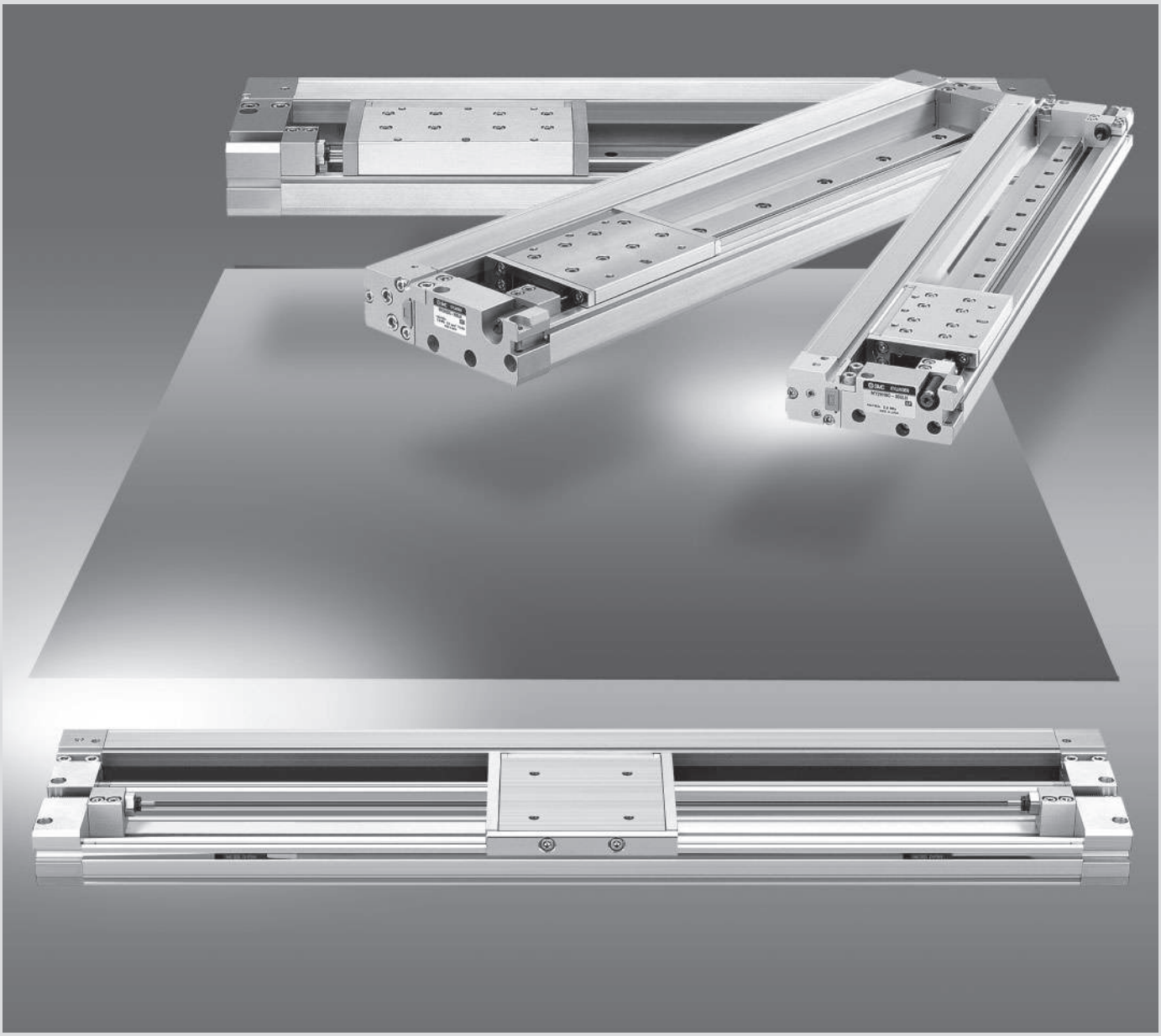
Mechanically Jointed Rodless Cylinder

MY2 Series

Ø 16, Ø 25, Ø 40



Compact and low profile design

SMC

CAT.EUS20-153Bb-UK

Mechanically Jointed Rodless Cylinder

MY2 Series

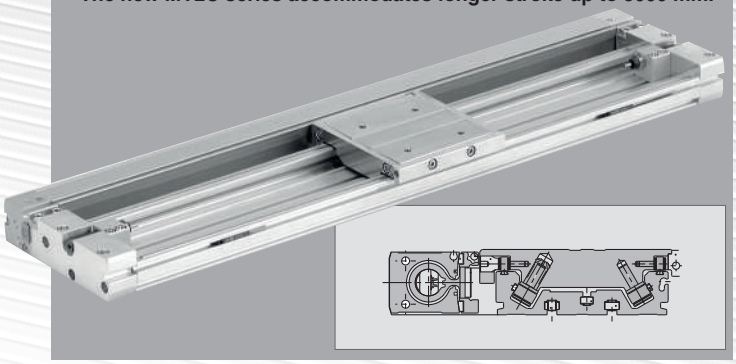
Compact and low profile design

A complete reduction in height of the cylinder allows mounting in a narrow space.
The low profile design of the cylinder built with a high precision single or double axis guide, provides same load capacity as the earlier MY1 series.
Three types of guide options to suit a variety of applications.

