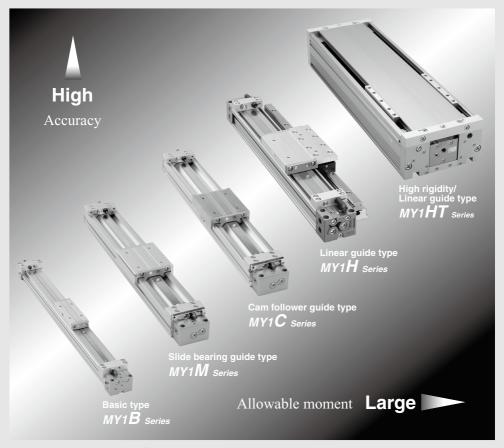
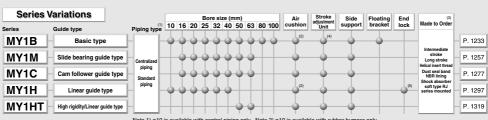
Mechanically Jointed Rodless Cylinder

MY1 Series



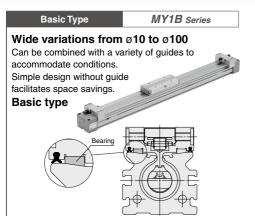
Five types of guide allow a wide range of selections.

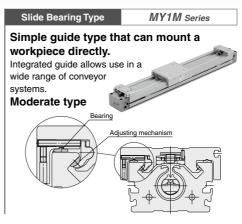


Note 1) ø10 is available with central piping only. Note 2) ø10 is available with rubber bumper only Note 3) Availability for Made-to-Order differs, depending on the size and the model. Note 4) Except ø10 to 100 Note 5) Except ø10

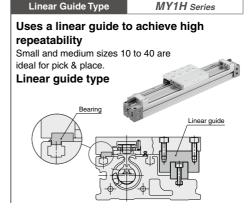


With 5 standardized guide types











Minimal leakage seal construction

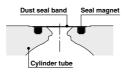
 The flexible material of the seal belt allows for improved adherence to the cylinder tube, resulting in a reduced leakage amount. (50% reduction compared with the current product)

Applicable models
MY1□16 to 50



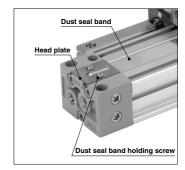
Dust seal band with improved holding force

 The seal magnet on the cylinder tube adsorbs the dust seal band with magnetic force, resulting in improved holding force.

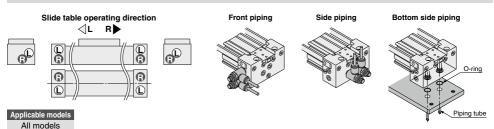


 The dust seal band can be easily removed for replacement by simply loosening the two holding screws. Easier maintenance

Applicable models
MY1B10, 25 to 40, 80, 100
MY1H10, 25 to 40



Allows for piping to be connected according to installation conditions. Centralized piping type for increased piping freedom



MY1M and MY1C compatibility guaranteed

 With the same outer dimensions and workpiece mounting dimensions, both series are compatible with stroke adjustment units, side supports, auto switches, etc.

Applicable models
MY1M16 to 63
MY1C16 to 63

Built-in adjustment bolt and shock absorber, 3 stroke adjustment unit types

• The shock absorber softens the impact of workpieces at the stroke end, and the adjustment bolt increases the repeatability of the stopping position.

The following 3 unit types each meet the specification requirements.

• An intermediate fixing spacer for stopping slide tables in the middle of the stroke is available as well.







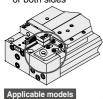
Intermediate fixing spacer as standard Fixture can be selected to hold the stroke adjustment unit at the intermediate stroke position.





Standardized end lock

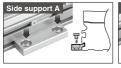
• The end lock type has been standardized for bore sizes ø16 to ø40 of the MY1H series. Mountable at any position on one or both sides

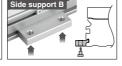




Side support

- Prevents deflection of the cylinder tube at a long stroke. Makes linear operation possible
- Now with 2 selectable mounting options in order to support mounting frames





Applicable models All models

Floating Bracket

 2 connection types can be selected. (ø25 to ø40) Easier to connect to other guide types.

MY1H



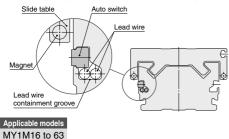


MY1B

MY1B10 to 100

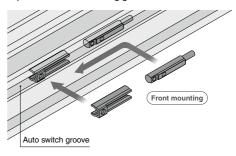
Auto switch wiring storage system To increase safety, auto switch lead wires can be stored to prevent accidental contact with slide tables.

 Improved safety and accuracy of the entire system can be achieved by storing auto switch lead wires in the product's designated lead wire containment grooves.



Auto switches can be mounted from the front. Contributes to reduction in mounting time.

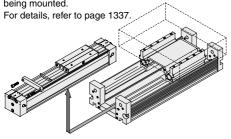
 Auto switches can be mounted from the front at any position on the mounting groove.



Applicable models MY1B25 to 40 MY1H25 to 40 MY1HT50, 63

Extremely easy to maintain

 It is possible to replace cylinders with a workpiece being mounted.

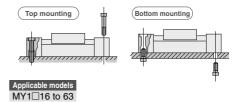


Applicable models MY1HT50, 63

MY1C16 to 63

Two mounting types, Space saving

 The cylinder body can be secured directly from either the top or bottom without the use of mounting brackets. This does not change the overall length dimension.



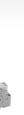
MY1 Series Variations

Series					Bore siz	ze (mm)					Dawa
Series	10	16	20	25	32	40	50	63	80	100	Page
MY1B	-	-	-	•	-	-	•	-	-	•	P. 1233
MY1M	\vdash	-	-	-	-	-	-	-	+		P. 1257
MY1C	\vdash	-	-	-	-	-	-	-	+		P. 1277
MY1H	-	-	-	-	-	-	-	+	+		P. 1297
MY1H End lock	\vdash	-	-	-	-	-	_	-	-		P. 1297
MY1HT	\vdash	+	+	\dashv	+	+	-	-	+	-	P. 1319

CONTENTS

Mechanically Jointed Rodless Cylinder MY1 Series









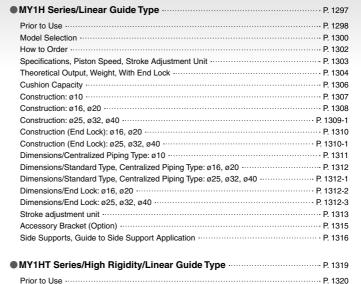
	, ·	
	Prior to Use ····	
	Model Selection ····	
	How to Order ·····	
	Specifications, Piston Speed, Stroke Adjustment Unit ·····	·····- P. 1239
	Theoretical Output, Weight ·····	P. 1240
	Cushion Capacity ·····	····· P. 1241
	Construction: ø10 ·····	P. 1243
	Construction: ø16, ø20, ø50 to ø100 ·····	P. 1244
	Construction: ø25, ø32, ø40 ·····	····· P. 1245-1
	Dimensions/Centralized Piping Type: ø10 ····	P. 1246
	Dimensions/Standard Type, Centralized Piping Type: ø16, ø20 ·····	
	Dimensions/Standard Type, Centralized Piping Type: ø25, ø32, ø40 ·····	
	Dimensions/Standard Type, Centralized Piping Type: ø50, ø63 ·····	
	Dimensions/Standard Type, Centralized Piping Type: ø80, ø100 ·····	P. 1249
	Stroke adjustment unit ·····	P. 1250
	Accessory Bracket (Option) ·····	····· P. 1251-1
	Side Supports, Guide to Side Support Application ·····	
	Floating Brackets ·····	P. 1254
	v	
	MY1M Series/Slide Bearing Guide Type ·····	D 1057
	Prior to Use ····	
	Model Selection ····	
	How to Order ····	
	Specifications, Piston Speed, Stroke Adjustment Unit ·····	
	Theoretical Output, Weight ·····	
	Cushion Capacity ·····	
	Construction: ø16 to ø63 ·····	
	Dimensions/Standard Type, Centralized Piping Type: ø16, ø20 ·····	
	Dimensions/Standard Type, Centralized Piping Type: ø25, ø32, ø40 ·····	······ P. 1271
	Dimensions/Standard Type, Centralized Piping Type: ø50, ø63 ·····	
	Stroke adjustment unit ·····	
	Accessory Bracket (Option)	
	Side Supports, Guide to Side Support Application ·····	····· P. 1275
0	MY1C Series/Cam Follower Guide Type	P. 1277
	Prior to Use	
		P 1278
	Model Selection ····	····· P. 1280
	Model Selection	······ P. 1280 ····· P. 1282
	Model Selection	P. 1280 P. 1282 P. 1283
	Model Selection	P. 1280 P. 1282 P. 1283 P. 1284

Dimensions/Standard Type, Centralized Piping Type: ø16, ø20 ····· P. 1290 Dimensions/Standard Type, Centralized Piping Type: ø25, ø32, ø40 P. 1291

Dimensions/Standard Type, Centralized Piping Type: ø50, ø63 ····· P. 1292 Side Supports, Guide to Side Support Application P. 1295

■ MY1B Series/Basic Type ------ P. 1233







Auto Switch Mounting ·····	P 1331
Made to Order: Individual Specifications	
Specific Product Precautions	

 Model Selection
 P. 1322

 How to Order
 P. 1324

 Specifications, Stroke Adjustment Unit
 P. 1325

 Theoretical Output, Standard Stroke, Weight
 P. 1325

 Cushion Capacity
 P. 1326

 Construction
 P. 1326

 Dimensions/Standard Type, Centralized Piping Type: ø50, ø63
 P. 1329

 Side Supports, Guide to Side Support Application
 P. 1330

MY1 Series **Model Selection 1**

Following are the steps for selecting the most suitable MY1 series to your application.

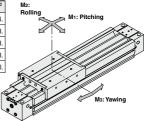
Standards for Tentative Model Selection

Cylinder model	Guide type	Standards for guide selection	Graphs for related allowable values
MY1B	Basic type	Guaranteed accuracy not required, generally combined with separate guide	Refer to P. 1234.
MY1M	Slide bearing guide type	Slide table accuracy approx. ±0.12 mm (2)	Refer to P. 1258.
MY1C	Cam follower guide type	Slide table accuracy approx. ±0.05 mm (2)	Refer to P. 1278.
MY1H	Linear guide type	Slide table accuracy of ± 0.05 mm or less required $^{(2)}$	Refer to P. 1298.
MY1HT	High rigidity/Linear guide type	Slide table accuracy of ±0.05 mm or less required (2)	Refer to P. 1320.

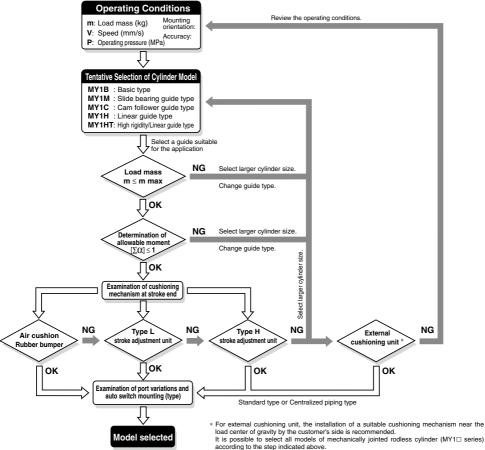
Note 1) These accuracy values for each guide should be used only as a guide during selection. Please contact SMC when guaranteed accuracy for MY1C/MY1H is required.

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

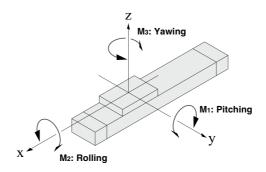


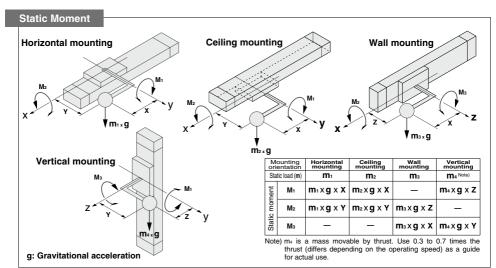
Refer to the separate operation manual for further details. If you have any questions, please contact SMC

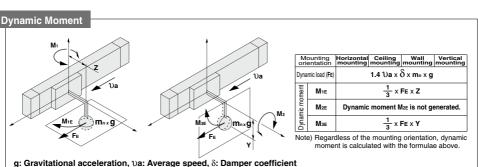
Types of Moment Applied to Rodless Cylinders

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







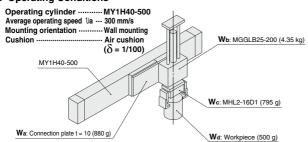


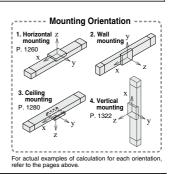
MY1 Series Model Selection 2

Following are the steps for selecting the most suitable MY1 series to your application.

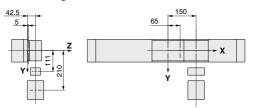
Calculation of Guide Load Factor

1. Operating Conditions





2. Load Blocking



Mass and Center of Gravity for Each Workpiece

Workpiece no.	Mass	Center of gravity					
Wn	m _n	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

$$\begin{aligned} \textbf{m}_3 &= \Sigma m_n \\ &= 0.88 + 4.35 + 0.795 + 0.5 = \textbf{6.525 kg} \end{aligned}$$

$$X = \frac{1}{m_3} \times \Sigma(m_n \times x_n)$$

$$= \frac{1}{6.525} (0.88 \times 65 + 4.35 \times 150 + 0.795 \times 150 + 0.5 \times 150) = 138.5 \text{ mm}$$

$$Y = \frac{1}{m_3} \times \Sigma(m_n \times y_n)$$

$$= \frac{1}{6.525} (0.88 \times 0 + 4.35 \times 0 + 0.795 \times 111 + 0.5 \times 210) = 29.6 \text{ mm}$$

$$Z = \frac{1}{m_3} \times \sum (m_n \times z_n)$$

$$= \frac{1}{6.525} (0.88 \times 5 + 4.35 \times 42.5 + 0.795 \times 42.5 + 0.5 \times 42.5) = 37.4 \text{ mm}$$

4. Calculation of Load Factor for Static Load

m₃: Mass

 $m_3 \max$ (from (1) of graph MY1H/ m_3) = 50 (kg)

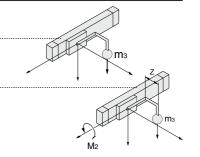
Load factor $\alpha_1 = m_3/m_3 \max = 6.525/50 = 0.13$

M2: Moment

 M_2 max (from (2) of graph MY1H/ M_2) = 50 (N·m)

 $M_2 = m_3 \times g \times Z = 6.525 \times 9.8 \times 37.4 \times 10^{-3} = 2.39 \text{ (N·m)}$

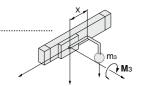
Load factor $\alpha_2 = M_2/M_2 \text{ max} = 2.39/50 = 0.05$



Ms: Moment

$$M_3 = m_3 \times g \times X = 6.525 \times 9.8 \times 138.5 \times 10^{-3} = 8.86 \text{ (N·m)}$$

Load factor $\alpha_3 = M_3/M_3 \text{ max} = 8.86/38.7 = 0.23$



5. Calculation of Load Factor for Dynamic Moment -

Equivalent load FE at impact

$$\mathbf{F} = 1.4 \text{ } 0 \text{ } 1.4 \text{ } 0 \text{ } 1.4 \text{$$

M1E: Moment

$$M_{1E} = \frac{1}{3} \times F_{E} \times Z = \frac{1}{3} \times 268.6 \times 37.4 \times 10^{-3} = 3.35 \text{ (N·m)}$$

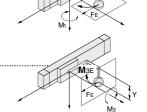
Load factor $C(4) = M_1 = M_1 = M_2 = 3.35/35.9 = 0.09$





$$M_{3E} = \frac{1}{3} \times \mathbf{F}_{E} \times \mathbf{Y} = \frac{1}{3} \times 268.6 \times 29.6 \times 10^{-3} = 2.65 \text{ (N·m)}$$

Load factor 0.5 = M3E/M3E max = 2.65/27.6 = 0.10



6. Sum and Examination of Guide Load Factors

$$\sum_{CA} = C X_1 + C X_2 + C X_3 + C X_4 + C X_5 = 0.60 \le 1$$

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 sum of guide load factors α in the formula above is more than 1, consider decreasing the speed, increasing the bore size, or changing the product series.

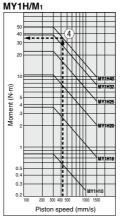
MY1H/M₂

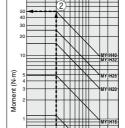
0.3

This calculation can be easily made using the "SMC Pneumatics CAD System".

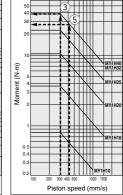
Load Mass

Allowable Moment



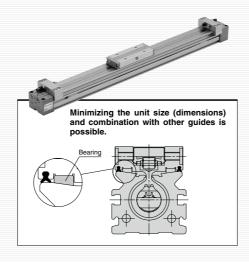


Piston speed (mm/s)



MY1H/M₃





INDEX

MY1B Series Prior to Use	·····P. 1234
Model Selection	
How to Order ·····	·····P. 1238
Specifications	·····P. 1239
Cushion Capacity	·····P. 1241
Construction	
Dimensions	
Stroke Adjustment Unit	·····P. 1250
Accessory Bracket (Option)	······ P. 1251-1
Floating Bracket ·····	P 1254

MY1B Series Prior to Use

Maximum Allowable Moment/Maximum Load Mass

Model	Bore size	Maximum a	allowable mo	ment (N·m)	Maximum load mass (kg)		
wodei	(mm)	M1	M2	Мз	m1	m ₂	m ₃
	10	0.8	0.1	0.3	5.0	1.0	0.5
	16	2.5	0.3	0.8	15	3.0	1.7
	20	5.0	0.6	1.5	21	4.2	3.0
	25	10	1.2	3.0	29	5.8	5.4
MY1B	32	20	2.4	6.0	40	8.0	8.8
IVITID	40	40	4.8	12	53	10.6	14
	50	78	9.3	23	70	14	20
	63	160	19	48	83	16.6	29
	80	315	37	95	120	24	42
	100	615	73	184	150	30	60

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.

Caution on Design

We recommend installing an external shock absorber when the cylinder is combined with another quide (connection with floating bracket, etc.) and the maximum allowable load is exceeded, or when the operating speed is 1000 to 1500 mm/s for bore sizes ø16, ø50, ø63, ø80 and ø100

Load mass (kg)

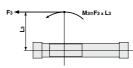






Moment (N·m)





<Calculation of guide load factor>

- 1. Maximum allowable load (1), static moment (2), and dynamic moment (3) (at the time of impact with stopper) must be examined for the selection calculations.
 - * To evaluate, use Va (average speed) for (1) and (2), and V (collision speed V = 1.4 Va) for (3). Calculate mmax for (1) from the maximum allowable load graph (m1, m2, m3) and Mmax for (2) and (3) from the maximum allowable moment graph (M1, M2, M3).

Sum of guide	C/ _ Load mass [m]	Static moment [M] (1)	Dynamic moment [ME] (2)	l
load factors	Maximum allowable load [mmax]	Allowable static moment [Mmax]	Allowable dynamic moment [M:max]	J

- 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 mass (kg)

Load (N)

FE: Load equivalent to impact (at impact with stopper) (N)

Va: Average speed (mm/s)

M: Static moment (N·m)

 $\upsilon = 1.4\upsilon a \text{ (mm/s)} F_E = 1.4\upsilon a \delta m g$

 $\therefore \mathbf{M} = \frac{1}{3} \overset{\text{NOR}}{\text{Fe}} \cdot L_1 = 4.57 \text{Va} \delta \text{mL},$

υ: Collision speed (mm/s) L₁: Distance to the load's center of gravity (m)

M_E: Dynamic moment (N·m)

δ: Damper coefficient

With rubber bumper = 4/100 (MY1B10, MY1H10) With air cushion = 1/100 With shock absorber = 1/100

g: Gravitational acceleration (9.8 m/s2)

Note 4) 1.4 vab 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.

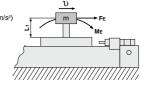
3. For detaild selection procedures, refer to pages 1236 and 1237.

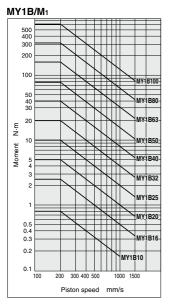
Maximum Allowable Moment

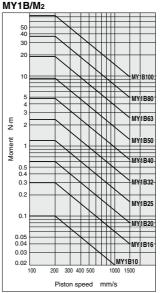
Select the moment from within the range of operating limits shown in the graphs. Note that the maximum allowable load value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable load for the selected conditions

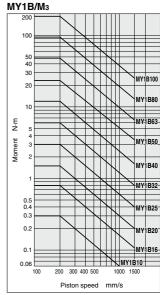
Maximum Load Mass

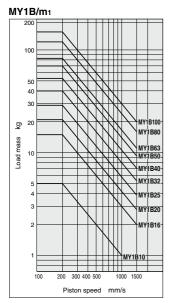
Select the load from within the range of limits shown in the graphs. Note that the maximum allowable moment value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable moment for the selected conditions.

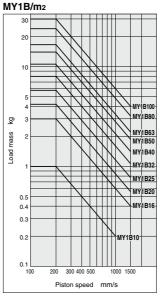


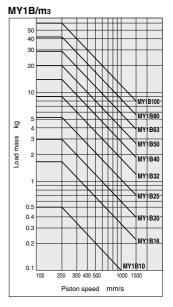












MY1B Series **Model Selection**

Following are the steps for selecting the most suitable MY1B series to your application.

MY1B50-500

Calculation of Guide Load Factor

1. Operating Conditions

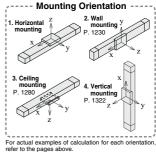
Cylinder MY1B50-500

Average operating speed \(\mathcal{D}\)a \(\dots\) 300 mm/s

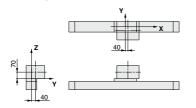
Mounting orientation Horizontal mounting

Cushion Air cushion

W: Workpiece (5 kg) $(\delta = 1/100)$



2. Load Blocking



Mass and Center of Gravity for Workpiece

Workpiece		Center of gravity				
no.	Mass m	X -axis	Y-axis	Z -axis		
W	5 kg	40 mm	40 mm	70 mm		

3. Calculation of Load Factor for Static Load

m₁: Mass

 $m_1 \max (from (1) of graph MY1B/m_1) = 47 (kg).....$

Load factor $\Omega_1 = m_1/m_1 \max = 5/47 = 0.11$

M₁: Moment



 $M_1 = m_1 \times g \times X = 5 \times 9.8 \times 40 \times 10^{-3} = 1.96 \text{ (N·m)}$

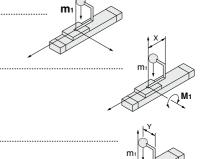
Load factor $Ol_2 = M_1/M_1 \max = 1.96/52 = 0.04$



 M_2 max (from (3) of graph MY1B/ M_2) = 6.2 (N·m)·······

 $M_3 = m_1 \times g \times Y = 5 \times 9.8 \times 40 \times 10^{-3} = 1.96 \text{ (N} \cdot \text{m)}$

Load factor $O(3) = M_2/M_2 \text{ max} = 1.96/6.2 = 0.32$



4. Calculation of Load Factor for Dynamic Moment

Equivalent load FE at impact

$$\mathbf{F}_{E} = 1.4 \text{Va} \times \delta \times \mathbf{m} \times \mathbf{g} = 1.4 \times 300 \times \frac{1}{100} \times 5 \times 9.8 = 205.8 \text{ (N)}$$

M1E: Moment

M1E max (from (4) of graph MY1B/M1 where 1.4\(\mathcal{D}\)a = 420 mm/s) = 37 (N\cdot m)\(\cdot\).

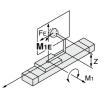
$$M_{1E} = \frac{1}{3} x \text{ Fe } x \text{ Z} = \frac{1}{3} x 205.8 \text{ x } 70 \text{ x } 10^{-3} = 4.81 \text{ (N·m)}$$

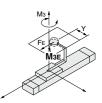
Load factor $OL_4 = M_1 = M_1 = M_2 = 4.81/37 = 0.13$

Mae: Moment

$$\mathbf{M}_{3E} = \frac{1}{3} \times \mathbf{F}_{E} \times \mathbf{Y} = \frac{1}{3} \times 205.8 \times 40 \times 10^{-3} = 2.75 \text{ (N·m)}$$

Load factor $OL_5 = M3E/M3E max = 2.75/11.0 = 0.25$





5. Sum and Examination of Guide Load Factors

$$\sum \alpha = \Omega_1 + \Omega_2 + \Omega_3 + \Omega_4 + \Omega_5 = 0.85 \le 1$$

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 α 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".

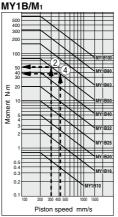
MY1B/M₂

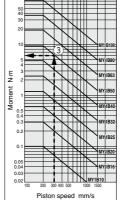
Load Mass MY1B/m₁

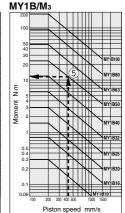
200 100 50 40 30 30 88 1

Piston speed mm/s

Allowable Moment





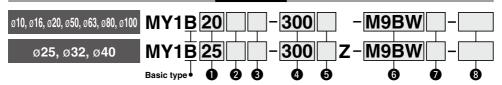


Mechanically Jointed Rodless Cylinder Basic Type

MY1B Series

Ø10, Ø16, Ø20, Ø25, Ø32, Ø40, Ø50, Ø63, Ø80, Ø100

How to Order



Bore size

10	10 mm
16	16 mm
20	20 mm
25	25 mm
32	32 mm
40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm

2 Port thread type

Symbol	Type	Bore size
Nil	M thread	ø10, ø16, ø20
INII	Rc	ø25, ø32, ø40,
TN	NPT	ø50, ø63, ø80,
TF	G	ø100

A Piping

	• · · · · · · · · · · · · · · · · · · ·					
	Nil	Standard type				
[G	Centralized piping type				

Note) For ø10, only G is available

4 Cylinder stroke (mm)

O Cymna.			
Bore size	Standard stroke*1	Long stroke (-XB11)	Maximum manufacturable stroke
10, 16	100, 200, 300, 400 500, 600, 700, 800 900, 1000, 1200, 1400	Strokes of 2001 to 3000 mm (1 mm increments) exceeding the standard stroke	3000
20, 25, 32 40, 50, 63 80, 100	1600, 1800, 2000 *1 The stroke can be manufactured in 1 mm increments from 1 mm stroke.	Strokes of 2001 to 5000 mm (1 mm increments) exceeding the standard stroke	5000

* Add "-XB11" to the end of the part number for long strokes. MY1B20-3000L-M9BW-XB11

Note) Please be advised that with stroke 49 or less, there are cases where auto switch mounting is not possible and the performance of the air cushion may decline.

Stroke adjustment unit symbol Refer to "Stroke adjustment unit" on page 1239.

6 Auto switch

Nil Without auto switch (Built-in magnet) For ø10 cylinders without an auto switch, the cylinder configuration is for the reed auto switch. Contact SMC when the solid state auto switch is retrofitted.

Applicable auto switches vary depending on the bore size. Select an applicable one referring to the table belo



(For details, refer to page 1334.) Specifications

-X168 Helical insert thread specifications

Made to Order Specifications

Click here for details

Symbol	Specifications
-XB11	Long stroke type
-XB22	Shock absorber soft type RJ series type
-XC67*	NBR rubber lining in dust seal band

Only ø16, ø20, ø50, and ø63 are available for the -XC67.

Number of auto switches

2 pcs.
1 pc.
"n" pcs.

Applicable Auto Switches/Refer to pages 1575 to 1701 for further information on auto switches

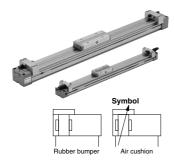
			oright		Lo	ad volta	ge		Auto swit	ch model		Lea	d wire ler	ngth (r	m)												
Тур	Special	Electrical	ator	Wiring		20	40	Perpen	dicular	In-l	ine	0.5	1	3	5	Pre-wired											
	function	entry	ξĒ	(Output)		DC	AC	ø10 to ø40	ø50 to ø100	ø10 to ø40	ø50 to ø100	(Nil) (M)		(L)	(Z)	connector	load										
Ę				3-wire (NPN)		5 V, 12 V		M9NV[Y	/69A]**	M9N[Y	59A]**	•	● [—]	•	0	0	IC										
switch	_			3-wire (PNP)		3 V, 12 V		M9PV[Y	/7PV]**	M9P[Y	M9P[Y7P]**		● [—]	•	0	0	circuit										
				2-wire		12 V		M9BV[Y	/69B]**	M9B[Y59B]** M9NW[Y7NW]**		•	●[—]	•	0	0	_										
유	Diagnostic indication (2-color indicator)]		3-wire (NPN)		5 V. 12 V		M9NWV[Y	7NWV]**			•	● [—]	•	0	0	IC	Relay,									
<u>a</u>				Yes	3-wire (PNP)	24 V	<u> </u>	M9PWV[Y	7PWV]**	M9PW[Y	7PW]**	•	● [—]	•	0	0	circuit	PLC									
tate												2-wire		12 V		M9BWV[Y	7BWV]**	M9BW[Y	7BW]**	•	●[—]	•	0	0	_		
ဟ	Water			3-wire (NPN)		5 V. 12 V		M9NA\		M9NA		0	0	•	0	0	IC										
Bio	resistant			3-wire (PNP)		3 V, 12 V		M9PA		М9РА		0	0	•	0	0	circuit										
Ś	(2-color indicator)			2-wire		12 V		M9BA	V [—]***	M9BA[Y	7BA]**	0	0	•	0	0											
Reed		Grommet Y	Grommet Y	Grommet Y	Grommet Ye	Grommet Y	Crommat Y		,		,	Yes	3-wire (NPN equivalent)	_	- 5 V -		A96V	_	A96	Z 76	•	_	•	_	_	IC circuit	_
å å	<u> </u>							2-wire	24 V	12 V	100 V	A93V*3	_	A93	Z73	•	•	•	•	_	_	Relay,					
ē	3		No	Z-WITE	24 V	'2 V	100 V or less	A90V	_	A90	Z80	•	_	•	_	_	IC circuit	PLC									

- *1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Consult with SMC regarding water resistant types with the above model numbers
- *2 For details on switch mounting brackets and part numbers, refer to "Switch Mounting Bracket: Part No." on page 1333-1.
- *3 1 m type lead wire is only applicable to D-A93.
- * Lead wire length symbols: 0.5 m ······· Nil (Example) M9NW
 - 3 m L (Example) M9NWL 5 m Z (Example) M9NWZ
- * Solid state auto switches marked with "O" are produced upon receipt of order.
- 1 m ······· M (Example) M9NWM ** D-M9 \underset type cannot be mounted on ø50. Select auto switches in brackets.
- * There are other applicable auto switches than listed above. For details, refer to page 1333-1.
- * Auto switches are shipped together (not assembled)





Mechanically Jointed Rodless Cylinder MY1B Series



Specifications

Bore s	size (mm)	10	16	20	25	32	40	50	63	80	100		
Fluid			Air										
Action			Double acting										
Operating	pressure range	0.2 to 0.8 MPa	0.2 to 0.8 MPa 0.15 to 0.8 MPa 0.1 to 0.8 MPa										
Proof pr	ressure		1.2 MPa										
Ambient and	fluid temperature		5 to 60°C										
Cushior	1	Rubber bumper Air cushion											
Lubricat	tion	Non-lube											
Stroke length tolerance		1000 or less +1.8 1001 to 3000 +2.8			2700 or less $^{+1.8}_{0}$, 2701 to 5000 $^{+2.8}_{0}$								
Piping	Front/Side port	M5	8.0 x		1,	/8	1/4	3,	/8	1,	/2		
Port size	Bottom port		Ø	4	Ø	6	ø8	ø.	10	ø.	18		

Piston Speed

Bore :	size (mm)	10	16	20 to 40	50 to 100
Without stroke ac	ljustment unit	100 to 500 mm/s			
Stroke	A unit 100 to 200 mm/s		100 to 100	00 mm/s (1)	_
adjustment unit	L unit and H unit	100 to 1000 mm/s	_	100 to 1500 mm/s (1)	_

Note 1) Be aware that when the stroke adjustment range is increased by manipulating the adjustment bolt, the air cushion capacity decreases.

Also, when exceeding the air cushion stroke ranges on page 1241, 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 1241.

Note 4) Due to the construction of this product, it may have more fluctuation in operating speed compared to a rod type air cylinder. For applications that require constant speed, select the equipment corresponding to the required level.

