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Graph" /></td>
<td><img src="image2.png" alt="Graph" /></td>
<td><img src="image3.png" alt="Graph" /></td>
<td><img src="image4.png" alt="Graph" /></td>
</tr>
</tbody>
</table>
# Mechanically Jointed Rodless Cylinder with Protective Cover

## Slide Bearing Guide Type/Cam Follower Guide Type

### Series MY1 W

- **ø16, ø20, ø25, ø32, ø40, ø50, ø63**

## How to Order

### Guide type
- M: Slide bearing guide type
- C: Cam follower guide type

### Applying protective cover
- Nil: None
- K: With side seal

### With side seal
- Note: Cylinders with side seal are available for ø16 to ø40.

### Lead wire length
- Symbols: 0.5 m, Nil (Example) A93
- 3 m: L (Example) Y99BL
- 5 m: Z (Example) F9NWZ

### Lead wire length (mm)
- Note: “S” is available when stroke adjusting units are A and L.

### Applicable Auto Switch

**For ø16, ø20**

### Type
- Reed switch
- Solid state switch

### Special function
- Grommet
- Grommet

### Electrical entry
- 3-wire (NPN equivalent)
- 3-wire (PNP)
- 2-wire

### Wiring (Output)
- Yes

### Load voltage
- DC: 5 V
- AC: 12 V

### Auto switch model
- A96V
- M9NV
- F9PWV
- Y7BW

### Number of auto switches
- Nil: 2 pcs
- S: 1 pcs
- n: n pcs

### Stroke adjusting unit
- Nil: Without adjusting unit
- A: With adjusting bolt
- L: With low load shock absorber + Adjusting bolt
- AL: With one A unit and one L unit

### Suffix for stroke adjusting unit
- (S) is produced upon receipt of order.

### Shock Absorbers for L Unit

<table>
<thead>
<tr>
<th>Unit no.</th>
<th>Bore size (mm)</th>
<th>L unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>16 mm</td>
<td>RB0806</td>
</tr>
<tr>
<td>20</td>
<td>20 mm</td>
<td>RB1007</td>
</tr>
<tr>
<td>25</td>
<td>25 mm</td>
<td>RB1412</td>
</tr>
<tr>
<td>32</td>
<td>32 mm</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>40 mm</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>50 mm</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>63 mm</td>
<td>RB2015</td>
</tr>
</tbody>
</table>

### Applicable Auto Switch

Refer to page 8-30-1 for further information on auto switches.

**For ø25, ø32, ø40, ø50, ø63**

### Type
- Reed switch
- Solid state switch

### Special function
- Grommet
- Grommet

### Electrical entry
- 3-wire (NPN equivalent)
- 3-wire (PNP)
- 2-wire

### Wiring (Output)
- Yes

### Load voltage
- DC: 5 V
- AC: 12 V

### Auto switch model
- Y7BW
- Y7NW
- Y7BW

### Number of auto switches
- Nil: Both ends
- S: One end

### Stroke adjusting unit
- Nil: Without adjusting unit
- A: With adjusting bolt
- L: With low load shock absorber + Adjusting bolt
- AL: With one A unit and one L unit

### Suffix for stroke adjusting unit
- (S) is produced upon receipt of order.

### Note
- Solid state switches marked with “<” are produced upon receipt of order.
- Note 1: Perpendicular electrical entry is not available for ø50 and ø63.
- Note 2: Water resistant switches are not available for ø50 and ø63.

Refer to page 8-12-24 for details on other applicable auto switches than listed above.

* For details about auto switches with pre-wire connector, refer to page 8-30-52.