MY2C Cam Follower Guide

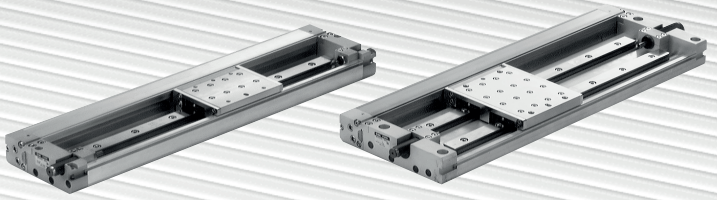
Available with long stroke

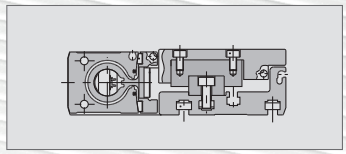
The new MY2C series accommodates longer stroke up to 5000 mm.

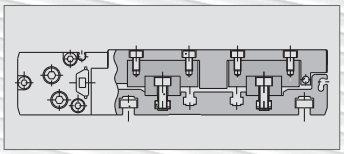


MY2H Single-axis Linear Guide

MY2HT Double-axis Linear Guide







All 3 types have the same cylinder height and actuator (cylinder).

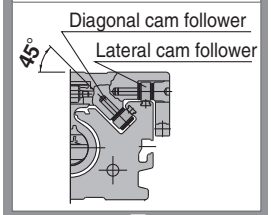
Increased load capacity

The dynamic load mass has been increased with improved guide performance. (Compared to previous MY1 series.)

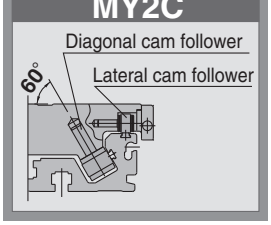
Cam Follower Guide | **Linear Guide**

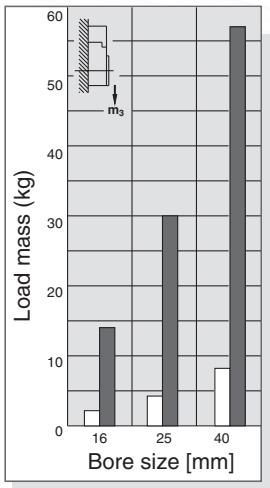
Higher rigidity of the diagonal cam follower and change in the mounting angle provides improved load and moment capacity.

