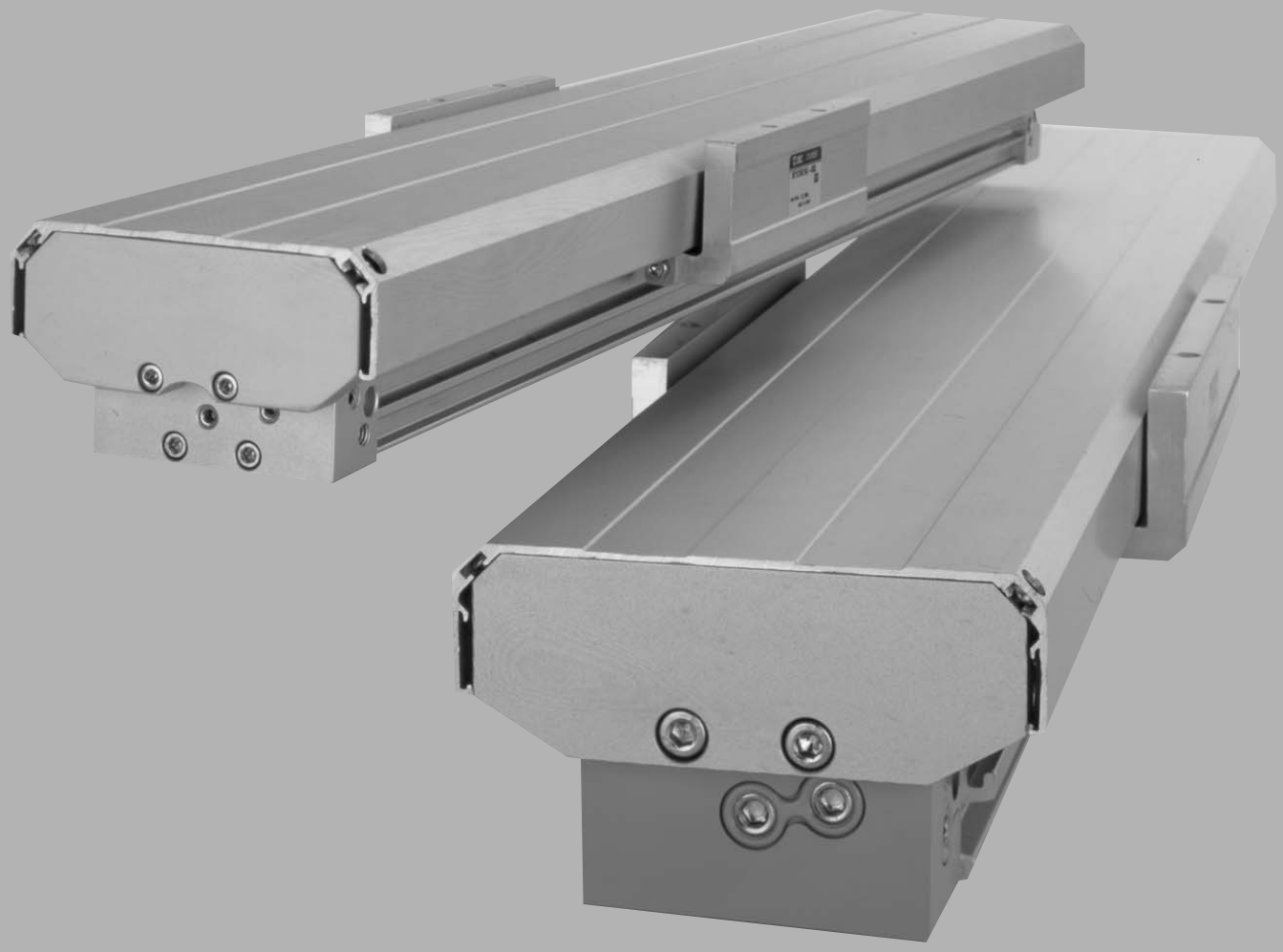
Mechanically Jointed Rodless Cylinder With Protective Cover

Series MY1□W

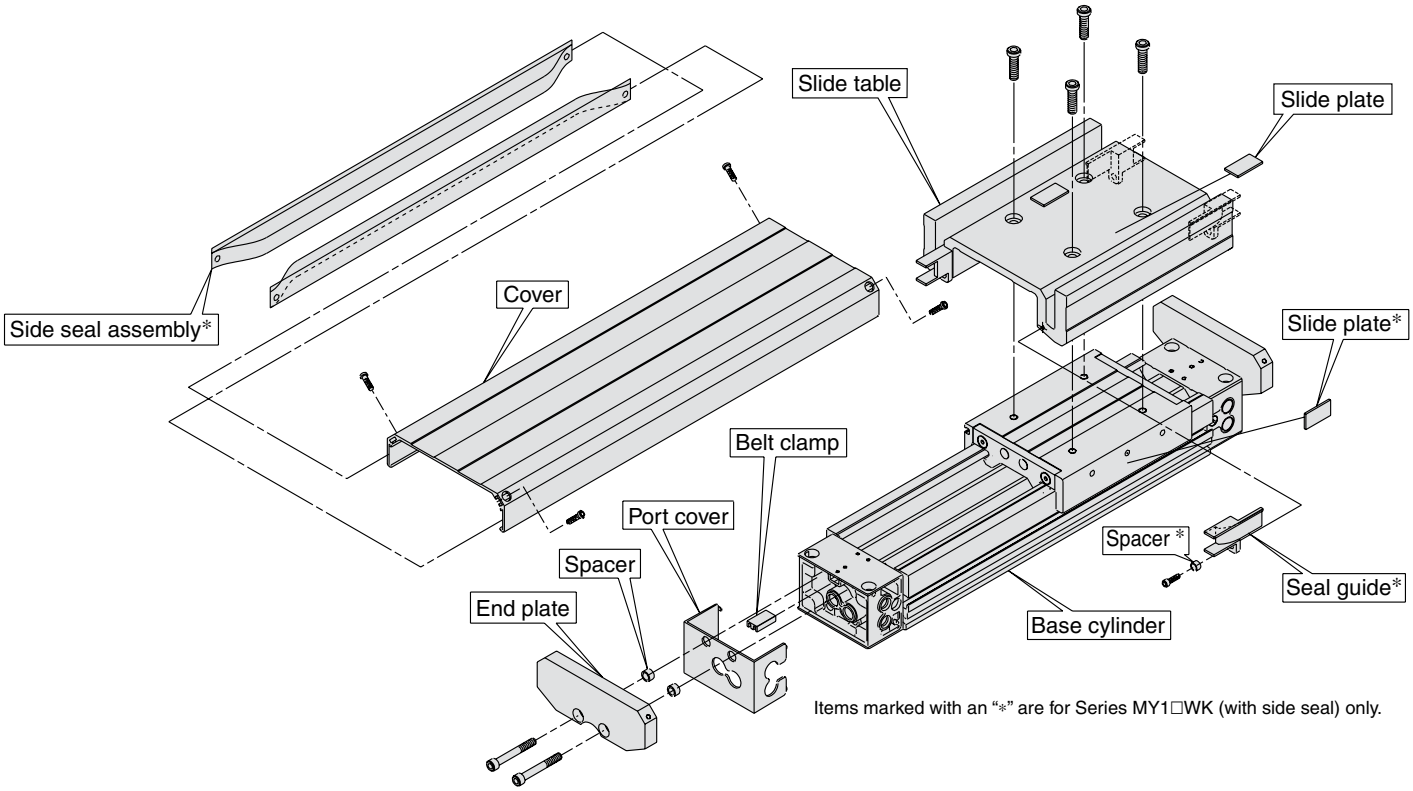
ø16, ø20, ø25, ø32, ø40, ø50, ø63

Protective cover offers excellent dust and water resistance



Series Variations

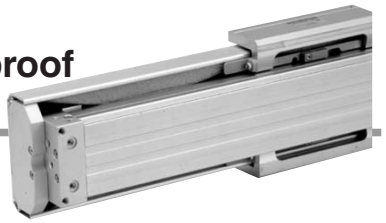
Series	Guide type	Cover	Bore size (mm)							Option
			16	20	25	32	40	50	63	
MY1MW	Slide bearing	With protective cover	●	●	●	●	●	●	●	• Centralized piping • Stroke adjusting unit • Side support
MY1MWK		With protective cover With side seal	●	●	●	●	●			
MY1CW	Cam follower guide	With protective cover	●	●	●	●	●	●	●	
MY1CWK		With protective cover With side seal	●	●	●	●	●			



Items marked with an "∗" are for Series MY1□WK (with side seal) only.

1 Dustproof and water resistant features are improved for using in locations where the cylinder is exposed to power dust and water drop or splash.

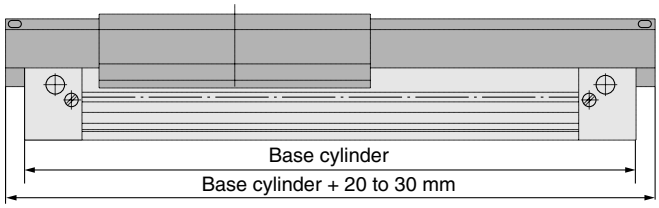
2 Side seals provide greater lateral dustproof and water resistance.



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

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

5 Protective cover only minimally adds to overall length.



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

Specific Product Precautions 1

Be sure to read before handling.

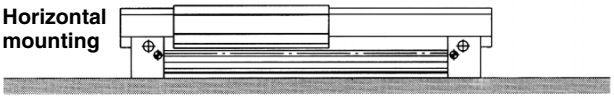
Mounting

⚠ Caution

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.

Horizontal mounting



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.

Operating Environment

⚠ Caution

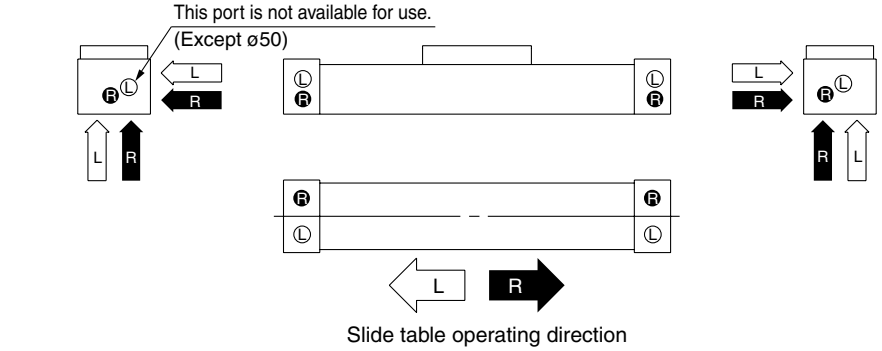
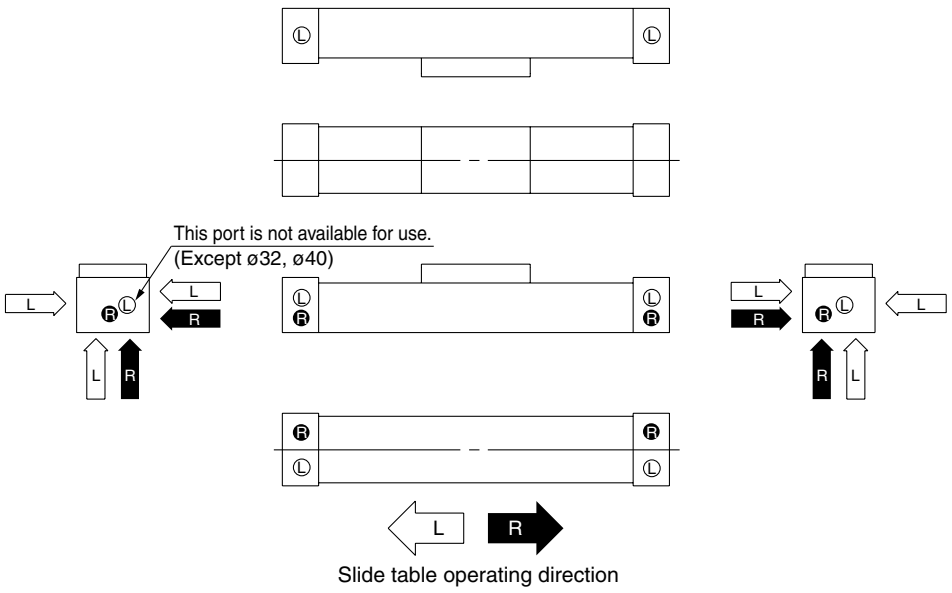
2. Because of floating particles such as paper dust and coolant mist that may enter the inside of the cover.

• 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.

⚠ Caution

Centralized Piping Port Variations

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

Applicable cylinder	Port variations
MY1MW16/20/50/63 **MY1CW16/20/50/63**	
MY1MW25/32/40 **MY1CW25/32/40**	

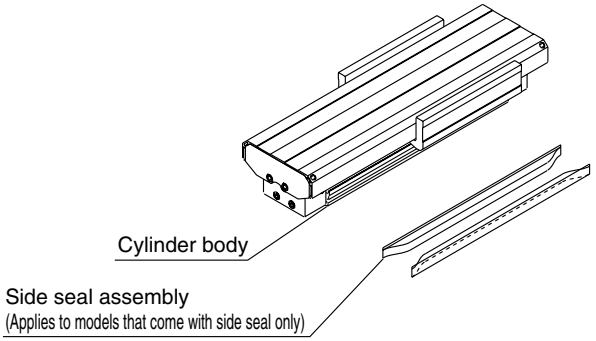
Specific Product Precautions 2

Be sure to read before handling.