Stroke Adjustment Unit Specifications

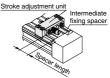
Bore si	ze (mm)	10		16		20		25			32			40		
Unit symbol		Α	Н	Α	Α	L	Н	Α	L	Н	Α	L	Н	Α	L	Н
Configurati Shock abso	ion orber model	With adjustment bolt	RB 0805 + with adjustment bolt	With adjustment bolt	With adjustment bolt	RB 0806 + with adjustment bolt	RB 1007 + with adjustment bolt	With adjustment bolt	With	RB 1412 + with adjustment bolt	With adjustment bolt	RB 1412 + with adjustment bolt	RB 2015 + with adjustment bolt	With adjustment bolt	RB 1412 + with adjustment bolt	RB 2015 + with adjustment bolt
Stroke adjustment	Without spacer	0 to	− 5	0 to -5.6		0 to -6		0 to -11.5		0 to -12			0 to -16		i	
intermediate W fixing	With short spacer	_	_	-5.6 to -11.2		-6 to -12	2	-11.5 to -23		23	-12 to -24		4	-16 to -32		2
	With long spacer		_	-11.2 to -16.8	_	-12 to -18		-23 to -34.5		-24 to -36		−32 to −48		8		

Note) Intermediate fixing spacer is not available for ø10.

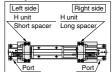
Stroke Adjustment Unit Symbol

		-				Right si	de stroke	adjustn	nent unit			
			Without	A: With	adjustm	ent bolt	L: With lov + Adjustm	v load shock ent bolt	k absorber	H: With hig + Adjustme	h load shoc ent bolt	k absorber
			unit		With short spacer	With long spacer		With short spacer	With long spacer		With short spacer	With long spacer
Ħ	Wit	hout unit	Nil	SA	SA6	SA7	SL	SL6	SL7	SH	SH6	SH7
adjustment unit	A: With a	djustment bolt	AS	Α	AA6	AA7	AL	AL6	AL7	AH	AH6	AH7
ner		With short spacer	A6S	A6A	A6	A6A7	A6L	A6L6	A6L7	A6H	A6H6	A6H7
nstı		With long spacer	A7S	A7A	A7A6	A7	A7L	A7L6	A7L7	A7H	A7H6	A7H7
adji		oad shock absorber +	LS	LA	LA6	LA7	L	LL6	LL7	LH	LH6	LH7
stroke	Adjustment	With short spacer	L6S	L6A	L6A6	L6A7	L6L	L6	L6L7	L6H	L6H6	L6H7
str	bolt	With long spacer	L7S	L7A	L7A6	L7A7	L7L	L7L6	L7	L7H	L7H6	L7H7
g		load shock absorber +	HS	HA	HA6	HA7	HL	HL6	HL7	Н	HH6	HH7
ftsi	Adjustment	With short spacer	H6S	H6A	H6A6	H6A7	H6L	H6L6	H6L7	Н6Н	H6	Н6Н7
Left	bolt	With long spacer	H7S	H7A	H7A6	H7A7	H7L	H7L6	H7L7	H7H	H7H6	H7

Stroke adjustment unit mounting diagram



Example of H6H7 attachment



Refer to pages 1331 to 1333-1 for the specifications with auto switch.

^{*} Stroke adjustment range is applicable for one side when mounted on a cylinder.

^{*} Spacers are used to fix the stroke adjustment unit at an intermediate stroke position.

For details on spacers and stroke adjustment units, refer to "Accessory Bracket (Option)" on page 1251-1.

Shock Absorbers for L and H Units

Model	Stroke adjustment	Bore size (mm)							
Wodel	unit	10	20	25	32	40			
Standard (Shock absorber/	L	_	RB0806	RB1007	RB1	412			
RB series)	Н	RB0805	RB1007	RB1412	RB2	2015			
Shock absorber/ soft type RJ series	L	_	RJ0806H	RJ1007H	RJ14	112H			
mounted (-XB22)	Н	RJ0805	RJ1007H	RJ1412H	_	_			

^{*} The shock absorber service life is different from that of the MY1B cylinder depending on operating conditions. Refer to the RB Series Specific Product Precautions for the replacement period.

Shock Absorber Specifications

Mod	del	RB 0805	RB 0806	RB 1007	RB 1412	RB 2015
Max. energy a	bsorption (J)	1.0	2.9	5.9	19.6	58.8
Stroke absor	ption (mm)	5	6	7	12	15
Max. collision	speed (mm/s)	1000	1500	1500	1500	1500
Max. operating frequency	uency (cycle/min)	80	80	70	45	25
Spring force			1.96	4.22	6.86	8.34
(N)			4.22	6.86	15.98	20.50
Operating temper	perating temperature range (°C)			5 to 60		

^{*} The shock absorber service life is different from that of the MY1B cylinder depending on operating conditions. Refer to the RB series Specific Product Precautions for the replacement period.

Theoretical Output

								(N)
Bore size	Piston area		0	perating	pressu	re (MPa	1)	
(mm)	(mm²)	0.2	0.3	0.4	0.5	0.6	0.7	0.8
10	78	15	23	31	39	46	54	62
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
80	5024	1004	1507	2009	2512	3014	3516	4019
100	7850	1570	2355	3140	3925	4710	5495	6280

Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm2)

Weight

80 20.70

100 35.70

Bore size	Basic	Additional weight per each	Weight of moving	Side support bracket weight (per set)		Stroke adjustment unit weight (per unit)			
(mm)	weight	50 mm of stroke	parts	Type A and B	A unit weight	L unit weight	H unit weight		
10	0.15	0.04	0.03	0.003	0.01	_	0.02		
16	0.61	0.06	0.07	0.01	0.04	_	_		
20	1.06	0.10	0.14	0.02	0.05	0.05	0.10		
25	1.14	0.11	0.21	0.02	0.06	0.10	0.18		
32	2.28	0.17	0.47	0.02	0.12	0.21	0.40		
40	3.11	0.25	0.91	0.04	0.23	0.32	0.49		
50	7.78	0.44	1.40	0.04	_	_	_		
63	13.10	0.70	2.20	0.08	_	_	_		

0.17

0.17 8.20

(ka)

1.97 Calculation: (Example) MY1B20-300A

1.18

4.80

- Basic weight -----1.06 kg
- Cylinder stroke -----300 stroke Additional weight0.10/50 stroke
- 1.06 + 0.10 x 300/50 + 0.05 x 2 ≅ 2.17 kg
- Weight of A unit1.76 kg

♠ Precautions

For details on the MY1B Series Mechanically Jointed Rodless Cylinder, refer to "Specific Product Precautions" on pages 1335 to 1336-2.

Mounted shock absorber soft type RJ series (-XB22) is made to order specifications. For details, refer to page 1752.

Cushion Capacity

Cushion Selection

<Rubber bumper>

Rubber bumpers are a standard feature on MY1B10. Since the stroke absorption of rubber bumpers is short, when adjusting the stroke with an A unit, install an external shock absorber.

The load and speed range which can be absorbed by a rubber bumper is inside the rubber bumper limit line of the graph.

<Air cushion>

Air cushions are a standard feature on mechanically jointed rodless cylinders. (Except ø10.)

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 adjustment unit with shock ab-sorber>
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 cushioning is necessary outside of the effective air cushion range even if the load and speed are within the air cushion limit line, or when the cyl-inder is operated in a load and speed range above the air cushion limit line and below the L unit limit line.

H unit

Use this unit when the cylinder is operated in a load and speed range above the L unit limit line and below the H unit limit line.

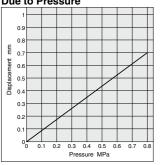
* For details on stroke adjustment using the adjustment bolt, refer to page 1336.

(mm)

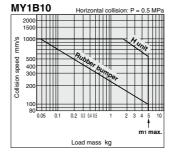
Air Cushion Stroke

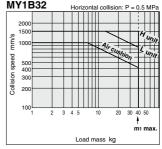
	()
Bore size (mm)	Cushion stroke
16	12
20	15
25	15
32	19
40	24
50	30
63	37
80	40
100	40

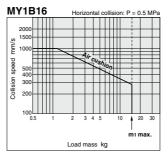
Rubber Bumper (Ø10 only) Positive Stroke from One End Due to Pressure

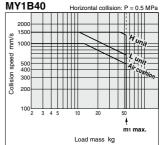


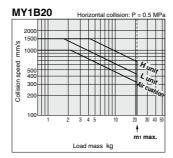
Absorption Capacity of Rubber Bumper, Air Cushion and Stroke Adjustment Units

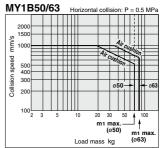


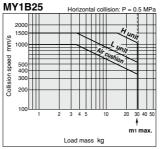


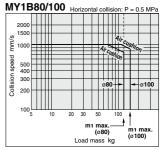






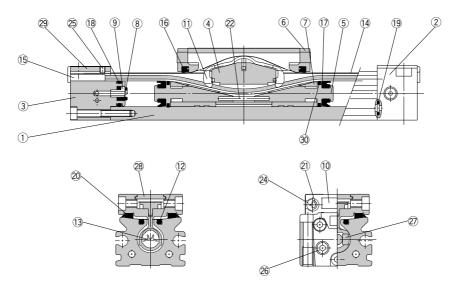






Construction: ø10

Centralized piping type: MY1B10G



Component Parts

Description	Material	Note
Cylinder tube	Aluminum alloy	Hard anodized
Head cover WR	Aluminum alloy	Painted
Head cover WL	Aluminum alloy	Painted
Piston yoke	Aluminum alloy	Hard anodized
Piston	Aluminum alloy	Chromated
End Cover	Special resin	
Wear ring	Special resin	
Bumper	Polyurethane rubber	
Holder	Stainless steel	
Stopper	Carbon steel	Nickel plated
Belt separator	Special resin	
Seal magnet	Rubber magnet	
	Cylinder tube Head cover WR Head cover WL Piston yoke Piston End Cover Wear ring Bumper Holder Stopper Belt separator	Cylinder tube Head cover WR Head cover WL Piston yoke Aluminum alloy Piston Piston Aluminum alloy Piston Aluminum alloy Piston Special resin Bumper Polyurethane rubber Holder Stainless steel Belt separator Special resin

No.	Description	Material	Note
15	Belt clamp	Special resin	
20	Bearing	Special resin	
21	Spacer	Chromium molybdenum steel	Nickel plated
22	Spring pin	Stainless steel	
23	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
24	Round binding head screw	Carbon steel	Chromated
25	Slotted set screw	Carbon steel	Black zinc chromated
26	Hexagon socket head plug	Carbon steel	Chromated
27	Magnet	_	
28	Top plate	Stainless steel	
29	Head plate	Stainless steel	
30	Lube-retainer	Special resin	

Replacement Part: Seal Kit

No.	Description	Qty.	MY1B10				
13	Seal belt	1	MY10-16A-Stroke				
14	Dust seal band	1	MY10-16B-Stroke				
16	Scraper	2					
17	Piston seal	2	MY1B10-PS				
18	Tube gasket	2					
19	O-ring	4					

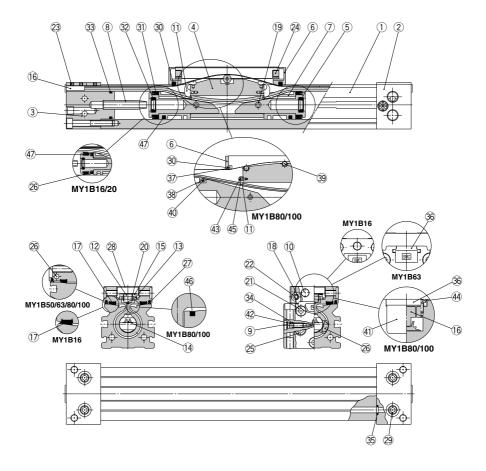
^{*} Seal kit includes (§, (⑦, (§) and (§).
Seal kit includes a grease pack (10 g).
When (§) and (§) are shipped independently, a grease pack is included. (10 g per 1000 strokes)
Order with the following part number when only the grease pack is needed:

grease pack is needed.

Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)

Construction: Ø16, Ø20, Ø50 to Ø100

MY1B16, 20, 50 to 100



Mechanically Jointed Rodless Cylinder MY1B Series

MY1B16, 20, 50 to 100

Component Parts

	inponent i arts		
No.	Description	Material	Note
_1	Cylinder tube	Aluminum alloy	Hard anodized
2	Head cover WR	Aluminum alloy	Painted
3	Head cover WL	Aluminum alloy	Painted
4	Piston yoke	Aluminum alloy	Anodized
5	Piston	Aluminum alloy	Chromated
		Special resin	
6	End cover	Carbon steel	Nickel plated (ø80, ø100)
_		0 11 1	(800, 8100)
7	Wear ring	Special resin	
8	Cushion ring	Aluminum alloy	Anodized
_9	Cushion needle	Rolled steel	Nickel plated
10	Stopper	Carbon steel	Nickel plated
11	Belt separator	Special resin	
12	Guide roller	Special resin	(ø16, ø20, ø50, ø63)
13	Guide roller shaft	Stainless steel	(ø16, ø20, ø50, ø63)
16	Belt clamp	Special resin	
10	Belt clamp	Aluminum alloy	Chromated (ø80, ø100)
17	Bearing	Special resin	
18	Spacer	Stainless steel	(ø16, ø20, ø50, ø63)
19	Spring pin	Carbon tool steel	
20	Type E retaining ring	Cold rolled special steel strip	(ø50, ø63)
21	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
22	Hexagon socket button head screw	Chromium molybdenum steel	Chromated
23	Hexagon socket head set screw	Chromium molybdenum steel	Black zinc chromated/ Chromated
24	Double round parallel key	Carbon steel	(ø16, ø20)
25	Hexagon socket head taper plug	Carbon steel	Chromated

NI-	Description	Material	Note
No.	Description	Material	Note
26	Magnet	_	
28	Top cover	Stainless steel	
29	Hexagon socket head taper plug	Carbon steel	Chromated
36	Head plate	Aluminum alloy	Painted (ø63 to ø100)
37	Backup plate	Special resin	(ø80, ø100)
38	Guide roller B	Special resin	(Ø80, Ø100)
39	Guide roller A	Stainless steel	(ø80, ø100)
40	Guide roller shaft B	Stainless steel	(ø80, ø100)
41	Side cover	Aluminum alloy	Hard anodized (ø80, ø100)
42	Type CR retaining ring	Spring steel	
43	Hexagon socket button head screw	Chromium molybdenum steel	Chromated (ø80, ø100)
44	Hexagon socket button head screw	Chromium molybdenum steel	Chromated (ø80, ø100)
45	Spacer B	Stainless steel	(ø80, ø100)
46	Seal magnet	Rubber magnet	(ø80, ø100)
47	Lube-retainer	Special resin	(ø16, ø20, ø50, ø63)

Replacement Part: Seal Kit

No	Description	Qty.	MY1B16	MY1B20			
14	Seal belt	1	MY16-16C-Stroke	MY20-16C-Stroke			
15	Dust seal band	1	MY16-16B-Stroke	MY20-16B-Stroke			
27	Side scraper	2	_	MYB20-15CA7164B			
-04	O-ring	2	KA00309	KA00309			
34	O-filing	2	(ø4 x ø1.8 x ø1.1)	(ø4 x ø1.8 x ø1.1)			
30	Scraper	2					
31	Piston seal	2					
32	Cushion seal	2	MY1B16-PS	MY1B20-PS			
33	Tube gasket	2					
35	O-ring	4	1				

No.	Description	Qty.	MY1B50	MY1B63	MY1B80	MY1B100		
14	Seal belt	1	MY50-16C-Stroke	MY63-16A-Stroke	MY80-16A-Stroke	MY100-16A-Stroke		
15	Dust seal band	1	MY50-16B-Stroke	MY63-16B-Stroke	MY80-16B-Stroke	MY100-16B-Stroke		
27	Side scraper	2 MYB50-15CA7165B		MYB63-15CA7166B	MYB80-15CK2470B	MYB100-15CK2471B		
34	0	2	KA00402	KA00777	KA00050	KA00050		
34	_ · •		(Ø8.3 x Ø4.5 x Ø1.9)	_	_	_		
30	Scraper	2						
31	Piston seal	2						
32	Cushion seal	2	MY1B50-PS	MY1B63-PS	MY1B80-PS	MY1B100-PS		
33	3 Tube gasket							
35								

^{*} Seal kit includes 30, 31, 32, 33 and 35. Order the seal kit based on each bore size.

When (4) and (5) are shipped independently, a grease pack is included. (10 g per 1000 strokes)

Order with the following part number when only the grease pack is needed. Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)

Note) Two kinds of dust seal bands are available for the MY1B16, 20, 50, 63. Since the part number varies depending on the treatment of the hexagon socket head set screw 23, please check a proper dust seal band carefully.

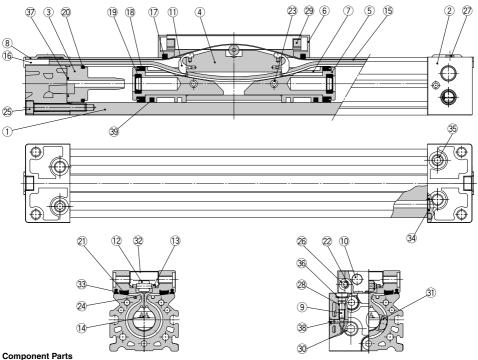
A: Black zinc chromated → MY□□-16B-stroke, B: Chromated → MY□□-16BW-stroke



^{*} Seal kit includes a grease pack (10 g).

Construction Ø25, Ø32, Ø40

MY1B25 to 40



No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Head cover	Aluminum alloy	Painted
3	Cushion boss	Polyacetal	
4	Piston yoke	Aluminum alloy	Anodized
5	Piston	Aluminum alloy	Chromated
6	End cover	Polyacetal	
7	Wear ring	Polyacetal	
8	Head plate	Stainless steel	
9	Cushion needle	Rolled steel	Nickel plated
10	Stopper	Carbon steel	Nickel plated
11	Belt separator	Polyacetal	
12	Guide roller	Polyacetal	
13	Parallel pin	Carbon steel	
16	Belt clamp	Polybutylene terephthalate	
21	Bearing	Polyacetal	
22	Spacer	Stainless steel	

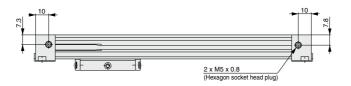
No.	Description	Material	Note
23	Spring pin	Carbon tool steel	
24	Seal magnet	Rubber magnet	
25	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
26	Hexagon socket button head screw	Chromium molybdenum steel	Chromated
27	Thin head screw	Chromium molybdenum steel	Chromated
29	Double round parallel key	Carbon steel	
30	Hexagon socket head taper plug	Carbon steel	Chromated (Centralized piping: 7pcs.)
31	Magnet	Rare earth magnet	
32	Top cover	Stainless steel	
35	Hexagon socket head taper plug	Carbon steel	Chromated (Centralized piping: 3 pcs.)
36	Type CR retaining ring	Spring steel	
38	Steel ball	Spring steel	
39	Lube retainer	Special resin	

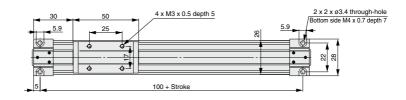
Sea	l List							
No.	Description	Material	Qty.	MY1B25	MY1B32	MY1B40		
14	Seal belt	Urethane	1	MY25-16C-Stroke	MY32-16C-Stroke	MY40-16C-Stroke		
15	Dust seal band	Stainless steel	1	MY1B25-16B-Stroke	MY1B32-16B-Stroke	MY1B40-16B-Stroke		
33	Side scraper	Polyamide	2	MYB25-15BA5900B	MYB32-15BA5901B	MYB40-15BA5902B		
	28 O-ring	NBR		KA00311	KA00320	KA00320		
28	O-ring	NBH	2	(ø5.1 × ø3 × ø1.05)	(ø7.15 × ø3.75× ø1.7)	(ø7.15 × ø3.75 × ø1.7)		
37	Cushion boss gasket	NBR	2	MYB25-16GA5900	MYB32-16GA5901	MYB40-16GA5902		
17	Scraper	NBR	2					
18	Piston seal	NBR	2					
19	Cushion seal	NBR	2	MY1B25-PS	MY1B32-PS	MY1B40-PS		
20	Tube gasket	NBR	2					
34	O-ring	NBR	2					

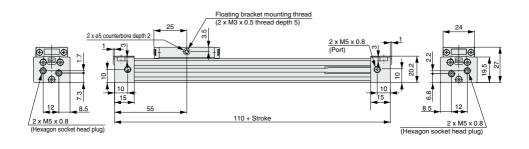
- * Seal kit includes 17, 18, 19, 20 and 34. Order the seal kit based on each bore size.
- * Seal kit includes a grease pack (10 g). When (4) and (5) are shipped independently, a grease pack is included. (10 g/1000 mm stroke) Order with the following part number when only the grease pack is needed. Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)

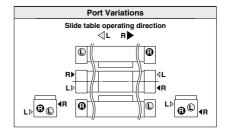
Centralized Piping Type Ø10

MY1B10G — Stroke



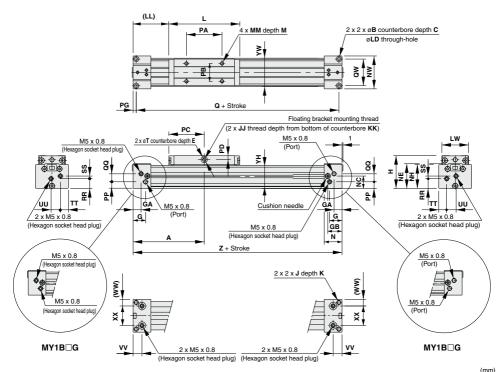






Standard Type/Centralized Piping Type Ø16, Ø20

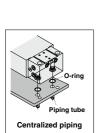
MY1B16□/20□ - Stroke

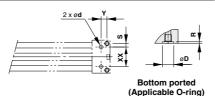


Model	Α	В	С	E	G	GA	GB	Н	J	JJ	K	KK	L	LD	LL	LW	М	MM	N	NC	NE
MY1B16□	80	6	3.5	2	14	9	16	37	M5 x 0.8	M4 x 0.7	10	6.5	80	3.5	40	30	6	M4 x 0.7	20	14	27.8
MY1B20□	100	7.5	4.5	2	12.5	12.5	20.5	46	M6 x 1	M4 x 0.7	12	10	100	4.5	50	37	8	M5 x 0.8	25	17.5	34

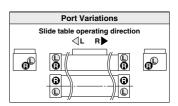
																						(mm)
Model	NH	NW	PA	РВ	PC	PD	PG	PP	Q	QQ	QW	RR	SS	Т	TT	UU	٧٧	ww	XX	YH	YW	Z
MY1B16□	27	37	40	20	40	4.5	3.5	7.5	153	9	30	11	3	7	9	10.5	10	7.5	22	26	32	160
MY1B20□	33.5	45	50	25	50	5	4.5	11.5	191	11	36	14.5	5	8	10.5	12	12.5	10.5	24	32.5	40	200

Centralized Piping on the Bottom

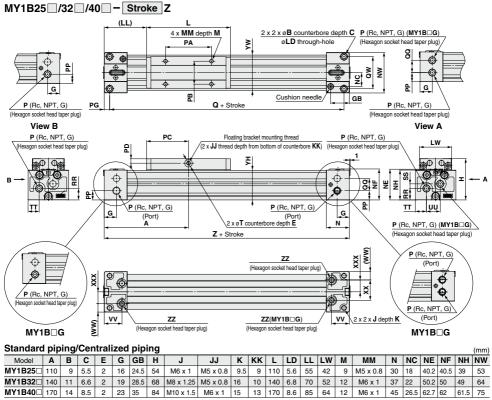




Model	wx	Υ	S	d	D	R	Applicable O-ring
MY1B16□	22	6.5	4	4	8.4	1.1	C6
MY1B20□	24	8	6	4	8.4	1.1	L C6



Standard/Centralized Piping Type Ø25, Ø32, Ø40

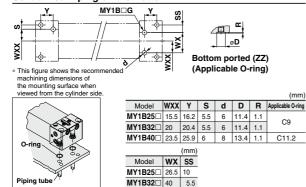


	. P.P					P.P	9																(111111)
Model	Α	В	С	E	G	GB	Н	J	JJ	K	KK	L	LD	LL	LW	М	MM	N	NC	NE	NF	NH	NW
MY1B25□	110	9	5.5	2	16	24.5	54	M6 x 1	M5 x 0.8	9.5	9	110	5.6	55	42	9	M5 x 0.8	30	18	40.2	40.5	39	53
MY1B32□	140	11	6.6	2	19	28.5	68	M8 x 1.25	M5 x 0.8	16	10	140	6.8	70	52	12	M6 x 1	37	22	50.2	50	49	64
MY1B40□	170	14	8.5	2	23	35	84	M10 x 1.5	M6 x 1	15	13	170	8.6	85	64	12	M6 x 1	45	26.5	62.7	62	61.5	75
																		Can	traliz	od r	inin	<u></u>	

																				Centralize	יח אנ	nınc	4	
Model	ם	DΛ	DD	PC	DD	DD	DC	Q	OW	RR	_	TT	1/1/	10/10/	XXX	VΠ	VW	7	ZZ	OCHILI AIII Z	,u pi	Ping	<u>, </u>	
iviodei		FA	FD	FC	FD	FF	ru	Q	QW	nn			vv	VV VV	^^^	IП	1 44		~~	Model	QQ	00	1111	vv
MY1B25□	1/8	60	30	55	-	12	7	206	42	15	10	11 E	23.3	44	15.5	38.5	46	200	Rc1/16	Model	QQ	33	UU	^^
INIT I DZO	1/0	טס	30	55	О	12	/	200	42	15	10	14.5	23.3	111	15.5	30.5	40	220	HC1/16	MY1B25	16	6	10	26.5
MY1B32□	1/8	80	35	70	10	16	Ω	264	51	16	10	16	28.5	12	20	48	55	000	Rc1/16	WITTDES	10	0	10	20.5
WITIDOZ	1/0	00	ათ	70	10	10	0	204	01	10	10	10	20.5	12	20	40	၁၁	200	HC1/16	MY1B32□	16	44	32	40
MY1B40	1/4	100	40	85	12	18.5	0	322	59	23.5	14	20	35	14	23.5	60.5	67	340	Rc1/8	WITIDOZ	10		32	40
WIT ID40	1/4	100	40	00	12	10.5	9	322	59	23.3	14	20	33	14	23.3	00.5	07	340	nc I/o	MY1B40□	24	12	35	47
																				WIT I D4U	24	12	. 30 I	4/

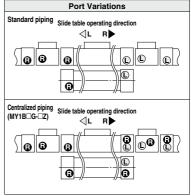
Centralized Piping on the Bottom

Centralized piping



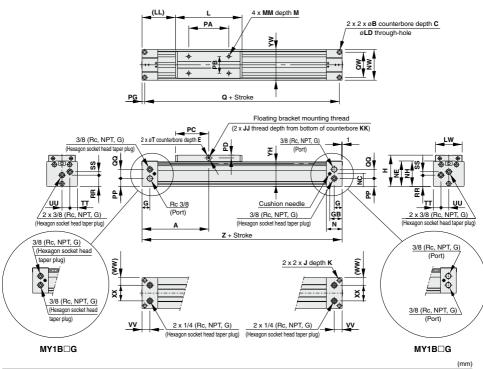
MY1B40□ 47

6



Standard Type/Centralized Piping Type Ø50, Ø63

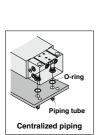


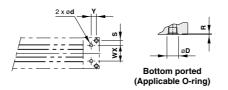


																				(111111)
Model	Α	В	С	Е	G	GB	Н	J	JJ	K	KK	L	LD	LL	LW	М	MM	N	NC	NE
MY1B50□	200	14	8.5	3	23.5	37	94	M12 x 1.75	M6 x 1	25	17	200	9	100	80	14	M8 x 1.25	47	38	76.5
MY1B63□	230	17	10.5	3	25	39	116	M14 x 2	M8 x 1.25	28	24	230	11	115	96	16	M8 x 1.25	50	51	100

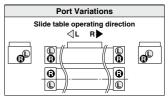
																						(mm)
Model	NH	NW	PA	РВ	PC	PD	PG	PP	Q	QQ	QW	RR	SS	Т	TT	υυ	٧٧	ww	XX	YH	YW	Z
MY1B50□	75	92	120	50	100	8.5	8	24	384	27	76	34	10	15	22.5	23.5	23.5	22.5	47	74	92	400
MY1B63□	95	112	140	60	115	9.5	10	37.5	440	29.5	92	45.5	13.5	16	27	29	25	28	56	94	112	460

Centralized Piping on the Bottom

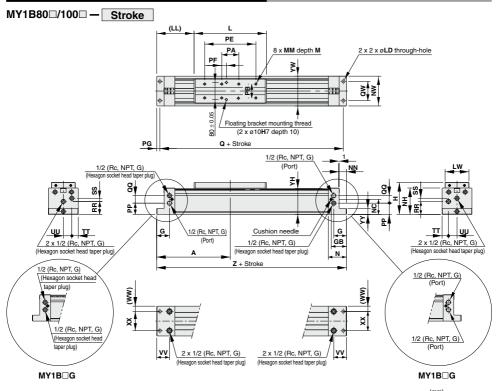




Model	wx	Υ	S	d	D	R	Applicable O-ring
MY1B50□	47	15.5	14.5	10	17.5	1.1	045
MY1B63□	56	15	18	10	17.5	1.1	C15



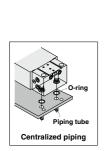
Standard Type/Centralized Piping Type Ø80, Ø100

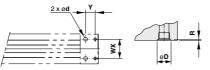


																		(mm)
Model	Α	G	GB	Н	L	LD	LL	LW	М	MM	N	NC	NH	NN	NW	PA	PB	PE
MY1B 80□	345	60	71.5	150	340	14	175	112	20	M10 x 1.5	85	71	124	35	140	80	65	240
MY1B100□	400	70	79.5	190	400	18	200	140	25	M12 x 1.75	95	85	157	45	176	120	85	280

																	(mm)
Model	PF	PG	PP	Q	QQ	QW	RR	SS	TT	UU	٧٧	ww	XX	YH	YW	YY	Z
MY1B 80□	22	15	53	660	35	90	61	15	30	40	60	25	90	122	140	28	690
MY1B100□	42	20	69	760	38	120	75	20	40	48	70	28	120	155	176	35	800

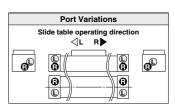
Centralized Piping on the Bottom





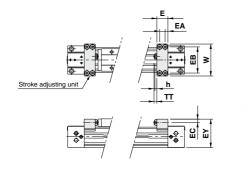
Bottom ported (Applicable O-ring)

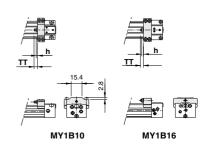
ĺ	Model	WX	Υ	d	D	R	Applicable O-ring
	MY1B 80□	90	45	18	26	1.8	P22
	MY1B100□	120	50	18	26	1.8	P22



Stroke Adjustment Unit

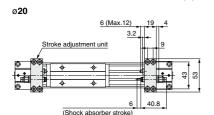


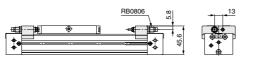


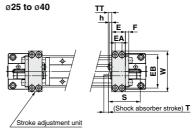


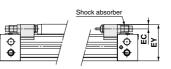
									(111111)
Applicable bore size	Е	EA	EB	EC	EY	FC	h	TT	W
MY1B10	10	5	28	3.3	26.3	_	1.8	5 (Max. 10)	35
MY1B16	14.6	7	34.4	4.2	36.5		2.4	5.4 (Max. 11)	43
MY1B20	19	9	43	5.8	45.6	13	3.2	6 (Max. 12)	53
MY1B25	20	10	49	6.5	53.5	13	3.5	5 (Max. 16.5)	60
MY1B32	25	12	61	8.5	67	17	4.5	8 (Max. 20)	74
MY1B40	31	15	76	9.5	81.5	17	4.5	9 (Max. 25)	94

With low load shock absorber + Adjustment bolt MY1B Bore size ☐ — Stroke L (Z)









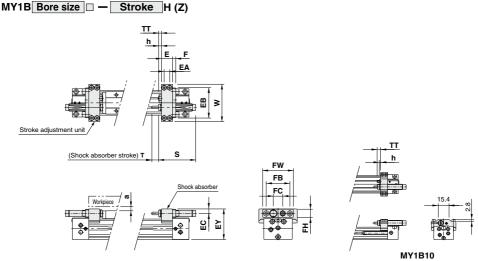
FW	
FB	
FC	Æ
••• •	
	1

										(mm
Applicable cylinder	Е	EA	EB	EC	EY	F	FB	FC	FH	FW
MY1B25	20	10	49	6.5	53.5	6	33	13	12	46
MY1B32	25	12	61	8.5	67	6	43	17	16	56
MY1B40	31	15	76	9.5	81.5	6	43	17	16	56
Applicable gulinder	h	0			TT		M	Charle ak	aaukau	madal

Applicable cylinder	h	S	T	TT	W	Shock absorber model
MY1B25	3.5	46.7	7	5 (Max. 16.5)	60	RB1007
MY1B32	4.5	67.3	12	8 (Max. 20)	74	RB1412
MY1B40	4.5	67.3	12	9 (Max. 25)	94	RB1412

Stroke Adjustment Unit

With high load shock absorber + Adjustment bolt



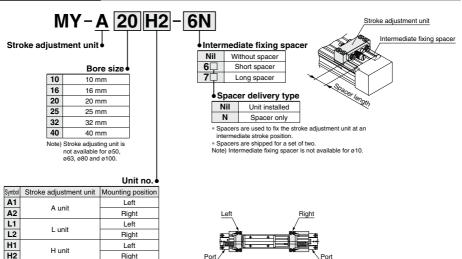
* Since the dimension EY of H unit is greater than the table top height (dimension H), when a workpiece is loaded that is larger than the full length (dimension L) of the slide table allow a clearance of size "a" or larger at the workpiece side.