MY1C

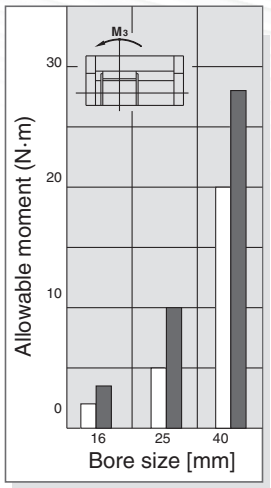


MY2C

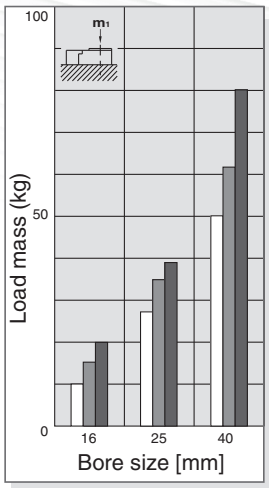




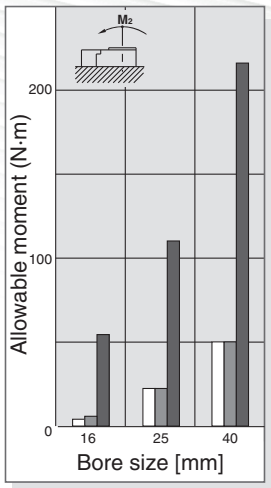
MY2C
MY1C



MY2C
MY1C



MY2HT
MY2H
MY1H



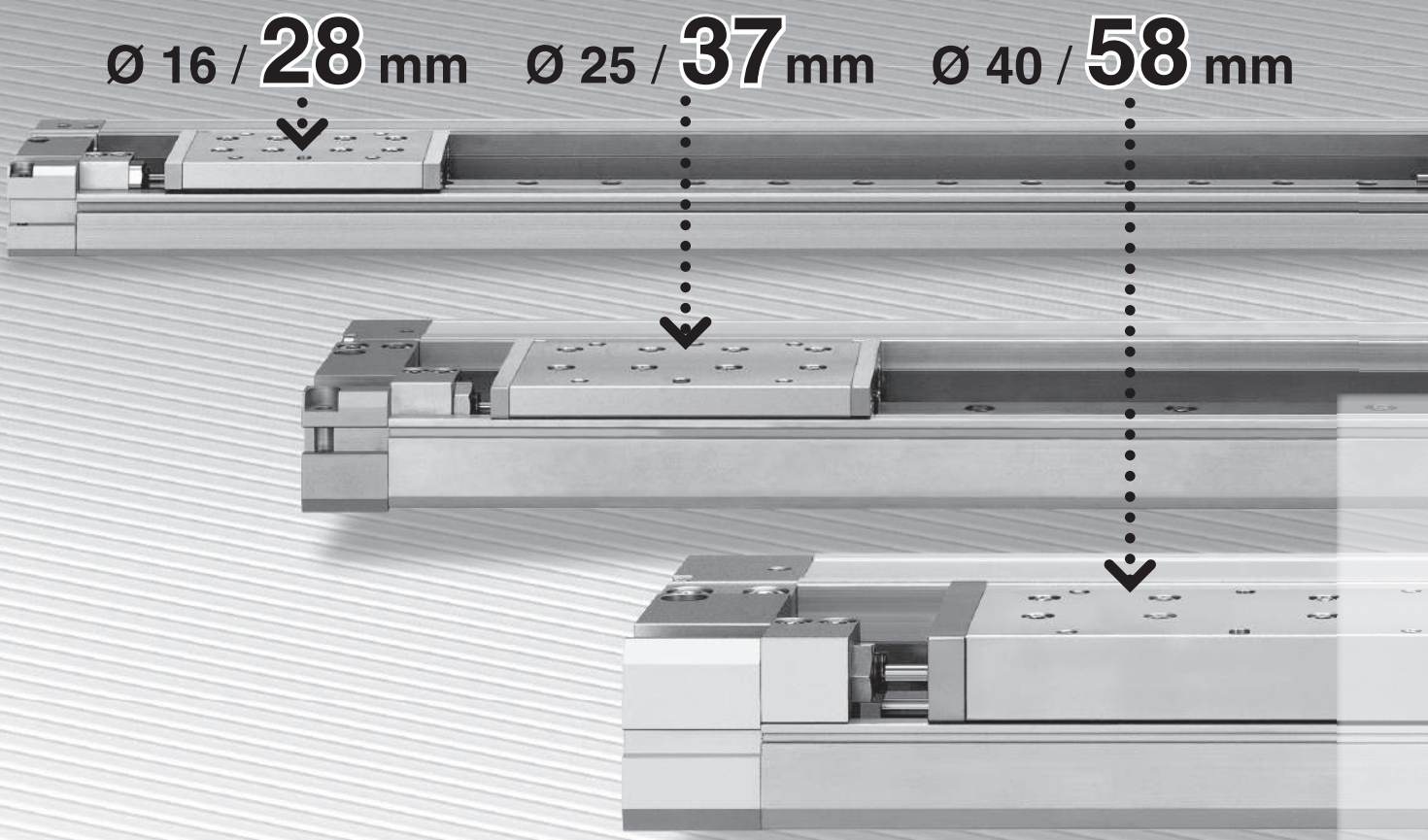
MY2HT
MY2H
MY1H

Height reduction by 30 % (Compared to previous MY1 series.)

Low profile achieved by placing the guide unit and cylinder body next to one another. (dimension reduced by 12 mm to 26 mm)

[mm]

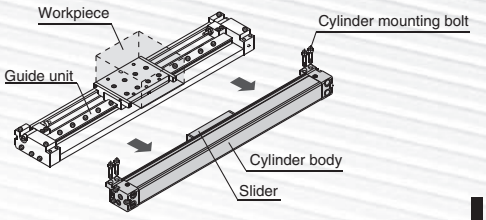
Series	Ø 16	Ø 25	Ø 40
MY2C	28	37	58
MY2H (Single axis)			
MY2HT (Double axis)			
MY1C, MY1H	40	54	84



Easy replacement of cylinder body

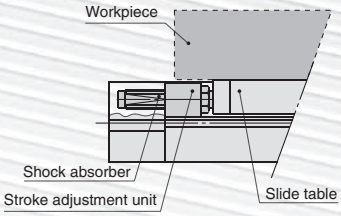
The cylinder can be replaced without removing the workpiece

The cylinder can be detached by simply removing the four mounting bolts, and pulling it off in the direction of the arrows.



Improved mounting flexibility

The low profile design allows mounting of heavy-loaded shock absorber (H unit) without interfering with the workpiece.

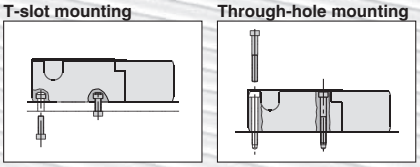


Option

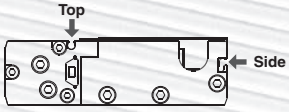
Optional side support is available (MY2C series)

A side support prevents guide deflection for the long stroke application.