Assembly Procedure

1. Component check

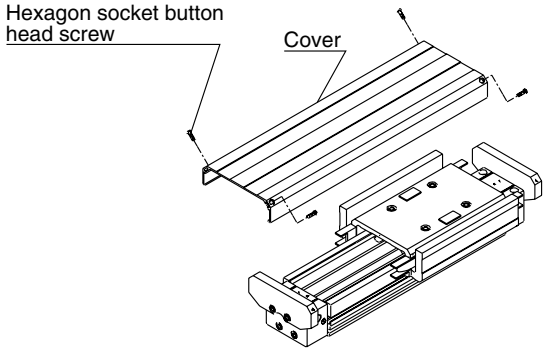
Check the components.



Note) When auto switches are included with a cylinder order, they are packaged together with the cylinder.

2. Removal of cover

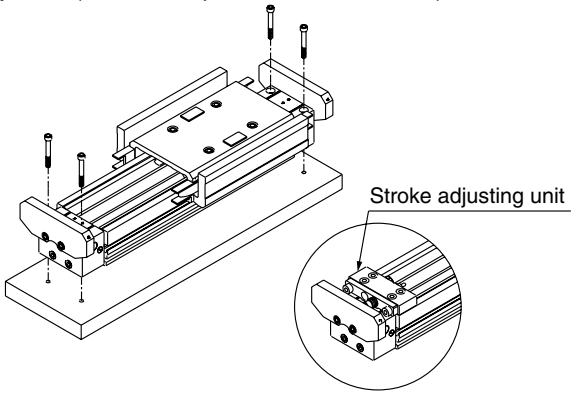
Remove the hexagon socket head button bolts and cover.



3. Body mounting/adjustment

Mount the cylinder body.

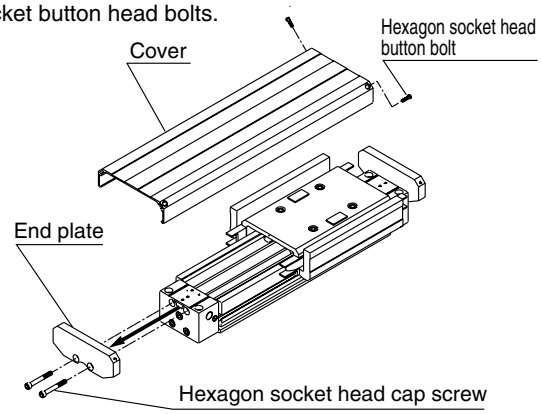
For cylinders with protective cover only (i.e., without side seal), reinstall the cover after the cylinder is mounted and adjusted. (Refer to Step 6 “Cover installation”.)



Note) The adjustment of the stroke adjusting unit (optional) should also be done at this time.

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.

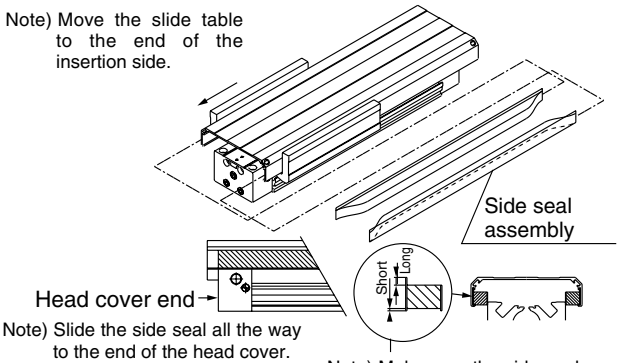


5. Side seal installation

Slide the side seal assembly into the place from one end of the cylinder.

⚠ Stainless steel portions of the side seal assembly are very sharp. Take extra precautions when handling.

Note) Move the slide table to the end of the insertion side.



Note) Slide the side seal all the way to the end of the head cover.

Note) Make sure the side seal assembly is facing in the right direction.

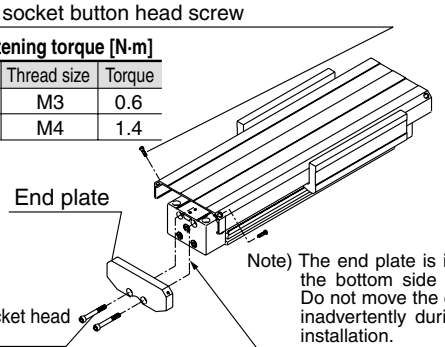
6. Cover installation

Reinstall the end plate and secure it.

Hexagon socket button head screw

Cover tightening torque [N·m]

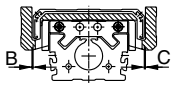
Bore (mm)	Thread size	Torque
16 to 40	M3	0.6
50, 63	M4	1.4



Note) The end plate is installed from the bottom side of the cover. Do not move the cover upward inadvertently during end plate installation.

End plate tightening torque [N·m]

Bore (mm)	Thread size	Torque
16	M3	0.6
20	M4	1.4
25	M5	2.8
32	M6	4.8
40	M6	4.8
50	M8	12
63	M10	24



Note) If there is no gap (clearance) between the slide table and cover (B, C in the drawing above) throughout the stroke range, loosen the hexagon socket head cap screw to readjust the cover, then retighten it.

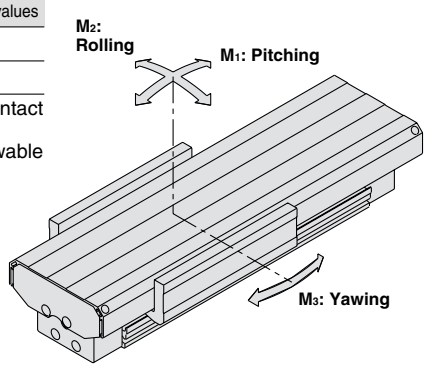
Model Selection 1

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

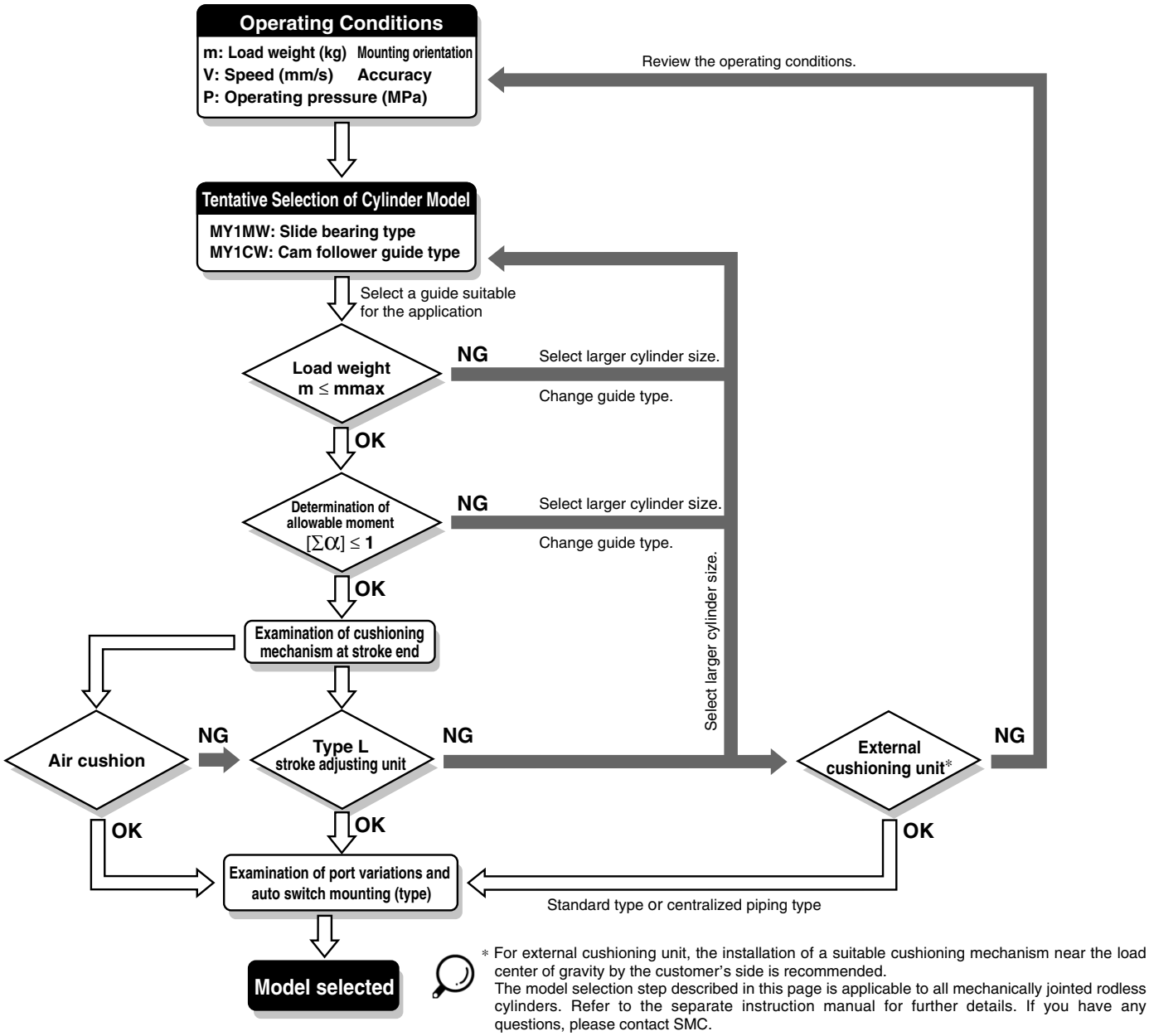
Standards for Tentative Model Selection

Cylinder model	Guide type	Standards for guide selection	Graphs for related allowable values
MY1MW	Slide bearing guide	Slide table accuracy approx. ±0.12 mm²	P. 8-12-8
MY1CW	Cam follower guide type	Slide table accuracy approx. ±0.05 mm²	P. 8-12-9

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

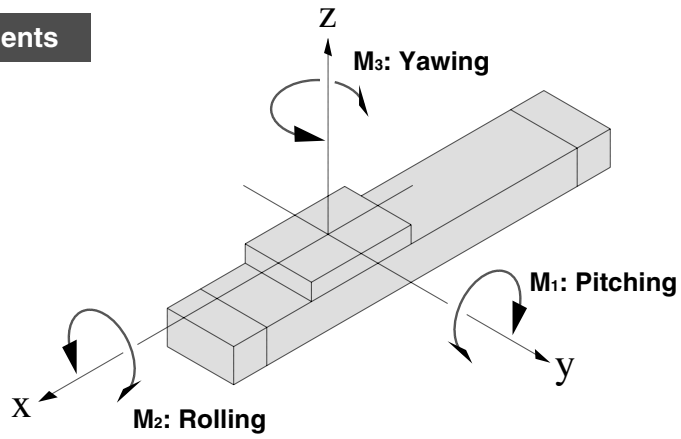


* For external cushioning unit, the installation of a suitable cushioning mechanism near the load center of gravity by the customer's side is recommended.
The model selection step described in this page is applicable to all mechanically jointed rodless cylinders. Refer to the separate instruction manual for further details. If you have any questions, please contact SMC.

Types of Moment Applied to Rodless Cylinders

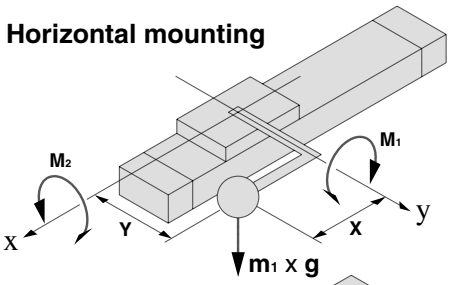
Multiple moments may be generated depending on the mounting orientation, load, and position of the center of gravity.

Coordinates and Moments

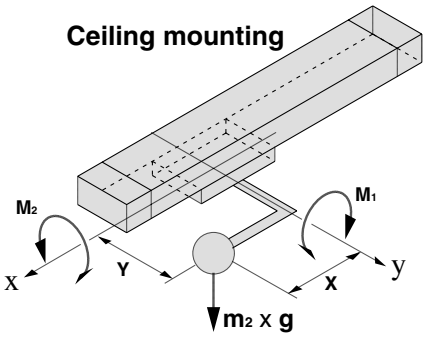


Static Moment

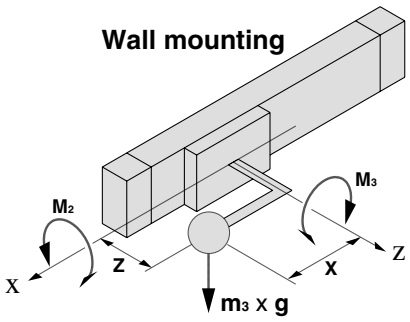
Horizontal mounting



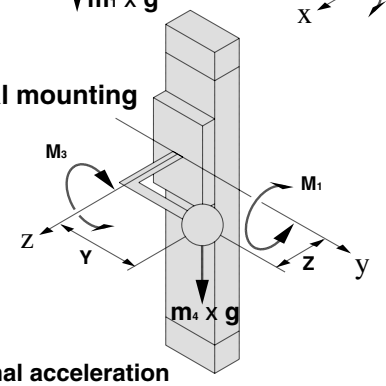
Ceiling mounting



Wall mounting



Vertical mounting

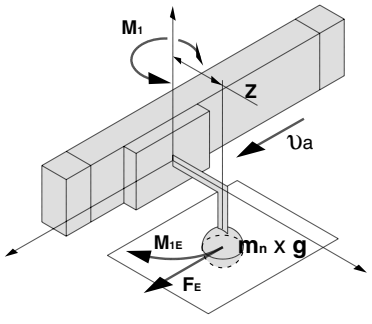


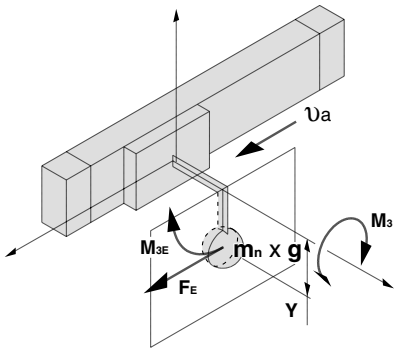
g: Gravitational acceleration

Mounting orientation		Horizontal mounting	Ceiling mounting	Wall mounting	Vertical mounting
Static load (m)		m_1	m_2	m_3	m_4 Note)
Static moment	M_1	$m_1 \times g \times X$	$m_2 \times g \times X$	——	$m_4 \times g \times Z$
	M_2	$m_1 \times g \times Y$	$m_2 \times g \times Y$	$m_3 \times g \times Z$	——
	M_3	——	——	$m_3 \times g \times X$	$m_4 \times g \times Y$