---

8-12-14
### Stroke Adjusting Unit Specifications

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>16</th>
<th>20</th>
<th>25</th>
<th>32</th>
<th>40</th>
<th>50</th>
<th>63</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit symbol</td>
<td><strong>A</strong></td>
<td><strong>L</strong></td>
<td><strong>A</strong></td>
<td><strong>L</strong></td>
<td><strong>A</strong></td>
<td><strong>L</strong></td>
<td><strong>A</strong></td>
</tr>
</tbody>
</table>

**Configuration Shock absorber model**
- With adjusting bolt
  - RB 0806 with adjusting bolt
  - RB 0807 with adjusting bolt
  - RB 1007 with adjusting bolt
  - RB 1412 with adjusting bolt

**Free stroke adjustment range (mm)**
- 16: 0 to –5.6
- 20: 0 to –6
- 25: 0 to –11.5
- 32: 0 to –12
- 40: 0 to –16
- 50: 0 to –20
- 63: 0 to –25

**Stroke adjustment range**
- When exceeding the stroke fine adjustment range: Utilize a made-to-order specifications “-X416” and “-X417”.

### Shock Absorber Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>RB 0806</th>
<th>RB 1007</th>
<th>RB 1412</th>
<th>RB 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. energy absorption (J)</td>
<td>2.9</td>
<td>5.9</td>
<td>19.6</td>
<td>58.8</td>
</tr>
<tr>
<td>Max. stroke absorption (mm)</td>
<td>6</td>
<td>7</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Max. collision speed (mm/s)</td>
<td>1500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. operating frequency (cycle/min)</td>
<td>80</td>
<td>70</td>
<td>45</td>
<td>25</td>
</tr>
<tr>
<td>Spring force (N)</td>
<td>Extended: 1.96</td>
<td>4.22</td>
<td>6.86</td>
<td>8.34</td>
</tr>
<tr>
<td>Retracted: 4.22</td>
<td>6.86</td>
<td>15.98</td>
<td>20.50</td>
<td></td>
</tr>
<tr>
<td>Operating temperature range (°C)</td>
<td>5 to 60</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Piston Speed

**Bore size (mm)**
- 16 to 63

**Without stroke adjusting unit**
- A unit: 100 to 1000 mm/s
- L unit: 100 to 1500 mm/s

**Maximum manufacturable stroke (mm)**
- 16: 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000, 1200, 1400, 1600, 1800, 2000
- 20, 25, 32, 40, 50, 63: 3000

*Strokes are manufacturable in 1 mm increments, up to the maximum stroke. However, when exceeding a 2000 mm stroke, specify “-XB11” at the end of the model number. For details, refer to the “Made to Order Specifications” on page 8-31-1.
### Theoretical Output

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>Piston area (mm(^2))</th>
<th>Operating pressure (MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Basic weight</td>
<td>Additional weight per each 50mm of stroke</td>
</tr>
<tr>
<td>16</td>
<td>1.25</td>
<td>0.16</td>
</tr>
<tr>
<td>20</td>
<td>2.56</td>
<td>0.28</td>
</tr>
<tr>
<td>25</td>
<td>4.75</td>
<td>0.43</td>
</tr>
<tr>
<td>32</td>
<td>7.79</td>
<td>0.61</td>
</tr>
<tr>
<td>40</td>
<td>13.53</td>
<td>0.83</td>
</tr>
<tr>
<td>50</td>
<td>21.84</td>
<td>1.18</td>
</tr>
<tr>
<td>63</td>
<td>31.15</td>
<td>2.05</td>
</tr>
</tbody>
</table>

**Calculation:** (Example) MY1MW25-300A
- Basic weight: 2.56 kg
- Additional weight: 0.28 kg per 50 st
- Weight of A unit: 0.07 kg
- Cylinder stroke: 300 st

\[
\text{Weight} = 2.56 + 0.28 \times 300 + 0.07 \times 2 \approx 4.38 \text{ kg}
\]