Two mounting types



Auto switch mounting on two sides



Standard with air cushion and centralised piping

Series Variations

Model	Bore size [mm]	Standard stroke [mm]	Max. available stroke [mm]	Made to order
MY2C Cam follower guide	16	50 100 150 200 250 300 350 400 450 500 550 600 700 800 900 1000 1200 1400 1600 1800 2000	5000 (3000 for Ø 16)	· Helical insert threads · Shock absorber soft type RJ series mounted
MY2H Linear guide/Single axis	25		1500 (1000 for Ø 16)	
MY2HT Linear guide/Double axis	40			

Note) Availability for Made-to-Order differs, depending on the size and the model.

MY2 Series
Model Selection 1

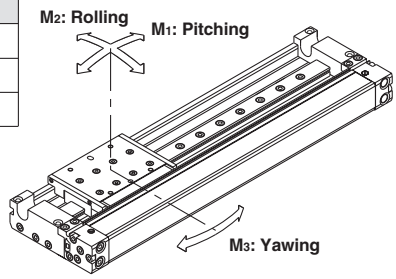
The following are the steps for selection of the MY2 series best suited to your application.

Standards for Tentative Model Selection

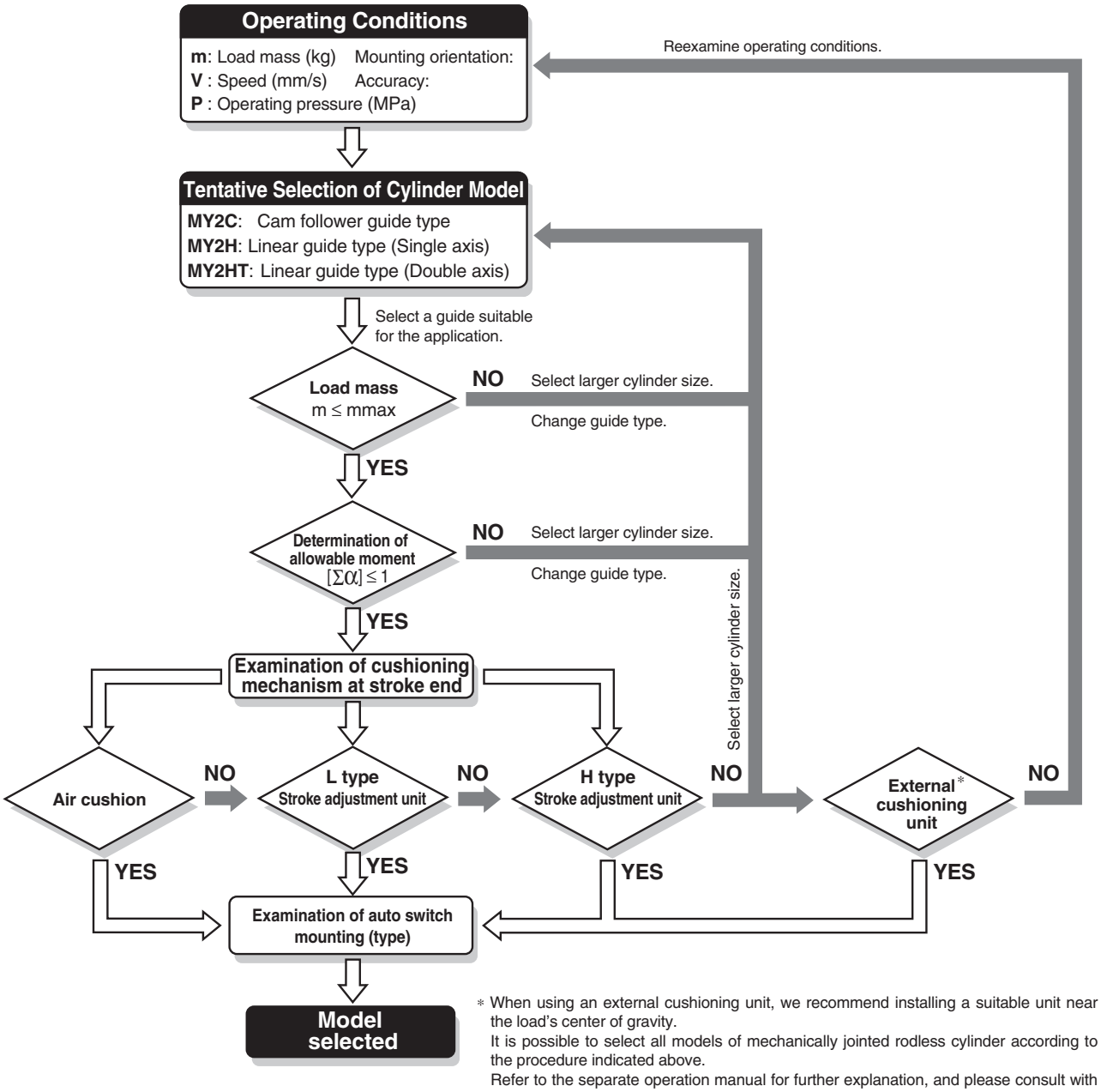
Cylinder model	Guide type	Standards for guide selection	Graphs for related allowable values
MY2C	Cam follower guide	Slide table accuracy approx. ±0.05 mm Note 2)	Refer to page 7.
MY2H	Linear guide type (Single axis)	Slide table accuracy ±0.05 mm or less Note 2)	Refer to page 8.
MY2HT	Linear guide type (Double axis)	Slide table accuracy ±0.05 mm or less Note 2)	Refer to page 9.