Note) "m_4" 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





Mounting orientation		Horizontal mounting	Ceiling mounting	Wall mounting	Vertical mounting
Dynamic load F_E		$\frac{1.4}{100} \times \upsilon a \times mn \times g$			
Adjusting bolt	M_{1E}	$\frac{1}{3} \times F_E \times Z$			
	M_{2E}	Dynamic moment M_2E is not generated.			
	M_{3E}	$\frac{1}{3} \times F_E \times Y$			

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

g: Gravitational acceleration, υa: Average speed

Maximum Allowable Moment/Maximum Load Weight

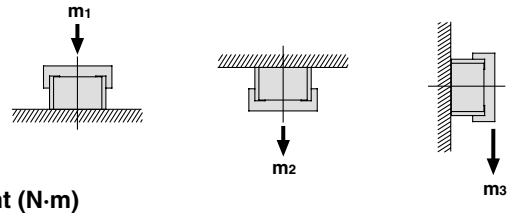
Model	Bore size (mm)	Maximum allowable moment (N·m)			Maximum load weight (kg)		
		M_1	M_2	M_3	m_1	m_2	m_3
MY1MW	**16**	6.0	3.0	1.0	18	7	2.1
	20	10	5.2	1.7	26	10.4	3
	25	15	9.0	2.4	38	15	4.5
	32	30	15	5.0	57	23	6.6
	40	59	24	8.0	84	33	10
	50	115	38	15	120	48	14
	63	140	60	19	180	72	21
MY1CW	**16**	6.0	3.0	2.0	18	7	2.1
	20	10	5.0	3.0	25	10	3
	25	15	8.5	5.0	35	14	4.2
	32	30	14	10	49	21	6
	40	60	23	20	68	30	8.2
	50	115	35	35	93	42	11.5
	63	150	50	50	130	60	16

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.

Maximum Allowable Moment

Select the moment from within the range of operating limits shown in the graphs. Note that the maximum allowable load value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable load for the selected conditions.

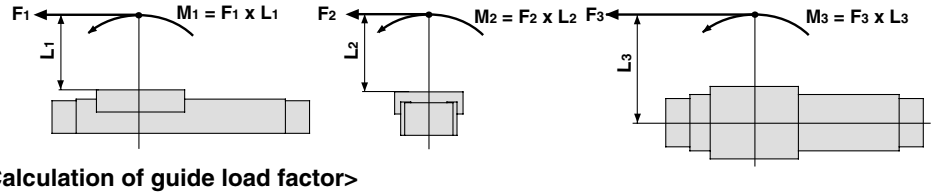
Load weight (kg)



⚠ Caution

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

Moment (N·m)



Maximum Load Weight

Select the load from within the range of limits shown in the graphs. Note that the maximum allowable moment value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable moment for the selected conditions.

<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).
 * To evaluate, use υa (average speed) for (1) and (2), and υ (collision speed $\upsilon = 1.4\,\upsilon a$) for (3). Calculate mmax for (1) from the maximum allowable load graph (m_1, m_2, and m_3), and Mmax for (2) and (3) from the maximum allowable moment graph (M_1, M_2, and M_3).

$$\text{Sum of guide load factors } \Sigma\alpha = \frac{\text{Load weight [m]}}{\text{Maximum allowable load [mmax]}} + \frac{\text{Static moment [M]}^{\text{Note 1)}}}{\text{Allowable static moment [Mmax]}} + \frac{\text{Dynamic moment [M}_E\text{]}^{\text{Note 2)}}}{\text{Allowable dynamic moment [M}_E\text{max]}} \leq 1$$

Note 1) Moment caused by the load, etc., with cylinder in resting condition.
Note 2) Moment caused by the impact load equivalent at the stroke end (at the time of impact with stopper).
Note 3) Depending on the shape of the workpiece, multiple moments may occur. When this happens, the sum of the load factors ($\Sigma\alpha$) is the total of all such moments.

2. Reference formula [Dynamic moment at impact]
Use the following formulae to calculate dynamic moment when taking stopper impact into consideration.

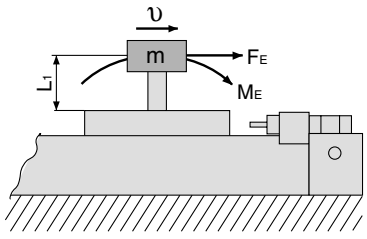
m: Load weight (kg)
F: Load (N)
F_E: Load equivalent to impact (at impact with stopper) (N)
υa: Average speed (mm/s)
M: Static moment (N·m)
υ: Collision speed (mm/s)
L_1: Distance to the load's center of gravity (m)
M_E: Dynamic moment (N·m)
g: Gravitational acceleration (9.8 m/s²)

$$\upsilon = 1.4\upsilon a \text{ (mm/s)} \qquad F_E = \frac{1.4}{100}\upsilon a \cdot g \cdot m^{\text{Note 4)}}$$

$$\therefore M_E = \frac{1}{3} F_E \cdot L_1 = 0.05\upsilon a\ m\ L_1 \text{ (N·m)}$$

Note 4) $\frac{1.4}{100}\ \upsilon a$ is a dimensionless coefficient for calculating impact force.

Note 5) Average load coefficient ($=\frac{1}{3}$): This coefficient is for averaging the maximum load moment at the time of stopper impact according to service life calculations.

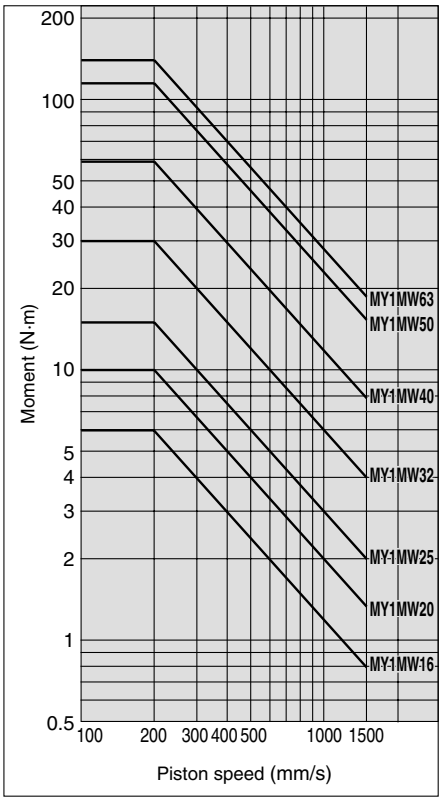


3. For detailed selection procedures, refer to pages 8-11-12 to 8-11-13.

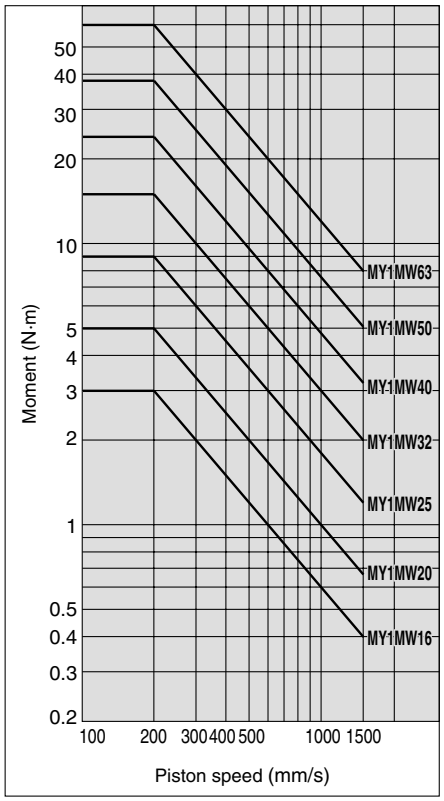
Maximum Allowable Moment/Maximum Load Weight

Maximum Allowable Moment: MY1MW

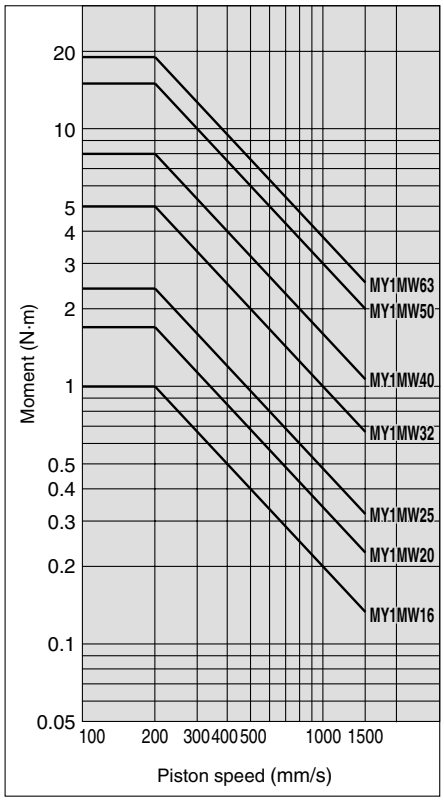
MY1MW/M1



MY1MW/M2

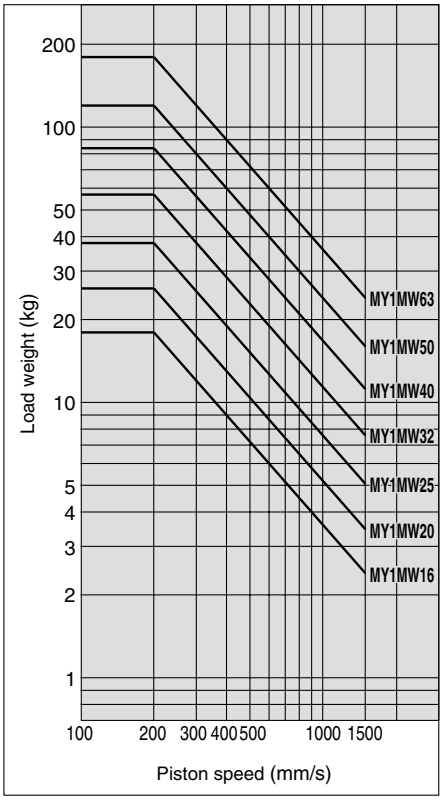


MY1MW/M3

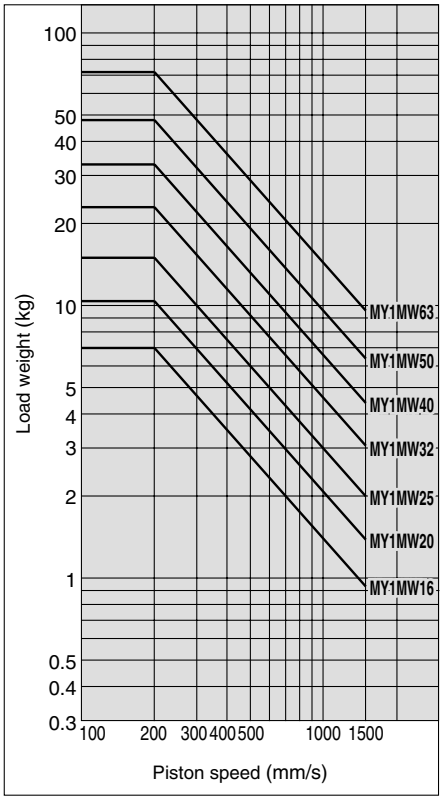


Maximum Load Weight: MY1MW

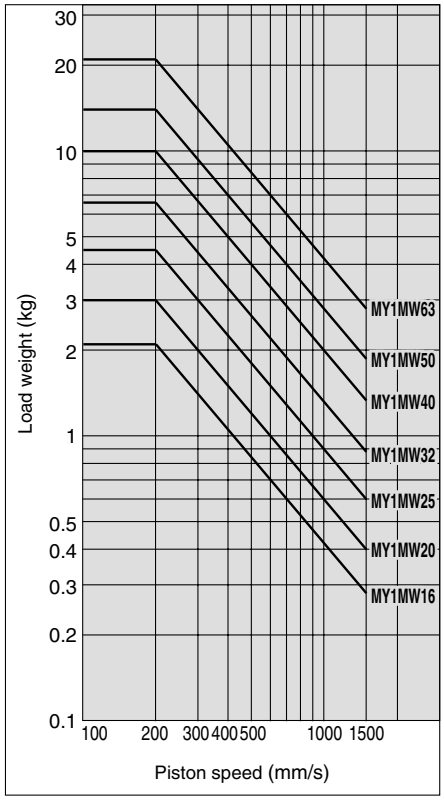
MY1MW/m1



MY1MW/m2



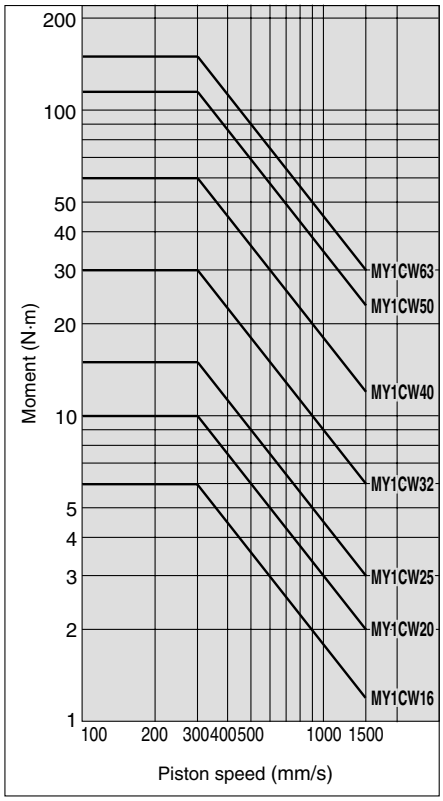
MY1MW/m3



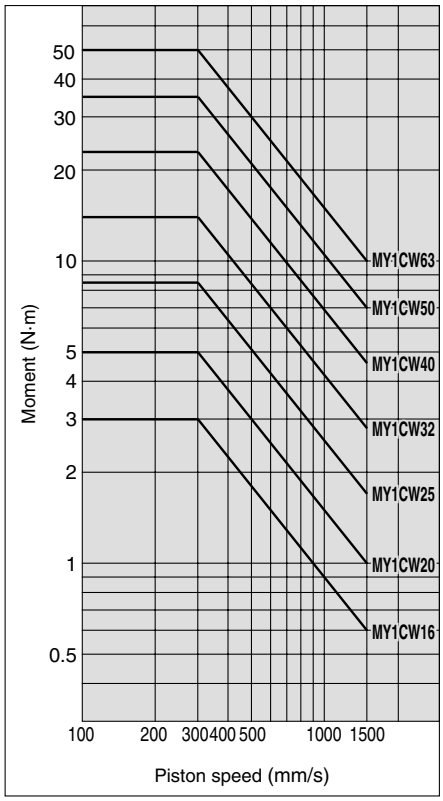
Maximum Allowable Moment/Maximum Load Weight