### Weight

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>MY1MW</th>
<th>MY1CW</th>
<th>Side support weight (per set)</th>
<th>Stroke adjusting unit weight (per unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Basic weight</td>
<td>Additional weight per each 50mm of stroke</td>
<td>Basic weight</td>
<td>Additional weight per each 50mm of stroke</td>
</tr>
<tr>
<td>16</td>
<td>1.25</td>
<td>0.16</td>
<td>1.25</td>
<td>0.16</td>
</tr>
<tr>
<td>20</td>
<td>2.56</td>
<td>0.28</td>
<td>2.50</td>
<td>0.28</td>
</tr>
<tr>
<td>25</td>
<td>4.75</td>
<td>0.43</td>
<td>4.62</td>
<td>0.42</td>
</tr>
<tr>
<td>32</td>
<td>7.79</td>
<td>0.61</td>
<td>7.51</td>
<td>0.57</td>
</tr>
<tr>
<td>40</td>
<td>13.53</td>
<td>0.83</td>
<td>13.61</td>
<td>0.82</td>
</tr>
<tr>
<td>50</td>
<td>21.84</td>
<td>1.18</td>
<td>21.94</td>
<td>1.17</td>
</tr>
<tr>
<td>63</td>
<td>31.15</td>
<td>2.05</td>
<td>31.15</td>
<td>2.05</td>
</tr>
</tbody>
</table>

### Option

**Stroke Adjusting Unit Part No.**

<table>
<thead>
<tr>
<th>Unit no.</th>
<th>16</th>
<th>20</th>
<th>25</th>
<th>32</th>
<th>40</th>
<th>50</th>
<th>63</th>
</tr>
</thead>
</table>

### Side Support Part No.

<table>
<thead>
<tr>
<th>Type</th>
<th>16</th>
<th>20</th>
<th>25</th>
<th>32</th>
<th>40</th>
<th>50</th>
<th>63</th>
</tr>
</thead>
<tbody>
<tr>
<td>Side support A</td>
<td>MY-S16A</td>
<td>MY-S20A</td>
<td>MY-S25A</td>
<td>MY-S32A</td>
<td>MY-S40A</td>
<td>MY-S63A</td>
<td></td>
</tr>
<tr>
<td>Side support B</td>
<td>MY-S16B</td>
<td>MY-S20B</td>
<td>MY-S25B</td>
<td>MY-S32B</td>
<td>MY-S40B</td>
<td>MY-S63B</td>
<td></td>
</tr>
</tbody>
</table>

For detailed dimensions, refer to page 8-12-22.
Mechanically Jointed Rodless Cylinder
With Protective Cover

Series MY1□W

Construction

MY1□W

MY1□WK with side seal

Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
<th>ø16</th>
<th>ø20</th>
<th>ø25</th>
<th>ø32</th>
<th>ø40</th>
<th>ø50</th>
<th>ø63</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>Slide table</td>
<td>Aluminum alloy</td>
<td>Hard anodized</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>②</td>
<td>Cover</td>
<td>Aluminum alloy</td>
<td>Hard anodized</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>③</td>
<td>End plate</td>
<td>Aluminum alloy</td>
<td>Hard anodized</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>④</td>
<td>Belt clamp</td>
<td>Special resin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑤</td>
<td>Slide plate</td>
<td>Special resin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑥</td>
<td>Port cover</td>
<td>Special resin</td>
<td>(ø25 to ø40)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑦</td>
<td>Spacer</td>
<td>Stainless steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑧</td>
<td>Hexagon socket button head screw</td>
<td>Chromium molybdenum steel</td>
<td>Nickel plated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⑨</td>
<td>Hexagon socket head cap screw</td>
<td>Chromium molybdenum steel</td>
<td>Nickel plated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Hexagon socket button head screw</td>
<td>Chromium molybdenum steel</td>
<td>Nickel plated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>11</td>
<td>Rodless cylinder</td>
<td>—</td>
<td>MY1M/MY1C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Seal guide A</td>
<td>Special resin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Seal guide B</td>
<td>Special resin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Slide plate</td>
<td>Special resin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Spacer</td>
<td>Stainless steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Hexagon socket head cap screw</td>
<td>Chromium molybdenum steel</td>
<td>Nickel plated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Seal List