Note 1) Please use the precision of each guide as a guideline for selection. Please contact SMC if warranty on precision is required.

Note 2) Accuracy indicates displacement of the table (at stroke end) when 50% of the allowable moment shown in the catalog is applied. (Reference value)



Selection Flow Chart

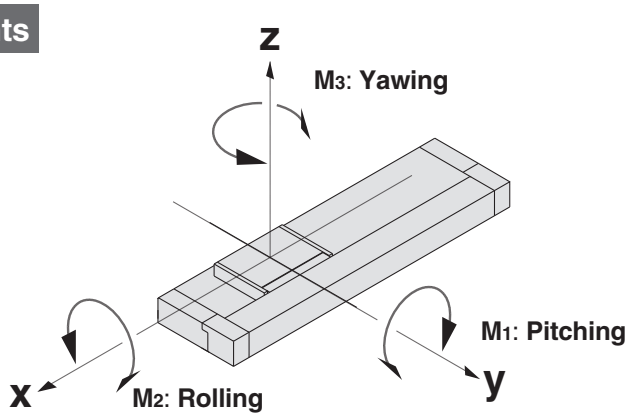


* When using an external cushioning unit, we recommend installing a suitable unit near the load's center of gravity.
It is possible to select all models of mechanically jointed rodless cylinder according to the procedure indicated above.
Refer to the separate operation manual for further explanation, and please consult with SMC regarding any questions.

Types of Moment Applied on Rodless Cylinders

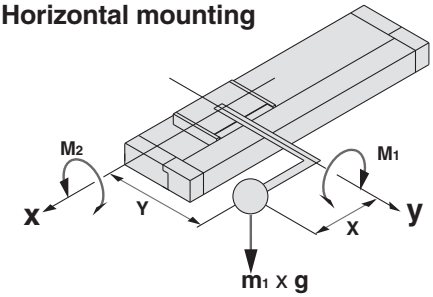
Multiple moments may be generated depending on the mounting orientation, load, and position of the center of gravity.

Coordinates and Moments

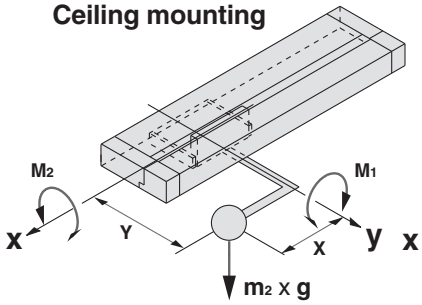


Static Moment

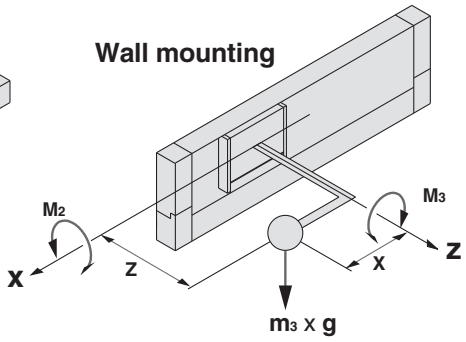
Horizontal mounting



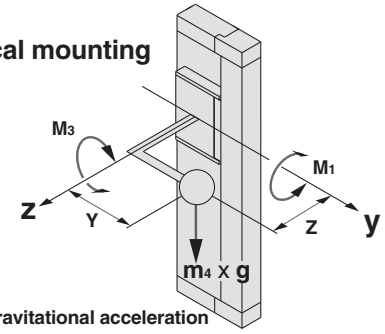
Ceiling mounting



Wall mounting



Vertical mounting

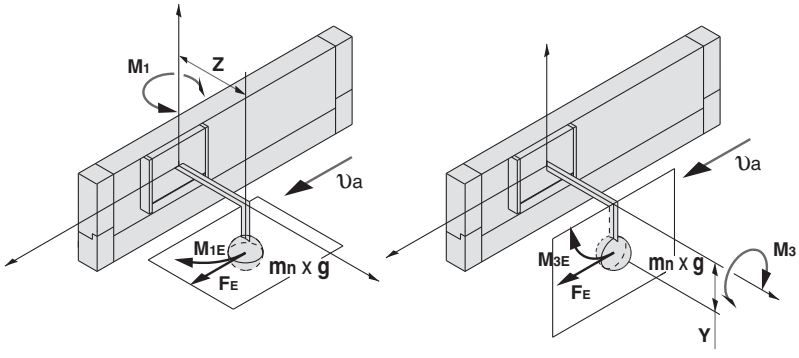


g: Gravitational acceleration

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

Note) m_4 is a mass movable by thrust. Use 0.3 to 0.7 times the thrust (differs depending on the operating speed) as a guide for actual use.