Maximum Allowable Moment: MY1CW

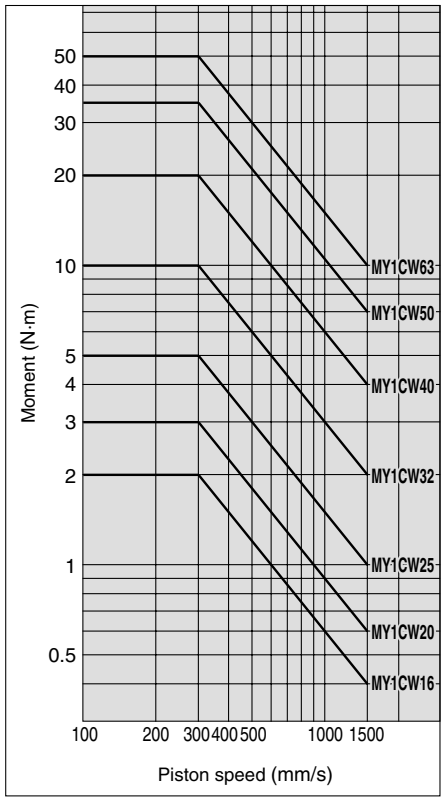
MY1CW/M1



MY1CW/M2

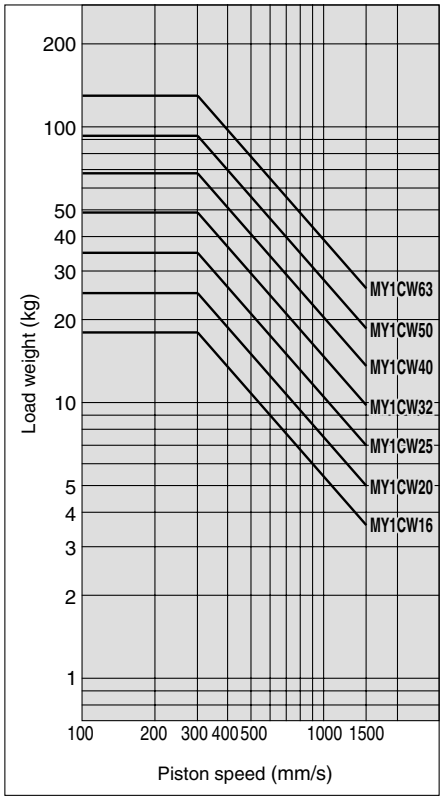


MY1CW/M3

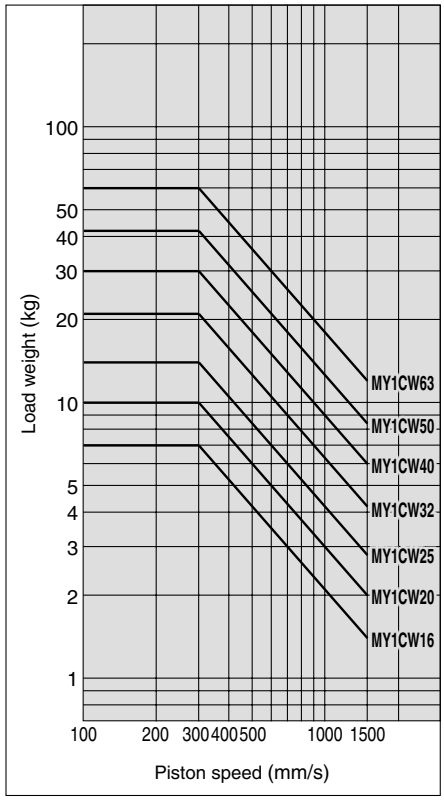


Maximum Load Weight: MY1CW

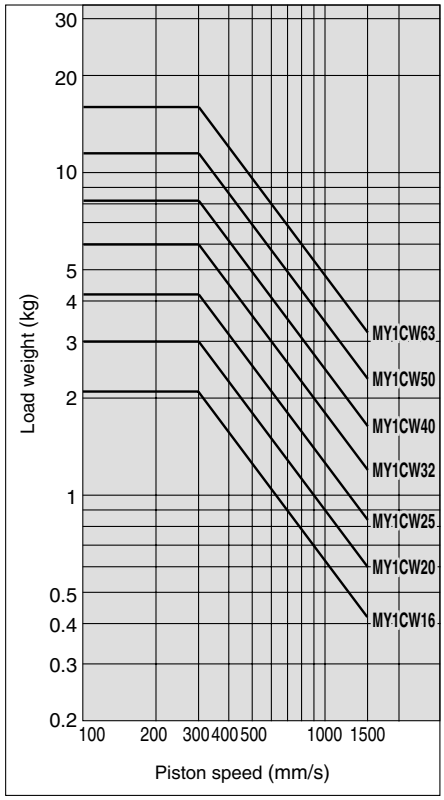
MY1CW/m1



MY1CW/m2



MY1CW/m3



Cushion Capacity

Cushion Selection

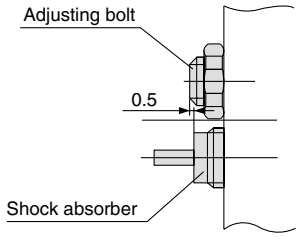
<Air cushion>
Air cushions are a standard feature on mechanically jointed rodless cylinders.
The air cushion mechanism is incorporated to prevent excessive impact of the piston at the stroke end during high speed operation. The purpose of air cushion, thus, is not to decelerate the piston near the stroke 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.



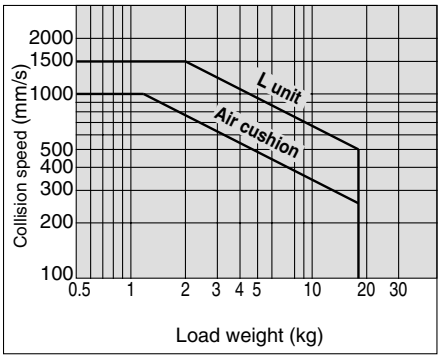
2. Do not use a shock absorber together with air cushion.

Air Cushion Stroke

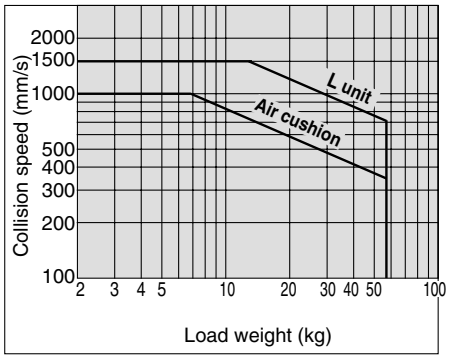
Bore size (mm)	Cushion stroke
16	12
20	15
25	15
32	19
40	24
50	30
63	37

Absorption Capacity of Air Cushion and Stroke Adjusting Units

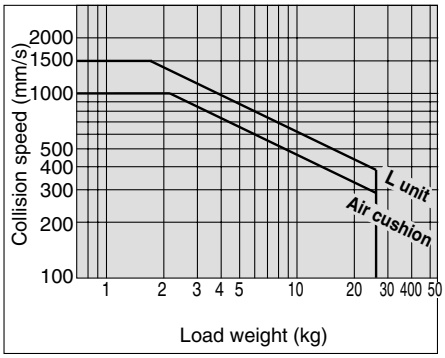
ø16 Horizontal collision: P = 0.5 MPa



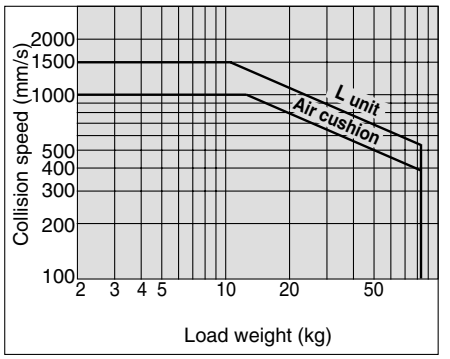
ø32 Horizontal collision: P = 0.5 MPa



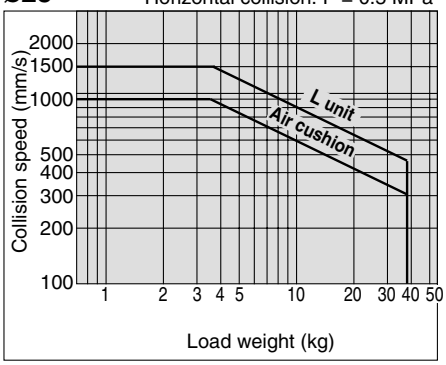
ø20 Horizontal collision: P = 0.5 MPa



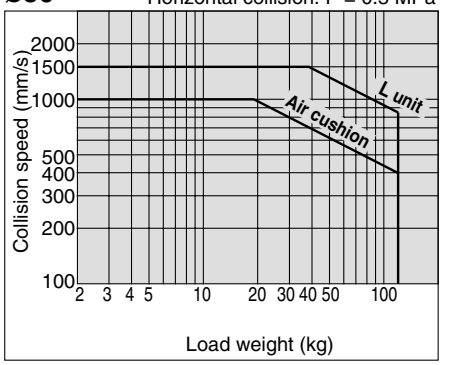
ø40 Horizontal collision: P = 0.5 MPa



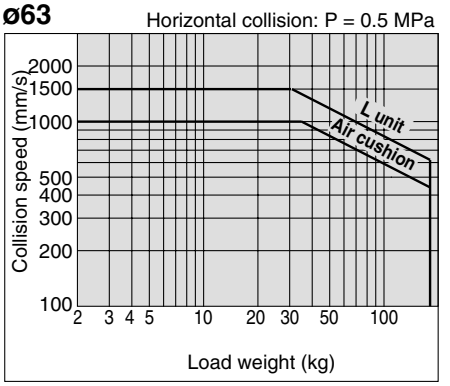
ø25 Horizontal collision: P = 0.5 MPa



ø50 Horizontal collision: P = 0.5 MPa



ø63 Horizontal collision: P = 0.5 MPa



Cushion Capacity

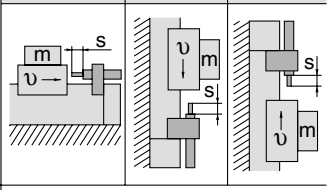
Tightening Torque for Stroke Adjusting Unit Holding Bolts (N·m)

Bore size (mm)	Unit	Tightening torque
16	A	0.6
	L	
20	A	1.5
	L	
25	A	3.0
	L	
32	A	5.0
	L	
40	A	12
	L	
50	A	12
	L	
63	A	24
	L	

Tightening Torque for Stroke Adjusting Unit Lock Plate Holding Bolts (N·m)

Bore size (mm)	Unit	Tightening torque
25	L	1.2
32	L	3.3
40	L	3.3

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

	Horizontal collision	Vertical (Downward)	Vertical (Upward)
Type of impact			
Kinetic energy E_1	$\frac{1}{2}\,m\cdot\upsilon^2$		
Thrust energy E_2	Fs	Fs + m·g·s	Fs – m·g·s
Absorbed energy E	$E_1 + E_2$		

Symbol
υ: Speed of impact object (m/s)
m: Weight of impact object (kg)
F: Cylinder thrust (N)
g: Gravitational acceleration (9.8 m/s²)
s: Shock absorber stroke (m)

Note) The speed of the impact object is measured at the moment of impact with the shock absorber.

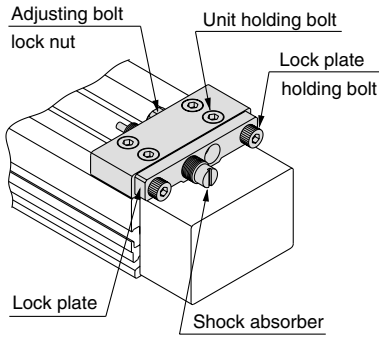
⚠ Precautions

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.



<Fastening of unit>
The unit can be secured by evenly tightening the four unit holding bolts.

⚠ Caution

Do not operate with the stroke adjusting unit fixed in an intermediate position.

When the stroke adjusting unit is fixed in an intermediate position, slippage can occur depending on the amount of energy released at the time of an impact. In such cases, the use of the adjusting bolt mounting brackets, available per made-to-order specifications -X416 and -X417, is recommended.
For other lengths, please consult with SMC (Refer to the "Tightening Torque for Stroke Adjusting Unit Holding Bolts" values in the chart at the upper left corner of this page.)