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Qty.</th>
<th>ø16</th>
<th>ø20</th>
<th>ø25</th>
<th>ø32</th>
<th>ø40</th>
<th>ø50</th>
<th>ø63</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Dust seal band</td>
<td>Series steel</td>
<td>1</td>
<td>MY16-16B-Stroke</td>
<td>MY20-16B-Stroke</td>
<td>MY25-16B-Stroke</td>
<td>MY32-16B-Stroke</td>
<td>MY40-16B-Stroke</td>
<td>MY50-16B-Stroke</td>
<td>MY63-16B-Stroke</td>
</tr>
<tr>
<td>15</td>
<td>Piston seal</td>
<td>GMY16</td>
<td>2</td>
<td>GMY20</td>
<td>GMY25</td>
<td>GMY32</td>
<td>GMY40</td>
<td>GMY50</td>
<td>GMY63</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Tube gasket</td>
<td>NBR</td>
<td>2</td>
<td>P12</td>
<td>P16</td>
<td>TMY-25</td>
<td>TMY-32</td>
<td>TMY-40</td>
<td>P44</td>
<td>P53</td>
</tr>
<tr>
<td>18</td>
<td>O-ring</td>
<td>NBR</td>
<td>2</td>
<td>ø4 x ø1.1</td>
<td>ø5.1 x ø3.0 x ø1.05</td>
<td>ø7.15 x ø3.75 x ø1.7</td>
<td>ø8.3 x ø4.5 x ø1.9</td>
<td>C-4</td>
<td>C-4</td>
<td>C-4</td>
</tr>
<tr>
<td>19</td>
<td>O-ring</td>
<td>NBR</td>
<td>4</td>
<td>ø7 x ø4 x ø1.5</td>
<td>C-6</td>
<td>C-7</td>
<td>C-9</td>
<td>C-11.2</td>
<td>C-14</td>
<td></td>
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<tr>
<td>20</td>
<td>Side seal assembly</td>
<td>Polyurethane</td>
<td>2</td>
<td>MYM16-Stroke</td>
<td>MYM20-Stroke</td>
<td>MYM25-Stroke</td>
<td>MYM32-Stroke</td>
<td>MYM40-Stroke</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Note) Two types of dust seal bands are available. Verify the type to use, since the part number varies depending on the treatment of the hexagon socket head set screw.

A Black zinc chromated → MY□□-16B-Stroke  B Nickel plated → MY□□-16BW-Stroke
Series MY1□ W

Dimensions: ø16, ø20

Hole Size for Centralized Piping on the Bottom
(Mounting side should be machined to these dimensions.)

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>S</th>
<th>WX</th>
<th>Y</th>
<th>Applicable O-ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>9</td>
<td>30</td>
<td>6.5</td>
<td>C6</td>
</tr>
<tr>
<td>20</td>
<td>6.5</td>
<td>32</td>
<td>8</td>
<td>C6</td>
</tr>
</tbody>
</table>

Bore size (mm) | A | B | C | CH | G | GA | GB | H | J | K | L | LD | LH | LL | LW | M | MM | N | NC | NE | NH | NW |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
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<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>90</td>
<td>6.0</td>
<td>3.5</td>
<td>25</td>
<td>13.5</td>
<td>8.5</td>
<td>16.2</td>
<td>52</td>
<td>M5 x 0.8</td>
<td>10</td>
<td>110</td>
<td>3.6</td>
<td>38</td>
<td>35</td>
<td>84</td>
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<td>110</td>
<td>7.5</td>
<td>4.5</td>
<td>26</td>
<td>12.5</td>
<td>—</td>
<td>20.0</td>
<td>58</td>
<td>M6 x 1</td>
<td>12</td>
<td>130</td>
<td>4.8</td>
<td>39</td>
<td>45</td>
<td>88</td>
<td>7.5</td>
<td>M5 x 0.8</td>
<td>25</td>
<td>17</td>
<td>55.5</td>
<td>21.7</td>
<td>60</td>
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</table>