(mm)

		-															(111111)
Applicable bore size	Е	EA	EB	EC	EY	F	FB	FC	FH	FW	h	S	Т	TT	W	Shock absorber model	а
MY1B10	10	5	28	5.5	29.8	_	_	8	_		1.8	40.8	5	5 (Max. 10)	35	RB0805	3.5
MY1B20	20	10	49	6.5	47.5	6	33	13	12	46	3.5	46.7	7	5 (Max. 11)	60	RB1007	2.5
MY1B25	20	10	57	8.5	57.5	6	43	17	16	56	4.5	67.3	12	5 (Max. 16.5)	70	RB1412	4.5
MY1B32	25	12	74	11.5	73	8	57	22	22	74	5.5	73.2	15	8 (Max. 20)	90	RB2015	6
MY1B40	31	15	82	12	87	8	57	22	22	74	5.5	73.2	15	9 (Max. 25)	100	RB2015	4

Accessory Bracket (Option)

Stroke Adjustment Unit

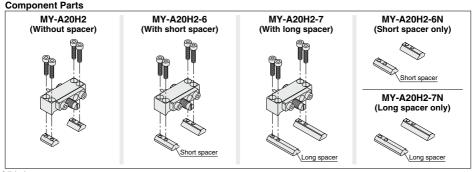


Stroke adjustment range

Stroke aujustiller	it rang	ye													(mm)
Bore size	1	0	16	20 Δ I H			25			32		40			
Unit symbol	Α	Н	Α	Α	L	Н	Α	L	Н	Α	L	Н	Α	L	Н
Without spacer	0 to	-5	0 to -5.6		0 to -6		0 to -11.5			0 to -12			0 to -16		
With short spacer	_	_	-5.6 to -11.2		-6 to -12		-11.5 to -23			-	12 to -2	24	-16 to -32		
With long spacer	_	_	-11.2 to -16.8	-	-12 to -18		-23 to -34.5				24 to -3	86	-32 to -48		

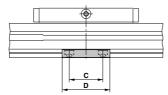
Spacer length (mm) Bore size 16 20 25 32 40 Short spacer 5.6 6 11.5 12 16 11.2 23 24 32 Long spacer

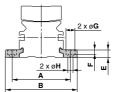
Note 1) A and H unit only for ø10, A unit only for ø16



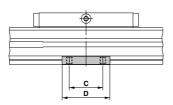
Side Support

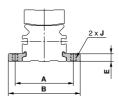
Side support A MY-S□A





Side support B MY-S□B





										(mm)
Model	Applicable bore size	Α	В	С	D	Е	F	G	Н	J
MY-S10 A	MY1B 10	35	43.6	12	21	3	1.2	6.5	3.4	M4 x 0.7
MY-S16 A	MY1B 16	43	53.6	15	26	4.9	3	6.5	3.4	M4 x 0.7
MY-S20 A	MY1B 20	53	65.6	25	38	6.4	4	8	4.5	M5 x 0.8
MY-S25 A	MY1B 25	61	75	0.5		8	5	0.5		1404
W T-323 B	MY1B 32	70	84	35	50	8	5	9.5	5.5	M6 x 1
MY-S32 A	MY1B 40	87	105	45	64	11.7	6	11		M8 x 1.25
W 1-332 B	MY1B 50	113	131	45	64	11.7	٥	11	6.6	W8 X 1.25
MY-S50 A	MY1B 63	136	158	55	80	14.8	8.5	14	9	M10 x 1.5
MY-S63 A	MY1B 80	170	200	70	100	18.3	10.5	17.5	11.5	M12 x 1.75
W T-303 B	MY1B100	206	236	70	100	18.3	10.5	17.5	11.5	W112 X 1.75

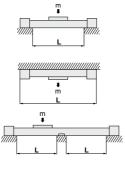
^{*} A set of side supports consists of a left support and a right support.

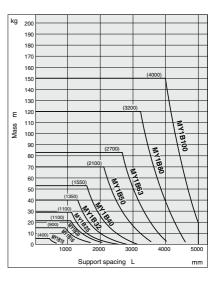
Guide for Side Support Application

For long stroke operation, the cylinder tube may be deflected depending on its own weight and the load mass. 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.





Floating Bracket

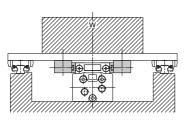
Facilitates connection to other guide systems.

Applicable bore size

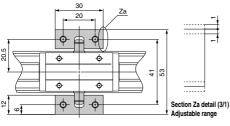
ø10

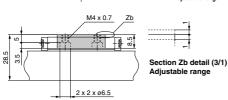
MY-J10

Application Example



Mounting Example





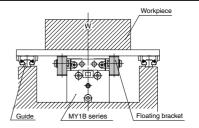
Note) A set of brackets with floating mechanism consists of a left bracket and a right bracket.

Applicable bore size

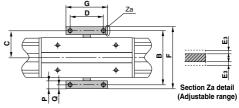
ø16, ø20

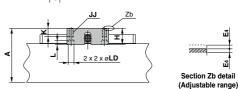
MY-J16/MY-J20

Application Example



Mounting Example





											(mm)
Model	Applicable bore size	Α	ı	3	С	D	F		(G	Н
MY-J16	MY1B16□	45			22.5	30	52		3	8	18
MY-J20	MY1B20□	55	55 52		26	35	59		5	0	21
Model	Applicable bore size	JJ	JJ		L	Р	Q	E:	3	E4	LD
MY-J16	MY1B16□	M4 x 0	M4 x 0.7		4	7	3.5	1		1	6
MY-J20	MY1B20□	M4 x 0	.7	10	4	7	3.5	1		1	6

Note) A set of brackets with floating mechanism consists of a left bracket and a right bracket.

MY-J10 to 20 (1 set) Component Parts

Description	Qty.	Material
Bracket	2	Carbon steel
Pin	2	Carbon steel
Conical spring washer	2	Carbon steel
Holding bolt	2	Chromium molybdenum steel

^{*} For details on how to secure the holding bolt, refer to page 1336.

Floating Bracket

Facilitates connection to other guide systems.

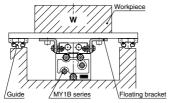
Applicable bore size

ø**25**, ø**32**, ø**40**

MY J25/MY J32/MY J40

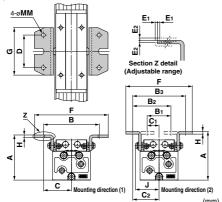
L Type

Application Example



Mounting dimension

One set of brackets can be mounted in two directions for compact combinations.



Part no.	Applicable		С	ommo	on		Mounting direction (1)				
Part no.	cylinder	D	G	Н	J	MM	Α	В	С	F	
MY-J25	MY1B25□	40	60	3.2	35	5.5	63	78	39	100	
MY-J32	MY1B32□	55	80	4.5	40	6.5	76	94	47	124	
MY-J40	MY1B40□	74	100	4.5	47	6.5	92	112	56	144	
Dort no	Applicable		Mo	ountin	g dire	ction	(2)		Adjustat	ole range	
Part no.	Applicable cylinder	Α	Mo B1	ountin B2	g dire	ction C1	(2) C 2	F	Adjustat E 1	le range	
		A 65	_		~			F 96			
MY-J25	cylinder		B ₁	B ₂	Вз	C ₁	C ₂		É1		

Note) Floating brackets consist of a set of right and left bracket.

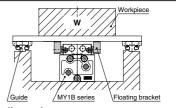
* For details on how to secure the holding bolt, refer to page 1336.

MY-J25 (1 set) Component Parts

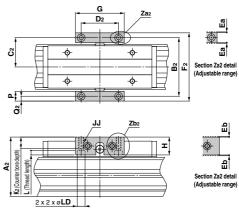
Description	Qty.	Material
Bracket	2	Carbon steel
Pin	2	Carbon steel
Conical spring washer	2	Carbon steel
Holding bolt	2	Chromium molybdenum steel

Block Type

Application Example



Mounting dimension



										(mm)
Part no.	Applicable cylinder	G	Н	J	J	L	Р	LD	Adjustab Ea	le range Eb
MYAJ25	MY1B25□	55	22	M6	x 1	5.5	12	9.5	1	1
MYAJ32	MY1B32□	60	22	M6	x 1	5.5	12	9.5	1	1
MYAJ40	MY1B40□	72	32	M8 x	1.25	6.5	16	11	1	1
Part no.	Applicable cylinder	A 2	B ₂	C2	D ₂	F2	K 2	Q ₂		
MYAJ25	MY1B25	63	61	30.5	40	73	14	6		
MYAJ32	MY1B32□	73	72	36	46	84	14	6		
MYAJ40	MY1B40□	93.5	88	44	55	104	19	8		

* For details on how to secure the holding bolt, refer to page 1336.

MYAJ25 to 40 (1 set) Component Parts

Description	Qty.	Material
Bracket	2	Rolled steel
Pin	2	Carbon steel
Conical spring washer	2	Carbon steel
Holding bolt	2	Chromium molybdenum steel

Floating Bracket

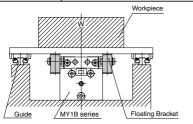
Facilitates connection to other guide systems.

Applicable bore size

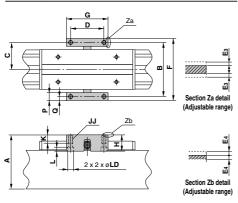
ø**50**, ø**63**

MY-J50/MY-J63

Application Example



Mounting Example



											(111111)
Model	Applicable bore size	Α	Е	3	С	D	F		•	G	Н
MY-J50	MY1B50□	110			55	70	126	3		90	37
MY-J63	MY1B63□	131	131 13		65	80	149	9	1	00	37
Model	Applicable bore size	JJ	JJ		L	P	Q	E	3	E4	LD
MY-J50	MY1B50□	M8 x 1.	M8 x 1.25		7.5	16	8	2	.5	2.5	11
MY-J63	MY1B63□	M10 x	M10 x 1.5		9.5	19	9.5	2	.5	2.5	14

Note) A set of brackets with floating mechanism consists of a left bracket and a right bracket.

MY-J50, 63 (1 set) Component Parts

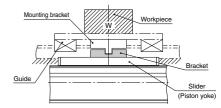
mr 656, 66 (r 56t) Component r arts				
Description	Qty.	Material		
Bracket	2	Carbon steel		
Pin	2	Carbon steel		
Conical spring washer	2	Carbon steel		
Holding bolt	2	Chromium molybdenum steel		

Applicable bore size

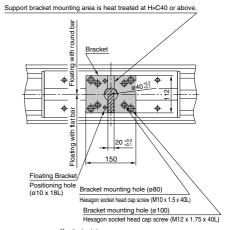
ø**80**, ø**100**

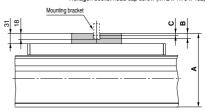
MY-J80/MY-J100

Application Example



Mounting Example





Model	Applicable bore size	Α	B (max.)	C (min.)
MY-J80	MY1B 80□	181	15	9
MY-J100	MY1B100□	221	15	9

- Note) Flat bar or round bar mounting are possible for the support bracket (slanted lines) mounted by the customer.
 - "B" and "C" indicate the allowable mounting dimensions for the support bracket (flat bar or round bar).
 - Consider support brackets with dimensions that allow the floating mechanism to function properly.

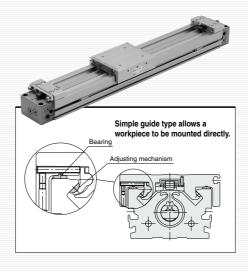
MY-J80, 100 (1 set) Component Parts

Description	Qty.	Material
Bracket	1	Rolled steel
Pin	2	Carbon steel
Holding bolt	4	Chromium molybdenum steel

^{*} For details on how to secure the holding bolt, refer to page 1336.



Ø16, Ø20, Ø25, Ø32, Ø40, Ø50, Ø63



INDEX MY1M Series Prior to Use P. 1258 Model Selection P. 1260 How to Order P. 1262 Specifications P. 1263 Cushion Capacity P. 1266 Construction P. 1268 Dimensions P. 1270 Stroke Adjustment Unit P. 1273 Accessory Bracket (Option) P. 1274-1

MY1M Series Prior to Use

Maximum Allowable Moment/Maximum Load Mass

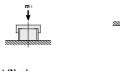
Model	Bore size	Maximum a	allowable mo	ment (N·m)	Maximum load mass (kg)				
Model	(mm)	M1	M2	Мз	m1	m ₂	тз		
	16	6.0	3.0	1.0	18	7	2.1		
	20	10	5.2	1.7	26	10.4	3		
	25	15	9.0	2.4	38	15	4.5		
MY1M	32	30	15	5.0	57	23	6.6		
	40	59	24	8.0	84	33	10		
	50	115	38	15	120	48	14		
	63	140	60	19	180	72	21		

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.

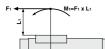
Load mass (kg)



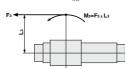




Moment (N·m)







<Calculation of guide load factor>

- Maximum allowable load (1), static moment (2), and dynamic moment (3) (at the time of impact with stopper) must be examined for the selection calculations.
 - * To evaluate, use ν a (average speed) for (1) and (2), and ν (collision speed $\nu = 1.4\nu$ a) for (3). Calculate mmax for (1) from the maximum allowable load graph (m, m₂, m₃) and Mmax for (2) and (3) from the maximum allowable moment graph (M₁, M₂, M₃).

Sum of guide	Σ(/ _ Load mass [m]	Static moment [M] (1)	Dynamic moment [M _E] ⁽²⁾
load factors	Maximum allowable load [mmax]	Allowable static moment [Mmax]	Allowable dynamic moment [Memax]

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 (α) is the total of all such moments.

2. Reference formula [Dvnamic moment at impact]

Use the following formulae to calculate dynamic moment when taking stopper impact into consideration.

m: Load mass (kg)

F: Load (N)

FE: Load equivalent to impact (at impact with stopper) (N)

Va: Average speed (mm/s)**M**: Static moment (N⋅m)

$$\begin{split} \upsilon &= 1.4 \upsilon a \text{ (mm/s) } \text{Fe} = 1.4 \upsilon a \cdot \delta^{\text{Note 4}} \cdot \text{g} \\ &:: \text{Me} = \frac{1}{2} \cdot \text{Fe-L}_1 = 4.57 \upsilon a \delta \text{mL}_1 \text{ (N\cdot m)} \end{split}$$

 υ : Collision speed (mm/s)

 $\textbf{L}_{1} \text{: }$ Distance to the load's center of gravity (m)

Me: Dynamic moment (N·m)

δ: Damper coefficient At collision: $\upsilon = 1.4 \upsilon a$ With rubber bumper = 4/100
(MY1B10, MY1H10)

With air cushion = 1/100 With shock absorber = 1/100

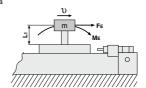
g: Gravitational acceleration (9.8 m/s2)

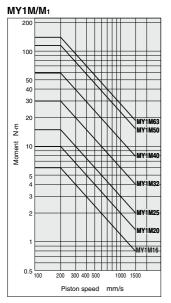
Note 4) $1.4 \text{Va} \hat{\mathbf{0}}$ is a dimensionless coefficient for calculating impact force. Note 5) Average load coefficient $(-\frac{1}{2})$: This coefficient is for averaging the maximum load moment at the time of stopper impact according to service life calculations.

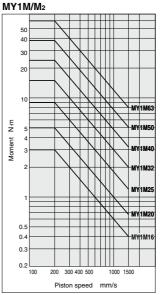
3. For detailed selection procedures, refer to pages 1260 and 1261.

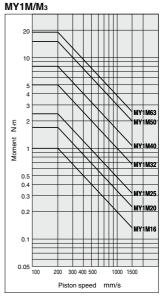
Maximum Load Mass

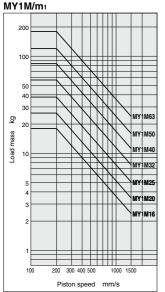
Select the load from within the range of limits shown in the graphs. Note that the maximum allowable moment value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable moment for the selected conditions.

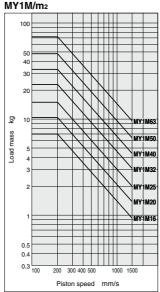


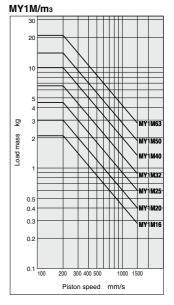










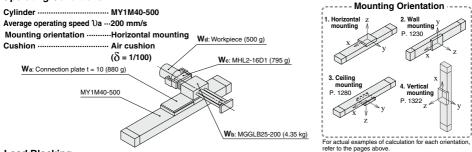


Model Selection

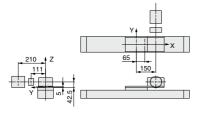
Following are the steps for selecting the most suitable MY1M series to your application.

Calculation of Guide Load Factor

1. Operating Conditions



2. Load Blocking



Mass and Center of Gravity for Each Workpiece

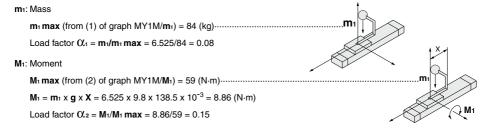
Workpiece no.	Mass	Center of gravity								
Wn	m _n	X-axis Xn	Y-axis Yn	Z-axis Zn						
Wa	0.88 kg	65 mm	0 mm	5 mm						
Wb	4.35 kg	150 mm	0 mm	42.5 mm						
Wc	0.795 kg	150 mm	111 mm	42.5 mm						
Wd	0.5 kg	150 mm	210 mm	42.5 mm						
				n-a b a d						

n=a, b, c, d

3. Composite center of Gravity Calculation

$$\begin{split} & \mathbf{m}_1 = \Sigma m_n \\ &= 0.88 + 4.35 + 0.795 + 0.5 = \textbf{6.525 kg} \\ & \mathbf{X} = \frac{1}{\mathbf{m}_1} \times \Sigma \left(\mathbf{m}_n \times \mathbf{x}_n \right) \\ &= \frac{1}{6.525} \left(0.88 \times 65 + 4.35 \times 150 + 0.795 \times 150 + 0.5 \times 150 \right) = \textbf{138.5 mm} \\ & \mathbf{Y} = \frac{1}{\mathbf{m}_1} \times \Sigma \left(\mathbf{m}_n \times \mathbf{y}_n \right) \\ &= \frac{1}{6.525} \left(0.88 \times 0 + 4.35 \times 0 + 0.795 \times 111 + 0.5 \times 210 \right) = \textbf{29.6 mm} \\ & \mathbf{Z} = \frac{1}{\mathbf{m}_1} \times \Sigma \left(\mathbf{m}_n \times \mathbf{z}_n \right) \\ &= \frac{1}{6.525} \left(0.88 \times 5 + 4.35 \times 42.5 + 0.795 \times 42.5 + 0.5 \times 42.5 \right) = \textbf{37.4 mm} \end{split}$$

4. Calculation of load factor for static load

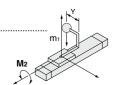


M2: Moment

$$M_2$$
 max (from (3) of graph MY1M/ M_2) = 24 (N·m)······

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

Load factor $\Omega_3 = M_2/M_2 \text{ max} = 1.89/24 = 0.08$



5. Calculation of Load Factor for Dynamic Moment -

Equivalent load FE at impact

$$\mathbf{F}_{E} = 1.4 \ \mathbf{va} \times \delta \times \mathbf{m} \times \mathbf{g} = 1.4 \times 200 \times \frac{1}{100} \times 6.525 \times 9.8 = 179.1 \text{ (N)}$$

M_{1E}: Moment

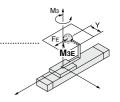
$$\mathbf{M}_{1E} = \frac{1}{2} \times \mathbf{F}_{E} \times \mathbf{Z} = \frac{1}{2} \times 179.1 \times 37.4 \times 10^{-3} = 2.23 \text{ (N·m)}$$

Load factor
$$C_{4} = M_{1E}/M_{1E} max = 2.23/42.1 = 0.05$$



$$\mathbf{M}_{3E} = \frac{1}{3} \times \mathbf{F}_{E} \times \mathbf{Y} = \frac{1}{3} \times 179.1 \times 29.6 \times 10^{-3} = 1.77 \text{ (N·m)}$$

Load factor $CL_5 = M_3 E/M_3 E max = 1.77/5.7 = 0.31$



6. Sum and Examination of Guide Load Factors

$$\Sigma_{\text{CL}} = \text{CL}_1 + \text{CL}_2 + \text{CL}_3 + \text{CL}_4 + \text{CL}_5 = \textbf{0.67} \leq \textbf{1}$$

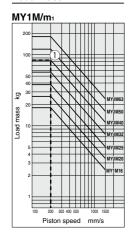
The above calculation is within the allowable value, and therefore the selected model can be used. Select a shock absorber separately.

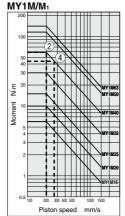
In an actual calculation, when the total sum of guide load factors α in the formula above is more than 1, consider either decreasing the speed, increasing the bore size, or changing the product series. This calculation can be easily made using the "SMC Pneumatics CAD System".

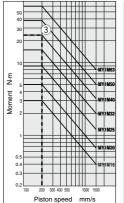
MY1M/M₂

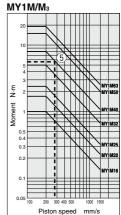
Load Mass

Allowable Moment







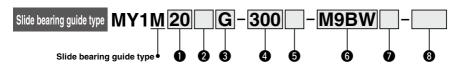


Mechanically Jointed Rodless Cylinder Slide Bearing Guide Type

MY1M Series

Ø16, Ø20, Ø25, Ø32, Ø40, Ø50, Ø63

How to Order



Bore size

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

2 Port thread type

Symbol	Type	Bore size
Nil	M thread	ø16, ø20
MII	Rc	ø25, ø32,
TN	NPT	ø40, ø50,
TF	G	ø63

Centralized piping type

Piping Nil Standard type

4 Cylinder stroke (mm)

Bore si	ze	Standard stroke*1	Long stroke (-XB11)	Maximum manufacturable stroke
16		100, 200, 300, 400, 500 600, 700, 800, 900 1000, 1200,1 400	Strokes of 2001 to 3000 mm (1 mm increments) exceeding the standard stroke	3000
20, 25, 40, 50,		1600, 1800, 2000	Strokes of 2001 to 5000 mm (1 mm increments) exceeding the standard stroke	5000

Note) Please be advised that with stroke 49 or less, there are cases where auto switch mounting is not possible and the performance of the air cushion may decline.

Stroke adjustment unit symbol Refer to "Stroke adjustment unit" on page 1263.

6 Auto switch

NII	Without auto switch (Built-in magnet)
	ble auto switches vary depending on the te. Select an applicable one referring to the low.

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	"n" pcs.

Made to Order Refer to page 1263 for details.

Applicable Auto Switches/Refer to pages 1575 to 1701 for further information on auto switches.

		Electrical Wiring Load voltage				Auto swit	ch mode	l	Lead	wire	length	n (m)	D														
Type	Special function	Electrical entry	ator	(Output)	_	C	AC	Perpen	ndicular	In-l	ine	0.5	1	3		Pre-wired connector	Applica	ble load									
		Citity	Indi	(Output)	L		AC.	ø16, ø20	ø25 to ø63	ø16, ø20	ø25 to ø63	(Nil)	(M)	(L)	(Z)	COTHICCIO											
<u>-</u>				3-wire (NPN)		5 V. 12 V		M9	NV	Ms	N	•	•	•	0	0	IC circuit										
switch				3-wire (PNP)		5 V, 12 V		М9	M9PV		9P	•	•	•	0	0	IC CIICUII										
				2-wire		12 V	12 V	12 V		12 V		2 V		BV	Ms	9B	•	•	•	0	0	_					
auto	Diagnostic indication (2-color indicator) Gromme			Grommet	Grommet						3-wire (NPN)		5 V. 12 V]	M9N	1WV	M9	NW	•	•	•	0	0	IC circuit			
						Yes	3-wire (PNP) 24 V	5 V, 12 V		M9F	PWV	М9	PW	•	•	•	0	0	IC circuit	Relay, PLC							
state	(2-color indicator)			2-wire		12 V		٦	12 V	12 V		3WV	M9	BW	•	•	•	0	0	_	' [0						
st		ater resistant color indicator)											3-wire (NPN)		5 V. 12 V]	M9N	AV*1	M9N	IA*¹	0	0	•	0	0	IC circuit	
Solid				3-wire (PNP)		5 V, 12 V	5 V, 12 V	M9PAV*1 M9F		PA*1	0	0	•	0	0	IC circuit											
	·								2-wire		12 V	1	M9B	AV*1	M9E	3A*1	0	0	•	0	0	_					
eed switch			Yes	3-wire (NPN equivalent)	_	5 V	_	A96V	_	A96	Z76	•	_	•	_	_	IC circuit	_									
Reed o swit		Grommet	res	0	24 V	12 V	100 V	A93V*3	_	A93	Z73	•	•	•	•	_	_	Relay,									
auto auto			No	2-wire	24 V	12 V	100 V or less	A90V	_	A90	Z80	•	_	•	_	_	IC circuit	PLC									

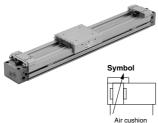
- *1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance.
- Consult with SMC regarding water resistant types with the above model numbers.

 *2 For details on switch mounting brackets and part numbers, refer to "Switch Mounting Bracket: Part No." on page 1333-1.
- *3 1 m type lead wire is only applicable to D-A93.
- * Lead wire length symbols: 0.5 m Nil (Example) M9NW
 - 1 m M (Example) M9NWM
 3 m L (Example) M9NWL
 5 m Z (Example) M9NWZ
- * Solid state auto switches marked with "O" are produced upon receipt of order.
- * There are other applicable auto switches than listed above. For details, refer to page 1333-1.
- * Auto switches are shipped together (not assembled). (Refer to page 1331 for the details of auto switch mounting.)



^{*} Add "-XB11" to the end of the part number for long strokes. MY1M20-3000L-M9BW-XB11

Mechanically Jointed Rodless Cylinder MY1M Series Slide Bearing Guide Type





Made to Order: Individual Specifications (For details, refer to page 1334.)

Symbol	
-X168	Helical insert thread specifications

Made to Order Specifications

Click here for details

Symbol	Specifications							
-XB11	Long stroke							
-XB22	Shock absorber soft type RJ series type							
-XC67	NBR rubber lining in dust seal band							

Specifications

Bore size (mm)		16	20	25	32	40	50	63		
Fluid		Air								
Action		Double acting								
Operating p	ressure range	0.2 to 0.8 MP	0.2 to 0.8 MPa 0.15 to 0.8 MPa							
Proof pres	sure	1.2 MPa								
Ambient and	fluid temperature	5 to 60°C								
Cushion		Air cushion								
Lubricatio	n			Non-li	ube					
Stroke len	gth tolerance	1000 or less +1.8 1001 to 3000 +2.8								
Piping	Front/Side port	M5 x 0.8		1,	/8	1/4	3/	/8		
port size	Bottom port	ø4		Ø	6	ø8	ø.	10		

Piston Speed

В	ore size (mm)	16 to 63
Without stroke a	djustment unit	100 to 1000 mm/s
Stroke	A unit	100 to 1000 mm/s ⁽¹⁾
adjustment unit	L unit and H unit	100 to 1500 mm/s ⁽²⁾

Note 1) Be aware that when the stroke adjustment range is increased by manipulating the adjustment bolt, the air cushion capacity decreases. Also, when exceeding the air cushion stroke ranges on page 1266, 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 1266.

Note 4) Due to the construction of this product, it may have more fluctuation in operating speed compared to a rod type air cylinder. For applications that require constant speed, select the equipment corresponding to the required level.

Stroke Adjustment Unit Specifications

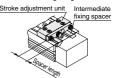
Bore siz	e (mm)	16 20		25				32			40			50			63				
Unit symbol		Α	L	A L H		Н	Α	L	Н	Α	L	Н	Α	L	н	Α	L	Н	Α	L	Н
Configuration Shock absorber mode		With adjustment bolt	RB 0806 + with adjustment bolt	With adjustment bolt	RB 0806 + with adjustment bolt	RB 1007 + with adjustment bolt	With adjustment bolt	RB 1007 + with adjustment bolt	RB 1412 + with adjustment bolt	With adjustment bolt	RB 1412 + with adjustment bolt	WIII	With adjustment bolt	RB 1412 + with adjustment bolt	+ with	With adjustment bolt	RB 2015 + with adjustment bolt	WIED	With adjustment bolt	RB 2015 + with adjustment bolt	RB 2725 + with adjustment bolt
Stroke adjust- ment range by	Without spacer	0 to -5.6		(0 to -6		0 to -11.5		0 to -12		0 to -16		0 to -20)	0 to -25		5			
intermediate With s	With short spacer	-5.6 to	-11.2	-6	6 to -1:	2	-1	1.5 to -	-23	-1	-12 to -24		-16 to -32		32	-20 to -40		10	-2	!5 to −!	50
fixing spacer (mm)	With long spacer	-11.2 t	-11.2 to -16.8		-12 to -18		-23 to -34.5		-24 to -36		-32 to -48		-40 to -60		-50 to -75		75				

 $[\]ast$ Stroke adjustment range is applicable for one side when mounted on a cylinder.

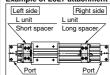
Stroke Adjustment Unit Symbol

<u> </u>	Right side stroke adjustment unit													
						Right s	ide stroke	adjustm	ent unit					
			Without	A: With adjustment			L: With lov + Adjustm	v load shoc ent bolt	k absorber	H: With high load shock absorber + Adjustment bolt				
	Wish and mais		unit		With short spacer	With long spacer		With short spacer	With long spacer		With short spacer	With long spacer		
mi	Wit	hout unit	Nil	SA	SA6	SA7	SL	SL6	SL7	SH	SH6	SH7		
n H	A: With a	djustment bolt	AS	Α	AA6	AA7	AL	AL6	AL7	AH	AH6	AH7		
ner		With short spacer	A6S	A6A	A6	A6A7	A6L	A6L6	A6L7	A6H	A6H6	A6H7		
adjustment		With long spacer	A7S	A7A	A7A6	A7	A7L	A7L6	A7L7	A7H	A7H6	A7H7		
adj		oad shock absorber +	LS	LA	LA6	LA7	L	LL6	LL7	LH	LH6	LH7		
stroke	Adjustment bolt	With short spacer	L6S	L6A	L6A6	L6A7	L6L	L6	L6L7	L6H	L6H6	L6H7		
stro	DOIL	With long spacer	L7S	L7A	L7A6	L7A7	L7L	L7L6	L7	L7H	L7H6	L7H7		
g	H: With high	load shock absorber +	HS	HA	HA6	HA7	HL	HL6	HL7	Н	HH6	HH7		
		With short spacer	H6S	H6A	H6A6	H6A7	H6L	H6L6	H6L7	Н6Н	H6	Н6Н7		
Left	DOIL	With long spacer	H7S	H7A	H7A6	H7A7	H7L	H7L6	H7L7	H7H	H7H6	H7		

Stroke adjustment unit mounting diagram



Example of L6L7 attachment



Refer to pages 1331 to 1333-1 for the specifications with auto switch.

^{*} Spacers are used to fix the stroke adjustment unit at an intermediate stroke position.

For details on spacers and stroke adjustment units, refer to "Accessory Bracket (Option)" on page 1274-1.