<Stroke adjustment with adjusting bolt>
Loosen the adjusting bolt lock nut, and adjust the stroke from the lock plate side using a hexagon wrench. Retighten the lock nut.

<Stroke adjustment with shock absorber>
Loosen the two lock plate holding bolts, turn the shock absorber and adjust the stroke. Then, uniformly tighten the lock plate holding bolts to secure the shock absorber.
Avoid excessive tightening of the holding bolts (except for ø16, ø20, ø50, and ø63). (Refer to "Tightening Torque for Stroke Adjusting Unit Lock Plate Holding Bolts" above left.)

Note)
Although the lock plate may slightly bend due to tightening of the lock plate holding bolt, this does not a affect the shock absorber and locking function.

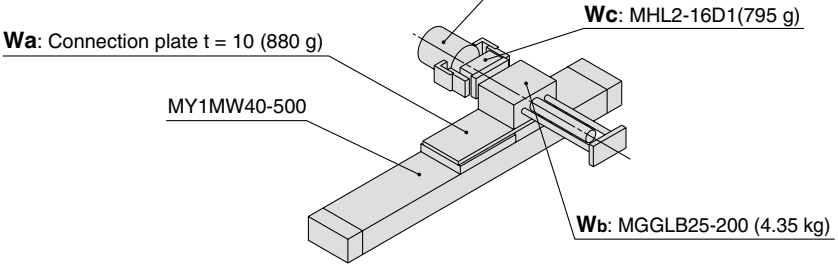
Model Selection 2

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

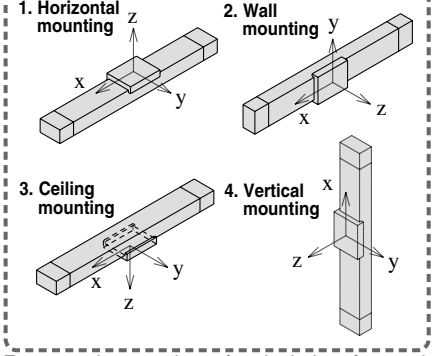
Calculation of Guide Load Factor

1. Operating Conditions

Cylinder ····· **MY1MW40-500**
Average operating speed υ**a** ····· **200 mm/s**
Mounting orientation ····· **Horizontal mounting**

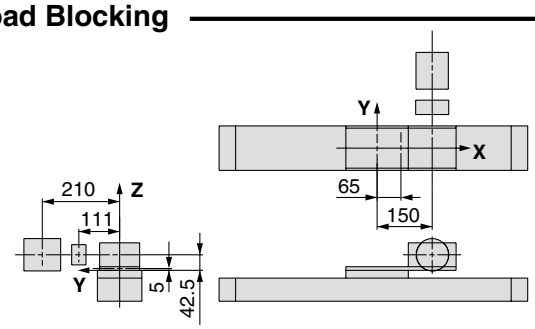


Mounting Orientation



For actual examples of calculation for each orientation, refer to the pages above.

2. Load Blocking



Weight and Center of Gravity for Each Workpiece

Workpiece no. Wn	Weight mn	Center of gravity		
		X-axis Xn	Y-axis Yn	Z-axis Zn
Wa	0.88 kg	65 mm	0 mm	5 mm
Wb	4.35 kg	150 mm	0 mm	42.5 mm
Wc	0.795 kg	150 mm	111 mm	42.5 mm
Wd	0.5 kg	150 mm	210 mm	42.5 mm

n = a, b, c, d

3. Composite Center of Gravity Calculation

$m_1 = \Sigma m_n$
$= 0.88 + 4.35 + 0.795 + 0.5 =$ **6.525 kg**

$X = \frac{1}{m_1} \times \Sigma(m_n \times x_n)$
$= \frac{1}{6.525}(0.88 \times 65 + 4.35 \times 150 + 0.795 \times 150 + 0.5 \times 150) =$ **138.5 mm**

$Y = \frac{1}{m_1} \times \Sigma(m_n \times y_n)$
$= \frac{1}{6.525}(0.88 \times 0 + 4.35 \times 0 + 0.795 \times 111 + 0.5 \times 210) =$ **29.6 mm**

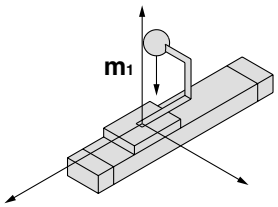
$Z = \frac{1}{m_1} \times \Sigma(m_n \times z_n)$
$= \frac{1}{6.525}(0.88 \times 5 + 4.35 \times 42.5 + 0.795 \times 42.5 + 0.5 \times 42.5) =$ **37.4 mm**

4. Calculation of Load Factor for Static Load

m_1: Weight

$m_1$max (from 1 of graph MY1MW/m_1) = 84 (kg) ·····

Load factor $\alpha_1 = m_1/m_1\text{max} = 6.525/84 =$ **0.08**

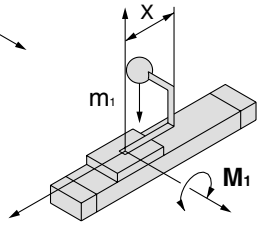


M_1: Moment

M_1 max (from (2) of graph MY1MW/M_1) = 59 (N·m) ·····

$M_1 = m_1 \times g \times X = 6.525 \times 9.8 \times 138.5 \times 10^{-3} = 8.86$ (N·m)

Load factor $\alpha_2 = M_1/M_1\text{max} = 8.86/59 =$ **0.15**



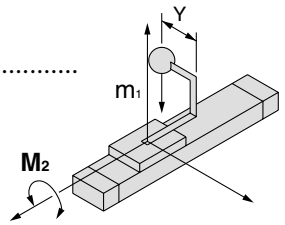
Calculation of Guide Load Factor

M_2: Moment

M_2max (from 3 of graph MY1MW: M_2) = 24 (N·m) ·····

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

Load factor $\alpha_3 = M_2/M_2\text{max} = 1.89/24 =$ **0.08**



5. Calculation of Load Factor for Dynamic Moment

Equivalent load F_E at impact

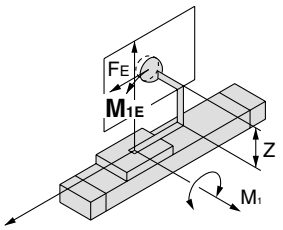
$$F_E = \frac{1.4}{100} \times \upsilon a \times g \times m = \frac{1.4}{100} \times 200 \times 9.8 \times 6.525 = 179.1 \text{ (N)}$$

M_{1E}: Moment

M_{1E}max (from 4 of graph MY1MW: M_1 where $1.4\upsilon a$ = 280 mm/s) = 42.1 (N·m) ·····

$$M_{1E} = \frac{1}{3} \times F_E \times Z = \frac{1}{3} \times 179.1 \times 37.4 \times 10^{-3} = 2.23 \text{ (N·m)}$$

Load factor $\alpha_4 = M_{1E}/M_{1E}\text{max} = 2.23/42.1 =$ **0.05**

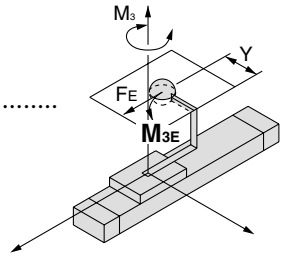


M_{3E}: Moment

M_{3E}max (from 5 of graph MY1MW: M_3 where $1.4\upsilon a$ = 280 mm/s) = 5.7 (N·m)·····

$$M_{3E} = \frac{1}{3} \times F_E \times Y = \frac{1}{3} \times 179.1 \times 29.6 \times 10^{-3} = 1.77 \text{ (N·m)}$$

Load factor $\alpha_5 = M_{3E}/M_{3E}\text{max} = 1.77/5.7 =$ **0.31**



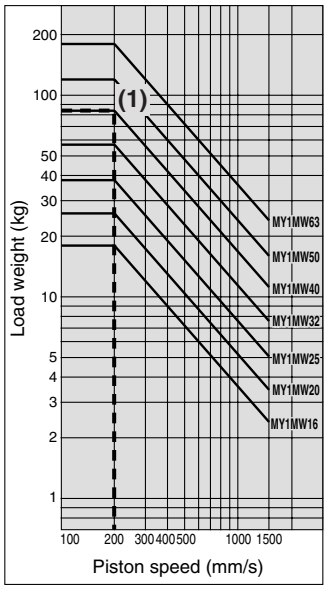
6. Sum and Examination of Guide Load Factors

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

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 $\sum a$ 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".

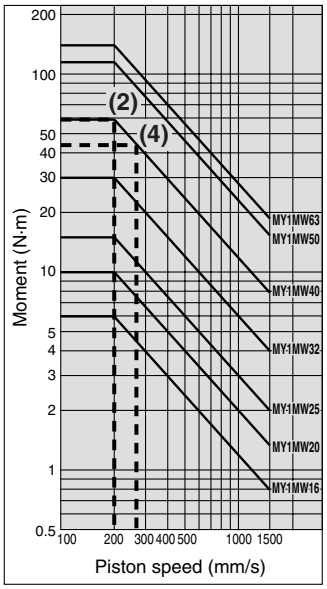
Load Weight

MY1MW/m_1

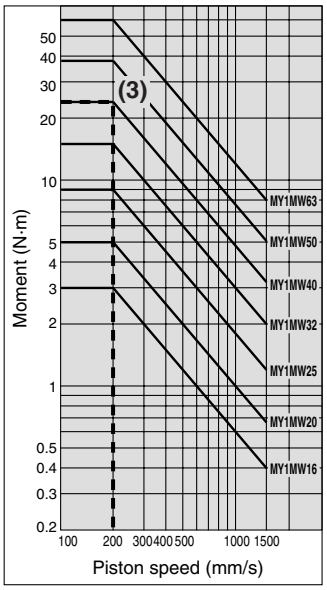


Allowable Moment

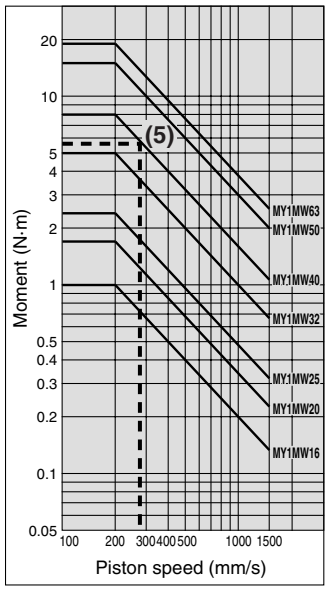
MY1MW/M_1



MY1MW/M_2



MY1MW/M_3



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

MY1 M W K 25 □ — 300 □ □ — Y7BW □

Guide type

M	Slide bearing type
C	Cam follower guide type

With protective cover

Side seal Note)

Nil	None
K	With side seal

Note) Cylinders with side seal are available for ø16 to ø40.

Bore size (mm)

16	16 mm
20	20 mm
25	25 mm
32	32 mm
40	40 mm
50	50 mm
63	63 mm

Piping

Nil	Standard type
G	Centralized piping type

Stroke

Refer to "Standard Stroke" on page 8-12-15.

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

Auto switch type

Nil	Without auto switch

∗ For the applicable auto switch model, refer to the table below.

Suffix for stroke adjusting unit Note)

Nil	Both ends
S	One end

Note) "S" is available when stroke adjusting units are A and L.

Number of auto switches

Nil	2 pcs
S	1 pcs
n	"n" pcs

Shock Absorbers for L Unit

Bore size (mm) / Unit no.	16	20	25	32	40	50	63
L unit	RB0806		RB1007	RB1412		RB2015	

Applicable Auto Switch /Refer to page 8-30-1 for further information on auto switches.

For ø16, ø20

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC	Load voltage	Load voltage AC	Auto switch model Perpendicular	Auto switch model In-line	Lead wire length (m)∗ 0.5 (Nil)	3 (L)	5 (Z)	Pre-wire connector	Applicable load	
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	**A96V**	**A96**	●	●	—	—	IC circuit	—
				2-wire	24 V	12 V	100 V	**A93V**	**A93**	●	●	—	—	—	Relay, PLC
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	**M9NV**	**M9N**	●	●	○	○	IC circuit	Relay PLC
				3-wire (PNP)				**M9PV**	**M9P**	●	●	○	○		
				2-wire		12 V		**M9BV**	**M9B**	●	●	○	○	—	
	Diagnostic indication (2-color indication)			3-wire (NPN)		5 V, 12 V		**F9NWV**	**F9NW**	●	●	○	○	IC circuit	
				3-wire (PNP)				**F9PWV**	**F9PW**	●	●	○	○		
				2-wire		12 V		**F9BWV**	**F9BW**	●	●	○	○	—	

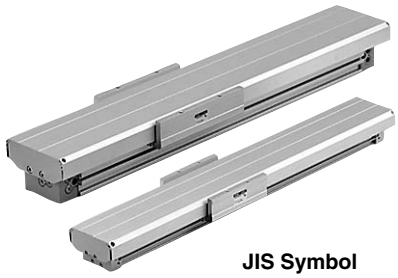
For ø25, ø32, ø40, ø50, ø63

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC	Load voltage	Load voltage AC	Auto switch model Perpendicular (1)	Auto switch model In-line	Lead wire length (m)∗ 0.5 (Nil)	3 (L)	5 (Z)	Pre-wire connector	Applicable load	
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	—	**Z76**	●	●	—	—	IC circuit	—
				2-wire	24 V	12 V	100 V	—	**Z73**	●	●	●	—	—	Relay, PLC
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	**Y69A**	**Y59A**	●	●	○	○	IC circuit	Relay PLC
				3-wire (PNP)				**Y7PV**	**Y7P**	●	●	○	○		
				2-wire		12 V		**Y69B**	**Y59B**	●	●	○	○	—	
	Diagnostic indication (2-color indication)			3-wire (NPN)		5 V, 12 V		**Y7NWV**	**Y7NW**	●	●	○	○	IC circuit	
				3-wire (PNP)				**Y7PWV**	**Y7PW**	●	●	○	○		
				2-wire		12 V		**Y7BWV**	**Y7BW**	●	●	○	○	—	
	Water resistant (2-color indication)			2-wire				—	**Y7BAL**(2)	●	●	○	○	—	

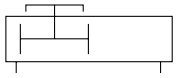
∗ Lead wire length symbols: 0.5 m·····Nil (Example) A93
3 m·····L (Example) Y59BL
5 m·····Z (Example) F9NWZ

∗ 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.