Dynamic Moment



g: Gravitational acceleration, Va: **Average speed**

Mounting orientation		Horizontal	Ceiling	Wall	Vertical
Dynamic load **FE**		$\frac{1.4}{100} \times Va \times m_n \times g$			
Dynamic moment	M_{1E}	$\frac{1}{3} \times F_E \times Z$			
	M_{2E}	**Dynamic moment M_{2E} does not occur.**			
	M_{3E}	$\frac{1}{3} \times F_E \times Y$			

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

Maximum Allowable Moment/Maximum Load Mass

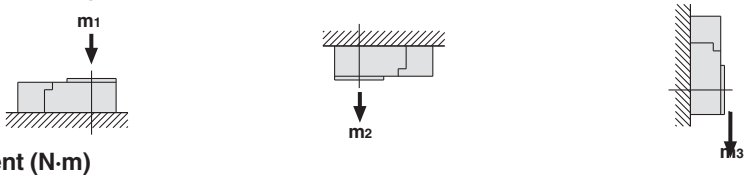
Model	Bore size (mm)	Maximum allowable moment (N·m)			Maximum load mass (kg)		
		M_1	M_2	M_3	m_1	m_2	m_3
MY2C	16	5	4	3.5	18	16	14
	25	13	14	10	35	35	30
	40	45	33	28	68	66	57
MY2H	16	7	6	7	15	13	13
	25	28	26	26	32	30	30
	40	60	50	60	62	62	62
MY2HT	16	46	55	46	20	18	18
	25	100	120	100	38	35	35
	40	200	220	200	80	80	80

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

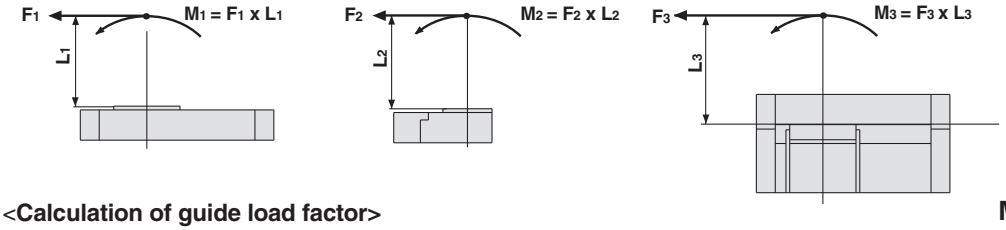
Caution on Design

If the product is operated with a guide load factor which exceeds the standard value, malfunction may occur due to damage to the cam follower and guide portion. Therefore, be sure to confirm that the guide load factor is 1 or less.

Load mass (kg)



Moment (N·m)



<Calculation of guide load factor>

1. Maximum load mass (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 υa (average speed) for (1) and (2), and υ (impact speed $\upsilon = 1.4\upsilon a$) for (3).
Calculate m max for (1) from the maximum load mass graph (m_1, m_2, m_3) and Mmax for (2) and (3) from the maximum allowable moment graph (M_1, M_2, M_3).

$$\text{Sum of guide load factors } \Sigma\alpha = \frac{\text{Load mass [m]}}{\text{Maximum load mass [m max]}} + \frac{\text{Static moment [M]}\ ^{(1)}}{\text{Allowable static moment [Mmax]}} + \frac{\text{Dynamic moment [ME]}\ ^{(2)}}{\text{Allowable dynamic moment [MEmax]}} \leq 1$$

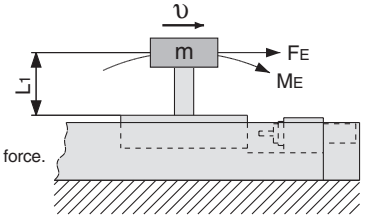
Note 1) Moment caused by the load, etc., with cylinder in resting condition.
Note 2) Moment caused by the impact load equivalent at the stroke end (at the time of impact with stopper).
Note 3) Depending on the shape of the workpiece, multiple moments may occur. When this happens, the sum of the load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

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

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

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

$\therefore M_E = \frac{1}{3} \cdot F_E \cdot L_1 = 0.05\upsilon a\ m\ L_1$ (N·m) Note 5)



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

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

3. Refer to pages 9 and 10 for detailed selection procedures.

Maximum Allowable Moment

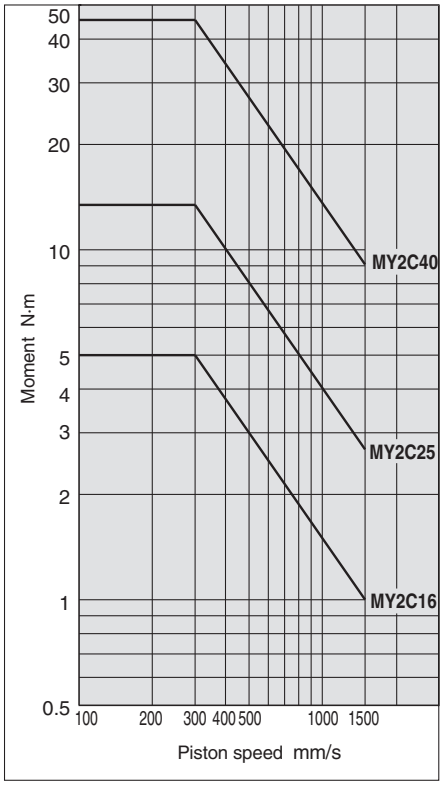
Select the moment from within the range of operating limits shown in the graphs. Note that the maximum load mass value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable load for the selected conditions.