Shock Absorbers for L and H Units

T	Stroke			Во	re size (m	nm)				
Type	adjustment unit	16	20	25	32	40	50	63		
Standard (Shock absorber/	L	RBC	0806	RB1007	RB1	412	RB2015			
RB series)	Н	_	RB1007	RB1412	RB2	2015	RB2	725		
Shock absorber/	L	RJ08	B06H	RJ1007H	RJ1412H		_	_		
soft type RJ series mounted (-XB22)	Н	_	RJ1007H	RJ1412H	_	_	_			

^{*} The shock absorber service life is different from that of the MY1M cylinder depending on operating conditions. Refer to the RB Series Specific Product Precautions for the replacement period.

Shock Absorber Specifications

Mod	del	RB 0806	RB 1007	RB 1412	RB 2015	RB 2725					
Max. energy a	bsorption (J)	2.9	5.9	19.6	58.8	147					
Stroke abso	rption (mm)	6	6 7 12 15 2								
Max. collision	speed (mm/s)	1500									
Max. operating free	uency (cycle/min)	80	70	45	25	10					
Spring	Extended	1.96	4.22	6.86	8.34	8.83					
opg	Retracted	4.22	6.86	15.98	20.50	20.01					
Operating temper	5 to 60										

^{*} The shock absorber service life is different from that of the MY1M cylinder depending on operating conditions. Refer to the RB Series Specific Product Precautions for the replacement period.

Theoretical Output

							(N)
Piston		(Operating	g pressu	re (MPa)	
(mm ²)	0.2	0.3	0.4	0.5	0.6	0.7	0.8
200	40	60	80	100	120	140	160
314	62	94	125	157	188	219	251
490	98	147	196	245	294	343	392
804	161	241	322	402	483	563	643
1256	251	377	502	628	754	879	1005
1962	392	588	784	981	1177	1373	1569
3115	623	934	1246	1557	1869	2180	2492
	area (mm²) 200 314 490 804 1256 1962	area (mm²) 0.2 200 40 314 62 490 98 804 161 1256 251 1962 392	area (mm²) 0.2 0.3 200 40 60 314 62 94 490 98 147 804 161 241 1256 251 377 1962 392 588	0.2 0.3 0.4	0.2 0.3 0.4 0.5	area (mm²) 0.2 0.3 0.4 0.5 0.6 200 40 60 80 100 120 314 62 94 125 157 188 490 98 147 196 245 294 804 161 241 322 402 483 1256 251 377 502 628 754 1962 392 588 784 981 1177	area (mm²) 0.2 0.3 0.4 0.5 0.6 0.7 200 40 60 80 100 120 140 314 62 94 125 157 188 219 490 98 147 196 245 294 343 804 161 241 322 402 483 563 1256 251 377 502 628 754 879 1962 392 588 784 981 1177 1373

Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm²)

Weight

							(kg)
Bore	Basic	Additional weight	Weight	Side support bracket weight (per set)		ljustment u (per unit)	
(mm)	weight	per each 50 mm of stroke	of moving parts	Type A and B	A unit weight	L unit weight	H unit weight
16	0.67	0.12	0.19	0.01	0.03	0.04	_
20	1.11	0.16	0.28	0.02	0.04	0.05	0.08
25	1.64	0.24	0.39	0.02	0.07	0.11	0.18
32	3.27	0.38	0.81	0.04	0.14	0.23	0.39
40	5.88	0.56	1.41	0.08	0.25	0.34	0.48
50	10.06	0.77	2.51	0.08	0.36	0.51	0.81
63	16.57	5.57 1.11 3.9		0.17	0.68	0.83	1.08

Calculation: (Example) MY1M25-300A

- Basic weight------ 1.64 kg
- Cylinder stroke ----- 300 stroke Additional weight ---- 0.24/50 stroke
- 1.64 + 0.24 x 300/50 + 0.07 x 2 ≅ 3.22 kg
- Weight of A unit----- 0.07 kg

** ⚠** Precautions

For details on the MY1M Series Mechanically Jointed Rodless Cylinder, refer to "Specific Product Precautions" on pages 1335 to 1336-2.

^{*} Mounted shock absorber soft type RJ series (-XB22) is made to order specifications. For details, refer to page 1752.

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 adjustment 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.

<H unit>

Use this unit when the cylinder is operated in a load and speed range above the L unit limit line and below the H unit limit line.

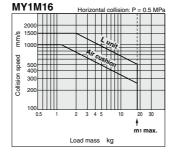
 For details on stroke adjustment using the adjustment bolt, refer to page 1336.

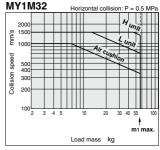
(mm)

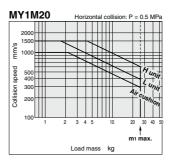
Air Cushion Stroke

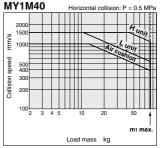
Bore size (mm)	Cushion stroke
16	12
20	15
25	15
32	19
40	24
50	30
63	37

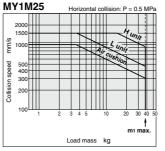
Absorption Capacity of Air Cushion and Stroke Adjustment Units

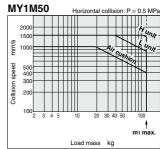


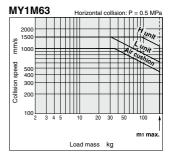






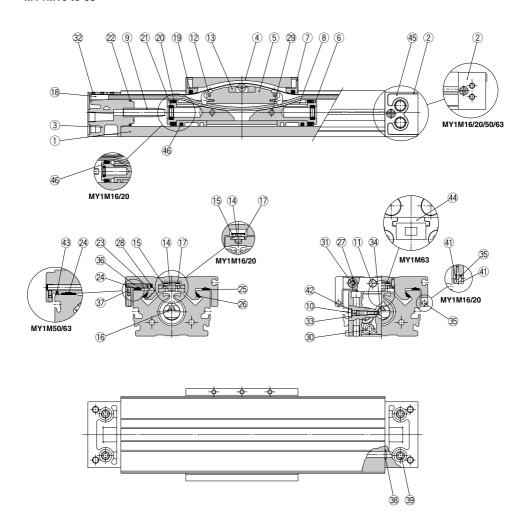






Construction: Ø16 to Ø63

MY1M16 to 63



Mechanically Jointed Rodless Cylinder MY1M Series Slide Bearing Guide Type

MY1M16 to 63

Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Head cover WR	Aluminum alloy	Painted
3	Head cover WL	Aluminum alloy	Painted
4	Slide table	Aluminum alloy	Hard anodized
5	Piston yoke	Aluminum alloy	Chromated
6	Piston	Aluminum alloy	Chromated
7	End cover	Special resin	
8	Wear ring	Special resin	
9	Cushion ring	Aluminum alloy	Anodized
10	Cushion needle	Rolled steel	Nickel plated
11	Stopper	Carbon steel	Nickel plated
12	Belt separator	Special resin	
13	Coupler	Sintered iron material	
14	Guide roller	Special resin	
15	Guide roller shaft	Stainless steel	
18	Belt clamp	Special resin	
23	Adjusting arm	Aluminum alloy	Chromated
24	Bearing R	Special resin	
25	Bearing L	Special resin	
26	Bearing S	Special resin	

No.	Description	Material	Note
27	Spacer	Stainless steel	
28	Backup spring	Stainless steel	
29	Spring pin	Carbon tool steel	
30	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
31	Hexagon socket button head screw	Chromium molybdenum steel	Chromated
32	Hexagon socket head set screw	Chromium molybdenum steel	Black zinc chromated/Chromated
34	Hexagon socket head taper plug	Carbon steel	Chromated
35	Magnet	_	
36	Hexagon socket head set screw	Chromium molybdenum steel	Black zinc chromated
37	Hexagon socket head set screw	Chromium molybdenum steel	Black zinc chromated
39	Hexagon socket head taper plug	Carbon steel	Chromated
40	Magnet holder	Special resin	(ø16, ø20)
41	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated
42	Type CR retaining ring	Spring steel	
44	Head plate	Aluminum alloy	Hard anodized (ø63)
45	Port cover	Special resin	(ø25 to ø40)
46	Lube-retainer	Special resin	

Replacement Part: Seal Kit

No.	Description	Qty.	MY1M16	MY1M20	MY1M25	MY1M32	MY1M40	MY1M50	MY1M63	
16	Seal belt	1	MY16-16C-Stroke	MY20-16C-Stroke	MY25-16C-Stroke	MY32-16C-Stroke	MY40-16C-Stroke	MY50-16C-Stroke	MY63-16A-Stroke	
17	Dust seal band	1	MY16-16B-Stroke	MY20-16B-Stroke	MY25-16B-Stroke	MY32-16B-Stroke	MY40-16B-Stroke	MY50-16B-Stroke	MY63-16B-Stroke	
33	O-ring	,	KA00309	KA00311	KA00311	KA00320	KA00402	KA00777	KA00777	
33	O-rillg		(ø4 x ø1.8 x ø1.1)	(ø5.1 x ø3 x ø1.05)	(ø5.1 x ø3 x ø1.05)	(ø7.15 x ø3.75 x ø1.7)	(ø8.3 x ø4.5 x ø1.9)	_	_	
43	Side scraper	r 2 –		_	_	_	_	MYM50-15CK0502B	MYM63-15CK0503B	
19	Scraper	2								
20	Piston seal	2]							
21	Cushion seal	2	MY1M16-PS	MY1M20-PS	MY1M25-PS	MY1M32-PS	MY1M40-PS	MY1M50-PS	MY1M63-PS	
22	Tube gasket	2								
38	O-ring	4	1							

^{*} Seal kit includes (9, 20, 2), (2) and (3). Order the seal kit based on each bore size.

Order with the following part number when only the grease pack is needed. Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)

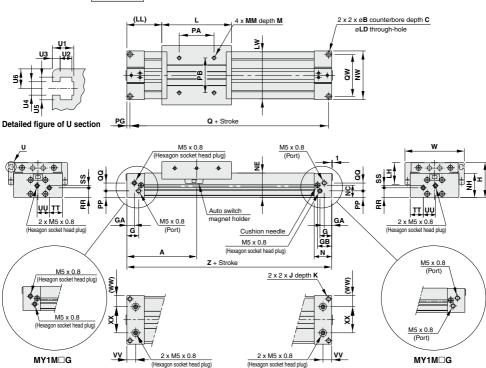
Note) Two kinds of dust seal bands are available. Verify the type to use, since the part number varies depending on the treatmentof the hexagon socket head set screw №. A: Black zinc chromated —MYUII—16Bestroke, B: Chromated —MYIII—16BW-stroke

^{*} Seal kit includes a grease pack (10 g).

When (6) and (7) are shipped independently, a grease pack is included. (10 g per 1000 strokes)

Standard Type/Centralized Piping Type Ø16, Ø20



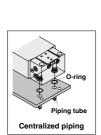


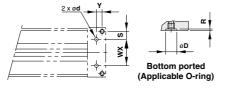
Model	Α	В	С	G	GA	GB	Н	J	K	L	LD	LH	LL	LW	М	MM	N	NC	NE	NH	NW	PA
MY1M16□	80	6	3.5	13.5	8.5	16.2	40	M5 x 0.8	10	80	3.6	22.5	40	54	6	M4 x 0.7	20	14	28	27.7	56	40
MY1M20□	100	7.5	4.5	12.5	12.5	20	46	M6 x 1	12	100	4.8	23	50	58	7.5	M5 x 0.8	25	17	34	33.7	60	50

															(mm)
Model	РВ	PG	PP	Q	QQ	QW	RR	SS	TT	UU	VV	W	ww	XX	Z
MY1M16□	40	3.5	7.5	153	9	48	11	2.5	15	14	10	68	13	30	160
MY1M20□	40	4.5	11.5	191	10	45	14.5	5	18	12	12.5	72	14	32	200

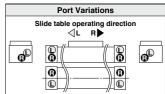
Detailed [Dime	nsior	ıs of	U Se	ction	(mm)
Model	U1	U2	U3	U4	U5	U6
MY1M16□	5.5	3	2	3.4	5.8	5
MY1M20□	5.5	3	2	3.4	5.8	5.5

Centralized Piping on the Bottom





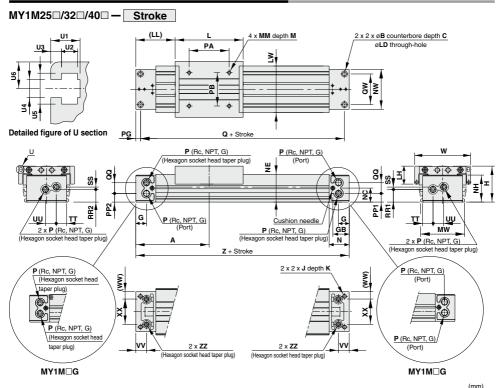
Model	WX	Υ	S	d	D	R	Applicable O-ring
MY1M16□	30	6.5	9	4	8.4	1.1	
MY1M20□	32	8	6.5	4	8.4	1.1	C6



A 1270

Mechanically Jointed Rodless Cylinder MY1M Series Slide Bearing Guide Type

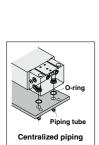
Standard Type/Centralized Piping Type Ø25, Ø32, Ø40

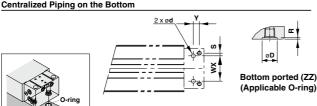


Model	Α	В	С	G	GB	Н	J	K	L	LD	LH	LL	LW	M	MM	MW	N	NC	NE	NH	NW	Р	PA
MY1M25□	110	9	5.5	17	24.5	54	M6 x 1	9.5	102	5.6	27	59	70	10	M5 x 0.8	66	30	21	41.8	40.5	60	1/8	60
MY1M32□	140	11	6.5	19	30	68	M8 x 1.25	16	132	6.8	35	74	88	13	M6 x 1	80	37	26	52.3	50	74	1/8	80
MY1M40□	170	14	8.5	23	36.5	84	M10 x 1.5	15	162	8.6	38	89	104	13	M6 x 1	96	45	32	65.3	63.5	94	1/4	100
																			"P" ind	icates	cylind	er supply	ports.

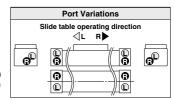
(mm) Model PG PP1 PP2 Q QQ QW RR1 RR2 SS UU W ww ΖZ MY1M25□ 12.7 12.7 206 15.5 18.9 17.9 4.1 15.5 16 38 220 Rc 1/16 MY1M32□ 21 19 48 280 Rc 1/16 60 8 15.5 18.5 16 60 22 16 102 13 MY1M40□ 80 9 17.5 20 322 26 72 25.5 29 9 26 21 23 118 20 54 340 Rc 1/8

Detailed Dimensions of U Section (mm) U4 U5 U6 MY1M25□ 5.5 2 3.4 5.8 5 MY1M32□ 3.4 7 5.5 3 2 5.8 MY1M40□ 6.5 3.8 2 4.5 7.3 8





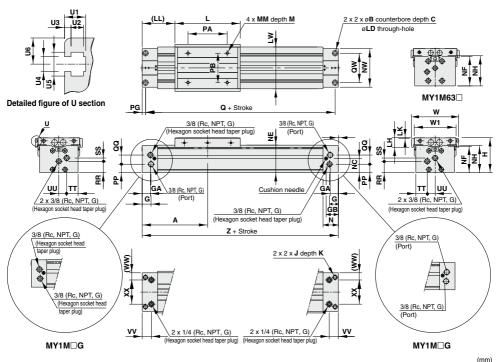
Model	WX	Υ	S	d	D	R	Applicable O-ring
MY1M25□	38	9	4	6	11.4	1.1	C9
MY1M32□	48	11	6	6	11.4	1.1	C9
MY1M40□	54	14	9	8	13.4	1.1	C11.2



Standard Type/Centralized Piping Type ø50, ø63

Refer to page 1337 regarding centralized piping port variations.

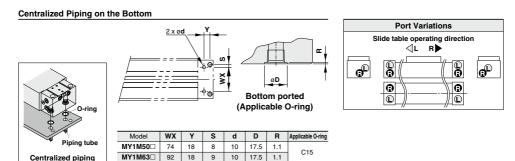
MY1M50□/60□ - Stroke



																								(
Model	Α	В	С	G	GA	GB	н	J	Κ	L	LD	LH	LK	LL	LW	M	MM	N	NC	NE	NF	NH	NW	PA
MY1M50□	200	17	10.5	27	25	37.5	107	M14 x 2	28	200	11	29	2	100	128	15	M8 x 1.25	47	43.5	84.5	81	83.5	118	120
MY1M63□	230	19	12.5	29.5	27.5	39.5	130	M16 x 2	32	230	13.5	32.5	5.5	115	152	16	M10 x 1.5	50	56	104	103	105	142	140

																(mm)
Model	PB	PG	PP	Q	QQ	QW	RR	SS	TT	UU	٧٧	W	W1	ww	XX	Z
MY1M50□	90	10	26	380	28	90	35	10	35	24	28	144	128	22	74	400
MY1M63□	110	12	42	436	30	110	49	13	43	28	30	168	152	25	92	460

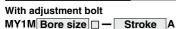
Detailed Dimensions of U Section (mm) U1 U2 U3 U4 U5 U6 MY1M50□ 6.5 3.8 2 4.5 7.3 8 MY1M63□ 8.5 5 5.5 8.4 8 2.5

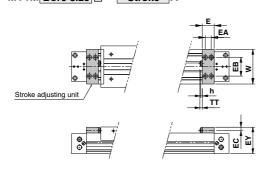


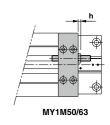
A 1272

Mechanically Jointed Rodless Cylinder MY1M Series Slide Bearing Guide Type

Stroke Adjustment Unit

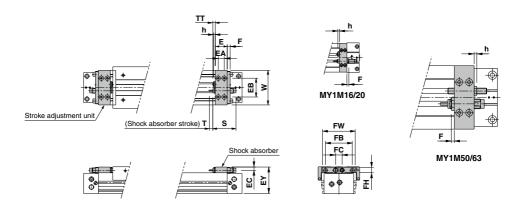






Applicable bore size	E	EA	EB	EC	EY	FC	h	TT	W
MY1M16	14.6	7	30	5.8	39.5	14	3.6	5.4 (Max. 11)	58
MY1M20	20	10	32	5.8	45.5	14	3.6	5 (Max. 11)	58
MY1M25	24	12	38	6.5	53.5	13	3.5	5 (Max. 16.5)	70
MY1M32	29	14	50	8.5	67	17	4.5	8 (Max. 20)	88
MY1M40	35	17	57	10	83	17	4.5	9 (Max. 25)	104
MY1M50	40	20	66	14	106	26	5.5	13 (Max. 33)	128
MY1M63	52	26	77	14	129	31	5.5	13 (Max. 38)	152

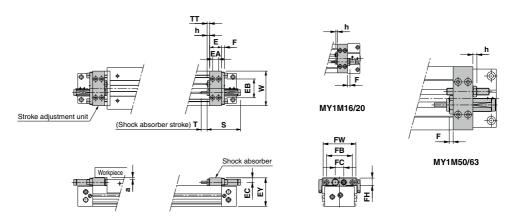
With low load shock absorber + Adjustment bolt MY1M Bore size — Stroke L



																(11111)
Applicable size	Е	EA	EB	EC	EY	F	FB	FC	FH	FW	h	S	Т	TT	W	Shock absorber model
MY1M16	14.6	7	30	5.8	39.5	4	_	14	_	_	3.6	40.8	6	5.4 (Max. 11)	58	RB0806
MY1M20	20	10	32	5.8	45.5	4	_	14	_	_	3.6	40.8	6	5 (Max. 11)	58	RB0806
MY1M25	24	12	38	6.5	53.5	6	54	13	13	66	3.5	46.7	7	5 (Max. 16.5)	70	RB1007
MY1M32	29	14	50	8.5	67	6	67	17	16	80	4.5	67.3	12	8 (Max. 20)	88	RB1412
MY1M40	35	17	57	10	83	6	78	17	17.5	91	4.5	67.3	12	9 (Max. 25)	104	RB1412
MY1M50	40	20	66	14	106	6		26		_	5.5	73.2	15	13 (Max. 33)	128	RB2015
MY1M63	52	26	77	14	129	6	_	31	_	_	5.5	73.2	15	13 (Max. 38)	152	RB2015

Stroke Adjustment Unit

With high load shock absorber + Adjustment bolt MY1M Bore size - Stroke H

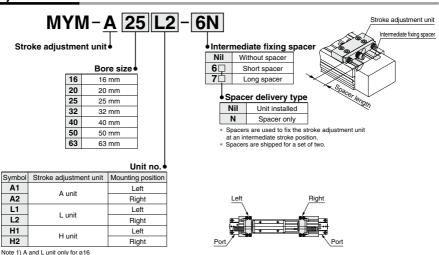


* Since dimension EY of the H type unit is greater than the table top height (dimension H), when mounting a workpiece that exceeds the overall length (dimension L) of the slide table, allow a clearance of dimension "a" or larger on the workpiece side.

Applicable bore size	Е	EA	EB	EC	EY	F	FB	FC	FH	FW	h	S	Т	TT	W	Shock absorber model	а
MY1M20	20	10	32	7.7	50	5	_	14		—	3.5	46.7	7	5 (Max. 11)	58	RB1007	5
MY1M25	24	12	38	9	57.5	6	52	17	16	66	4.5	67.3	12	5 (Max. 16.5)	70	RB1412	4.5
MY1M32	29	14	50	11.5	73	8	67	22	22	82	5.5	73.2	15	8 (Max. 20)	88	RB2015	6
MY1M40	35	17	57	12	87	8	78	22	22	95	5.5	73.2	15	9 (Max. 25)	104	RB2015	4
MY1M50	40	20	66	18.5	115	8		30			11	99	25	13 (Max. 33)	128	RB2725	9
MY1M63	52	26	77	19	138.5	8	_	35	—	—	11	99	25	13 (Max. 38)	152	RB2725	9.5

Accessory Bracket (Option)

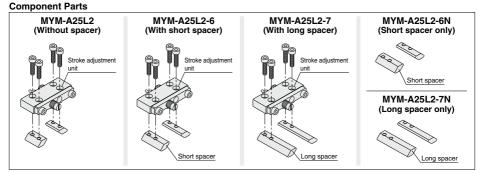
Stroke Adjustment Unit



Stroke adjustment range

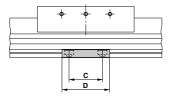
Stroke adjustiner	it range)																		(mm)
Bore size	1	6		20			25			32			40			50			63	
Unit symbol	Α	L	Α	L	Н	Α	L	Н	Α	L	Н	Α	L	Н	Α	L	Н	Α	L	Н
Without spacer	0 to	-5.6		0 to -6	3	0	to -11	.5	0	to -1	2	() to -1	6	C) to -2	0	C	to -2	5
With short spacer	-5.6 to	-11.2	-	6 to -	12	-11	1.5 to	-23	-1	2 to -	24	-1	16 to –	32	-2	20 to –	40	-2	25 to –	50
With long spacer	-11.2 t	0 –16.8	-1	2 to -	18	-23	3 to -3	4.5	-2	4 to –	36	-3	32 to –	48	-4	10 to –	60	-5	60 to –	75

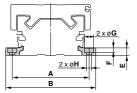
Spacer length							(mm)
Bore size	16	20	25	32	40	50	63
Short spacer	5.6	6	11.5	12	16	20	25
Long spacer	11.2	12	23	24	32	40	50



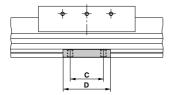
Side Support

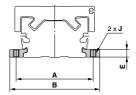
Side support A MY-S□A





Side support B MY-S□B





Model	Applicable bore size	Α	В	С	D	Е	F	G	Н	J
MY-S16A	MY1M16	61	71.6	15	26	4.9	3	6.5	3.4	M4 x 0.7
MY-S20A	MY1M20	67	79.6	25	38	6.4	4	8	4.5	M5 x 0.8
MY-S25A	MY1M25	81	95	35	50	8	5	9.5	5.5	M6 x 1
MY-S32A	MY1M32	100	118	45	64	11.7	6	11	6.6	M8 x 1.25
MY-S408	MY1M40	120	142		00	14.8	8.5	14	9	M10 x 1.5
W 1-540B	MY1M50	142	164	55	80		8.5	14	9	I IVI IU X I.5
MY-S63A	MY1M63	172	202	70	100	18.3	10.5	17.5	11.5	M12 x 1.75

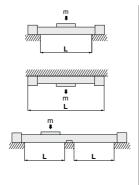
^{*} A set of side supports consists of a left support and a right support.

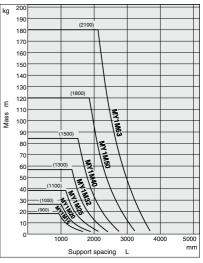
Guide for Side Support Application

For long stroke operation, the cylinder tube may be deflected depending on its own weight and the load mass. 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.

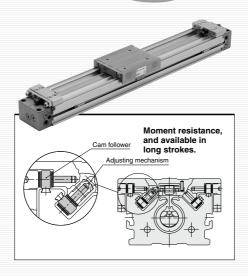
⚠ Caution

- 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.
- Support brackets are not for mounting; use them solely for providing support.









INDEX	
MY1C Series Prior to Use	D 1270
Model Selection	
How to Order	
Specifications	P. 1283
Cushion Canacity	P 1286
Construction	
Dimensions	
Side Support	···· P. 1295

MY1C Series Prior to Use

Maximum Allowable Moment/Maximum Load Mass

Model	Bore size	Maximum a	llowable mo	ment (N·m)	Maximum load mass (kg)					
Model	(mm)	M ₁	M2	Мз	m1	m ₂	mз			
	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			
MY1C	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 mass (kg)



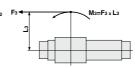




Moment (N·m)







<Calculation of guide load factor>

- Maximum allowable load (1), static moment (2), and dynamic moment (3) (at the time of impact with stopper) must be examined for the selection calculations.
 - * To evaluate, use \(\mathcal{u}\) a (average speed) for (1) and (2), and \(\mathcal{v}\) (collision speed \(\mathcal{v}\) = 1.4\(\mathcal{u}\)) for (3). Calculate mmax for (1) from the maximum allowable load graph (m₁, m₂, m₃) and Mmax for (2) and (3) from the maximum allowable moment graph (M₁, M₂, M₃).

Sum of guide $\Sigma \alpha =$	Load mass [m]	Static moment [M] (1)	Dynamic moment [M _E] ⁽²⁾ < 1
load factors	Maximum allowable load [m max]	Allowable static moment [Mmax]	Allowable dynamic moment [Memax]

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 mass (kg)

F: Load (N)

FE: Load equivalent to impact (at impact with stopper) (N)

Va: Average speed (mm/s)

M: Static moment (N-m)

$$\begin{split} & \upsilon = 1.4 \upsilon a \text{ (mm/s) } F_E = 1.4 \upsilon a \cdot \delta \cdot m \cdot g \\ & :: \textbf{M}_E = \frac{1}{3} \cdot F_E \cdot L_1 = 4.57 \upsilon a \delta m L_1 \text{ (N·m)} \end{split}$$

υ: Collision speed (mm/s)

L₁: Distance to the load's center of gravity (m)

g: Gravitational acceleration (9.8 m/s2)

ME: Dynamic moment (N-m)

δ: Damper coefficient At collision: 0 = 1.40aWith rubber bumper = 4/100
(MY1B10, MY1H10)
With air cushion = 1/100
With shock absorber = 1/100

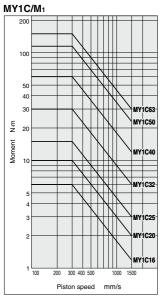
Note 4) 1.4Vaδ is a dimensionless coefficient for calculating impact force.

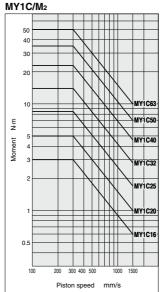
Note 5) Average load coefficient (= -\frac{1}{2}). This coefficient is for averaging the maximum load moment at the time of stopper impact according to service life calculations.

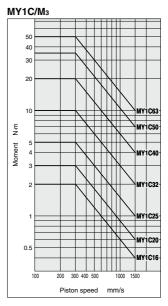
3. For detailed selection procedures, refer to pages 1280 and 1281.

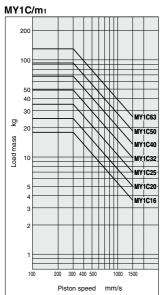
Maximum Load Mass

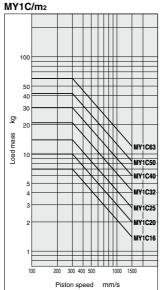
Select the load from within the range of limits shown in the graphs. Note that the maximum allowable moment value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable moment for the selected conditions.

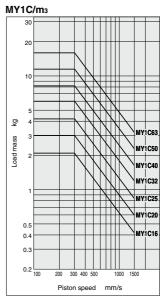










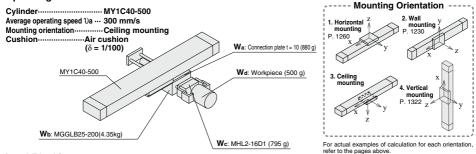


MY1C Series **Model Selection**

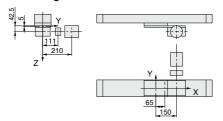
Following are the steps for selecting the most suitable MY1C series to your application.

Calculation of Guide Load Factor

1. Operating Conditions



2. Load Blocking



Mass and Center of Gravity for Each Workpiece

Workpiece no.	Mass	Center of gravity								
Wn	m _n	X-axis X _n	Y-axis Yn	Z-axis Z n						
Wa	0.88 kg	65 mm	0 mm	5 mm						
W ь 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

$$\begin{split} & \mathbf{m}_2 = \Sigma m_n \\ &= 0.88 + 4.35 + 0.795 + 0.5 = \textbf{6.525 kg} \\ & \mathbf{X} = \frac{1}{m_2} \times \Sigma \left(\mathbf{m}_n \times \mathbf{x}_n \right) \\ &= \frac{1}{6.525} \left(0.88 \times 65 + 4.35 \times 150 + 0.795 \times 150 + 0.5 \times 150 \right) = \textbf{138.5 mm} \\ & \mathbf{Y} = \frac{1}{m_2} \times \Sigma \left(\mathbf{m}_n \times \mathbf{y}_n \right) \\ &= \frac{1}{6.525} \left(0.88 \times 0 + 4.35 \times 0 + 0.795 \times 111 + 0.5 \times 210 \right) = \textbf{29.6 mm} \\ & \mathbf{Z} = \frac{1}{m_2} \times \Sigma \left(\mathbf{m}_n \times \mathbf{z}_n \right) \\ &= \frac{1}{6.525} \left(0.88 \times 5 + 4.35 \times 42.5 + 0.795 \times 42.5 + 0.5 \times 42.5 \right) = \textbf{37.4 mm} \end{split}$$

4. Calculation of Load Factor for Static Load

m2: Mass $m_2 \max$ (from (1) of graph MY1C/ m_2) = 30 (kg)..... Load factor $\Omega_1 = m_2/m_2 \max = 6.525/30 = 0.22$ M₁: Moment $M_1 = m_2 \times q \times X = 6.525 \times 9.8 \times 138.5 \times 10^{-3} = 8.86 \text{ (N·m)}$

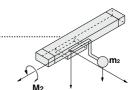
Load factor $\Omega_2 = M_1/M_1 \text{ max} = 8.86/60 = 0.15$

M₂: Moment

 $M_2 \max$ (from (3) of graph MY1C/ M_2) = 23.0 (N·m).....

$$M_2 = m_2 \times g \times Y = 6.525 \times 9.8 \times 29.6 \times 10^{-3} = 1.89 (N \cdot m)$$

Load factor $Ol_3 = M_2/M_2 max = 1.89/23.0 = 0.08$



5. Calculation of Load Factor for Dynamic Moment -

Equivalent load FE at impact

$$\mathbf{F}_{E} = 1.4 \text{ } 0 \text{ } 0$$

M1E: Moment

M_{1E} max (from (4) of graph MY1C/M₁ where $1.4\upsilon a = 420$ mm/s) = 42.9 (N·m)······

$$\mathbf{M}_{1E} = \frac{1}{3} \times \mathbf{F}_{E} \times \mathbf{Z} = \frac{1}{3} \times 268.6 \times 37.4 \times 10^{-3} = 3.35 \text{ (N·m)}$$

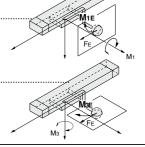
Load factor
$$OL_4 = M_1 E/M_1 E max = 3.35/42.9 = 0.08$$

M_{3E}: Moment



$$\mathbf{M}_{3E} = \frac{1}{3} \times \mathbf{F}_{EX} \mathbf{Y} = \frac{1}{3} \times 268.6 \times 29.6 \times 10^{-3} = 2.65 \text{ (N·m)}$$

Load factor $\Omega_5 = M_{3E}/M_{3E} max = 2.65/14.3 = 0.19$



6. Sum and Examination of Guide Load Factors -

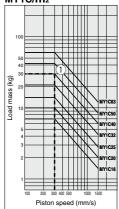
$$\sum_{\mathcal{U}} = \mathcal{O}_{1} + \mathcal{O}_{2} + \mathcal{O}_{3} + \mathcal{O}_{4} + \mathcal{O}_{5} = 0.72 \leq 1$$

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

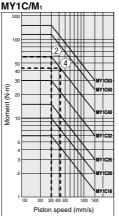
In an actual calculation, when the total sum of guide load factors α in the formula above is more than 1, consider either decreasing the speed, increasing the bore size, or changing the product series. This calculation can be easily made using the "SMC Pneumatics CAD System".