Bore size (mm) | PA | PB | PG | PP | Q | QQ | GW | RR | SS | TT | UU | VV | W | WW | YW | Z |
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<td>9</td>
<td>48</td>
<td>11.0</td>
<td>2.5</td>
<td>14</td>
<td>10.0</td>
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<td>13</td>
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<td>180</td>
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<td>11.5</td>
<td>191</td>
<td>10</td>
<td>45</td>
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<td>5.0</td>
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<td>12.5</td>
<td>110</td>
<td>14</td>
<td>58</td>
<td>220</td>
</tr>
</tbody>
</table>
Dimensions: ø25, ø32, ø40

Bore size (mm) | A | B | C | CH | G | GB | H | J | K | L | LD | LH | LL | LW | M | MM | MW | N | NC | NE | NH | NW
| 25 | 120 | 9 | 5.5 | 25.7 | 17 | 24.5 | 66 | M6 x 1 | 9.5 | 142 | 5.6 | 38.7 | 49 | 100 | 10 | M5 x 0.8 | 66 | 30 | 21 | 64 | 28 | 60
| 32 | 150 | 11 | 6.5 | 31.5 | 19 | 30.0 | 82 | M6 x 1.25 | 16.0 | 172 | 6.8 | 44.2 | 64 | 122 | 13 | M6 x 1 | 80 | 37 | 26 | 80 | 37 | 74
| 40 | 180 | 14 | 8.5 | 34.8 | 23 | 36.5 | 98 | M10 x 1.5 | 20.2 | 202 | 8.6 | 47.2 | 79 | 138 | 13 | M6 x 1 | 96 | 45 | 32 | 96 | 48 | 94

Bore size (mm) | PA | PB | PG | PP1 | PP2 | Q | QQ | QW | RR1 | RR2 | SS | TT | UU | VV | W | WW | YW | Z
| 25 | 60 | 112 | 7 | 12.7 | 12.7 | 206 | 16 | 46 | 18.9 | 17.9 | 5.1 | 15.5 | 16 | 16 | 122 | 11 | 70 | 240
| 32 | 80 | 134 | 8 | 15.5 | 18.5 | 264 | 16 | 60 | 22.0 | 24.0 | 4.0 | 21.0 | 16 | 19 | 144 | 13 | 88 | 300
| 40 | 100 | 150 | 9 | 17.5 | 20.0 | 322 | 26 | 72 | 25.5 | 29.0 | 9.0 | 26.0 | 21 | 23 | 160 | 20 | 104 | 360

Hole Size for Centralized Piping on the Bottom
(Mounting side should be machined to these dimensions.)

Bore size (mm) | D | d | WX | Y | S | Applicable O-ring
|---|---|---|---|---|---|---|
| 25 | 11.4 | 6 | 38 | 9 | 4 | C9
| 32 | 11.4 | 6 | 48 | 11 | 6 | C9
| 40 | 13.4 | 8 | 54 | 14 | 9 | C11.2
Dimensions: ø50, ø63