JIS Symbol



Specifications

Bore size (mm)		16	20	25	32	40	50	63
Fluid		Air						
Action		Double acting						
Operating pressure range		MY1MW: 0.15 to 0.8 MPa; MY1CW: 0.1 to 0.8 MPa						
Proof pressure		1.2 MPa						
Ambient and fluid temperature		5 to 60°C						
Cushion		Air cushion						
Lubrication		Non-lube						
Stroke length tolerance		1000 or less $^{+1.8}_{0}$ 1001 to 3000 $^{+2.8}_{0}$	2700 or less $^{+1.8}_{0}$; 2701 to 5000 $^{+2.8}_{0}$					
Piping port size	Front/Side port	M5 x 0.8		Rc 1/8		Rc 1/4	Rc 3/8	
	Bottom port (Centralized piping type only)	ø4		ø5	ø6	ø8	ø10	ø11

Stroke Adjusting Unit Specifications

Bore size (mm)	16		20		25		32		40		50		63	
Unit symbol	A	L	A	L	A	L	A	L	A	L	A	L	A	L
Configuration Shock absorber model	With adjusting bolt	RB 0806 with adjusting bolt	With adjusting bolt	RB 0806 with adjusting bolt	With adjusting bolt	RB 1007 with adjusting bolt	With adjusting bolt	RB 1412 with adjusting bolt	With adjusting bolt	RB 1412 with adjusting bolt	With adjusting bolt	RB 2015 with adjusting bolt	With adjusting bolt	RB 2015 with adjusting bolt
Fine stroke adjustment range (mm)	0 to –5.6		0 to –6		0 to –11.5		0 to –12		0 to –16		0 to –20		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

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

Piston Speed

Bore size (mm)		16 to 63
Without stroke adjusting unit		100 to 1000 mm/s
Stroke adjusting unit	A unit	100 to 1000 mm/s (1)
	L unit	100 to 1500 mm/s (2)

Note 1) The air cushion capacity will be reduced when the stroke adjustment range is increased by the adjusting bolt.When exceeding the air cushion stroke ranges on page 8-12-10, the piston speed should be 100 to 200 mm per second.
Note 2) The piston speed is 100 to 1000 mm/s for centralized piping.
Note 3) Use at a speed within the absorption capacity range. Refer to page 8-12-10.

Made to Order Specifications (For details, refer to page 8-31-1.)

Symbol	Specifications
-XB11	Long stroke
-XC67	NBR rubber lining in dust seal band
-X416	Holder mounting bracket I
-X417	Holder mounting bracket II

Standard Stroke

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

* 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

(N)

Bore size (mm)	Piston area (mm^2)	Operating pressure (MPa)						
		0.2	0.3	0.4	0.5	0.6	0.7	0.8
16	200	40	60	80	100	120	140	160
20	314	62	94	125	157	188	219	251
25	490	98	147	196	245	294	343	392
32	804	161	241	322	402	483	563	643
40	1256	251	377	502	628	754	879	1005
50	1962	392	588	784	981	1177	1373	1569
63	3115	623	934	1246	1557	1869	2180	2492

Weight

(kg)

Bore size (mm)	MY1MW		MY1CW		Side support weight (per set)	Stroke adjusting unit weight (per unit)	
	Basic weight	Additional weight per each 50mm of stroke	Basic weight	Additional weight per each 50mm of stroke	Type A and B	A unit weight	L unit weight
16	1.25	0.16	1.25	0.16	0.01	0.03	0.04
20	1.90	0.19	1.85	0.18	0.02	0.04	0.05
25	2.56	0.28	2.50	0.28	0.02	0.07	0.11
32	4.75	0.43	4.62	0.42	0.04	0.14	0.23
40	7.79	0.61	7.51	0.57	0.08	0.25	0.34
50	13.53	0.83	13.61	0.82	0.08	0.36	0.51
63	21.84	1.18	21.94	1.17	0.17	0.68	0.83

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
- 2.56 + 0.28 x 300 ÷ 50 + 0.07 x 2 ≅ 4.38 kg

Option

Stroke Adjusting Unit Part No.

Unit no. \ Bore size (mm)	16	20	25	32	40	50	63
A unit	MYM-A16A	MYM-A20A	MYM-A25A	MYM-A32A	MYM-A40A	MYM-A50A	MYM-A63A
L unit	MYM-A16L	MYM-A20L	MYM-A25L	MYM-A32L	MYM-A40L	MYM-A50L	MYM-A63L

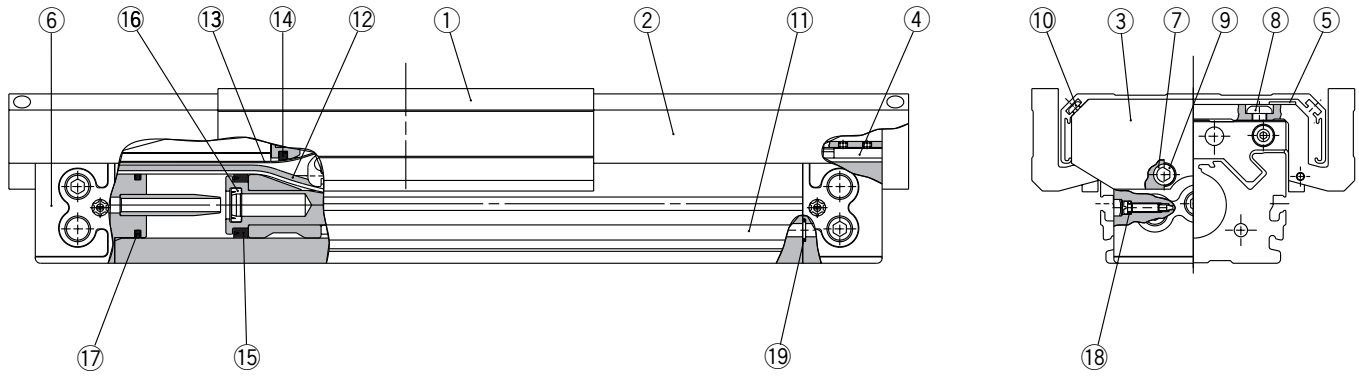
Side Support Part No.

Type \ Bore size (mm)	16	20	25	32	40	50	63
Side support A	MY-S16A	MY-S20A	MY-S25A	MY-S32A	MY-S40A		MY-S63A
Side support B	MY-S16B	MY-S20B	MY-S25B	MY-S32B	MY-S40B		MY-S63B

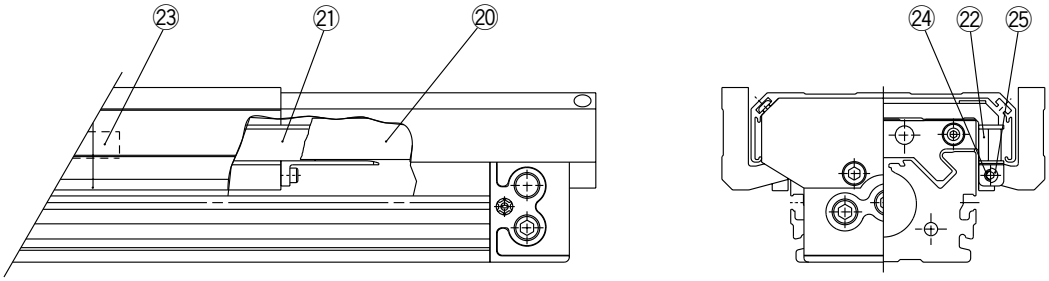
For detailed dimensions, refer to page 8-12-22.

Construction

MY1□W



MY1□WK with side seal



Component Parts

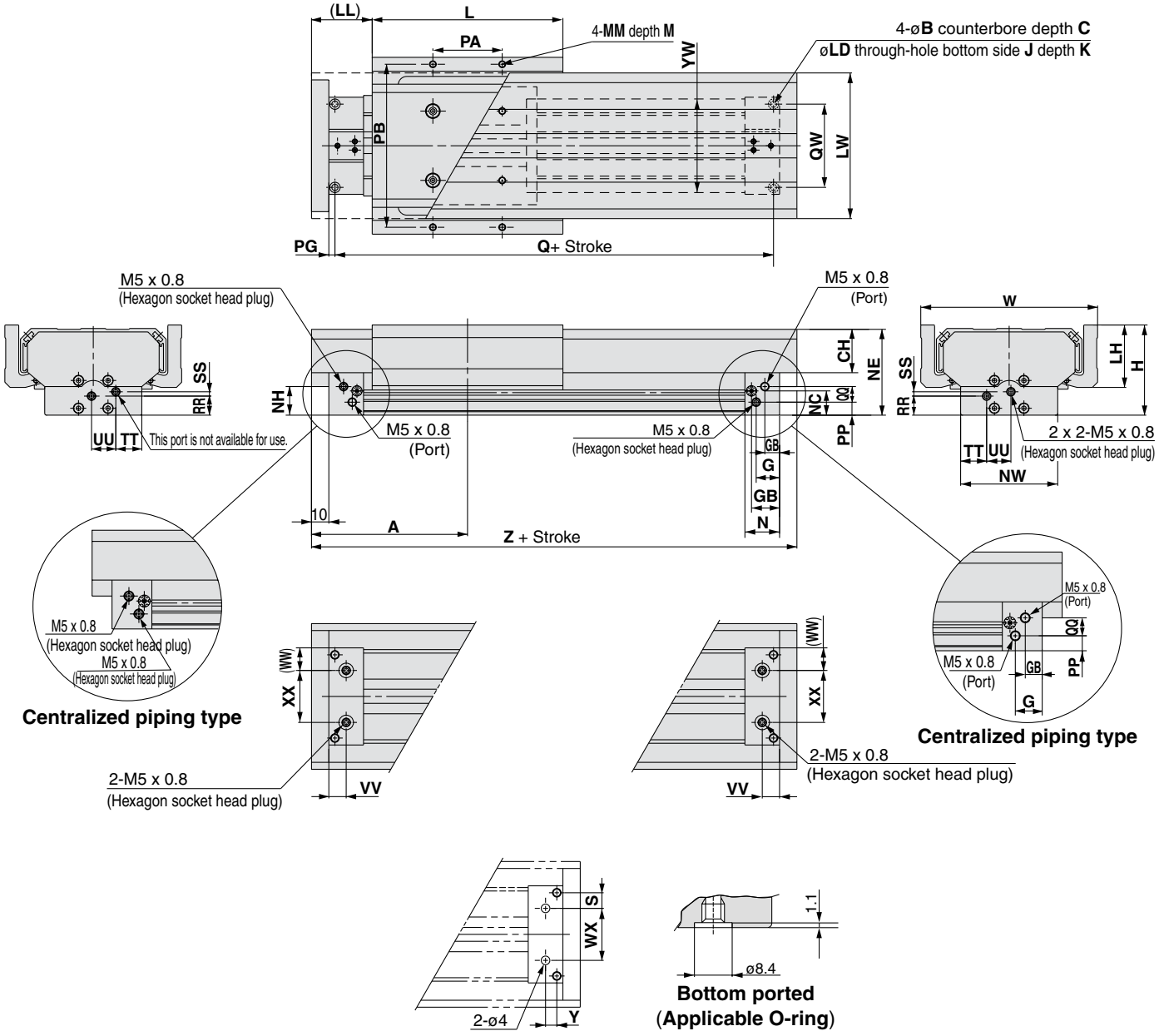
No.	Description		Material	Note	ø16	ø20	ø25	ø32	ø40	ø50	ø63
①	Cover unit	Slide table	Aluminum alloy	Hard anodized	MYMW-16-Stroke	MYMW-20-Stroke	MYMW-25-Stroke	MYMW-32-Stroke	MYMW-40-Stroke	MYMW-50-Stroke	MYMW-63-Stroke
②		Cover	Aluminum alloy	Hard anodized							
③		End plate	Aluminum alloy	Hard anodized							
④		Belt clamp	Special resin								
⑤		Slide plate	Special resin								
⑥		Port cover	Special resin	(ø25 to ø40)							
⑦		Spacer	Stainless steel	(ø25 to ø40)							
⑧		Hexagon socket button head screw	Chromium molybdenum steel	Nickel plated							
⑨		Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated							
⑩		Hexagon socket button head screw	Chromium molybdenum steel	Nickel plated							
⑪	Rodless cylinder		—	MY1M/MY1C	—	—	—	—	—	—	—
㉑	Side seal unit	Seal guide A	Special resin		MYMK-16-A	MYMK-16-A	MYMK-25-A	MYMK-25-A	MYMK-25-A	—	—
㉒		Seal guide B	Special resin								
㉓		Slide plate	Special resin								
㉔		Spacer	Stainless steel								
㉕		Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated							