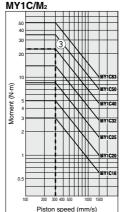
Load Mass

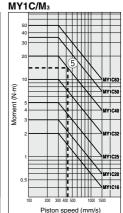
MY1C/m₂



Allowable Moment





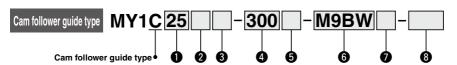


Mechanically Jointed Rodless Cylinder Cam Follower Guide Type

MY1C Series

Ø16, Ø20, Ø25, Ø32, Ø40, Ø50, Ø63

How to Order



Bore size

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

Port thread type

Symbol	Type	Bore size				
Nil	M thread	ø16, ø20				
NII	Rc	ø25, ø32,				
TN	NPT	ø40, ø50,				
TF	G	ø63				

Pining

Nil	Standard type						
G	Centralized piping type						

4 Cylinder stroke (mm)

Bore size	Standard stroke*1	Long stroke (-XB11)	Maximum manufacturable stroke
16	100, 200, 300, 400, 500 600, 700, 800, 900 1000, 1200, 1400	Strokes of 2001 to 3000 mm (1 mm increments) exceeding the standard stroke	3000
20, 25, 32 40, 50, 63	1600, 1800, 2000 1 The stroke can be manufactured in 1 mm increments from 1 mm stroke.	Strokes of 2001 to 5000 mm (1 mm increments) exceeding the standard stroke	5000

Ordering example

* Add "-XB11" to the end of the part number for long strokes. MY1C20-3000L-M9BW-XB11

Note) Please be advised that with stroke 49 or less, there are cases where auto switch mounting is not possible and the performance of the air cushion may decline.

Stroke adjustment unit symbol Refer to "Stroke adjustment unit" on page 1283.



6 Auto switch

Nil	Without auto switch (Built-in magnet)
	le auto switches vary depending on the
the table	 Select an applicable one referring to below.

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	"n" pcs.

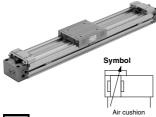
Made to Order Refer to page 1283 for details.

Applicable Auto Switches/Refer to pages 1575 to 1701 for further information on auto switches.

		Floridad	light	\A/:-:	L	Load voltage			Auto swit	ch model		Lead	wire l	ength	n (m)	Pre-wired		
Type	Special function	Electrical entry	ator	Wiring (Output)		DC AC F		Perpendicular		In-l	ine	0.5	1	3	5	connector	Applica	ble load
		Citaly	Indic	(Output)		C	AC	ø16, ø20 ø25 to ø63		ø16, ø20	ø25 to ø63	(Nil) (M)		(L)	(Z)	CONTINUES		
ڃ				3-wire (NPN)		E V 10 V	5 V, 12 V		NV	MS	N	•	•	•	0	0	IC circuit	
switch				3-wire (PNP)		5 V, 12 V			M9PV		P	•	•	•	0	0	IC CITCUIT	
				2-wire		12 V			BV	MS	В	•	•	•	0	0	_	
anto	6			3-wire (NPN)		5 V, 12 V	M9NWV		M9NW		•	•	•	0	0	IC circuit	D.1.	
	Diagnostic indication (2-color indicator)	Grommet	Yes	3-wire (PNP)	24 V		M9P	٧W٧	M9I	PW	•	•	•	0	0	IC CITCUIT	Relay, PLC	
state	(2-color indicator)			2-wire		12 V		M9B	3WV	M9I	3W	•	•	•	0	0	_	1 LC
25				3-wire (NPN)		5 V. 12 V		M9N	AV*1	M9N	IA*1	0	0	•	0	0	IC circuit	
Solid	Water resistant (2-color indicator)			3-wire (PNP)		5 V, 12 V		M9P	AV*1	M9F	A*1	0	0	•	0	0	IC CITCUIT	
Ō	(2-color indicator)			2-wire		12 V		M9BAV*1		M9E	8A*1	0	0	•	0	0	_	
eed			Yes	3-wire (NPN equivalent)	_	5 V	_	A96V	_	A96	Z76	•	_	•	_	_	IC circuit	_
Reed o swit		Grommet	162	2-wire	24 V	12 V	100 V	A93V*3	_	A93	Z73	•	•	•	•	_	_	Relay,
arto Br			No	Z-wire	24 V	12 0	100 V or less	A90V	_	A90	Z80	•	_	•	_	_	IC circuit	PLC

- *1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance.
- Consult with SMC regarding water resistant types with the above model numbers.
- *2 For details on switch mounting brackets and part numbers, refer to "Switch Mounting Bracket: Part No." on page 1333-1.
- *3.1 m type lead wire is only applicable to D-A93
- * Lead wire length symbols: 0.5 m Nil (Example) M9NW
 - 1 m M (Example) M9NWM 3 m L (Example) M9NWL 3 m L 5 m Z (Example) M9NWZ
- * Solid state auto switches marked with "O" are produced upon receipt of order
- * Separate switch spacers (BMG2-012) are required to retrofit auto switches (M9 type) on cylinders ø25 to ø63.
- * There are other applicable auto switches than listed above. For details, refer to page 1333-1.
- * Auto switches are shipped together (not assembled). (Refer to page 1331 for the details of auto switch mounting.)

Mechanically Jointed Rodless Cylinder Cam Follower Guide Type MY1C Series



Made to Order: Individual Specifications (For details, refer to page 1334.)

Symbol	Specifications
-X168	Helical insert thread specifications

Made to Order Specifications Click here for details

Symbol	Specifications					
-XB11	Long stroke					
-XB22 Shock absorber soft type RJ series type						
-XC56	With knock pin hole					
-XC67	NBR rubber lining in dust seal band					

Specifications

Bore size (mm)	16	20	25	32	40	50	63			
Fluid		Air									
Action		Double acting									
Operating p	ressure range	0.15 to 0.8 N	1Pa		0.1	to 0.8 M	Pa				
Proof pres	sure	1.2 MPa									
Ambient and f	luid temperature	5 to 60°C									
Cushion		Air cushion									
Lubricatio	n	Non-lube									
Stroke leng	th tolerance	1000 or less *1.8 1001 to 3000 *2.8	2700 or less ^{+1,8} ₀ , 2701 to 5000 ^{+2,8} ₀								
Piping	Front/Side port	M5 x 0.8		1/8		1/4	3,	/8			
port size	Bottom port	ø4	ø	6	ø8	ø.	10				

Piston Speed

В	ore size (mm)	16 to 63				
Without stroke a	djustment unit	100 to 1000 mm/s				
Stroke	A unit	100 to 1000 mm/s ⁽¹⁾				
adjustment unit	L unit and H unit	100 to 1500 mm/s ⁽²⁾				

Note 1) Be aware that when the stroke adjustment range is increased by manipulating the adjustment bolt, the air cushion capacity decreases. Also, when exceeding the air cushion stroke ranges on page 1286, 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 1286.

Note 4) Due to the construction of this product, it may have more fluctuation in operating speed compared to a rod type air cylinder. For applications that require constant speed, select the equipment corresponding to the required level.

Stroke Adjustment Unit Specifications

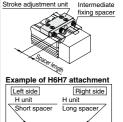
	and the state of t																				
Bore size	(mm)	1	6		20			25			32			40			50			63	
Unit symb	ool	Α	L	Α	L	Н	Α	L	Н	Α	L	Н	Α	L	Н	Α	L	Н	Α	L	Н
Configura Shock abomodel	sorber		RB 0806 + with adjustment bolt	With adjustment bolt	RB 0806 + with adjustment bolt	RB 1007 + with adjustment bolt	With adjustment bolt	RB 1007 + with adjustment bolt	Win	With adjustment bolt	RB 1412 + with adjustment bolt	+ with	With adjustment bolt	RB 1412 + with adjustment bolt	RB 2015 + with adjustment bolt	With adjustment bolt	RB 2015 + with adjustment bolt	RB 2725 + with adjustment bolt	With adjustment bolt	RB 2015 with adjustment bolt	RB 2725 + with adjustment bolt
Stroke adjust- ment range by	Without spacer	0 to	-5.6	(0 to -6		0 1	to –11.	5	(to -12	2	C	to -16	3	C	to -20)	_ c	to -25	5
intermediate '	With short spacer	-5.6 to	-11.2	-6	-6 to −12		-11	-11.5 to -23		-1	2 to –2	24	-1	-16 to -32		-20 to -40		−25 to −50		50	
fixing spacer (mm)	With long spacer	-11.2 to	0 –16.8	-1	2 to -1	8	-23	3 to -34	1.5	-2	24 to ∹	36	-3	2 to -4	18	-4	10 to –6	60	-5	i0 to −7	75

^{*} Stroke adjustment range is applicable for one side when mounted on a cylinder.

Stroke Adjustment Unit Symbol

	Arono rajacament cint cymbol												
				Right side stroke adjustment unit									
			Without	A: With	adjustm	ent bolt	L: With lov + Adjustm	v load shoc ent bolt	k absorber	H: With hig + Adjustme	gh load shoo ent bolt	k absorber	
			unit		With short spacer	With long spacer		With short spacer	With long spacer		With short spacer	With long spacer	
unit	Wit	hout unit	Nil	SA	SA6	SA7	SL	SL6	SL7	SH	SH6	SH7	
Ē	A: With a	djustment bolt	AS	Α	AA6	AA7	AL	AL6	AL7	AH	AH6	AH7	
adjustment		With short spacer	A6S	A6A	A6	A6A7	A6L	A6L6	A6L7	A6H	A6H6	A6H7	
usti		With long spacer	A7S	A7A	A7A6	A7	A7L	A7L6	A7L7	A7H	A7H6	A7H7	
adj		oad shock absorber +	LS	LA	LA6	LA7	L	LL6	LL7	LH	LH6	LH7	
stroke	Adjustment	With short spacer	L6S	L6A	L6A6	L6A7	L6L	L6	L6L7	L6H	L6H6	L6H7	
stro	DOIL	With long spacer	L7S	L7A	L7A6	L7A7	L7L	L7L6	L7	L7H	L7H6	L7H7	
g		load shock absorber +	HS	HA	HA6	HA7	HL	HL6	HL7	Н	HH6	HH7	
ftsi	Adjustment bolt	With short spacer	H6S	H6A	H6A6	H6A7	H6L	H6L6	H6L7	Н6Н	H6	Н6Н7	
٩	DOIL	With long spacer	H7S	H7A	H7A6	H7A7	H7L	H7L6	H7L7	H7H	H7H6	H7	

Stroke adjustment unit mounting diagram



Refer to pages 1331 to 1333-1 for the specifications with auto switch.

^{*} Spacers are used to fix the stroke adjustment unit at an intermediate stroke position.

For details on spacers and stroke adjustment units, refer to "Accessory Bracket (Option)" on page 1274-1.

Shock Absorbers for L and H Units

T	Stroke adjustment	Bore size (mm)									
Type	unit	16	20	25	32	40	50	63			
Standard (Shock absorber/	L	RB0806		RB1007	RB1412		RB2015				
RB series)	Н	- RB1007		RB1412	RB2015		RB2725				
Shock absorber/	L	RJ0806H		RJ1007H	RJ1412H		_	_			
soft type RJ series mounted (-XB22)	Н	_	RJ1007H	RJ1412H	_	_	_	_			

^{*} The shock absorber service life is different from that of the MY1C cylinder depending on operating

Shock Absorber Specifications

Мо	RB 0806	RB 1007	RB 1412	RB 2015	RB 2725		
Max. energy a	absorption (J)	2.9	5.9	19.6	58.8	147	
Stroke abso	rption (mm)	6	7	12	15	25	
Max. collision	speed (mm/s)	1500					
Max. operating fre	quency (cycle/min)	80	70	45	25	10	
Spring	Extended	1.96	4.22	6.86	8.34	8.83	
force (N)	Retracted	4.22	6.86	15.98	20.50	20.01	
Operating tempe	5 to 60						

^{*} The shock absorber service life is different from that of the MY1C cylinder depending on operating conditions. Refer to the RB Series Specific Product Precautions for the replacement period.

Theoretical Output

								(N)				
Bore size	Piston	Operating pressure (MPa)										
(mm)	area (mm²)	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				

Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm2)

Weight

							(kg)	
Bore	Basic	Additional weight	Weight	Side support bracket weight (per set)		ljustment u (per unit)	t unit weight it)	
(mm)	weight	per each 50 mm of stroke	of moving parts	Type A and B	A unit weight	L unit weight	H unit weight	
16	0.67	0.12	0.22	0.01	0.03	0.04	_	
20	1.06	0.15	0.31	0.02	0.04	0.05	0.08	
25	1.58	0.24	0.41	0.02	0.07	0.11	0.18	
32	3.14	0.37	0.86	0.04	0.14	0.23	0.39	
40	5.60	0.52	1.49	0.08	0.25	0.34	0.48	
50	10.14	0.76	2.59	0.08	0.36	0.51	0.81	
63	16.67	1.10	4.26	0.17	0.68	0.83	1.08	

Calculation: (Example) MY1C25-300A

- ··· 1.58 kg Basic weight------
- Cylinder stroke ----- 300 stroke
- Additional weight ----- 0.24/50 stroke 1.58 + 0.24 x 300/50 + 0.07 x 2 ≅ 3.16 kg
- Weight of A unit----- 0.07 kg

For details on the MY1C Series Mechanically Jointed Rodless Cylinder, refer to "Specific Product Precautions" on pages 1335 to 1336-2.

conditions. Refer to the RB Series Specific Product Precautions for the replacement period.

* Mounted shock absorber soft type RJ series (-XB22) is made to order specifications. For details, refer to page 1752.

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 adjustment unit with shock absorber>
Use this unit when operating with a load or speed exceeding the air cushion limit line, or when cushioning is necessary because the cylinder stroke is 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.

H unit

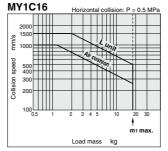
Use this unit when the cylinder is operated in a load and speed range above the L unit limit line and below the H unit limit line.

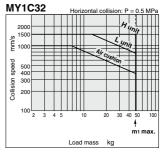
 For details on stroke adjustment using the adjustment bolt, refer to page 1336.

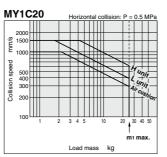
Air Cushion Stroke

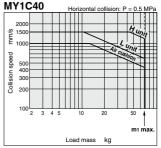
Bore size (mm)	Cushion stroke
16	12
20	15
25	15
32	19
40	24
50	30
63	37

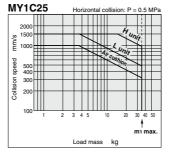
Absorption Capacity of Air Cushion and Stroke Adjustment Units

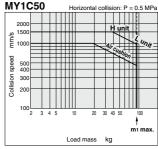


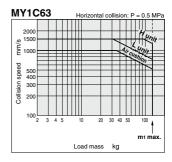






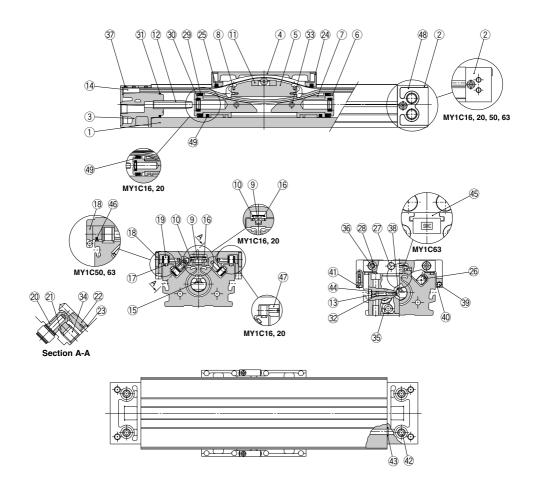






Construction: Ø16 to Ø63

MY1C16 to 63



MY1C16 to 63

Component Parts

00	ipononii anto		
No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Head cover WR	Aluminum alloy	Painted
3	Head cover WL	Aluminum alloy	Painted
4	Slide table	Aluminum alloy	Electroless nickel plated
5	Piston yoke	Aluminum alloy	Chromated
6	Piston	Aluminum alloy	Chromated
7	Wear ring	Special resin	
8	Belt separator	Special resin	
9	Guide roller	Special resin	
10	Guide roller shaft	Stainless steel	
11	Coupler	Sintered iron material	
12	Cushion ring	Aluminum alloy	Anodized
13	Cushion needle	Rolled steel	Nickel plated
14	Belt clamp	Special resin	
17	Rail	Hard steel wire	
18	Cam follower cap	Special resin	(ø25 to ø40)
19	Cam follower	_	
20	Eccentric gear	Stainless steel	
21	Gear bracket	Stainless steel	
22	Adjustment gear	Stainless steel	
23	Retaining ring	Stainless steel	

No.	Description	Material	Note
			Note
24	End Cover	Special resin	
26	Backup plate	Special resin	
27	Stopper	Carbon steel	Nickel plated
28	Spacer	Stainless steel	
33	Spring pin	Carbon tool steel	
34	Hexagon socket head set screw	Chromium molybdenum steel	Black zinc chromated
35	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
36	Hexagon socket button head screw	Chromium molybdenum steel	Chromated
37	Hexagon socket head set screw	Chromium molybdenum steel	Black zinc chromated/Chromated
38	Hexagon socket head taper plug	Carbon steel	Chromated
39	Magnet		
40	Magnet holder	Special resin	
41	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
42	Hexagon socket head taper plug	Carbon steel	Chromated
44	Type CR retaining ring	Spring steel	
45	Head plate	Aluminum alloy	Hard anodized (ø63)
46	Side scraper	Special resin	(ø50 to ø63)
47	Bushing	Aluminum alloy	(ø16 to ø20)
48	Port cover	Special resin	(ø25 to ø40)
49	Lube-retainer	Special resin	

Replacement Part: Seal Kit

No.	Description	Qty.	MY1C16	MY1C20	MY1C25	MY1C32	MY1C40	MY1C50	MY1C63
15	Seal belt	1	MY16-16C-Stroke	MY20-16C-Stroke	MY25-16C-Stroke	MY32-16C-Stroke	MY40-16C-Stroke	MY50-16C-Stroke	MY63-16A-Stroke
16	Dust seal band	1	MY16-16B-Stroke	MY20-16B-Stroke	MY25-16B-Stroke	MY32-16B-Stroke	MY40-16B-Stroke	MY50-16B-Stroke	MY63-16B-Stroke
32	O-ring	2	KA00309	KA00311	KA00311	KA00320	KA00402	KA00777	KA00777
32	O-rillg		(ø4 x ø1.8 x ø1.1)	(ø5.1 x ø3 x ø1.05)	(ø5.1 x ø3 x ø1.05)	(ø7.15 x ø3.75 x ø1.7)	(ø8.3 x ø4.5 x ø1.9)	_	_
46	Side scraper	2	_	_	_	_	_	MYM50-15CK0502B	MYM63-15CK0503B
25	Scraper	2							
29	Piston seal	2							
30	Cushion seal	2	MY1M16-PS	MY1M20-PS	MY1M25-PS	MY1M32-PS	MY1M40-PS	MY1M50-PS	MY1M63-PS
31	Tube gasket	2							
43	O-ring	4							

^{*} Seal kit includes 25, 29, 30, 31 and 43. Order the seal kit based on each bore size.

Order with the following part number when only the grease pack is needed.

Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)

Note) Two kinds 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 ③.

A: Black zinc chromated → MY□□-16B-stroke, B: Nickel plated → MY□□-16BW-stroke

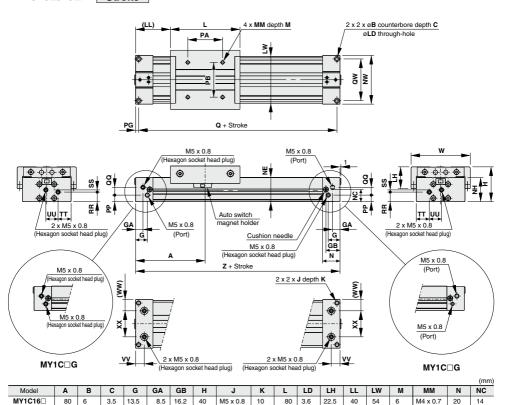
^{*} Seal kit includes a grease pack (10 g).

When (§) and (§) are shipped independently, a grease pack is included. (10 g per 1000 strokes)

Standard Type/Centralized Piping Type Ø16, Ø20

The stroke adjustment unit for the MY1C is the same as that of the MY1M. For models and external dimensions, refer to pages 1273 to 1274-1.

MY1C16□/20□ - Stroke



																			(mm)
Model	NE	NH	NW	PA	PB	PG	PP	Q	QQ	QW	RR	SS	TT	UU	٧٧	W	ww	XX	Z
MY1C16□	28	27.7	56	40	40	3.5	7.5	153	9	48	11	2.5	15	14	10	68	13	30	160
MY1C20□	34	33.7	60	50	40	4.5	11.5	191	10	45	14.5	5	18	12	12.5	72	14	32	200

12 100 4.8 23

50 58 7.5

M5 x 0.8

25 17

Centralized Piping on the Bottom Port Variations Slide table operating direction L R▶ 0 0 øD 0 0 **Bottom ported** (L) (Applicable O-ring) Model wx s d D R Applicable O-ring

MY1C20□

100 7.5 4.5 12.5 12.5 20 46 M6 x 1

Pipina tube

Centralized piping

MY1C16□

MY1C20□

30 6.5

32 8 6.5 4

1.1

C6

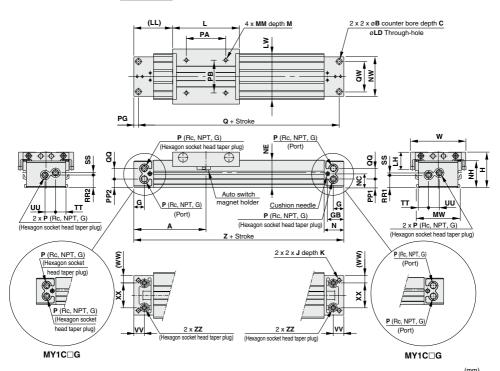
4 8.4 1.1

Mechanically Jointed Rodless Cylinder MY1C Series Cam Follower Guide Type

Standard Type/Centralized Piping Type ø25, ø32, ø40

The stroke adjustment unit for the MY1C is the same as that of the MY1M. For models and external dimensions, refer to pages 1273 to 1274-1.

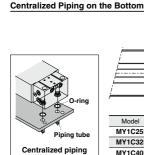
MY1C25□/32□/40□ - Stroke

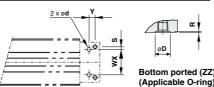


																							(111111)
Model	Α	В	С	G	GB	Н	J	K	L	LD	LH	LL	LW	М	MM	MW	N	NC	NE	NH	NW	P	PA
MY1C25□	110	9	5.5	17	24.5	54	M6 x 1	9.5	102	5.6	27	59	70	10	M5 x 0.8	66	30	21	41.8	40.5	60	Rc 1/8	60
MY1C32□	140	11	6.5	19	30	68	M8 x 1.25	16	132	6.8	35	74	88	13	M6 x 1	80	37	26	52.3	50	74	Rc 1/8	80
MY1C40□	170	14	8.5	23	36.5	84	M10 x 1.5	15	162	8.6	38	89	104	13	M6 x 1	96	45	32	65.3	63.5	94	Rc 1/4	100
	•		•		•	•				•			•		•	•				·			

"P" indicates cylinder supply ports.

																		(mm)
Model	PB	PG	PP1	PP2	Q	QQ	QW	RR1	RR2	SS	TT	UU	٧٧	W	ww	XX	Z	ZZ
MY1C25□	50	7	12.7	12.7	206	15.5	46	18.9	17.9	4.1	15.5	16	16	84	11	38	220	Rc 1/16
MY1C32□	60	8	15.5	18.5	264	16	60	22	24	4	21	16	19	102	13	48	280	Rc 1/16
MY1C40□	80	9	17.5	20	322	26	72	25.5	29	9	26	21	23	118	20	54	340	Rc 1/8





	POIL VAIIALIONS
	Slide table operating direction < L R▶
)	

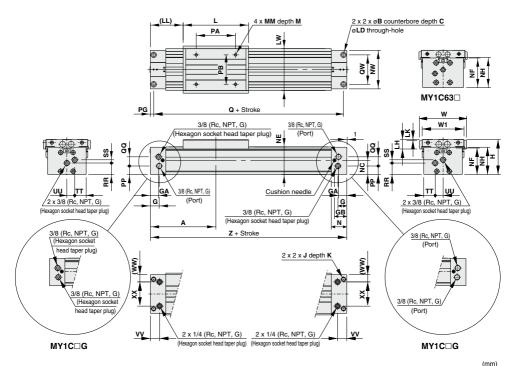
Port Variations

Model	WX	Υ	S	d	D	R	Applicable O-ring
MY1C25□	38	9	4	6	11.4	1.1	C9
MY1C32	48	11	6	6	11.4	1.1	C9
MY1C40□	54	14	9	8	13.4	1.1	C11.2

Standard Type/Centralized Piping Type ø50, ø63

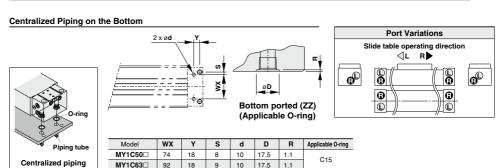
The stroke adjustment unit for the MY1C is the same as that of the MY1M. For models and external dimensions, refer to pages 1273 to 1274-1.

MY1C50□/63□ - Stroke



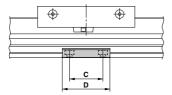
Model	Α	В	С	G	GA	GB	Н	J	K	L	LD	LH	LK	LL	LW	M	MM	N	NC	NE
MY1C50□	200	17	10.5	27	25	37.5	107	M14 x 2	28	200	11	29	2	100	128	15	M8 x 1.25	47	43.5	84.5
MY1C63□	230	19	12.5	29.5	27.5	39.5	130	M16 x 2	32	230	13.5	32.5	5.5	115	152	16	M10 x 1.5	50	60	104

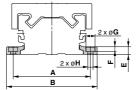
																				(mm)
Model	NF	NH	NW	PA	PB	PG	PP	Q	QQ	QW	RR	SS	TT	UU	٧٧	W	W1	ww	XX	z
MY1C50□	81	83.5	118	120	90	10	26	380	28	90	35	10	35	24	28	144	128	22	74	400
MY1C63□	103	105	142	140	110	12	42	436	30	110	49	13	43	28	30	168	152	25	92	460



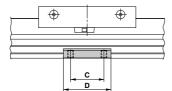
Side Support

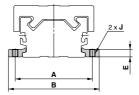
Side support A MY-S□A





Side support B MY-S□B





										(mm)
Model	Applicable bore size	Α	В	С	D	E	F	G	Н	J
MY-S168	MY1C16	61	71.6	15	26	4.9	3	6.5	3.4	M4 x 0.7
MY-S20 ^A	MY1C20	67	79.6	25	38	6.4	4	8	4.5	M5 x 0.8
MY-S25 ^A	MY1C25	81	95	35	50	8	5	9.5	5.5	M6 x 1
MY-S32A	MY1C32	100	118	45	64	11.7	6	11	6.6	M8 x 1.25
MY-S40₽	MY1C40	120	142	55	80	14.8	8.5	14	9	M10 x 1.5
W 1-5408	MY1C50	142	164	၁၁	80	14.8	8.5	14	9	WIIU X I.5
MY-S63å	MY1C63	172	202	70	100	18.3	10.5	17.5	11.5	M12 x 1.75

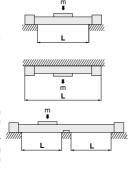
^{*} A set of side supports consists of a left support and a right support.

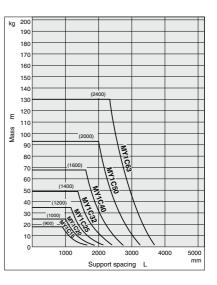
Guide for Side Support Application

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

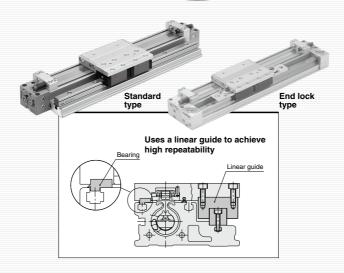
- 1. If the cylinder mounting surfaces are not measured accurately, using a side support may cause poor operation. Therefore, be sure to level the cylinder tube when mounting. Also, for long stroke operation involving vibration and impact, use of a side support is recommended even if the spacing value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







ø10, ø16, ø20, ø25, ø32, ø40



INDEX

MY1H Series Prior to Use	····· P. 1298
Model Selection	····· P. 1300
How to Order	····· P. 1302
Specifications	····· P. 1303
Cushion Capacity	·····P. 1306
Construction	·····P. 1307
Dimensions	······P. 1311
Stroke Adjustment Unit	
Accessory Bracket (Option)	P 1315

MY1H Series Prior to Use

Maximum Allowable Moment/Maximum Load Mass

Model	Bore size	Maximum a	allowable mo	ment (N·m)	Maxim	um load ma	iss (kg)
iviouei	(mm)	M1	M ₂	Мз	m1	m ₂	mз
	10	0.8	1.1	0.8	6.1	6.1	6.1
	16	3.7	4.9	3.7	10.8	10.8	10.8
MY1H	20	11	16	11	17.6	17.6	17.6
IVIYIH	25	23	26	23	27.5	27.5	27.5
	32	39	50	39	39.2	39.2	39.2
	40	50	50	39	50	50	50

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 mass (kg)



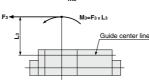




Moment (N·m)







<Calculation of guide load factor>

- Maximum allowable load (1), static moment (2), and dynamic moment (3) (at the time of impact with stopper) must be examined for the selection calculations.
 - * To evaluate, use ν a (average speed) for (1) and (2), and ν (collision speed $\nu = 1.4\nu$ a) for (3). Calculate mmax for (1) from the maximum allowable load graph (m, m₂, m₃) and Mmax for (2) and (3) from the maximum allowable moment graph (M₁, M₂, M₃).



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 mass (kg)

F: Load (N)

FE: Load equivalent to impact (at impact with stopper) (N)

Va: Average speed (mm/s)

M: Static moment (N·m)

$$\upsilon = 1.4\upsilon a \text{ (mm/s)} \text{ Fe} = 1.4\upsilon a \cdot \delta^{\text{Note 4}} \cdot g$$

 $\therefore \textbf{M}_{\text{E}} = \frac{1}{3} \cdot \overset{\text{Note 5}}{\text{Fe}} \cdot L_{1} = 4.57 \upsilon a \delta m L_{1} \left(N \cdot m \right)$

υ: Collision speed (mm/s)

L1: Distance to the load's center of gravity (m)

ME: Dynamic moment (N·m)

Damper coefficient
 With rubber bumper = 4/100
 (MY1B10, MY1H10)
 With air cushion = 1/100

With shock absorber = 1/100

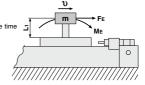
g: Gravitational acceleration (9.8 m/s²)

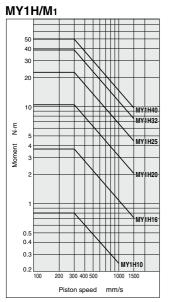
Note 4) $1.4 \mathrm{Va}\delta$ is a dimensionless coefficient for calculating impact force. Note 5) Average load coefficient (=3): This coefficient is for averaging the maximum load moment at the time of stopper impact according to service life calculations.

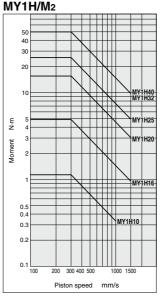
3. For detailed selection procedures, refer to pages 1300 and 1301.

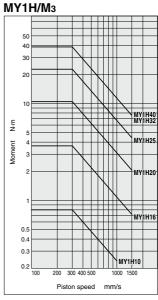
Maximum Load Mass

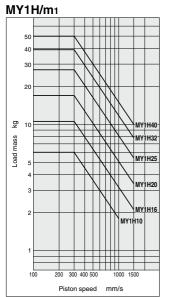
Select the load from within the range of limits shown in the graphs. Note that the maximum allowable moment value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable moment for the selected conditions.