Maximum Load Mass

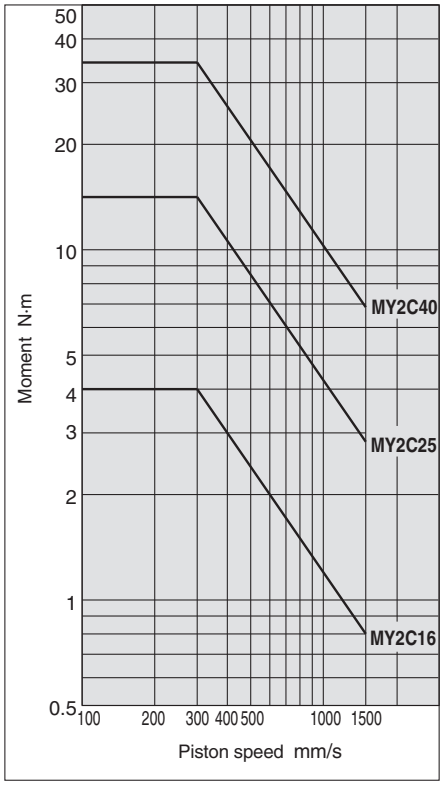
Select the load mass from within the range of limits shown in the graphs. Note that the maximum allowable moment value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable moment for the selected conditions.