Seal List

No.	Description	Material	Qty.	ø16	ø20	ø25	ø32	ø40	ø50	ø63
⑫	Seal belt	Special resin	1	MY16-16A-Stroke	MY20-16A-Stroke	MY25-16A-Stroke	MY32-16A-Stroke	MY40-16A-Stroke	MY50-16A-Stroke	MY63-16A-Stroke
⑬	Dust seal band	Stainless steel	1	MY16-16B-Stroke	MY20-16B-Stroke	MY25-16B-Stroke	MY32-16B-Stroke	MY40-16B-Stroke	MY50-16B-Stroke	MY63-16B-Stroke
⑭	Scraper	NBR	2	MYM16-15AK0500	MYM20-15AK0501	MYM25-15AA5903	MYM32-15AA5904	MYM40-15AA5905	MYM50-15AK0502	MYM63-15AK0503
⑮	Piston seal	NBR	2	GMY16	GMY20	GMY25	GMY32	GMY40	GMY50	GMY63
⑯	Cushion seal	NBR	2	MYB16-15-A7163	MYB20-15-A7164	RCS-8	RCS-10	RCS-12	MC-16	MC-20
⑰	Tube gasket	NBR	2	P12	P16	TMY-25	TMY-32	TMY-40	P44	P53
⑱	O-ring	NBR	2	ø4 x ø1.8 x ø1.1	ø5.1 x ø3 x ø1.05	ø7.15 x ø3.75 x ø1.7	ø8.3 x ø4.5 x ø1.9	C-4	C-4	C-4
⑲	O-ring	NBR	4	ø7 x ø4 x ø1.5	ø7 x ø4 x ø1.5	C-6	C-7	C-9	C-11.2	C-14
⑳	Side seal assembly	Polyurethane	2	MYMK-16-Stroke	MYMK-20-Stroke	MYMK-25-Stroke	MYMK-32-Stroke	MYMK-40-Stroke	—	—

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

Dimensions: ø16, ø20



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
16	90	6.0	3.5	25	13.5	8.5	16.2	52	M5 x 0.8	10	110	3.6	38	35	84	6.0	M4 x 0.7	20	14	49.5	16.5	56
20	110	7.5	4.5	26	12.5	—	20.0	58	M6 x 1	12	130	4.8	39	45	88	7.5	M5 x 0.8	25	17	55.5	21.7	60

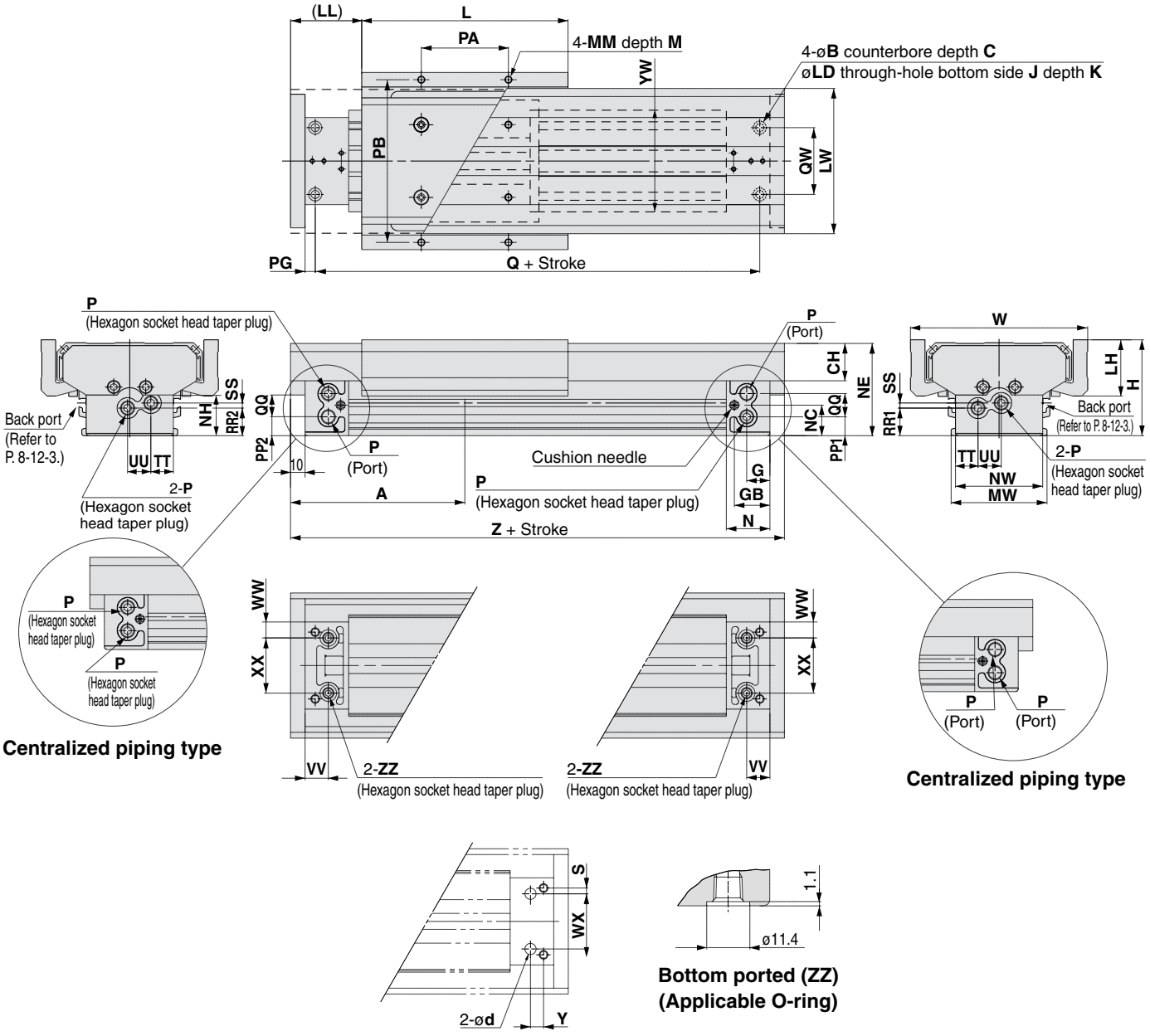
Bore size (mm)	PA	PB	PG	PP	Q	QQ	QW	RR	SS	TT	UU	VV	W	WW	YW	Z
16	40	94	3.5	7.5	153	9	48	11.0	2.5	15	14	10.0	102	13	54	180
20	50	100	4.5	11.5	191	10	45	14.5	5.0	18	12	12.5	110	14	58	220

Hole Size for Centralized Piping on the Bottom

(Mounting side should be machined to these dimensions.)

Bore size (mm)	S	WX	Y	Applicable O-ring
16	9	30	6.5	C6
20	6.5	32	8	C6

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	M8 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	15.0	202	8.6	47.2	79	138	13	M6 x 1	96	45	32	96	48	94

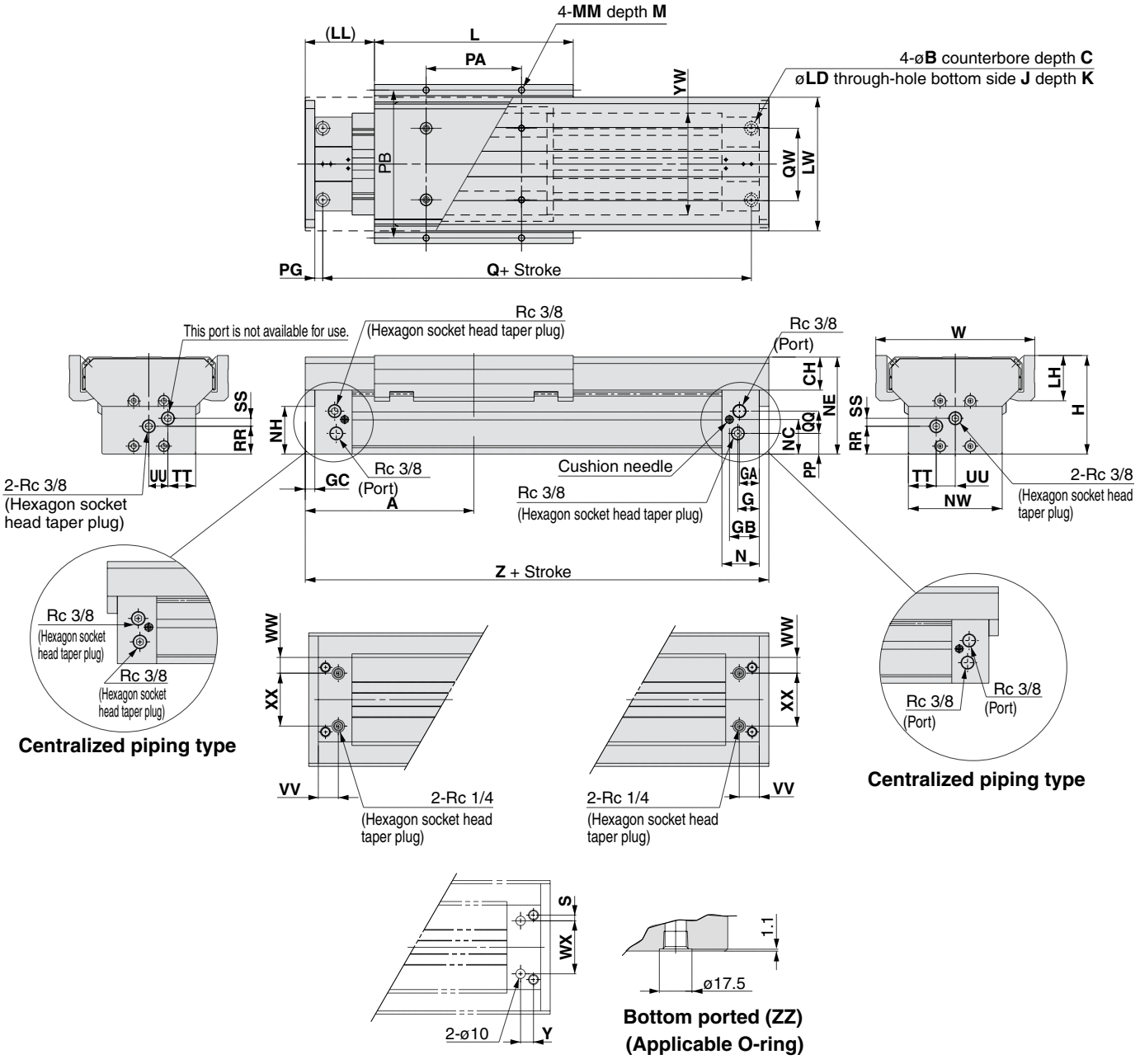
Bore size (mm)	PA	PB	PG	PP1	PP2	Q	QQ	QW	RR1	RR2	SS	TT	UU	VV	W	WW	YW	Z
25	60	112	7	12.7	12.7	206	16	46	18.9	17.9	5.1	15.5	16	16	122	11	70	240
32	80	134	8	15.5	18.5	264	16	60	22.0	24.0	4.0	21.0	16	19	144	13	88	300
40	100	150	9	17.5	20.0	322	26	72	25.5	29.0	9.0	26.0	21	23	160	20	104	360

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



Bore size (mm)	A	B	C	CH	G	GA	GB	GC	H	J	K	L	LD	LH	LL	LW	M	MM	N	NC	NE	NH
50	212	17	10.5	41.5	27.0	25.0	37.5	12	124	M14 x 2	28	250	11	57	87	168	15	M8 x 1.25	47	44	122	60
63	245	19	12.5	47.0	29.5	27.5	39.5	15	149	M16 x 2	32	290	14	65	100	200	16	M10 x 1.25	50	60	147	70

Bore size (mm)	NW	PA	PB	PG	PP	Q	QQ	QW	RR	SS	TT	UU	VV	W	WW	YW	Z
50	118	120	186	10	26	380	28	90	35	10	35	24	28	200	22	128	424
63	142	140	220	12	42	436	30	110	49	13	43	28	30	236	25	152	490

Hole Size for Centralized Piping on the Bottom

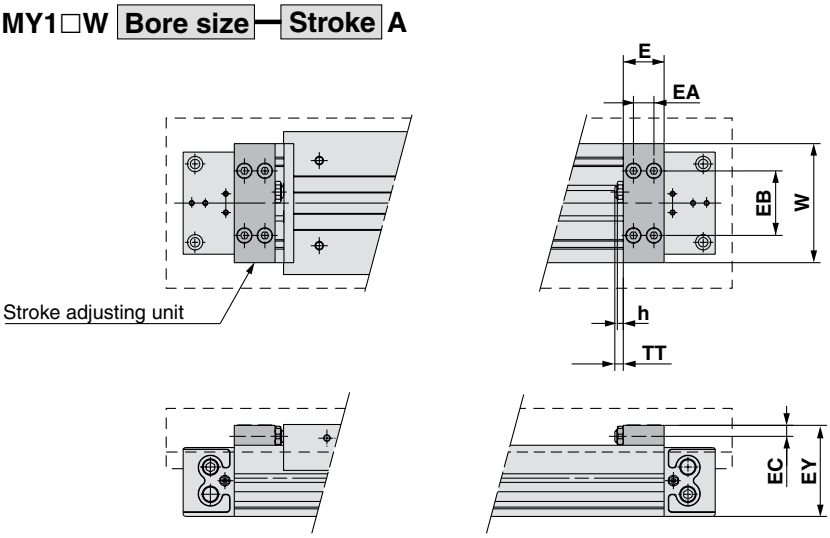
(Mounting side should be machined to these dimensions.)