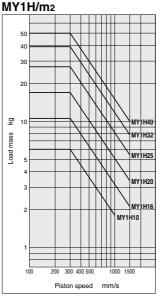


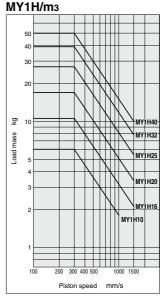












MY1H Series **Model Selection**

Following are the steps for selecting the most suitable MY1H series to your application.

Wd: Workpiece (200 g)

Calculation of Guide Load Factor

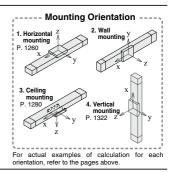
1. Operating Conditions -

Operating cylinder MY1H20-500 Average operating speed Va ... 300 mm/s

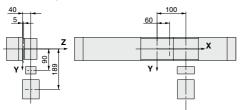
Mounting orientation Wall mounting

Wa: Connection plate t = 10 (440 g

Cushion Air cushion (δ = 1/100) MY1H40-500 Wb: MGGLB20-100 (2 kg) Wc: MHL2-10D (280 g)



2. Load Blocking



Mass and Center of Gravity for Each Workpiece

Workpiece no.	Mass	Center of gravity							
Wn	m _n	X-axis Y-axis Xn Yn		Z-axis Zn					
Wa	0.44 kg	60 mm	0 mm	5 mm					
Wb	2.0 kg	100 mm	0 mm	40 mm					
Wc	0.280 kg	100 mm	90 mm	40 mm					
Wd	0.2 kg	100 mm	189 mm	40 mm					

n=a, b, c, d

3. Composite Center of Gravity Calculation

$$m_3 = \Sigma m_n$$

= 0.44 + 2.0 + 0.280 + 0.2 = **2.92 kg**

$$X = \frac{1}{m_3} \times \Sigma (m_n \times x_n)$$

$$= \frac{1}{2.95} (0.44 \times 60 + 2.0 \times 100 + 0.280 \times 100 + 0.2 \times 100) = 94.0 \text{ mm}$$

$$\mathbf{Y} = \frac{1}{\mathbf{m}_3} \times \Sigma \left(\mathbf{m}_n \times \mathbf{y}_n \right)$$

$$= \frac{1}{2.95} (0.44 \times 0 + 2.0 \times 0 + 0.280 \times 90 + 0.2 \times 189) = 21.6 \text{ mm}$$

$$Z = \frac{1}{m_3} \times \Sigma (m_n \times z_n)$$

= $\frac{1}{2.95} (0.44 \times 5 + 2.0 \times 40 + 0.280 \times 40 + 0.2 \times 40) = 34.8 \text{ mm}$

4. Calculation of Load Factor for Static Load

m₃: Mass

 $m_3 \max$ (from (1) of graph MY1H/ m_3) = 17.6 (kg).....

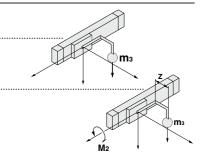
Load factor $\Omega_1 = m_3/m_3 max = 2.92/17.6 = 0.17$

M₂: Moment

 $m_2 \max$ (from (2) of graph MY1H/M₂) = 16.0 (N·m).....

 $M_2 = m_3 \times q \times Z = 2.92 \times 9.8 \times 34.8 \times 10^{-3} = 1.00 \text{ (N-m)}$

Load factor $Cl_2 = M_2/M_2 max = 1.00/16.0 = 0.07$

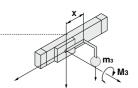


M₃: Moment

M₃ max (from (3) of graph MY1H/M₃) = 11.0 (N⋅m)....

$$M_3 = m_3 \times g \times X = 2.92 \times 9.8 \times 94.0 \times 10^{-3} = 2.69 \text{ (N·m)}$$

Load factor $\Omega_3 = M_3/M_3 \text{ max} = 2.69/11.0 = 0.25$



5. Calculation of Load Factor for Dynamic Moment

Equivalent load FE at impact

$$F_E = 1.4 \text{Va} \times \delta \times m \times g = 1.4 \times 300 \times \frac{1}{100} \times 2.92 \times 9.8 = 120.2 \text{ (N)}$$

M1E: Moment

 M_{1E} max (from (4) of graph MY1H/ M_{1} where 1.4 Ω a = 420 mm/s) = 7.9 (N·m).....

$$M_{1E} = \frac{1}{3} \times F_E \times Z = \frac{1}{3} \times 120.2 \times 34.8 \times 10^{-3} = 1.40 \text{ (N·m)}$$

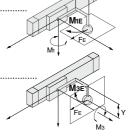
M_{3E}: Moment



$$\mathbf{M}_{3E} = \frac{1}{3} \mathbf{x} \mathbf{F}_{E} \mathbf{x} \mathbf{Y} = \frac{1}{3} \mathbf{x} 120.2 \mathbf{x} 21.6 \mathbf{x} 10^{-3} = 0.87 (N \cdot m)$$

Load factor $\alpha_5 = M_{3E}/M_{3E} = 0.87/7.9 = 0.12$

Load factor $\Omega_4 = M_{1E}/M_{1E} max = 1.40/7.9 = 0.18$



6. Sum and Examination of Guide Load Factors

$$\Sigma_{C1} = CL_1 + CL_2 + CL_3 + CL_4 + CL_5 = 0.79 \le 1$$

The above calculation is within the allowable value, and therefore the selected model can be used.

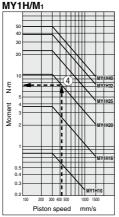
Select a shock absorber separately.

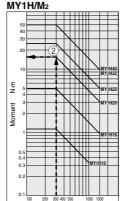
In an actual calculation, when the total sum of guide load factors $\Sigma \alpha$ in the formula above is more than 1, consider either decreasing the speed, increasing the bore size, or changing the product series.

This calculation can be easily made using the "SMC Pneumatics CAD System".

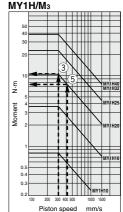
Load Mass

Allowable Moment





Piston speed

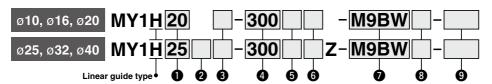


Mechanically Jointed Rodless Cylinder Linear Guide Type

MY1H Series

Ø10, Ø16, Ø20, Ø25, Ø32, Ø40

How to Order



A Rore size

•	DOI O OILO
10	10 mm
16	16 mm
20	20 mm
25	25 mm
32	32 mm
40	40 mm

2 Port thread type

•	•	, p
Symbol	Type	Bore size
Nil	M thread	ø10, ø16, ø20
	Rc	ø25, ø32
TN	NPT	ø40
TF	G	940

A Dinina

O i ipilig								
Nil	Standard type							
G	Centralized piping type							

Note) For Ø10, only G is available.

Stroke adjustment unit symbol

Refer to "Stroke adjustment unit" on page 1303. Intermediate fixing spacer is not available for end lock mounting side.

Number of auto

switches							
Nil 2 pcs.							
s	1 pc.						
n "n" nos							

Made to Order

Refer to page 1303 for details

6 End lock position

Nil	Without end lock						
Е	Right end						
F	Left end						
W	Both ends						
	Nil E F W						

- * MY1H10 is not available with end lock
- * For end lock positions, refer to page 1312-2.

Cylinder stroke (mm)

Bore size	Standard stroke	Intermediate stroke (-XB10)	Long stroke (-XB11)	Maximum manufacturable stroke
10	50, 100, 150	Intermediate strokes of 60 to 590 mm (10 mm increments) other than standard strokes	_	_
16, 20	200, 250, 300 350, 400, 450 500, 550, 600	Intermediate strokes of 51 to 599 mm (1	Strokes of 601 to 1000 mm (1 mm increments) exceeding the standard stroke	1000
25, 32, 40	300, 330, 600	mm increments) other	Strokes of 601 to 1500 mm (1 mm increments) exceeding the standard stroke	1500
Ordoring oven	anlo	•		

model.

- * Add "-XB10" to the end of the part number for intermediate strokes.
- * Add "-XB11" to the end of the part number for long strokes.

MY1H10-60-M9BW-XB10 MY1H20-800L-M9BW-XB11

- Auto switch Nil Without auto switch (Built-in magnet) * Refer to the table below for the applicable auto switch
- * For ø10 cylinders without an auto switch, the cylinder configuration is for the reed auto switch. Contact SMC when the solid state auto switch is retrofitted.

Applicable Auto Switches/Refer to pages 1575 to 1701 for further information on auto switches.

		Etc. of Co. of	light	140.0	L	oad volta	ge	Auto swit	ch model	Lea	d wir	e ler	ngth ((m)											
Type	Special function	Electrical entry	Indicator light	Wiring (Output)	D	С	AC	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)		None	Pre-wired connector	Applical	ole load								
				3-wire (NPN)		5 V. 12 V		M9NV	M9N	•		•	0	0	0	IC circuit									
switch	_			3-wire (PNP)		5 V, 12 V		M9PV	M9P	•	•	•	0	0	0	IO CIICUII									
				2-wire		12 V		M9BV	M9B	•	•	•	0	0	0	_									
anto	B			3-wire (NPN)		5 V, 12 V		M9NWV	M9NW	•	•	•	0	0	0	IC circuit	Relay,								
	Diagnostic indication (2-color indicator)	Grommet	Yes	3-wire (PNP)	24 V	24 V	24 V	24 V	24 V	24 V	24 V	24 V	1 V S V, 12 V	J V, 12 V	_	M9PWV	M9PW	•	•	•	0	0	0	IO CIICUII	PLC
state	(2 color malaator)		2-	2-wire			12 V		M9BWV	M9BW	•	•	•	0	0	0	_	1 20							
				3-wire (NPN)			5 V, 12 V		M9NAV*1	M9NA*1	0	0	•	0	-	0	IC circuit								
Solid	Water resistant (2-color indicator)			3-wire (PNP)		5 V, 12 V		M9PAV*1	M9PA*1	0	0	•	0	_	0	IO CIICUII									
	, ,			2-wire		12 V		M9BAV*1	M9BA*1	0	0	•	0	_	0	_									
Reed auto switch		Grommet	Yes	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	•	_	•	-	_	_	IC circuit	_								
e S	_	Gioinmet		2-wire	24 V	12 V	100 V	A93V*3	A93	•	•	•	•	_	_	_	Relay,								
an			No	2-wire	24 V	12 V	100 V or less	A90V	A90	•	_	•	_	_	-	IC circuit	PLC								

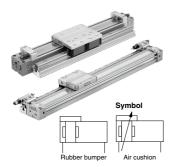
- *1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Consult with SMC regarding water resistant types with the above model numbers.
- *2 For details on switch mounting brackets and part numbers, refer to "Switch Mounting Bracket: Part No." on page 1333-1.
- *3 1 m type lead wire is only applicable to D-A93.
- * Lead wire length symbols: 0.5 m ········ Nil (Example) M9NW 1 m ······· M (Example) M9NWM

 - 3 m L (Example) M9NWL 5 m Z
- * Solid state auto switches marked with "O" are produced upon receipt of order.
- (Example) M9NWZ * There are other applicable auto switches than listed above. For details, refer to page 1333-1.
- * Auto switches are shipped together (not assembled). (Refer to page 1331 for the details of auto switch mounting.)

A 1302



Mechanically Jointed Rodless Cylinder MY1H Series



Made to Order: Individual Specifications (For details, refer to page 1334.)

L	Symbol	Specifications				
	-X168	Helical insert thread specifications				

Made to Order Specifications

Click here for details

onon nor o lor dottano								
Symbol	Specifications							
-XB10	Intermediate stroke (Using exclusive body)							
-XB11 ⁽¹⁾	11 ⁽¹⁾ Long stroke							
-XB22	-XB22 Shock absorber soft type RJ series type							
-XC56	With knock pin hole							
-XC67 ⁽²⁾	NBR rubber lining in dust seal band							

Note 1) Excludes ø10 for the -XB11

Note 2) Only bore sizes ø10 to ø20 are available for the -XC67.

Specifications

Bore size (mm)		10	16	20	25	32	40			
Fluid				А	ir					
Action				Double	acting					
Operating	pressure range	0.2 to 0.8 MPa	0.15 to 0	0.8 MPa	C	0.1 to 0.8 MPa	a			
Proof pre	ssure		1.2 MPa							
Ambient and	fluid temperatures	5 to 60°C								
Cushion		Rubber bumper Air cushion								
Lubrication	on	Non-lube								
Stroke length tolerance		+1.8 0								
Piping	Front/Side port	M5 x 0.8			1.	1/4				
port size Bottom port			04			ø6				

Piston Speed

В	ore size (mm)	10	16 to 40
Without stroke a	djustment unit	100 to 500 mm/s	100 to 1000 mm/s
Stroke	A unit		100 to 1000 mm/s ⁽¹⁾
adjustment unit	L unit and H unit	100 to 1000 mm/s	100 to 1500 mm/s (2)

Note 1) Be aware that when the stroke adjustment range is increased by manipulating the adjustment bolt, the air cushion capacity decreases. Also, when exceeding the air cushion stroke ranges on page 1306, 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 1306.

Stroke Adjustment Unit Specifications

Bore siz	ze (mm)	10	1	6		20			25			32			40	
Unit symbo	ı	Н	Α	L	Α	L	Н	Α	L	Н	Α	L	н	Α	L	Н
Configurati Shock abso	on orber model	RB 0805 + with adjustment bolt	With adjustment bolt	RB 0806 + with adjustment bolt	With adjustment bolt		RB 1007 + with adjustment bolt	With adjustment bolt	RB 1007 + with adjustment bolt	RB 1412 + with adjustment bolt	With adjustment bolt	RB 1412 + with adjustment bolt	RB 2015 + with adjustment bolt	With adjustment bolt	RB 1412 + with adjustment bolt	RB 2015 + with adjustment bolt
Stroke adjust- ment range by	Without spacer	0 to -10	0 to	-5.6		0 to -6		(to -11.	5		0 to -12			0 to -16	
intermediate	With short spacer	—*1	-5.6 to	-11.2		-6 to -12	2	-1	1.5 to -	23	_	12 to -2	4	-	-16 to -3	2
fixing spacer (mm)	With long spacer	—*1	-11.2 t	0 –16.8	-	12 to -1	8	-2	23 to -34	.5	_	24 to -3	6	_	-32 to -4	8

^{*1)} For ø10, stroke adjustment is available. Refer to page 1336-2 for details.

Stroke Adjustment Unit Symbol

٠.	Stroke Adjustinent Ont Symbol												
				Right side stroke adjustment unit									
			Without	A: with adjustment boit		L: With low load shock absorber + Adjustment bolt			H: With high load shock absorber + Adjustment bolt				
		unit		With short spacer	With long spacer		With short spacer	With long spacer		With short spacer	With long spacer		
ŧ	≝ Without unit		Nil	SA	SA6	SA7	SL	SL6	SL7	SH	SH6	SH7	
Ē	With short spacer With long spacer		AS	Α	AA6	AA7	AL	AL6	AL7	AH	AH6	AH7	
ner		With short spacer	A6S	A6A	A6	A6A7	A6L	A6L6	A6L7	A6H	A6H6	A6H7	
usti		With long spacer	A7S	A7A	A7A6	A7	A7L	A7L6	A7L7	A7H	A7H6	A7H7	
adj	L: With low lo	oad shock absorber +	LS	LA	LA6	LA7	L	LL6	LL7	LH	LH6	LH7	
ş	Adjustment	With short spacer	L6S	L6A	L6A6	L6A7	L6L	L6	L6L7	L6H	L6H6	L6H7	
stro	polt Adjustment	With long spacer	L7S	L7A	L7A6	L7A7	L7L	L7L6	L7	L7H	L7H6	L7H7	
de		load shock absorber +	HS	HA	HA6	HA7	HL	HL6	HL7	Н	HH6	HH7	
ft s	Adjustment	With short spacer	H6S	H6A	H6A6	H6A7	H6L	H6L6	H6L7	Н6Н	H6	Н6Н7	
Left	bolt	With long spacer	H7S	H7A	H7A6	H7A7	H7L	H7L6	H7L7	H7H	H7H6	H7	

Intermediate fixing spacer is not available for end lock mounting side. * Spacers are used to fix the stroke adjustment unit at an intermediate stroke position.

Refer to pages 1331 to 1333-1 for the specifications with auto switch.

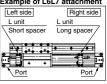


Stroke adjustment unit mounting diagram

adjustment unit Intermediate fixing spacer

Place the protruding section on the stroke adjusting unit side

Example of L6L7 attachment



^{*2)} Stroke adjustment range is applicable for one side when mounted on a cylinder.

For details on spacers and stroke adjustment units, refer to "Accessory Bracket (Option)" on page 1315.

Shock Absorbers for L and H Units

Type	Stroke adjustment	Bore size (mm)								
туре	unit	10	16	20	25	32	40			
Standard (Shock absorber/	L		RB0806		RB1007	RB1412				
RB series)	Н	RB0805	_	— RB1007		RB2015				
Shock absorber/soft type RJ series	L	_	RJ08	306H	RJ1007H	RJ14	112H			
mounted (-XB22)	Н	RJ0805	_	RJ1007H	RJ1412H	_	_			

The shock absorber service life is different from that of the MY1H cylinder depending on operating conditions. Refer to the RB Series Specific Product Precautions for the replacement period.

Shock Absorber Specifications

Model		RB 0805	RB 0806	RB 1007	RB 1412	RB 2015	
Max. energy a	bsorption (J)	1.0	2.9	5.9	19.6	58.8	
Stroke absorption (mm)		5	6	7	12	15	
Max. collision	Max. collision speed (mm/s)		1500	1500	1500	1500	
Max. operating free	quency (cycle/min)	80	80	70	45	25	
Spring	Extended	1.96	1.96	4.22	6.86	8.34	
force (N)	Retracted	3.83	4.22	6.86	15.98	20.50	
Operating temper	rature range (°C)	5 to 60					

^{*} The shock absorber service life is different from that of the MY1H cylinder depending on operating conditions. Refer to the RB Series Specific Product Precautions for the replacement period.

Theoretical Output

								(N)		
Bore size	Piston	Operating pressure (MPa)								
(mm)	area (mm²)	0.2	0.3	0.4	0.5	0.6	0.7	0.8		
10	78	15	23	31	39	46	54	62		
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		

Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm²)

Weight

							(kg)	
Bore	Basic	Additional weight per each	Weight	Side support bracket weight (per set)	Stroke adjustment unit weight (per unit)			
(mm)	weight	50 mm of stroke	of moving parts	Type A and B	A unit weight	L unit weight	H unit weight	
10	0.26	0.08	0.05	0.003	_	_	0.02	
16	0.74	0.14	0.19	0.01	0.02	0.04	_	
20	1.35	0.25	0.40	0.02	0.03	0.05	0.07	
25	2.17	0.30	0.73	0.02	0.04	0.07	0.11	
32	4.37	0.46	1.30	0.04	0.08	0.14	0.23	
40	5.84	0.55	1.89	0.08	0.12	0.19	0.28	

Calculation: (Example) MY1H20-300A

- Basic weight----- 1.35 kg
- Cylinder stroke ----- 300 stroke
- Additional weight ----- 0.25/50 stroke
- $1.35 + 0.25 \times 300/50 + 0.03 \times 2 \cong 2.19 \text{ kg}$
- Weight of A unit----- 0.03 kg

With End Locks



Specifications

Bore size (mm)	16	20	25	32	40			
Lock position	One end (Selectable), Both ends							
Holding force (Max.) (N)	110	170	270	450	700			
Fine stroke adjustment range (mm)	0 to -5.6	0 to -6	0 to -11.5	0 to -12	0 to -16			
Backlash	1 mm or less							
Manual release	Possible (Non-lock type)							

⚠ Precautions

For details on the MY1H Series Mechanically Jointed Rodless Cylinder, refer to "Specific Product Precautions" on pages 1335 to 1336-3.

ı

Mounted shock absorber soft type RJ series (-XB22) is made to order specifications. For details, refer to page 1752.

Cushion Capacity

Cushion Selection

<Rubber bumper>

Rubber bumpers are a standard feature on MY1H10.

Since the stroke absorption of rubber bumpers is short, when adjusting the stroke with an A unit, install an external shock absorber.

The load and speed range which can be absorbed by a rubber bumper is inside the rubber bumper limit line of the graph.

<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 adjustment 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.

H unit

Use this unit when the cylinder is operated in a load and speed range above the L unit limit line and below the H unit limit line.

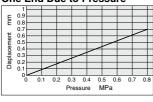
 For details on stroke adjustment using the adjustment bolt, refer to page 1336.

(mm)

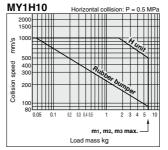
Air Cushion Stroke

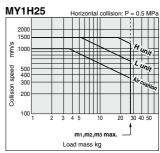
Bore size (mm)	Cushion stroke				
16	12				
20	15				
25	15				
32	19				
40	24				

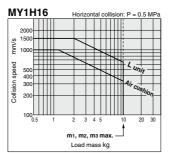
Rubber Bumper (Ø10 only) Positive Stroke from One End Due to Pressure

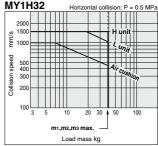


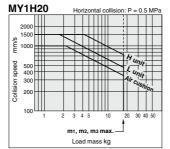
Absorption Capacity of Rubber Bumper, Air cushion and Stroke Adjustment Units

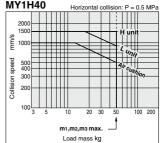






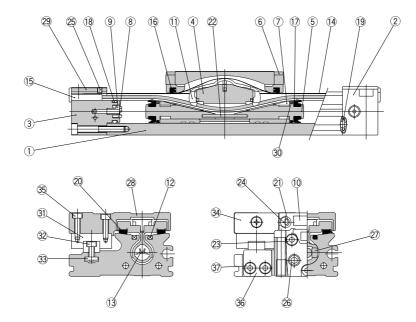






Construction: ø10

Centralized piping type



No.

22

Description

Spring pin

Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Head cover WR	Aluminum alloy	Painted
3	Head cover WL	Aluminum alloy	Painted
4	Piston yoke	Aluminum alloy	Hard anodized
5	Piston	Aluminum alloy	Chromated
6	End cover	Special resin	
7	Wear ring	Special resin	
- 8	Bumper	Polyurethane rubber	
9	Holder	Stainless steel	
10	Stopper	Carbon steel	Nickel plated
11	Belt separator	Special resin	
12	Seal magnet	Rubber magnet	
15	Belt clamp	Special resin	
20	Bearing	Special resin	
21	Spacer	Chromium molybdenum steel	Nickel plated

23	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
24	Round binding head screw	Carbon steel	Chromated
25	Hexagon socket head set screw	Carbon steel	Black zinc chromated
26	Hexagon socket head plug	Carbon steel	Chromated
27	Magnet	_	
28	Slide table	Aluminum alloy	Hard anodized
29	Head plate	Stainless steel	
30	Lube-retainer	Special resin	
31	Linear guide		
32	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
33	Square nut	Carbon steel	Chromated
34	Stopper plate	Carbon steel	Chromated
35	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
36	Guide stopper	Carbon steel	Nickel plated
37	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated

Material

Stainless steel

Note

Replacement Part: Seal Kit

No.	Description	Qty.	MY1H10							
13	Seal belt	1	MY10-16A-Stroke							
14	Dust seal band	1	MY10-16B-Stroke							
16	Scraper	2								
17	Piston seal	2	MY1B10-PS							
18	Tube gasket	2	MITIBIO-PS							
19	O-ring	4								

^{*} Seal kit includes (6, (7), (8) and (9).

pack is included.

Order with the following part number when only the

grease pack is needed.

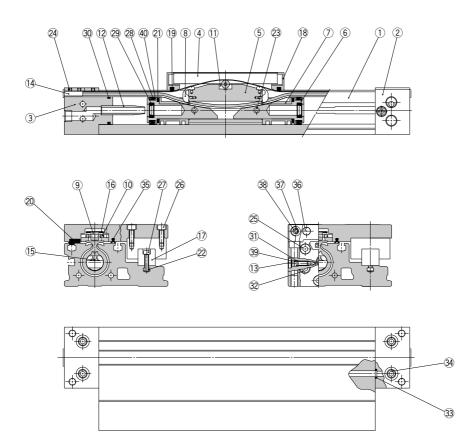
Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)

Seal kit includes a grease pack (10 g).

When (3) and (4) are shipped independently, a grease

Construction: ø16, ø20

MY1H16, 20



Mechanically Jointed Rodless Cylinder MY1H Series

MY1H16, 20

Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Head cover WR	Aluminum alloy	Painted
3	Head cover WL	Aluminum alloy	Painted
4	Slide table	Aluminum alloy	Hard anodized
5	Piston yoke	Aluminum alloy	Chromated
6	Piston	Aluminum alloy	Chromated
7	Wear ring	Special resin	
8	Belt separator	Special resin	
9	Guide roller	Special resin	
10	Guide roller shaft	Stainless steel	
11	Coupler	Sintered iron material	
12	Cushion ring	Aluminum alloy	Anodized
13	Cushion needle	Rolled steel	Nickel plated
14	Belt clamp	Special resin	
17	Guide	_	
18	End cover	Special resin	
20	Bearing	Special resin	

No.	Description	Material	Note
21	Magnet	_	
22	Square nut	Carbon steel	Chromated
23	Spring pin	Carbon tool steel	
24	Hexagon socket head set screw	Chromium molybdenum steel	Black zinc chromated/Chromated
25	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
26	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
27	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
32	Hexagon socket head taper plug	Carbon steel	Chromated
34	Hexagon socket head taper plug	Carbon steel	Chromated
36	Stopper	Carbon steel	Nickel plated
37	Spacer	Stainless steel	
38	Hexagon socket button head screw	Chromium molybdenum steel	Chromated
39	Type CR retaining ring	Spring steel	
40	Lube-retainer	Special resin	

Replacement Part: Seal Kit

No.	Description	Qty.	MY1H16	MY1H20			
15	Seal belt	1	MY16-16C-Stroke	MY20-16C-Stroke			
16	Dust seal band	1	MY16-16B-Stroke	MY20-16B-Stroke			
04	O-ring	2	KA00309	KA00309			
31	· •		(ø4 x ø1.8 x ø1.1)	(ø4 x ø1.8 x ø1.1)			
35	Side scraper	1	MYH16-15BK2900B	MYH20-15BK2901B			
19	Scraper	2					
28	Piston seal	2					
29	Cushion seal	2	MY1H16-PS MY1H20-PS				
30	Tube gasket	2					
33	O-ring	4					

^{*} Seal kit includes (9, 28, 29, 30 and 33. Order the seal kit based on each bore size.

Note) Two kinds of dust seal bands are available. Verify the type to use, since the part number varies

depending on the treatmentof the hexagon socket head set screw 24.

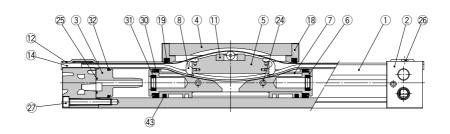
A: Black zinc chromated \rightarrow MY \square -16B-stroke, B: Chromated \rightarrow MY \square -16BW-stroke

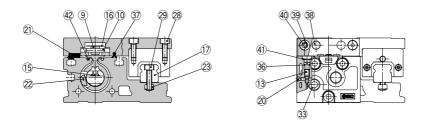
^{*} Seal kit includes a grease pack (10 g).

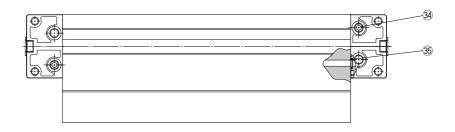
Seal kit includes a grease pack (10 g). When (\$\frac{1}{2}\$ and (\$\frac{1}{2}\$ and (\$\frac{1}{2}\$) are shipped independently, a grease pack (20 g) is included. Order with the following part number when only the grease pack is needed. Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)

Construction: Ø25, Ø32, Ø40

MY1H25, 32, 40







MY1H25, 32, 40

Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Head cover	Aluminum alloy	Painted
3	Cushion boss	Special resin	
4	Slide table	Aluminum alloy	Hard anodized
5	Piston yoke	Aluminum alloy	Chromated
6	Piston	Aluminum alloy	Chromated
7	Wear ring	Special resin	
8	Belt separator	Special resin	
9	Guide roller	Special resin	
10	Parallel pin	Stainless steel	
11	Coupler	Sintered iron material	
12	Head plate	Stainless steel	
13	Cushion needle	Rolled steel	Nickel plated
14	Belt clamp	Special resin	
17	Guide	_	
18	End cover	Special resin	
20	Steel ball	Carbon tool steel	
21	Bearing	Special resin	
22	Magnet	Rare earth magnet	
23	Square nut	Carbon steel	Chromated
24	Spring pin	Bearing steel	
26	Thin head screw	Chromium molybdenum steel	Chromated
27	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
28	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
29	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
33	Hexagon socket head taper plug	Carbon steel	Chromated (Centralized piping: 10 pcs.)
34	Hexagon socket head taper plug	Carbon steel	Chromated (Centralized piping: 4 pcs.)
_38	Stopper	Carbon steel	
39	Spacer	Stainless steel	
40	Hexagon socket button head screw	Chromium molybdenum steel	Chromated
41	CR retaining ring	Spring steel	
42	Seal magnet	Rubber magnet	
43	Lube retainer	Special resin	

Replacement Parts: Seal Kit

No.	Description	Material	Qty.	MY1H25	MY1H32	MY1H40		
15	Seal belt	Urethane	1	MY25-16C-Stroke	MY32-16C-Stroke	MY40-16C-Stroke		
16	Dust seal band	Stainless steel	1	MY1B25-16B-Stroke	MY1B32-16B-Stroke	MY1B40-16B-Stroke		
25	Cushion boss gasket	NBR	2	MYB25-16GA5900	MYB32-16GA5901	MYB40-16GA5902		
36	O-ring	NBR	2	KA00311	KA00320	KA00320		
30	O-ring	INDIN	4	(ø5.1 x ø3 x ø1.05)	(ø7.15 x ø3.75 x ø1.7)	(ø7.15 x ø3.75 x ø1.7)		
37	Side scraper	Special resin	2	MYH25-15BK2902B	MYH32-15BK2903B	MYH40-15BK2904B		
19	Scraper	NBR	2					
30	Piston seal	NBR	2					
31	Cushion seal	NBR	2	MY1H25-PS	MY1H32-PS	MY1H40-PS		
32	Tube gasket	NBR	2					
35	O-ring	NBR	4					

^{*} Seal kit includes (9, 30, 3), 32 and 35. Order the seal kit based on each bore size.

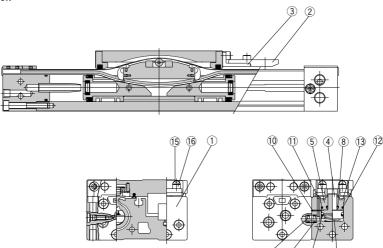
Order with the following part number when only the grease pack is needed. Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)



^{*} Seal kit includes a grease pack (10 g). When (5) or (6) is shipped independently, a grease pack (20 g) is included.

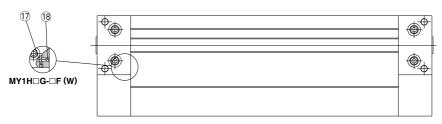
Construction: Ø16, Ø20

With End Lock



(9)

(6)



Component Parts

No.	Description	Material	Note
1	Locking body	Aluminum alloy	Painted
2	Lock finger	Carbon steel	After quenching, nickel plated
3	Lock finger bracket	Rolled steel	Nickel plated
4	Lock piston	Carbon tool steel	After quenching, electroless nickel plated
5	Rod cover	Aluminum alloy	Hard anodized
6	Return spring	Spring steel	Zinc chromated
7	Bypass pipe	Aluminum alloy	Chromated
10	Steel ball	High carbon chrome bearing steel	
11	Steel ball	High carbon chrome bearing steel	
13	Round type R retaining ring	Carbon tool steel	Nickel plated
14	O-ring	NBR	
15	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated
16	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated
17	Steel ball	High carbon chrome bearing steel	
18	Steel ball	High carbon chrome bearing steel	

Replacement Part: Seal Kit

No.	Description	Material	Qty.	MY1H16	MY1H20
8	Rod seal	NBR	1	KB00257	KB00257
9	Piston seal	NBR	1	KB00202	KB00202
12	O-ring	NBR	1	KA00057	KA00057

^{**} Since the seal kit does not include a grease pack, order it separately.