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>CH</th>
<th>G</th>
<th>GA</th>
<th>GB</th>
<th>GC</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>LD</th>
<th>LH</th>
<th>LL</th>
<th>LW</th>
<th>M</th>
<th>MM</th>
<th>N</th>
<th>NC</th>
<th>NE</th>
<th>NH</th>
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<tr>
<td>50</td>
<td>212</td>
<td>17</td>
<td>10.5</td>
<td>41.5</td>
<td>27.0</td>
<td>25.0</td>
<td>37.5</td>
<td>12</td>
<td>124</td>
<td>M14 x 2</td>
<td>28</td>
<td>250</td>
<td>11</td>
<td>57</td>
<td>87</td>
<td>168</td>
<td>15</td>
<td>M8 x 1.25</td>
<td>47</td>
<td>44</td>
<td>122</td>
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<tr>
<td>63</td>
<td>245</td>
<td>19</td>
<td>12.5</td>
<td>47.0</td>
<td>29.5</td>
<td>27.5</td>
<td>39.5</td>
<td>15</td>
<td>149</td>
<td>M16 x 2</td>
<td>32</td>
<td>290</td>
<td>14</td>
<td>65</td>
<td>100</td>
<td>200</td>
<td>16</td>
<td>M10 x 1.25</td>
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<td>60</td>
<td>147</td>
<td>70</td>
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<th>PA</th>
<th>PB</th>
<th>PG</th>
<th>PP</th>
<th>Q</th>
<th>QQ</th>
<th>QW</th>
<th>RR</th>
<th>SS</th>
<th>TT</th>
<th>UT</th>
<th>VV</th>
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<th>WW</th>
<th>WW</th>
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<th>YY</th>
<th>Z</th>
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<tr>
<td>50</td>
<td>118</td>
<td>120</td>
<td>186</td>
<td>10</td>
<td>26</td>
<td>380</td>
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<td>24</td>
<td>28</td>
<td>200</td>
<td>22</td>
<td>128</td>
<td>424</td>
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<td>63</td>
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<td>220</td>
<td>12</td>
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<td>110</td>
<td>49</td>
<td>13</td>
<td>43</td>
<td>28</td>
<td>30</td>
<td>236</td>
<td>25</td>
<td>152</td>
<td>490</td>
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</tbody>
</table>

**Hole Size for Centralized Piping on the Bottom**
(Mounting side should be machined to these dimensions.)

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>S</th>
<th>WX</th>
<th>Y</th>
<th>Applicable O-ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>8</td>
<td>74</td>
<td>18</td>
<td>C15</td>
</tr>
<tr>
<td>63</td>
<td>9</td>
<td>92</td>
<td>18</td>
<td>C15</td>
</tr>
</tbody>
</table>
Stroke Adjusting Unit

With adjusting bolt

**MY1-W** Bore size — Stroke A

<table>
<thead>
<tr>
<th>Model</th>
<th>E</th>
<th>EA</th>
<th>EB</th>
<th>EC</th>
<th>EY</th>
<th>FC</th>
<th>h</th>
<th>TT</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>MY1-W16</td>
<td>14.6</td>
<td>7</td>
<td>30</td>
<td>5.8</td>
<td>39.5</td>
<td>14</td>
<td>3.6</td>
<td>5.4 (Max. 11)</td>
<td>58</td>
</tr>
<tr>
<td>MY1-W20</td>
<td>20</td>
<td>10</td>
<td>32</td>
<td>5.8</td>
<td>45.5</td>
<td>14</td>
<td>3.6</td>
<td>5 (Max. 11)</td>
<td>58</td>
</tr>
<tr>
<td>MY1-W25</td>
<td>24</td>
<td>12</td>
<td>38</td>
<td>6.5</td>
<td>53.5</td>
<td>13</td>
<td>3.5</td>
<td>5 (Max. 16.5)</td>
<td>70</td>
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<tr>
<td>MY1-W32</td>
<td>29</td>
<td>14</td>
<td>50</td>
<td>8.5</td>
<td>67</td>
<td>17</td>
<td>4.5</td>
<td>8 (Max. 20)</td>
<td>88</td>
</tr>
<tr>
<td>MY1-W40</td>
<td>35</td>
<td>17</td>
<td>57</td>
<td>10</td>
<td>83</td>
<td>17</td>
<td>4.5</td>
<td>9 (Max. 25)</td>
<td>104</td>
</tr>
<tr>
<td>MY1-W50</td>
<td>40</td>
<td>20</td>
<td>66</td>
<td>14</td>
<td>106</td>
<td>26</td>
<td>5.5</td>
<td>13 (Max. 33)</td>
<td>128</td>
</tr>
<tr>
<td>MY1-W63</td>
<td>52</td>
<td>26</td>
<td>77</td>
<td>14</td>
<td>129</td>
<td>31</td>
<td>5.5</td>
<td>13 (Max. 38)</td>
<td>152</td>
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</table>