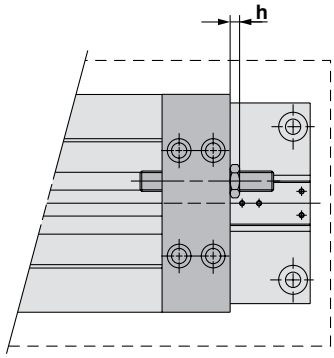
Bore size (mm)	S	WX	Y	Applicable O-ring
50	8	74	18	C15
63	9	92	18	C15

Stroke Adjusting Unit

With adjusting bolt

MY1□W Bore size — Stroke A





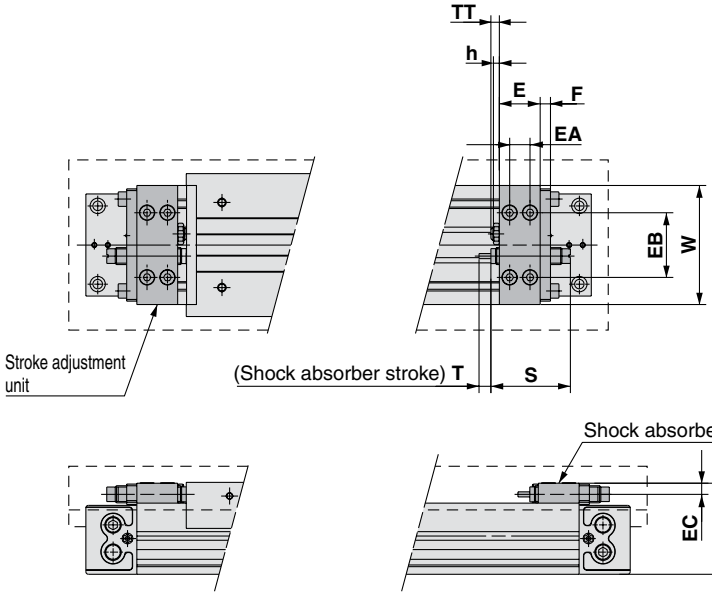
MY1□W50/63

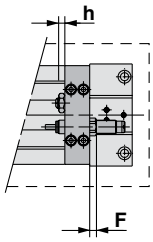
(mm)

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

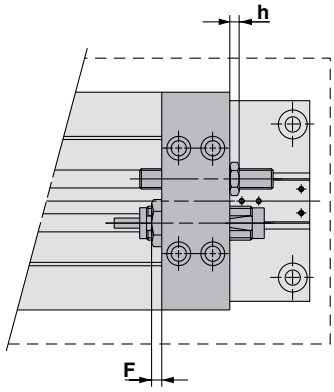
With low load shock absorber + Adjusting bolt

MY1□W Bore size — Stroke L





MY1□W16/20



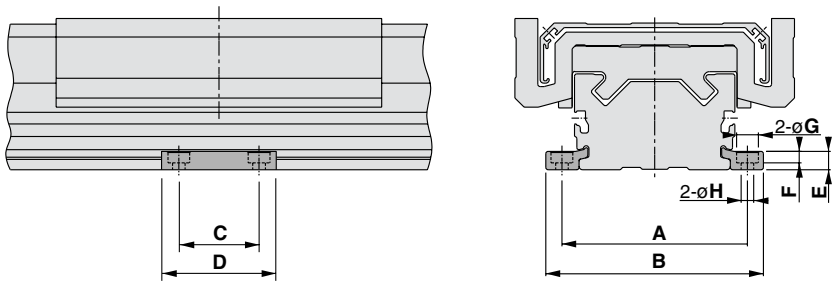
MY1□W50/63

(mm)

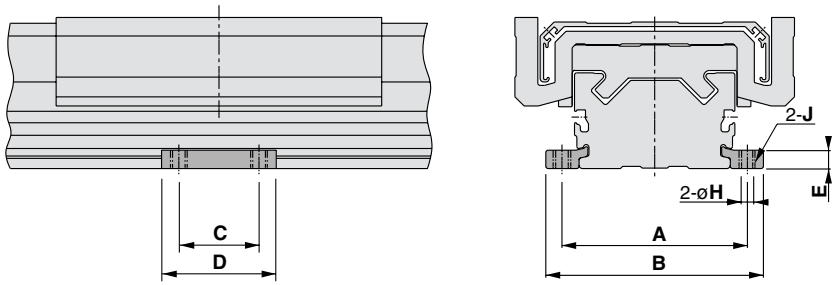
Model	E	EA	EB	EC	EY	F	FB	FC	FH	FW	h	S	T	TT	W	Shock absorber model
MY1□W16	14.6	7	30	5.8	39.5	4	—	14	—	—	3.6	40.8	6	5.4 (Max. 11)	58	RB0806
MY1□W20	20	10	32	5.8	45.5	4	—	14	—	—	3.6	40.8	6	5 (Max. 11)	58	RB0806
MY1□W25	24	12	38	6.5	53.5	6	54	13	13	66	3.5	46.7	7	5 (Max. 16.5)	70	RB1007
MY1□W32	29	14	50	8.5	67	6	67	17	16	80	4.5	67.3	12	8 (Max. 20)	88	RB1412
MY1□W40	35	17	57	10	83	6	78	17	17.5	91	4.5	67.3	12	9 (Max. 25)	104	RB1412
MY1□W50	40	20	66	14	106	6	—	26	—	—	5.5	73.2	15	13 (Max. 33)	128	RB2015
MY1□W63	52	26	77	14	129	6	—	31	—	—	5.5	73.2	15	13 (Max. 38)	152	RB2015

Side Support

Side support A
MY-S□A



Side support B
MY-S□B

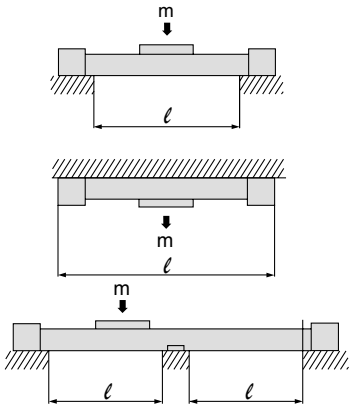


(mm)

Model	Applicable bore size	A	B	C	D	E	F	G	H	J
MY-S16$^{A}_{B}$	MY1□W16	61	71.6	15	26	4.9	3	6.5	3.4	M4 x 0.7
MY-S20$^{A}_{B}$	MY1□W20	67	79.6	25	38	6.4	4	8	4.5	M5 x 0.8
MY-S25$^{A}_{B}$	MY1□W25	81	95	35	50	8	5	9.5	5.5	M6 x 1
MY-S32$^{A}_{B}$	MY1□W32	100	118	45	64	11.7	6	11	6.6	M8 x 1.25
MY-S40$^{A}_{B}$	MY1□W40	120	142	55	80	14.8	8.5	14	9	M10 x 1.5
	MY1□W50	142	164							
MY-S63$^{A}_{B}$	MY1□W63	172	202	70	100	18.3	10.5	17.5	11.5	M12 x 1.75

Guide for Side Support Application

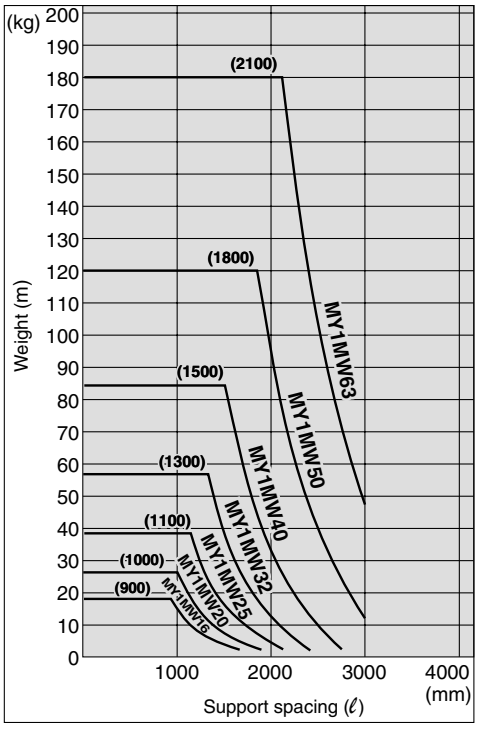
For long stroke operation, the cylinder tube may be deflected depending on its own weight and the load weight. In such a case, use a side support in the middle section. The spacing (ℓ) of the support must be no more than the values shown in the graph on the right.



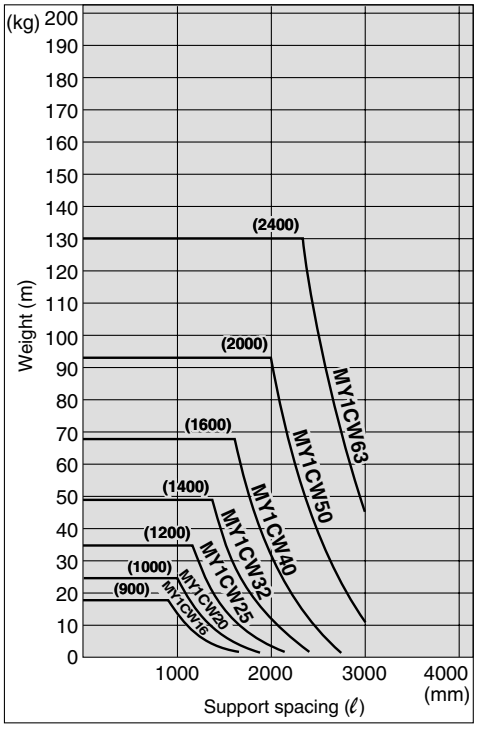
⚠Caution

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.

MY1MW



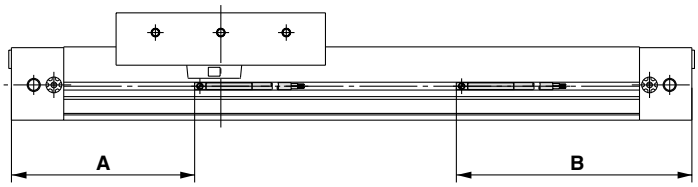
MY1CW



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 Note)	11	7.5

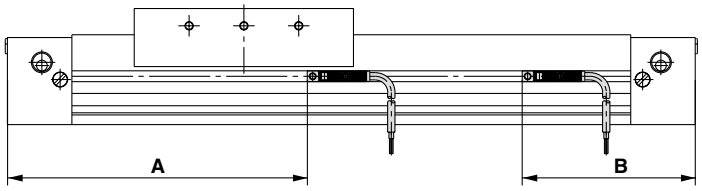
Solid State Switch
D-M9N(V), D-M9P(V), D-M9B(V)

Mounting position	ø16	ø20
A	74	94
B	86	106
Operating range Note)	6.5	7

D-F9NW(V), D-F9PW(V), D-F9BW(V)

Mounting position	ø16	ø20
A	73	93
B	87	107
Operating range Note)	8.5	6.5

MY1MW25/32/40/50/63



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	95.5	110.5	121.5	136.5
Operating range Note)	12	12	12	11.5	11.5

Solid State Switch
D-Y59$^{A}_{B}$, D-Y69$^{A}_{B}$, D-Y7P(V)
D-Y7NW(V), D-Y7PW(V), D-Y7BW(V)

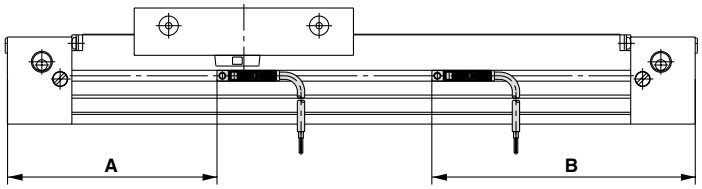
Mounting position	ø25	ø32	ø40	ø50	ø63
A	139.5	184.5	229.5	278.5	323.5
B	180.5	95.5	110.5	121.5	136.5
Operating range Note)	5	5	5	5.5	5.5

D-Y7BAL (mm)

Mounting position	ø25	ø32	ø40
A	139.5	184.5	229.5
B	180.5	95.5	110.5
Operating range Note)	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	121.5	136.5
Operating range Note)	12	12	12	11.5	11.5

Solid State Switch
D-Y59$^{A}_{B}$, D-Y69$^{A}_{B}$, D-Y7P(V)
D-Y7NW(V), D-Y7PW(V), D-Y7BW(V)

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	121.5	136.5
Operating range Note)	5	5	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 Note)	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.)

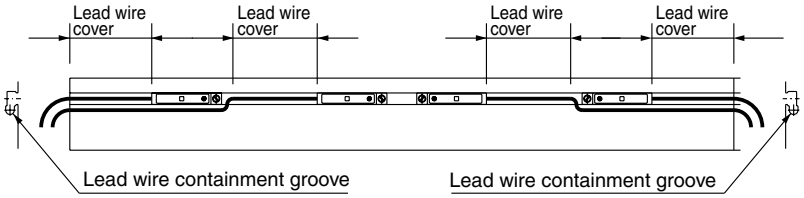


Fig. (1) Auto switch mounting position

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.

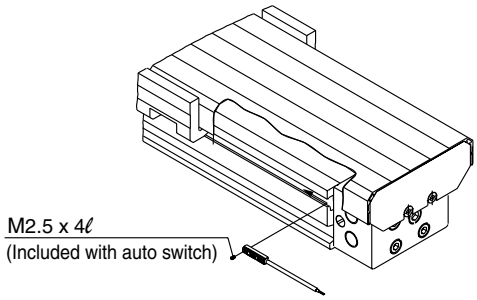


Fig. (2) Auto switch mounting

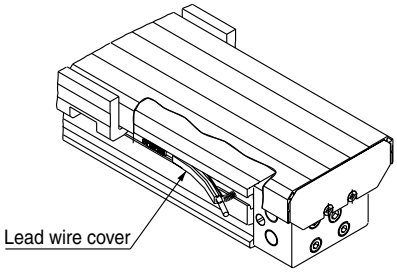


Fig. (3) Installation of lead wire cover

Other than the applicable auto switches listed in "How to Order", the following auto switches can be mounted. For detailed specifications, refer to page 8-30-1.

Type	Model	Electrical entry (Fetching direction)	Features
Reed switch	D-A90	Grommet (In-line)	Without indicator light
	D-Z80	Grommet (In-line)	

∗ 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-A90 cannot be mounted on Series MY1HT.