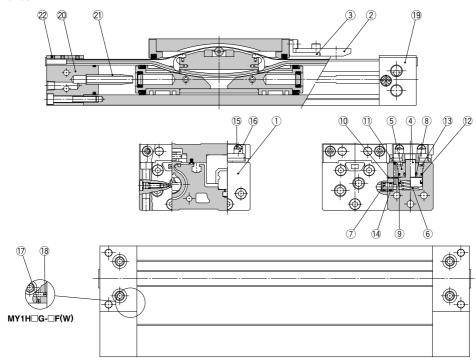
Grease pack part no.: GR-S-010 (10 g)





Construction: ø25, ø32, ø40

End lock



Component Parts

No.	Description	Material	Note
1	Locking body	Aluminum alloy	Painted
2	Lock finger	Carbon steel	After quenching, nickel plated
3	Lock finger bracket	Rolled steel	Nickel plated
4	Lock piston	Carbon tool steel	After quenching, electroless nickel plated
5	Rod cover	Aluminum alloy	Hard anodized
6	Return spring	Spring steel	Zinc chromated
7	Bypass pipe	Aluminum alloy	Hard anodized
10	Steel ball	High carbon chromium bearing steel	
11	Steel ball	High carbon chromium bearing steel	
13	Inverted internal retaining ring	Carbon tool steel	Nickel plated
15	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
16	Hexagon socket head cap screw	Chromium molybdenum steel	Chromated
17	Steel ball	High carbon chromium bearing steel	
18	Steel ball	High carbon chromium bearing steel	
19	Head cover WR	Aluminum alloy	Painted
20	Head cover WL	Aluminum alloy	Painted
21	Cushion ring	Aluminum alloy	
22	Hexagon socket head set screw	Chromium molybdenum steel	Chromated

Replacement Parts: Seal Kit

No.	Description	Material	Qty.	MY1H25	MY1H32	MY1H40
8	Rod seal	NBR	1	KB00267	KB00267	KB00267
9	Piston seal	NBR	1	KB00217	KB00217	KB00217
12	O-ring	NBR	1	KB00037	KB00037	KB00037
14	O-ring	NBR	2	KA00048	KA00048	KA00048

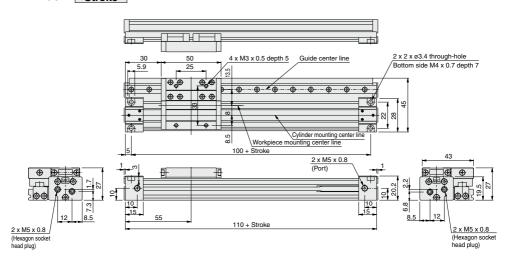
^{*} Since the seal kit does not include a grease pack, order it separately.

Grease pack part no.: GR-S-010 (10 g)



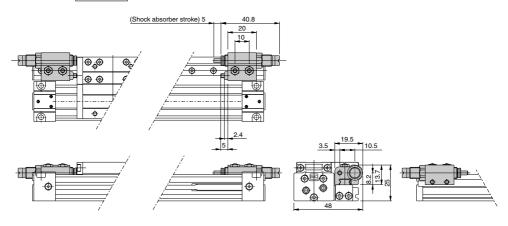
Centralized Piping Type Ø10

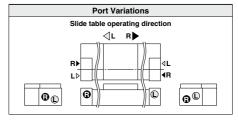
MY1H10G - Stroke



With shock absorber + Adjustment bolt

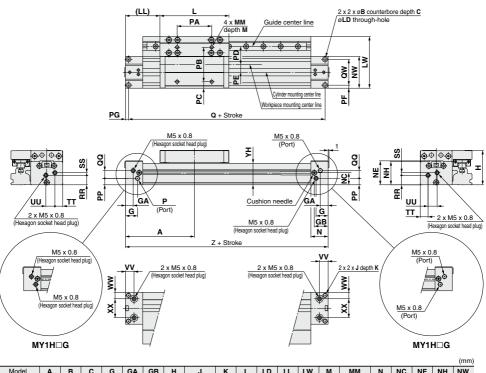
MY1H10G - Stroke H





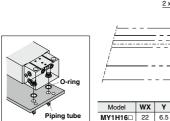
Standard Type/Centralized Piping Type Ø16, Ø20

MY1H16□/20□ - Stroke



Wodel	_ ^	-	U	u	GA	GB	п	J			LD	LL	LVV	IVI	IVIIVI	14	IVC	INE	1411	14 44
MY1H16□	80	6	3.5	14	9	16	40	M5 x 0.8	10	80	3.5	40	60	7	M4 x 0.7	20	14	27.8	27	37
MY1H20□	100	7.5	4.5	12.5	12.5	20.5	46	M6 x 1	12	100	4.5	50	78	8	M5 x 0.8	25	17.5	34	33.5	45
·																				

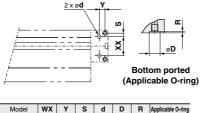
																				(mm)
Model	PA	PB	PC	PD	PE	PF	PG	PP	Q	QQ	QW	RR	SS	TT	UU	VV	ww	XX	YH	Z
MY1H16□	40	40	7.5	21	9	3.5	3.5	7.5	153	9	30	11	3	9	10.5	10	7.5	22	25	160
MY1H20□	50	40	14.5	27	12	4.5	4.5	11.5	191	11	36	14.5	5	10.5	12	12.5	10.5	24	31.5	200
			•	•	•	•		•	•	•	•	•		•	•	•	•		•	



MY1H20□

Centralized Piping on the Bottom

Centralized piping



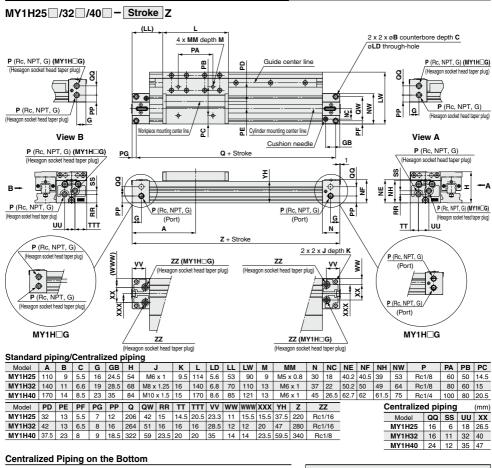
4 8.4

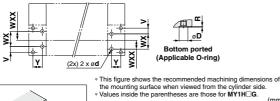
4 4 8.4 1.1

Slide table operating direction L R G G G C C C C C C C C C C	1 ort variations
	Slide table operating direction < L R▶

Port Variations

Standard Type/Centralized Piping Type: Ø25, Ø32, Ø40





	* values insid	e tne p	arentne	ses are	tnose i	or IMIY1	H⊔G. (mm)
	Model	WXX	Υ	d	D	R	Applicable O-ring
	MY1H25	15.5	16.2	6	11.4	1.1	C9
,	MY1H32	20	20.4	6	11.4	1.1	Ca
'	MY1H40	23.5	25.9	8	13.4	1.1	C11.2
			(mm)				

		(/
Model	wx	V
MY1H25	26.5	10
MY1H32	40	5.5
MY1H40	47	6

Port Variations Standard piping Slide table operating direction ⊲L R▶ **6** 6 0 **(** (L) \mathbb{O} 0 Centralized piping Slide table operating direction (MY1HG-CZ) ⊲L 0 8 $\mathbf{G}_{\mathbb{D}}$ R▶ ര 0 C 0

A 1312-1

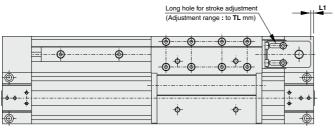
Piping tube
Centralized piping

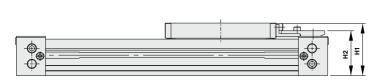
Mechanically Jointed Rodless Cylinder MY1H Series

With End Lock Ø16, Ø20

Dimensions for types other than end lock are identical to the standard type dimensions. For details about dimensions, etc., refer to page 1312.

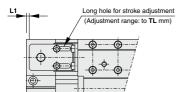
MY1H□-□E (Right end)



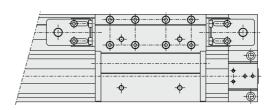




MY1H□-□F (Left end)



MY1H□-□W (Both ends)

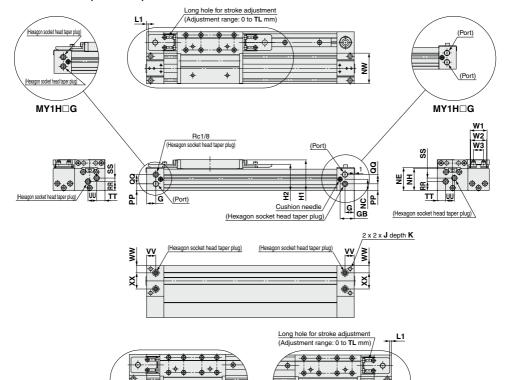


							(mm)
Model	H1	H2	L1	TL	W1	W2	W3
MY1H16□	39.2	33	0.5	5.6	18	16	10.4
MY1H20□	45.7	39.5	3	6	18	16	10.4

With End Lock: Ø25, Ø32, Ø40

Dimensions for types other than end lock are identical to the standard type dimensions. For details about dimensions, etc., refer to page 1312-1.

MY1H□-□WZ (Both ends)



Standard piping/Centralized piping

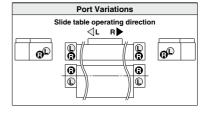
Model	NC	NE	PP	RR	SS	UU	VV	ww	XX
MY1H25	20	40.5	12	16	6	15	16	12.5	28
MY1H32	25	50	17	23	4	16	19	16	32
MY1H40	30.5	63	8.5	27	10.5	22	23	19.5	36

MY1H□-□FZ (Left end)

End lock mechanism (Standard piping/Centralized piping)										
Model	H1	H2	L1	TL	W1	W2	W3			
MY1H25	53.5	46	3	11.5	29.3	27.3	17.7			
MY1H32	67	56	6.5	12	29.3	27.3	17.7			
MY1H40	83	68.5	10.5	16	38	35	24.4			

MY1H□-□EZ

(Right end)



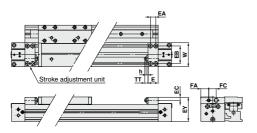
^{*} The dimensions of the TT, G, GB, and NA are the same as those of the standard product.

Stroke Adjustment Unit

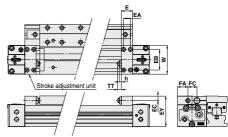


MY1H Bore size □ - Stroke A(Z)

ø16, ø20







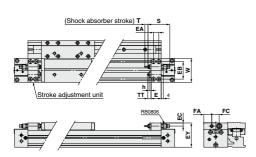
Applicable bore size	Е	EA	EB	EC	EY	FA	FC	h	TT	W
MY1H16	14.6	7	28	5.8	39.5	11.5	13	3.6	5.4 (Max. 11)	37
MY1H20	19	10	33	5.8	45.5	15	14	3.6	6 (Max. 12)	45
MY1H25	18	9	40	7.5	53.5	16	21	3.5	5 (Max. 16.5)	53
MY1H32	25	14	45.6	9.5	67.5	23	20	4.5	8 (Max. 20)	64
MY1H40	31	19	55	11	82	24.5	26	4.5	9 (Max. 25)	75

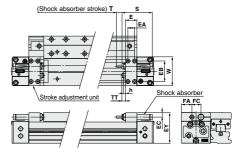
With low load shock absorber + Adjustment bolt

MY1H Bore size □ - Stroke L(Z)

ø16, ø20

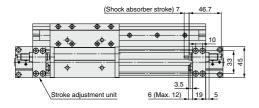






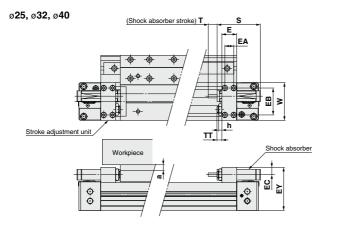
Applicable bore size	E	EA	EB	EC	EY	FA	FC	h	S	Т	TT	W	Shock absorber model
MY1H16	14.6	7	28	5.8	39.5	11.5	13	3.6	40.8	6	5.4 (Max. 11)	37	RB0806
MY1H20	19	10	33	5.8	45.5	15	14	3.6	40.8	6	6 (Max. 12)	45	RB0806
MY1H25	18	9	40	7.5	53.5	16	21	3.5	46.7	7	5 (Max. 16.5)	53	RB1007
MY1H32	25	14	45.6	9.5	67.5	23	20	4.5	67.3	12	8 (Max. 20)	64	RB1412
MY1H40	31	19	55	11	82	24.5	26	4.5	67.3	12	9 (Max. 25)	75	RB1412

Stroke Adjustment Unit









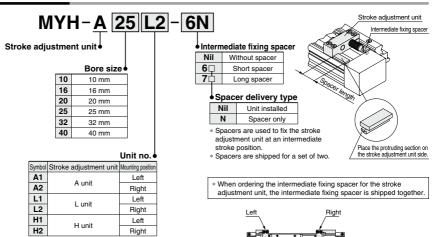


* Since the EY dimension of H unit is greater than the table top height (H dimension), when a work piece exceeding the full length (L dimension) of the slide table is mounted, allow a clearance of size "a" or larger at the work piece side.

Applicable bore size	Е	EA	EB	EC	EY	F	FA	FC	h	S	Т	TT	W	Shock absorber model	а
MY1H25	18	9	40	9	57	_	18	17.5	4.5	67.3	12	5 (Max. 16.5)	53	RB1412	3.5
MY1H32	25	14	45.6	12.4	73	_	18.5	22.5	5.5	73.2	15	8 (Max. 20)	64	RB2015	5.5
MY1H40	31	19	55	12.4	86	_	26.5	22	5.5	73.2	15	9 (Max. 25)	75	RB2015	2.5

Accessory Bracket (Option)

Stroke Adjustment Unit

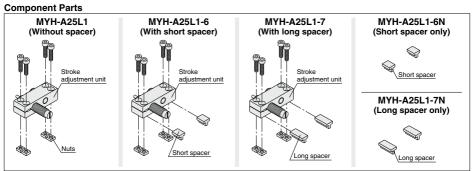


Stroke adjustment range

Stroke adjustmen	roke adjustment range (mm)														
Bore size	10	16			20		25			32			40		
Unit symbol	Н	Α	L	Α	L	Н	Α	L	Н	Α	L	Н	Α	L	Н
Without spacer	0 to -10	0 to	-5.6		0 to -6		C) to -11.	.5		0 to -12	!		0 to -16	6
With short spacer	-*	-5.6 to	-11.2		-6 to -1	2	-1	11.5 to -	-23	-	12 to -2	24	_	16 to -3	32
With long spacer	-*	-11.2 t	0 –16.8	-	-12 to -1	8	-2	23 to -34	4.5	-	24 to -3	86	-	32 to -4	18

^{*} For Ø10, stroke adjustment is available. Refer to page 1336-2 for details.

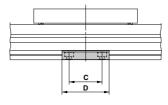
Spacer length					(mm)
Bore size	16	20	25	32	40
Short spacer	5.6	6	11.5	12	16
Long spacer	11.2	12	23	24	32

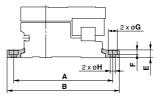


^{*} Nuts are equipped on the cylinder body.

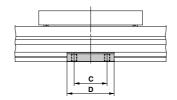
Side Support

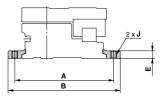
Side support A MY-S□A





Side support B MY-S□B





										(mm)
Model	Applicable bore size	Α	В	С	D	E	F	G	Н	J
MY-S10 ^A	MY1H10	53	61.6	12	21	3	1.2	6.5	3.4	M4 x 0.7
MY-S16A	MY1H16	71	81.6	15	26	4.9	3	6.5	3.4	M4 x 0.7
MY-S20₽	MY1H20	91	103.6	25	38	6.4	4	8	4.5	M5 x 0.8
MY-S25A	MY1H25	105	119	35	50	8	5	9.5	5.5	M6 x 1
MY-S32A	MY1H32	130	148	45	64	11.7	6	11	6.6	M8 x 1.25
MY-S40₽	MY1H40	145	167	55	80	14.8	8.5	14	9	M10 x 1.5
	•						_			

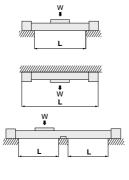
^{*} A set of side supports consists of a left support and a right support.

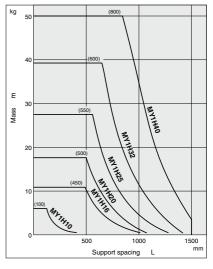
Guide for Side Support Application

For long stroke operation, the cylinder tube may be deflected depending on its own weight and the load mass. 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.

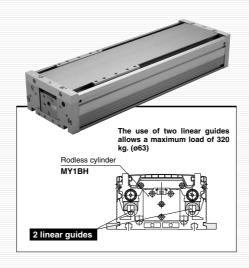
⚠ Caution

- 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.









INDEX MY1HT Series Prior to Use P. 1320 Model Selection P. 1322 How to Order P. 1324 Specifications P. 1325 Cushion Capacity P. 1326 Construction P. 1328 Dimensions P. 1329 Side Support P. 1330

MY1HT Series Prior to Use

Maximum Allowable Moment/Maximum Load Mass

Model	Bore size	Maximum a	ıllowable mo	ment (N·m)	Maximum load mass (kg)			
iviodei	(mm)	M ₁	M2	Мз	m1	m2	тз	
MY1HT	50	140	180	140	200	140	200	
INITIOI	63	240	300	240	320	220	320	

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.

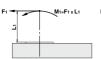
Load mass (kg)



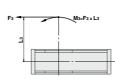




Moment (N·m)







<Calculation of guide load factor>

- 1. Maximum allowable load (1), static moment (2), and dynamic moment (3) (at the time of impact with stopper) must be examined for the selection calculations.
 - * To evaluate, use value (average speed) for (1) and (2), and value (collision speed value = 1.4va) for (3), Calculate mmax for (1) from the maximum allowable load graph (m1, m2, m3) and Mmax for (2) and (3) from the maximum allowable moment graph (M1, M2, M3).

Sum of guide $\Sigma \alpha =$	Load mass [m]	Static moment [M] (1)	Dynamic moment [M _E] (2)	,
load factors 200 =	Maximum allowable load [m max]	Allowable static moment [Mmax]	Allowable dynamic moment [Memax]	Ľ

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 mass (kg)

F: Load (N)

FE: Load equivalent to impact (at impact with stopper) (N)

1)a: Average speed (mm/s)

M: Static moment (N-m)

 $v = 1.4va \text{ (mm/s) } F_E = 1.4va \cdot \delta \cdot \vec{m} \cdot \vec{g}$

 $\therefore \mathbf{M}_{E} = \frac{1}{3} \cdot \mathbf{F}_{E} \cdot \mathbf{L}_{1} = 4.57 \text{Va} \delta m \mathbf{L}_{1}$

υ: Collision speed (mm/s)

L1: Distance to the load's center of gravity (m)

ME: Dynamic moment (N-m)

δ: Damper coefficient

With rubber bumper = 4/100

(MY1B10, MY1H10) With air cushion = 1/100

With shock absorber = 1/100

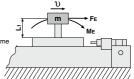
g: Gravitational acceleration (9.8 m/s2)

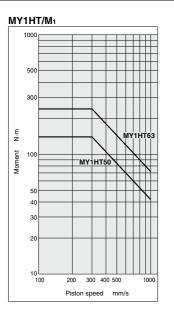
Note 4) 1.4 vab is a dimensionless coefficient for calculating impact force. Note 5) Average load coefficient $(=\frac{1}{3})$: This coefficient is for averaging the maximum load moment at the time of stopper impact according to service life calculations.

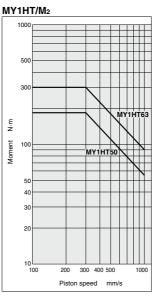
3. For detailed selection procedures, refer to pages 1322 and 1323.

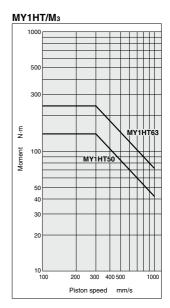
Maximum Load Mass

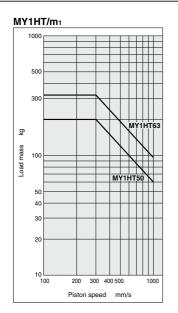
Select the load from within the range of limits shown in the graphs. Note that the maximum allowable moment value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable moment for the selected conditions.

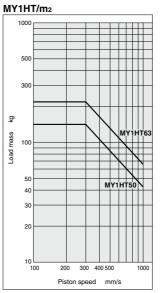


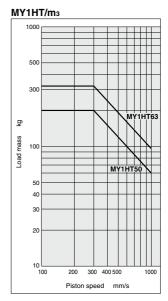










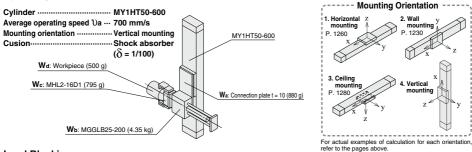


MY1HT Series Model Selection

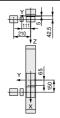
Following are the steps for selecting the most suitable MY1HT series to your application.

Calculation of Guide Load Factor

1. Operating Conditions



2. Load Blocking



Mass and Center of Gravity for Each Workpiece

Workpiece no.	Mass	С	enter of gravi	ty
Wn	m _n	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

$$\mathbf{m}_4 = \sum_{\mathbf{m}_{\mathbf{n}}}$$

= 0.88 + 4.35 + 0.795 + 0.5 = **6.525 kg**

$$\begin{array}{ll} \boldsymbol{X} & = \frac{1}{m_4} \, \boldsymbol{x} \, \boldsymbol{\Sigma} \, \left(m_n \, \boldsymbol{x} \, \boldsymbol{x}_n \right) \\ & = \frac{1}{6.525} \, \left(0.88 \, \boldsymbol{x} \, 65 + 4.35 \, \boldsymbol{x} \, 150 + 0.795 \, \boldsymbol{x} \, 150 + 0.5 \, \boldsymbol{x} \, 150 \right) = \boldsymbol{138.5} \, \, \boldsymbol{mm} \\ \end{array}$$

$$Y = \frac{1}{m_x} x \sum (m_n \times y_n)$$

$$= \frac{1}{6.525} (0.88 \times 0 + 4.35 \times 0 + 0.795 \times 111 + 0.5 \times 210) = 29.6 \text{ mm}$$

$$Z = \frac{1}{m_4} x \sum (m_n \times z_n)$$

$$= \frac{1}{6.525} (0.88 \times 5 + 4.35 \times 42.5 + 0.795 \times 42.5 + 0.5 \times 42.5) = 37.4 mm$$

4. Calculation of Load Factor for Static Load

m₄: Mass

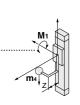
 m_4 is the mass which can be transferred by the thrust, and as a rule, is actually about 0.3 to 0.7 of the thrust. (This differs depending on the operating speed.)



M₁ max (from (1) of graph MY1HT/M₁) = 60 (N·m) ······

$$M_1 = m_4 \times q \times Z = 6.525 \times 9.8 \times 37.4 \times 10^{-3} = 2.39 \text{ (N·m)}$$

Load factor $O(1) = M_2/M_2 max = 2.39/60 = 0.04$



Model Selection MY1HT Series

M₃: Moment

$$M_3 = m_4 \times g \times Y = 6.525 \times 9.8 \times 29.6 \times 10^{-3} = 1.89 (N \cdot m)$$

Load factor $\Omega_2 = M_3/M_3$ max = 1.89/60 = 0.03



5. Calculation of Load Factor for Dynamic Moment

Equivalent load FE at impact

$$\mathbf{F}_{E} = 1.4 \text{Va} \times \delta \times \mathbf{m} \times \mathbf{g} = 1.4 \times 700 \times \frac{1}{100} \times 6.525 \times 9.8 = 626.7 \text{ (N)}$$

M_{1E}: Moment

$$\mathbf{M}_{1E} = \frac{1}{3} \times \mathbf{F}_{E} \times \mathbf{Z} = \frac{1}{3} \times 626.7 \times 37.4 \times 10^{-3} = 7.82 \text{ (N·m)}$$

Load factor Ol3 = M1E/M1E max = 7.82/42.9 = 0.18

M_{3E}: Moment

M3E max (from (4) of graph MY1HT/M3 where
$$1.4Va = 980 \text{ mm/s}$$
) = 42.9 (N·m)....

$$\mathbf{M}_{3E} = \frac{1}{3} \times \mathbf{F}_{E} \times \mathbf{Y} = \frac{1}{3} \times 626.7 \times 29.6 \times 10^{-3} = 6.19 \text{ (N·m)}$$

Load factor $OC_4 = M_{3E}/M_{3E} max = 6.19/42.9 = 0.14$



6. Sum and Examination of Guide Load Factors

 $\Sigma \alpha = \alpha 1 + \alpha 2 + \alpha 3 + \alpha 4 = 0.39 \le 1$

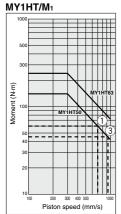
The above calculation is within the allowable value, and therefore the selected model can be used.

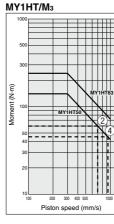
Select a shock absorber separately.

In an actual calculation, when the total sum of guide load factors $\Sigma \alpha$ 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".

Allowable Moment



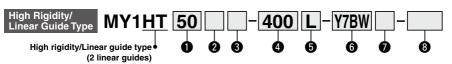


Mechanically Jointed Rodless Cylinder High Rigidity/Linear Guide Type

MY1HT Series

ø50, ø63

How to Order



Bore size 50 mm

63

Port thread type Symbol Type Bore size Nil Rc ø50. ø63 ΤN NPT G

Piping Standard type G Centralized piping type

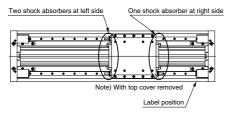
Refer to "Standard Stroke" on page 1325.

5 Stroke adjustment unit

63 mm

L	One shock absorber at each stroke end						
Н	H Two shock absorbers at each stroke end						
LH	One shock absorber at left side, two shock absorbers at right side						
HL	Two shock absorbers at left side, one shock absorber at right side						

* The positions right and left are for when the label is on the front side. Refer to the figure below for details.



6 Auto switch

Nil Without auto switch (Built-in magnet) For the applicable auto switch model, refer to the table below

Number of auto switches Nil 2 ncs S 1 pc. n "n" pcs

Made to Order Refer to page 1325 for details.

Option

Stroke Adjustment Unit Part No.

Bore size (mm)	50	63
Unit type	MYT-A50L	MYT-A63L

Side Support Part No.

Bore size (mm)	50	63				
Side support A	MY-S	S63A				
Side support B	MY-S63B					
- 1. 7 1 . 7 1 . 7 1 . 7 1						

For details about dimensions, etc., refer to page 1330, A set of side supports consists of a left support and a right support

Applicable Auto Switches/Refer to pages 1575 to 1701 for further information on auto switches

			Electrical	5	Wiring	L	oad volta	ge	Auto swit	ch model	Lead wire I	ength	n (m)	Pre-wired													
T	ype	Special function	entry	Indicator light	(Output)	D	С	AC	Perpendicular	In-line	0.5 (Nil)	3 (L)	5 (Z)	connector	Applicat	ole load											
	c,				3-wire (NPN)		5 V, 12 V		Y69A	Y59A	•	•	0	0													
	switch	_			3-wire (PNP)		5 V, 12 V		Y7PV	Y7P	•	•	0	0	IC circuit												
	anto 8				2-wire	24 V	12 V	1	Y69B	Y59B	•	•	0	0	_												
		Diagnostic indication (2-color indicator)	Grommet Y	Yes	3-wire (NPN)		5 V, 12 V	5 V 10 V	Y7NWV	Y7NW	•	•	0	0	IC circuit	Relay, PLC											
	state				3-wire (PNP)			12 V	Y7PWV	Y7PW	•	• • 0 0 '	IC circuit														
1	Solid				2-wire		10.1/		Y7BWV	Y7BW	•	•	0	0													
	S	Water resistant (2-color indicator)			1		2-wire		12 V		_	Y7BA*1	_	•	0	0	-										
2	auto switch			Ye.	Ye									. Y	Yes	3-wire (NPN equivalent)	_	5 V	_	_	Z 76	•	•	-	_	IC circuit	-
å	10.5	_	Grommet		2-wire 24	24 V	12 V	100 V	_	Z73	•	•	•	_	_	Relay,											
	an			No		24 V	12 V	100 V or less	I	Z80	•	•	<u> </u>	_	IC circuit	PLC"											

- *1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance Consult with SMC regarding water resistant types with the above model numbers.
- *2 For details on switch mounting brackets and part numbers, refer to "Switch Mounting Bracket: Part No." on page 1333-1.
- * Lead wire length symbols: 0.5 m ····· Nil (Example) Y7BW
 - 3 m ····· L (Example) Y7BWL 5 m ····· Z Example) Y7BWZ

- * Solid state auto switches marked with "O" are produced upon receipt of order.
 - * Separate switch spacers (BMP1-032) are required for retrofitting of auto switches.
- * There are other applicable auto switches than listed above. For details, refer to page 1333-1. * Auto switches are shipped together (not assembled). (For details about auto switch mounting, etc., refer to page 1332.)

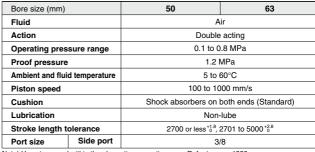
A 1324



Mechanically Jointed Rodless Cylinder MY1HT Series High Rigidity/Linear Guide Type

Specifications





Note) Use at a speed within the absorption capacity range. Refer to page 1326.

Stroke Adjustment Unit Specifications

Applicable bore size (mm)	5	0	63		
	L	Н	L	Н	
Unit symbol, contents	RB2015 and adjustment bolt: 1 set each	RB2015 and adjustment bolt: 2 sets each	RB2725 and adjustment bolt: 1 set each	RB2725 and adjustment bolt: 2 sets each	
Fine stroke adjustment range (mm)	0 to	-20	0 to -25		
Stroke adjustment range	For adjustment method, refer to page 1337.				

^{*} Stroke adjustment range is applicable for one side when mounted on a cylinder.

Shock absorber model Maximum energy absorption (J) Stroke absorption (mm) Maximum collision speed (mm/s)		RB2015 x 1 pc.	RB2015 x 2 pcs.	RB2725 x 1 pc.	RB2725 x 2 pcs.
		58.8	88.2 Note)	147	220.5 Note)
		15	15	25	25
		10	00	1000	
Maximum operating	frequency (cycle/min)	25	25	10	10
Coming force (N)	Extended	8.34	16.68	8.83	17.66
Spring force (N)	Retracted	20.50	41.00	20.01	40.02
Operating temperature range (°C)			5 to	0 60	

Note) Maximum energy absorption for 2 pcs. is calculated by multiplying the value for 1 pc. by 1.5.

Theoretical Output

								(IN)
Bore size	Piston area (mm²)	(Opera	ating	pres	sure	(MPa	ι)
(mm)		0.2	0.3	0.4	0.5	0.6	0.7	0.8
50	1962	392	588	784	981	1177	1373	1569
63	3115	623	934	1246	1557	1869	2180	2492

Note) Theoretical output (N) = Pressure (MPa) x Piston

Made to Order Specifications Click here for details

Symbol	Specifications
-XB10	Intermediate stroke (Using exclusive body)
-XC67	NBR rubber lining in dust seal band

Standard Stroke

Bore size (mm)	Standard stroke (mm)	Intermediate stroke (-XB10)	Long stroke (-XB11)	Maximum manufacturable stroke
50, 63	200, 400, 600 800, 1000 1500, 2000	Intermediate strokes of 201 to 1999 mm (1 mm increments) other than standard strokes	-	5000

Note) Ordering example

Weight

							(kg)
Bore size	Basic	Additional weight per	Weight of moving	Side support weight (per set)	Stroke a	djustment un	it weight
(mm)	weight ea	of stroke of mm parts		Type A and B	L unit weight	LH unit weight	H unit weight
50	30.62	0.87	5.80	0.17	0.62	0.93	1.24
63	41.69	1.13	8.10	0.17	1.08	1.62	2.16

Calculation: (Example) MY1HT50-400L

- Basic weight -----30.62 kg
 Additional weight ----0.87/25 st
- Additional weight ----0.87/25 st
 L unit weight -----0.62 kg
- Cylinder stroke...... 400 st $30.62 + 0.87 \times 400 \div 25 + 0.62 \times 2 \cong 45.8$

Refer to pages 1331 to 1333-1 for the specifications with auto switch.



^{*} The shock absorber service life is different from that of the MY1HT cylinder depending on operating conditions. Refer to the RB Series Specific Product Precautions for the replacement period.