With low load shock absorber + Adjusting bolt

**MY1-W** Bore size — Stroke L

<table>
<thead>
<tr>
<th>Model</th>
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<th>EB</th>
<th>EC</th>
<th>EY</th>
<th>FC</th>
<th>h</th>
<th>S</th>
<th>TT</th>
<th>W</th>
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</thead>
<tbody>
<tr>
<td>MY1-W16</td>
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<td>7</td>
<td>30</td>
<td>5.8</td>
<td>39.5</td>
<td>4</td>
<td>14</td>
<td>3.6</td>
<td>40.8</td>
<td>54</td>
</tr>
<tr>
<td>MY1-W20</td>
<td>20</td>
<td>10</td>
<td>32</td>
<td>5.8</td>
<td>45.5</td>
<td>4</td>
<td>14</td>
<td>3.6</td>
<td>40.8</td>
<td>6</td>
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<tr>
<td>MY1-W25</td>
<td>24</td>
<td>12</td>
<td>38</td>
<td>6.5</td>
<td>53.5</td>
<td>6</td>
<td>13</td>
<td>6.5</td>
<td>46.7</td>
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<td>14</td>
<td>50</td>
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<td>6</td>
<td>17</td>
<td>8</td>
<td>67.3</td>
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<td>MY1-W40</td>
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<td>17</td>
<td>57</td>
<td>10</td>
<td>83</td>
<td>6</td>
<td>17</td>
<td>91</td>
<td>67.3</td>
<td>12</td>
</tr>
<tr>
<td>MY1-W50</td>
<td>40</td>
<td>20</td>
<td>66</td>
<td>14</td>
<td>106</td>
<td>6</td>
<td>26</td>
<td>5.5</td>
<td>73.2</td>
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<tr>
<td>MY1-W63</td>
<td>52</td>
<td>26</td>
<td>77</td>
<td>14</td>
<td>129</td>
<td>6</td>
<td>31</td>
<td>5.5</td>
<td>73.2</td>
<td>15</td>
</tr>
</tbody>
</table>
Side Support

Guide for Side Support Application

For long stroke operation, the cylinder tube may be deflected depending on its own weight and the load weight. In such a case, use a side support in the middle section. The spacing (l) of the support must be no more than the values shown in the graph on the right.

**Caution**

1. If the cylinder mounting surfaces are not measured accurately, using a side support may cause poor operation. Therefore, be sure to level the cylinder tube when mounting. Also, for long stroke operation involving vibration and impact, use of a side support is recommended even if the spacing value is within the allowable limits shown in the graph.

2. Support brackets are not for mounting; use them solely for providing support.
Proper Auto Switch Mounting Position (Detection at stroke end)

Note) The operating range is a guide including hysteresis, but is not guaranteed. There may be varied substantially depending on the surrounding environment (Assuming approximately 30% dispersion).

MY1CW16/20
MY1MW16/20

Reed Switch
D-A90(V), D-A93(V), D-A96(V) (mm)
Mounting position ø16 ø20
A 70 90
B 90 110
Operating range 11 7.5

Solid State Switch
D-M9N(V), D-M9P(V), D-M9B(V) (mm)
Mounting position ø16 ø20
A 74 94
B 86 106
Operating range 6.5 7

D-F9NW(V), D-F9PW(V), D-F9BW(V) (mm)
Mounting position ø16 ø20
A 73 93
B 87 107
Operating range 8.5 6.5

MY1CW25/32/40/50/63

Reed Switch
D-Z73, D-Z76, D-Z80 (mm)
Mounting position ø25 ø32 ø40 ø50 ø63
A 139.5 184.5 229.5 278.5 323.5
B 80.5 89.5 110.5 121.5 136.5
Operating range 12 12 12 11.5 11.5