^{*} Add "-XB10" to the end of the part number for intermediate strokes. MY1HT50-500L-Y7BW-XB10

Cushion Capacity

Cushion Selection

<Stroke adjustment unit with built-in shock absorber>

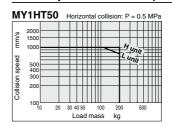
L unit

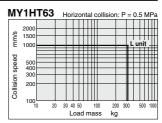
Use this unit when the cylinder stroke is outside of the effective air cushion range even if the load and speed are within the air cushion limit line, or when the cylinder is operated in a load and speed range above the air cushion limit line or below the L unit limit line.

H unit

Use this unit when the cylinder is operated in a load and speed range above the L unit limit line and below the H unit limit line.

Stroke Adjustment Unit Absorption Capacity



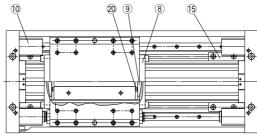


↑ Precautions

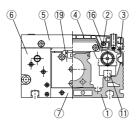
For details on the MY1HT Series Mechanically Jointed Rodless Cylinder, refer to "Specific Product Precautions" on pages 1335 to 1337.

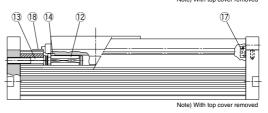
Construction

Standard type



Note) With top cover removed



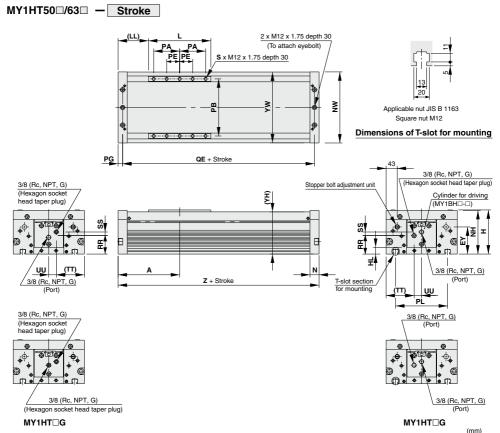


Component Parts

No.	Description	Material	Note
1	Guide frame	Aluminum alloy	Hard anodized
2	Slide table	Aluminum alloy	Hard anodized
3	Side cover	Aluminum alloy	Hard anodized
4	Top cover	Aluminum alloy	Hard anodized
5	Upper plate	Aluminum alloy	Hard anodized
6	End plate	Aluminum alloy	Hard anodized
7	Bottom plate	Aluminum alloy	Hard anodized
8	End cover	Aluminum alloy	Chromated
9	Coupler	Aluminum alloy	Chromated
10	Adjuster holder	Aluminum alloy	Hard anodized
11	Guide	_	
12	Shock absorber	_	
13	Stopper bolt	Carbon steel	Nickel plated
14	Absorber ring	Rolled steel	Nickel plated
15	End support	Aluminum alloy	Hard anodized
16	Top block	Aluminum alloy	Chromated
17	Side block	Aluminum alloy	Chromated
18	Slide plate	Special resin	
19	Rodless cylinder	_	MY1BH
20	Stopper	Carbon steel	Nickel plated

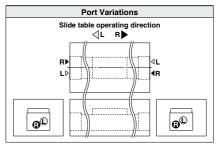
Mechanically Jointed Rodless Cylinder MY1HT Series High Rigidity/Linear Guide Type

Standard Type/Centralized Piping Type Ø50, Ø63



Model	Α	EY	Н	HL	L	LL	N	NH	NW	PA	PB	PE	PG
MY1HT50□	207	97.5	145	23	210	102	30	143	254	90	200	-	15
MY1HT63□	237	104.5	170	26	240	117	35	168	274	100	220	50	17.5

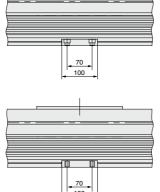
										(mm)
Model	PL	QE	RR	S	SS	TT	UU	YH	YW	Z
MY1HT50□	180	384	57	6	10	103.5	23.5	136.4	253	414
MY1HT63□	200	439	71.5	10	13.5	108	29	162.6	273	474

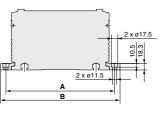


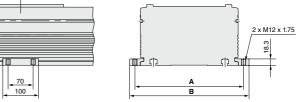
Side Support

Side support A MY-S63A

Side support B MY-S63B







Dimensions			(mm
Model	Applicable bore size	Α	В
MY-S63A	MY1HT50	284	314
W 1-303B	MY1HT63	304	334

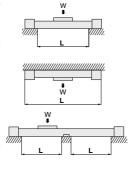
^{*} A set of side supports consists of a left support and a right support.

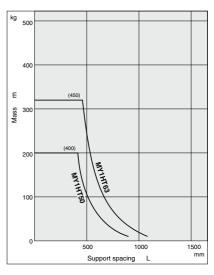
Guide for Side Support Application

For long stroke operation, the cylinder tube may be deflected depending on its own weight and the load mass. 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.

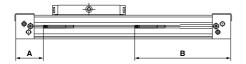




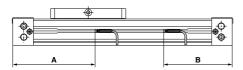
Auto Switch Mounting

Proper Auto Switch Mounting Position (Detection at stroke end)

MY1B (Basic type) ø10 to 20



ø25 to ø100



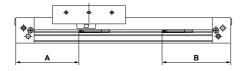
Proper Auto Switch Mounting Position

model	D-M9	□V □W □WV	D-A	9□ 9□V	D-Y59□/Y7P D-Y69□/Y7PV D-Y7□W D-Y7□WV D-Y7BA D-Z7□/Z80		
Bore size \	Α	В	Α	В	Α	В	
10	24	86	20	90	_	_	
16	31.5	128.5	27.5	132.5	_	_	
20	39	161	35	165	_	_	
25	138	82	107	82	_	_	
32	186.5	93.5	159	93.5	_	_	
40	222.5	170	186	170	_	_	
50	_	_	_	_	272.5	127.5	
63	322.5 137.5		_	_	317.5	142.5	
80	489.5 200.5		_	_	484.5	205.5	
100	574.5	225.5	_	_	569.5	230.5	

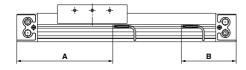
Note 1) D-M9□□□type cannot be mounted on ø50.

Note 2) Adjust the auto switch after confirming the operating condition in the actual setting.

MY1M (Slide bearing guide type) ø16, ø20



ø25 to ø63

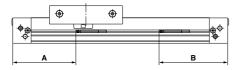


Proper Auto Switch Mounting Position

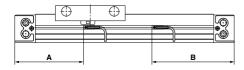
model	D-M9 U D-M9 U D-M9 U D-M9 UV D-M9 UA D-M9 A		D-A D-A	9□ 9□V	D-Y59□/Y7P D-Y69□Y7PV D-Y7□W D-Y7□WV D-Z7□/Z80		
Bore size \	Α	В	Α	В	Α	В	
16	74	86	70	90	_	_	
20	94	106	90	110	_	_	
25	143.5	75.5	_	_	139.5	80.5	
32	189.5	90.5	_	_	184.5	95.5	
40	234.5	105.5	_	_	229.5	110.5	
50	283.5	116.5	_	_	278.5	121.5	
63	328.5	131.5	_	_	323.5	136.5	

Note) Adjust the auto switch after confirming the operating condition in the actual setting.

MY1C (Cam follower guide type) ø16. ø20



ø25 to ø63



Proper Auto Switch Mounting Position

Auto switch D_MO□

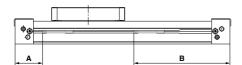
model	D-M9 D-M9 D-M9 D-M9 D-M9	□V □W □WV □A	D-A D-A	9□ 9□V	D-Y59□/Y7P D-Y69□/Y7PV D-Y7□W D-Y7□WV D-Z7□/Z80		
Bore size \	Α	В	Α	В	Α	В	
16	74	86	70	90	_	1	
20	94	106	90	110	_	_	
25	102	118	_	_	97	123	
32	132	148	_	_	127	153	
40	162.5	175.5	_	_	157.5	182.5	
50	283.5 116.5		_	_	278.5	121.5	
63	328.5	131.5	_	_	323.5	136.5	

Note) Adjust the auto switch after confirming the operating condition in the actual setting.



Proper Auto Switch Mounting Position (Detection at stroke end)

MY1H (Linear guide type) \emptyset 10 to \emptyset 20



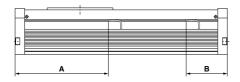
Proper Auto Switch Mounting Position

(mm) 77P 77PV

model	D-M9 D-M9 V D-M9 W D-M9 W D-M9 A D-M9 A D-M9 A B		D-A	9□ 9□V	D-Y59□/Y7P D-Y69□/Y7PV D-Y7□W D-Y7□WV D-Z7□/Z80		
Bore size \			Α	В	Α	В	
10	24	86	20	90	_	_	
16	31.5	128.5	27.5 132.5		_	_	
20	39	161	35 165		_	_	
25	46.5	99.5	42.5	95.5	_	_	
32	54 124		50	120	_	_	
40	61.5	146.5	57.5	142.5	_	_	

Note) Adjust the auto switch after confirming the operating condition in the actual setting.

MY1HT (High rigidity/Linear guide type) Ø50, Ø63



Proper Auto Switch

Mounting Position (mm)									
Auto switch model	D-Y590 D-Y690 D-Y70 D-Y70 D-Y780 D-Z700	⊒/Y7PV W WV A							
Bore size	Α	В							
50	290.5	123.5							
63	335.5	138.5							

Note) Adjust the auto switch after confirming the operating condition in the actual setting.

Auto Switch Mounting MY1 Series

Operating Range

Note) Since this is a guideline including hysteresis, not meant to be guaranteed. (Assuming approximately ±30% dispersion.) There may be the case it will vary substantially depending on an ambient environment.

MY1H (Linear guide type)

MY1B (Basic type)

A					Doic	3120				
Auto switch model	10	16	20	25	32	40	50	63	80	100
D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	3.5	4	5.5	5.0	5.5	5.5	_	12	12	11.5
D-A9□/A9□V	6	6.5	8.5	7.0	10.0	9.0	_	_	_	_
D-Z7□/Z80	_	_	_	_	_	_	11.5	11.5	11.5	11.5
D-Y59□/Y69□ D-Y7P/Y7PV D-Y7□W/Y7□WV	_	_	_	_	_	_	3.5	3.5	3.5	3.5

D-M9□□□ type cannot be mounted on ø50.

MY1H (Linear guide type) (mr										
Auto switch model	Bore size									
Auto switch model	10	16	20	25	32	40				
D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	3	4.5	5	5.0	5.5	5.5				
D-A9□/A9□V	11	6.5	8.5	7.0	10.0	9.0				
D-Z7□/Z80	_	_	_	_	_	_				
D-Y59□/Y69□ D-Y7P/Y7PV D-Y7□W/Y7□WV	_	_	_	_	_					

MV1M (Slide bearing guide type)

with the (Sinde bearing guide type)										
Auto switch model	Bore size									
Auto switch model	16	20	25	32	40	50	63			
D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	7.5	7.5	8.5	8.5	9.5	7	6			
D-A9□/A9□V	11	7.5	_	_	_	_	-			
D-Z7□/Z80	_	_	12	12	12	11.5	11.5			
D-Y59□/Y69□ D-Y7P/Y7PV D-Y7□W/Y7□WV	_	_	5	5	5	5.5	5.5			

MY1C (Cam follower guide type)

Auto switch model	Bore size										
Auto switch model	16	20	25	32	40	50	63				
D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	7.5	7.5	7	8	8.5	7	6				
D-A9□/A9□V	11	7.5	_	_	_	_	_				
D-Z7□/Z80			12	12	12	11.5	11.5				
D-Y59□/Y69□ D-Y7P/Y7PV D-Y7□W/Y7□WV	_	_	5	5	5	5.5	5.5				

MY1HT

(High rigidity/Linear guide type) (mm)				
A 1 2	Bore size			
Auto switch model	50	63		
D-Z7□/Z80	11	11		
D-Y59□/Y69□ D-Y7P/Y7PV D-Y7□W/Y7□WV D-Y7BA	5	5		

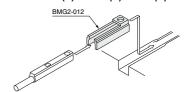
Auto Switch Mounting Bracket/Part No.

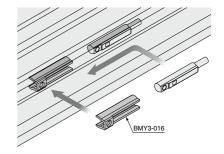
Bore size	MY1B, MY1M,	MY1C, MY1H
Auto switch model (mm)	ø10 to ø20	ø25 to ø100
D-A9□/A9□V D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	-	BMG2-012

Note) D-A9□□ type cannot be mounted on ø50 to ø100 of the MY1B, and ø25 to ø63 of the MY1C and MY1M. D-M9□□□ type cannot be mounted on ø50 of the MY1B series.

Bore size	MY1B-Z, MY1H-Z
Auto switch model (mm)	ø25 to ø40
D-A9□/A9□V D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	BMY3-016

Ø25 to Ø100: M9□(V)/M9□W(V)/M9□A(V)





Switch Spacer No.

Culindar agrica	Applicable bore size (mm)	
Cylinder series	50	63
MY1HT	BMP1-032	

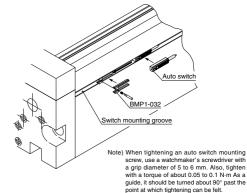
When attaching an auto switch, first take a switch spacer between your fingers and press it into a switch mounting groove. When doing this, confirm that it is set in the correct mounting orientation, or reattach if necessary

Next, insert an auto switch into the groove and slide it until it is positioned under the switch spacer.

After establishing the mounting position, use a watchmakers flat head screwdriver to tighten the auto switch mounting screw which is included.







ı ı ı ī

Besides the models listed in How to Order, the following auto switches are applicable.

For detailed specifications, refer to pages 1575 to 1701.

Туре	Model	Electrical entry (Fetching direction)	Features	Applicable bore size	
	D-Y69A, Y69B, Y7PV	Comment (Barrers distributes)	_		
Solid state auto switch	D-Y7NWV, Y7PWV, Y7BWV	Grommet (Perpendicular)	Diagnostic indication (2-color indicator)	ø25 to ø100	
Solid State auto Switch	D-Y59A, Y59B, Y7P	Grommet (In-line)	_	925 10 9 100	
	D-Y7NW, Y7PW, Y7BW	Grommet (in-line)	Diagnostic indication (2-color indicator)		

^{*} For solid state auto switches, auto switches with a pre-wired connector are also available. Refer to pages 1648 and 1649 for details. * Normally closed (NC = b contact) solid state auto switches (D-F9G/F9H/Y7G/Y7H types) are also available. Refer to pages 1593 and 1595 for details.

Made to Order: Individual Specifications

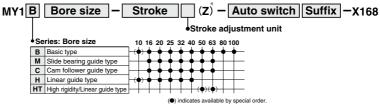
Please contact SMC for detailed dimensions, specifications and lead times.



1 Helical Insert Thread Specifications

Symbol -X168

Helical insert thread is used for the slide table mounting thread, the thread size is the same as the standard model.



Example) MY1B20G-300L-M9BW-X168

^{*} Please specify "Z" for the MY1B25 to 40 and the MY1H25 to 40.



Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 3 to 12 for Actuator and Auto Switch Precautions.

Selection

1. When using a cylinder with long strokes, implement an intermediate support.

When using a cylinder with long strokes, implement an intermediate support to prevent the tube from sagging and being deflected by vibration or an external load.

Refer to the Guide for Side Support Application on pages 1252, 1275, 1295, 1316 and 1330.

For intermediate stops, use a dual-side pressure control circuit.

Since the mechanically jointed rodless cylinders have a unique seal structure, slight external leakage may occur. Controlling intermediate stops with a 3 position valve cannot hold the stopping position of the slide table (slider). The speed at the restarting state also may not be controllable. Use the dual-side pressure control circuit with a PAB-connected 3 position valve for intermediate stops.

3. Constant speed.

Since the mechanically jointed rodless cylinders have a unique seal structure, a slight speed change may occur. For applications that require constant speed, select an applicable equipment for the level of demand.

4. Load factor of 0.5 or less

When the load factor is high against the cylinder output, it may adversely affect the cylinder (condensation, etc.) and cause malfunctions. Select a cylinder to make the load factor less than 0.5. (Mainly when using an external guide)

5. Cautions on less frequent operation

When the cylinder is used extremely infrequently, operation may be interrupted in order for anchoring and a change lubrication to be performed or service life may be reduced.

6. Consider uncalculated loads such as piping, cableveyor, etc., when selecting a load moment Calculation does not include the external acting force of piping, cableveyor, etc. Select load factors taking into account the external acting force of piping, cableveyor, etc.

7. Accuracy

The mechanical jointed rodless cylinder does not guarantee traveling parallelism. When accuracy in traveling parallelism and a middle position of stroke is required, please consult SMC.

Mounting

∧ Caution

- Do not apply strong impacts or excessive moment to the slide table (slider).
 - The slide table (slider) is supported by precision bearings (MY1C, MY1H) or resin bearings. Therefore, do not apply strong impacts or excessive moment, etc., when mounting workpieces.

Mounting

∧ Caution

- 2. When connecting to a load which has an external guide mechanism, use a discrepancy absorption mechanism
 - Mechanically jointed rodless cylinders can be used with a direct load within the allowable range for each type of guide. Please note that careful alignment is necessary when connecting to a load having an external guide mechanism. Mount the external guide mounting brackets and floating brackets in a place where the required degree of freedom for the floating Y and Z axes can be secured.

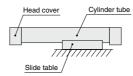
The thrust transmission area of the floating bracket must be fixed so that it does not partially contact the body.

- * Refer to the Coordinates and Moment in Model Selection on page 1229 for the details of floating Y and Z axes.
- 3. Do not mount cylinders as they are twisted.

When mounting, be sure for a cylinder tube not to be twisted. The flatness of the mounting surface is not appropriate, the cylinder tube is twisted, which may cause air leakage due to the detachment of a seal belt, damage a dust seal band, and cause malfunctions.

Do not mount a slide table on the fixed equipment surface.

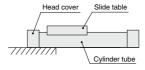
It may cause damage or malfunctions since an excessive load is applied to the bearing.



Mounting with a slide table (slider)

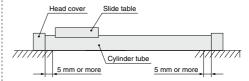
5. Consult SMC when mounting in a cantilevered way.

Since the cylinder body deflects, it may cause malfunctions. Please consult SMC when using it this way.



Mounting in a cantilevered way

Fixed parts of the cylinder on both ends must have at least 5 mm of contact between where the bottom of the cylinder tube and the equipment surface.





Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 3 to 12 for Actuator and Auto Switch Precautions.

Mounting

Do not generate negative pressure in the cylinder tube.

When the cylinder is in a non-pressurized state, such as during a test run, maintenance, etc., external or inertial force may cause negative pressure to be generated inside the cylinder. In such cases, the seal belt may come off, resulting in a temporary air leak.

- Examples:
- When external force is used to move a slide table all at once during installation, a test run, etc.
- When a vertically-mounted slide table carrying a load drops due to self-weight

(In either case, the smaller the speed controller's opening is set, the more likely negative pressure is to be generated.)

• For negative pressure prevention

When using external force to move a slide table, move it slowly and steadily at about 20 mm/s. (If the speed controller's opening is set extremely small, increase the opening only during manual operation.)

• If the seal belt comes off

If the seal belt comes off due to negative pressure and air is leaking, manually move the slide table from the beginning to the end of the cylinder's full stroke slowly and steadily at about 20 mm/s.

(If the speed controller's opening is set extremely small, increase the opening only during manual operation.)

If air continues to leak even after the above mentioned restoration methods have been tried, please contact your nearest sales office.

Do not unnecessarily alter the guide adjustment setting.

 The adjustment of the guide is preset and does not require readjustment under normal operating conditions. Therefore, do not unnecessarily alter the guide adjustment setting. However, series other than the MY1H Series can be readjusted and their bearings can be replaced.

To perform these operations, refer to the bearing replacement procedure given in the operation manual.

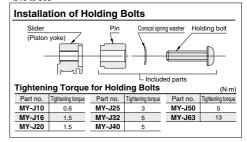
Do not get your hands caught during cylinder operation.

For the cylinder with a stroke adjustment unit, the space between the slide table and stroke adjustment unit is very small, and your hands may get caught. When operating without a protective cover, be careful not to get your hands caught.

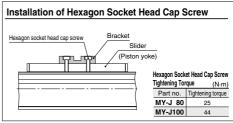
10. Do not use a shock absorber together with air cushion.

Secure the holding bolt as shown in the diagram below.

<ø10 to ø63>



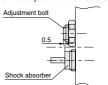
<ø80 to ø100>



12. Refer to the figure below when using the adjustment 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 adjustment bolt at the position where it protrudes

approximately 0.5 mm from the shock absorber.







Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 12 for Actuator and Auto Switch Precautions.

Mounting

⚠ Caution

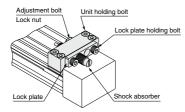
13. Tightening Torque for Stroke Adjustment Unit (Lock Plate) Holding Bolts

Use caution not to get your hands caught in the unit.

When using a product with stroke adjustment unit, the space between the slide table (slider) and the stroke adjustment 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 adjustment unit fixed in an intermediate position.

When the stroke adjustment unit is fix in an intermediate position, slippage can occur depending on the amount of energy released at the time of an impact. In such cases, as a stroke adjustment unit with the spacer for intermediate securing is available, it is recommended to use it.

(MY1B: Excludes ø10)

For other lengths, please consult with SMC (Refer to "Tightening Torque for Stroke Adjustment Unit Holding Bolts".)

<Stroke adjustment with adjustment bolt>

Loosen the adjustment 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

Take care not to over-tighten the holding bolts, (MY1B; Excludes ø10, ø20 L unit, MY1M/C: Excludes ø16, ø20, ø50, and ø63)

(Refer to "Tightening Torgue for Stroke Adjustment Unit Lock Plate Holding Bolts".)

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.

Tightening Torque for Stroke Adjustment Tightening Torque for Stroke Adjustment

Utilit Holding Boils		
Unit	Tightening torque	
Α	0.4	
A		
L	3.5	
Н		
Α		
L	5.8	
Н		
Α		
L	13.8	
Н		
	Unit A H A L H A L H A L L L L L L L L L L	

Unit Lock Plate Holding Bolts

Bore size (mm)	Unit	Tightening torque		
20	Н	1.2		
25	L	1.2		
25	Н	3.3		
32	L	3.3		
32	Н	10		
40	L	3.3		
40	Н	10		

<MY1M, MY1C>

Bore size

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

(mm)	Unit	torque	
16	Α	0.7	
10	L	0.7	
	Α		
20	L	1.8	
	Н		
	Α		
25	L	3.5	
	Н		
	Α		
32	L	5.8	
	Н		
	Α		
40	L	13.8	
	Н		
	Α		
50	L	13.8	
	Н		
	Α		
63	L	27.5	
	Н		

Tightening Torque for Stroke Adjustment Unit Lock Plate Holding Bolts

Bore size (mm)	Unit	Tightening torque
25	L	1.2
25	Н	3.3
32	L	3.3
32	Н	10
40	ш	3.3
40	Н	10

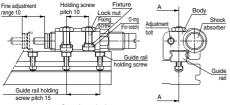


Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 12 for Actuator and Auto Switch Precautions.

Mounting

<MY1H:

To adjust the stroke adjustment unit of the MY1H10, follow the step shown below.



Section A-A

Adjusting Procedure

- Loosen the two lock nuts, and then loosen the holding screws by turning them approximately two turns.
- Move the body to the notch just before the desired stroke. (The notches are found in alternating increments of 5 mm and 10 mm.)
- Tighten the holding screw to 0.3 N·m. Make sure that the tightening does not cause excessive torque.

The fixture fits into the fastening hole in the guide rail to prevent slippage, which enables fastening with low torque.

- 4. Tighten the lock nut to 0.6
- 5. Make fine adjustments with the adjustment bolt and shock absorber

Tightening Torque for Stroke Adjustment Unit Holding Bolts $(N \cdot m)$

Bore size (mm)	Tightening torque	
10	Refer to "Adjusting Procedure" above.	
16	0.7	
20	1.8	
25	1.8	
32	3.5	
40	5.8	

Use the formula below to calculate the absorbed energy of the stroke adjustment unit with shock absorber.

			(N·m)
	Horizontal collision	Vertical (Downward)	Vertical (Upward)
Type of impact	<u>v</u> - <u>s</u>	v m	s = = = = = = = = = = = = = = = = = = =
Kinetic energy E ₁	1/2 m·U²		
Thrust energy E ₂	F·s	F·s + m·g·s	F·s – m·g·s
Absorbed energy E	E1 + E2		

Symbol

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

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

Operating Environment

⚠ Warning

- Do not use in an environment where the cylinder is exposed to coolant, cutting oil, water drops, adhesive foreign particles, dust, etc. and avoid use with compressed air containing drainage and foreign particles.
 - Foreign matter or liquids on the cylinder's interior or exterior can wash out the lubricating grease, which can lead to deterioration and damage of dust seal band and seal materials. causing a danger of malfunction.

When operating in locations with exposure to water and oil, or in dusty locations, provide protection such as a cover to prevent direct contact with the cylinder, or mount so that the dust seal band surface faces downward, and operate with clean compressed air.

Carry out cleaning and grease application suitable for the operating environment.

Carry out cleaning regularly when using in an operating environment in which the product is likely to get dirty.

After cleaning, be sure to apply grease to the top side of the cylinder tube and the rotating part of the dust seal band. Apply grease to these parts regularly even if not after cleaning. Please consult SMC for the cleaning of the slide table (slider) interior and grease application.

The product is not designed for clean room usage. If clean room usage is considered, please consult with SMC.

Service Life and Replacement Period of Shock Absorber

∧ Caution

- 1. Allowable operating cycle under the specifications set in this catalog is shown below.
 - 1.2 million times RB08□□
 - 2 million times RB10□□ to RB2725

Note) Specified service life (suitable replacement period) is the value at room temperature (20 to 25°C). The period may vary depending on the temperature and other conditions. In some cases the absorber may need to be replaced before the allowable operating cycle above.





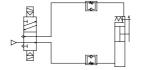
Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 12 for Actuator and Auto Switch Precautions.

MY1H: With End Lock

Recommended Pneumatic Circuit

⚠ Caution

This is necessary for the correct locking and unlocking actions.



Operating Precautions

⚠ Caution

1. Do not use 3-position solenoid valves.

Avoid use in combination with 3-position solenoid valves (especially closed center metal seal types). If pressure is trapped in the port on the lock mechanism side, the cylinder cannot be locked

Furthermore, even after being locked, the lock may be released after some time due to air leaking from the solenoid valve and entering the cylinder.

2. Back pressure is required when releasing the lock.

Before starting operation, be sure to control the system so that air is supplied to the side without the lock mechanism (in case of locks on both ends, the side where the slide table is not locked) as shown in the figure above. There is a possibility that the lock may not be released. (Refer to "Lock Release.")

- 3. Release the lock when mounting or adjusting the cylinder.

 If mounting or other work is performed when the cylinder is locked, the lock unit may be damaged.
- 4. Operate at 50% or less of the theoretical output.

If the load exceeds 50% of the theoretical output, this may cause problems such as failure of the lock to release, or damage to the lock unit.

- 5. Do not operate multiple cylinders in synchronization. Avoid applications in which two or more end lock cylinders are synchronized to move one workpiece, as one of the cylinder locks may not be able to release when required.
- Use a speed controller with meter-out control. Lock cannot be released occasionally by meter-in control.
- Be sure to operate completely to the cylinder stroke end on the side with the lock.

If the cylinder piston does not reach the end of the stroke, locking and unlocking may not be possible. (Refer to "End Lock Mechanism Adjustment.")

Operating Pressure

 Supply air pressure of 0.15 MPa or higher to the port on the side that has the lock mechanism, as it is necessary for disengaging the lock

Exhaust Speed

1. Locking will occur automatically if the pressure applied to the port on the lock mechanism side falls to 0.05 MPa or less. In the cases where the piping on the lock mechanism side is long and thin, or the speed controller is separated at some distance from the cylinder port, the exhaust speed will be reduced. Take note that some time may be required for the lock to engage. In addition, clogging of a silencer mounted on the solenoid valve exhaust port can produce the same effect.

Relation to Cushion

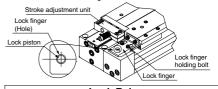
⚠ Caution

 When the air cushion on the lock mechanism side is in a fully closed or nearly closed state, there is a possibility that the slide table will not reach the stroke end, in which case locking will not occur.

End Lock Mechanism Adjustment

⚠ Caution

- The end lock mechanism is adjusted at the time of shipping.
 Therefore, adjustment for operation at the stroke end is unnecessary.
- 2. Adjust the end lock mechanism after the stroke adjustment unit has been adjusted. The adjustment bolt and shock absorber of the stroke adjustment unit must be adjusted and secured first. Locking and unlocking may not occur otherwise.
- Perform fine adjustment of the end lock mechanism as follows. Loosen the lock finger holding bolts, and then adjust by aligning the center of the lock piston with the center of the lock finger hole. Secure the lock finger.



Lock Release

⚠ Warning

1. Before releasing the lock, be sure to supply air to the side without the lock mechanism, so that there is no load applied to the lock mechanism when it is released. (Refer to "Recommended Pneumatic Circuit.") If the lock is released when the port on the side without the lock is in an exhaust state, and with a load applied to the lock unit, the lock unit may be subjected to an excessive force and be damaged.

Furthermore, sudden movement of the slide table is very dangerous.

Manual Release

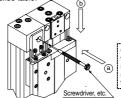
⚠ Caution

1. When manually releasing the end lock, be sure to release the pressure.

If it is unlocked while the air pressure still remains, it will lead to damage a workpiece, etc. due to unexpected lurching.

2. Perform manual release of the end lock mechanism as follows.

Push the lock piston down with a screwdriver, etc., and move the slide table.



Other handling precautions regarding mounting, piping and environment are the same as the standard series.

A 1336-3



Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 3 to 12 for Actuator and Auto Switch Precautions.

MY1HT

Mounting

Do not put hands or fingers inside when the body is suspended.
 Since the body is heavy, use eye bolts when suspending it.
 (The eye bolts are not included with the body.)

Stroke Adjustment Method

∧ Caution

 As shown in Figure (1), to adjust the stopper bolt within the adjustment range A, insert a hexagon wrench from the top to loosen the hexagon socket head set screw by approximately one turn, and then adjust the stopper bolt with a flat head screwdriver.

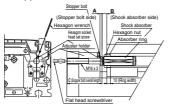


Figure (1) Stroke adjusting section detail

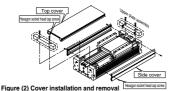
Stopper Bolt Holding Screw Tightening Torque

Stopper Bolt

Tightening Torque for Stroke Adjustment Unit Lock Plate Holding Bolts (N-r

Fightening Torque for Stroke Adjustment Unit Lock Plate Holding Boits (N·m)			
Bore size (mm)	Tightening torque		
50	0.6		
63	1.5		

 When the adjustment described in 1 above is insufficient, the shock absorber can be adjusted. Remove the covers as shown in Figure (2) and make further adjustment by loosening the hexagon nut.



Various dimensions are indicated in Table (1). Never make an adjustment that exceeds the dimensions in the table, as it may cause an accident and/or damage.

Table (1)		(mm)
Bore size (mm)	50	63
A to AMAX	6 to 26	6 to 31
В to Вмах	14 to 54	14 to 74
С	87	102
Max. adjustment range	60	85



Figure (3) Maximum stroke adjustment detail

Disassembly and Assembly Procedure

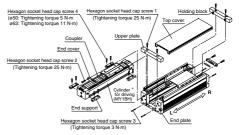
⚠ Caution

Disassembly step

- 1. Remove the hexagon socket head cap screws 1, and remove the upper plates.
- 2. Remove the top cover.
- 3. Remove the hexagon socket head cap screws 2, and remove the end covers and couplers.
- 4. Remove the hexagon socket head cap screws 3.
- 5. Remove the hexagon socket head cap screws 4, and remove the end supports.
- 6. Remove the cylinder.

Assembly step

- 1. Insert the MY1BH cylinder.
- 2. Temporarily fasten the end supports with the hexagon socket head cap screws 4.
- 3. With two hexagon socket head cap screws 3 on the L or R side, pull the end support and the cylinder.
- 4. Tighten the hexagon socket head cap screws 3 on the other side to eliminate the looseness in the axial direction. (At this point, a space is created between the end support and the end plate on one side, but this is not a problem.)
- 5. Re-tighten the hexagon socket head cap screws 4.
- Fasten the end cover with the hexagon head cap screws 2, while making sure that the coupler is in the right direction.
- 7. Place the top cover on the body.
- Insert the holding blocks into the top cover and fasten the upper plates with the hexagon socket head cap screws 1.



Cylinder For Driving (MY1BH Series)

Since the MY1BH series is a cylinder for driving for the MY1HT series, its construction is different from the MY1B series.

Do not use the MY1B series as a cylinder for driving, since it will lead to