Solid State Switch
D-Y59A, D-Y69A, D-Y7P(V) D-Y7NW(V), D-Y7PW(V), D-Y7BW(V) (mm)
Mounting position ø25 ø32 ø40 ø50 ø63
A 139.5 184.5 229.5 278.5 323.5
B 180.5 95.5 110.5 121.5 136.5
Operating range 5 5 5 5 5

D-Y7BAL (mm)
Mounting position ø25 ø32 ø40
A 139.5 184.5 229.5
B 180.5 95.5 110.5
Operating range 8 8 8

Perpendicular electrical entry is not available for ø50 and ø63.

D-Y69A, D-Y69B, D-Y7PV D-Y7NWV, D-Y7PWV, D-Y7BWV

MY1CW25/32/40/50/63

Reed Switch
D-Z73, D-Z76, D-Z80 (mm)
Mounting position ø25 ø32 ø40 ø50 ø63
A 97.5 127.5 157.5 278.5 323.5
B 122.5 152.5 182.5 212.5 236.5
Operating range 12 12 12 11.5 11.5

Solid State Switch
D-Y59A, D-Y69A, D-Y7P(V) D-Y7NW(V), D-Y7PW(V), D-Y7BW(V) (mm)
Mounting position ø25 ø32 ø40 ø50 ø63
A 97.5 127.5 157.5 278.5 323.5
B 122.5 152.5 182.5 212.5 236.5
Operating range 5 5 5 5 5

D-Y7BAL (mm)
Mounting position ø25 ø32 ø40
A 97.5 127.5 157.5
B 122.5 152.5 182.5
Operating range 8 8 8

Perpendicular electrical entry is not available for ø50 and ø63.

D-Y69A, D-Y69B, D-Y7PV D-Y7NWV, D-Y7PWV, D-Y7BWV
Mounting of Auto Switch & Installation of Lead Wire Cover (ø50, ø63)

⚠️ Caution

Be sure to install a lead wire cover on the auto switches for size ø50 and ø63 cylinders.

Install a lead wire cover following the procedures provided below to prevent the lead wire from interfering with the slider.

Lead wire cover is packaged together with size ø50 and ø63 cylinders equipped with auto switches.

For ordering the lead wire cover separately, use the following part number:
MYM63GAR6386-1640 (Length: 2 m)

1. Auto switch mounting position

Up to 4 auto switches can be mounted on one side of the cylinder (total of 8 switches on both sides).

When multiple auto switches are used, be sure to use the lead wire groove and pull the lead wires out from the edge of the cylinder. (Bold lines in Fig. (1) indicate lead wires.)

2. How to mount auto switch/install lead wire cover

1) Insert and slide in the auto switch from the side of the cylinder and secure it with the screw provided. (Refer to Fig. (2).)

2) Cut the lead wire cover to the desired length using a cutter or tube cutter. (Refer to Fig. (1).)

3) First place the lead wires into the lead wire cover. Then, install a lead wire cover onto a cylinder body. (Refer to Fig. (3).)

4) Make sure that the lead wires do not interfere with the slide table at any stroke range.

Fig. (1) Auto switch mounting position

Fig. (2) Auto switch mounting

Fig. (3) Installation of lead wire cover

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Electrical entry (Fetching direction)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reed switch</td>
<td>D-A90</td>
<td>Grommet (In-line)</td>
<td>Without indicator light</td>
</tr>
<tr>
<td></td>
<td>D-280</td>
<td>Grommet (In-line)</td>
<td></td>
</tr>
</tbody>
</table>

Other than the applicable auto switches listed in “How to Order”, the following auto switches can be mounted:

* Normally closed (NC = b contact), solid state switch (D-F9G/F9H/Y7G/Y7H type) are also available. For details, refer to page 8-30-31 to 8-30-32.
* D-A80 cannot be mounted on Series MY1HT.