Moment/MY2C

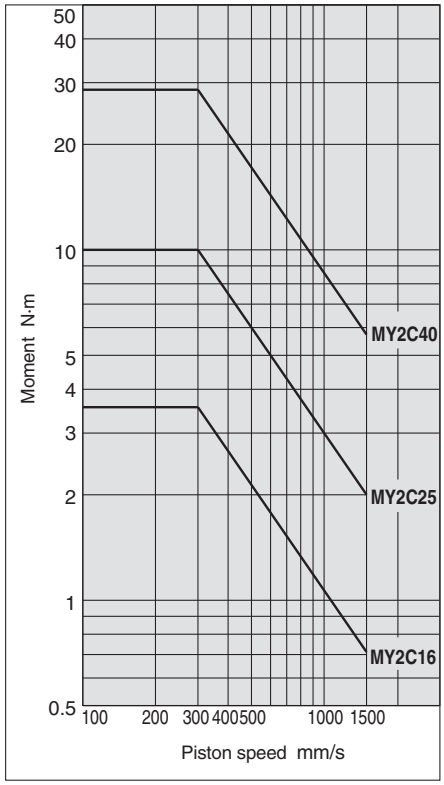
MY2C/M_1



MY2C/M_2

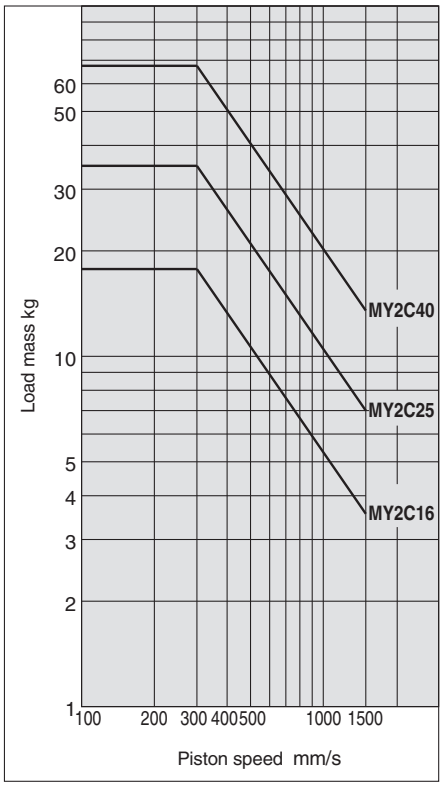


MY2C/M_3

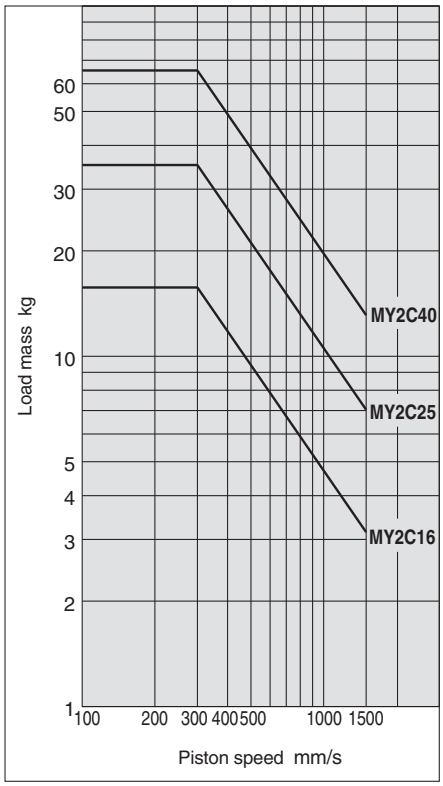


Load Mass/MY2C

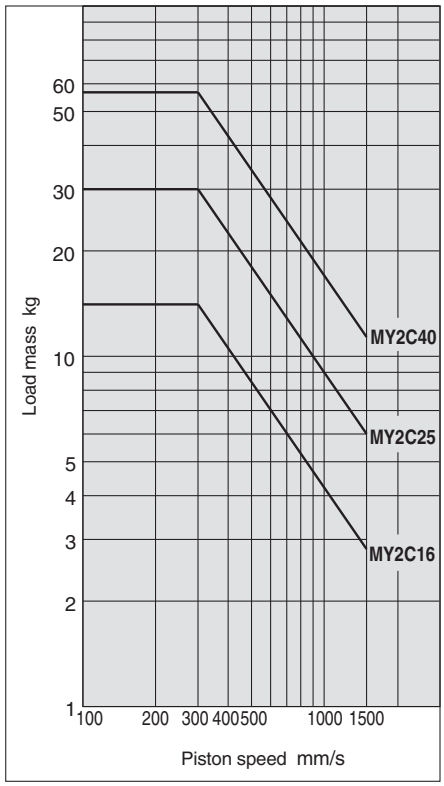
MY2C/m_1



MY2C/m_2



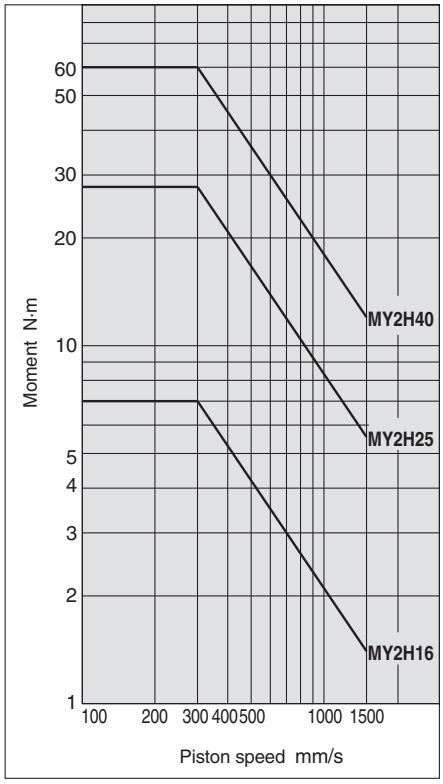
MY2C/m_3



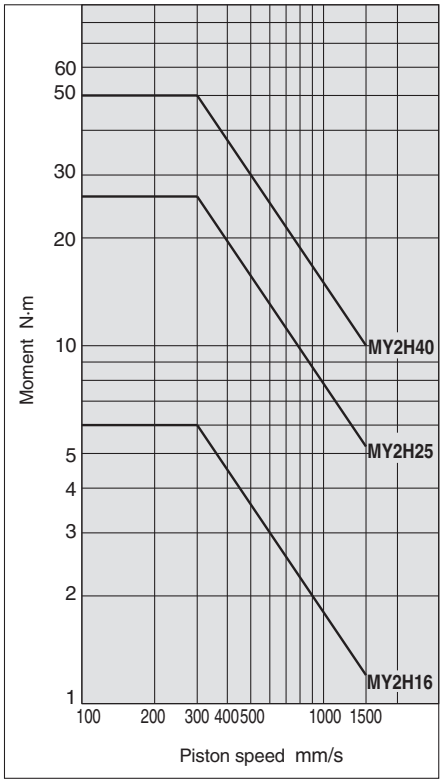
Maximum Allowable Moment/Maximum Load Mass

Moment/MY2H (Single axis)

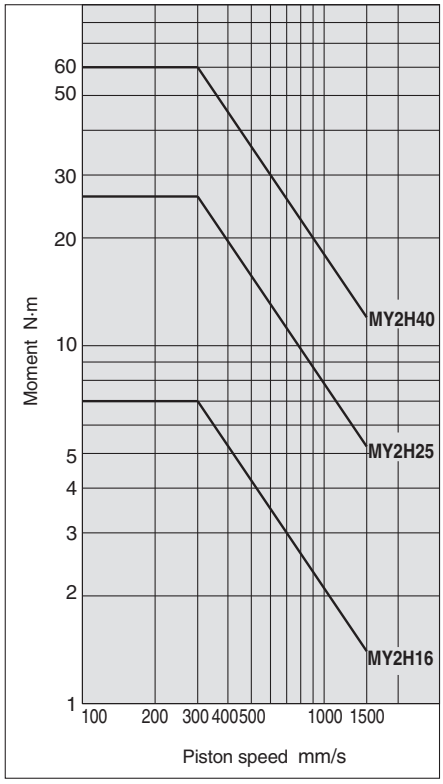
MY2H/M1



MY2H/M2

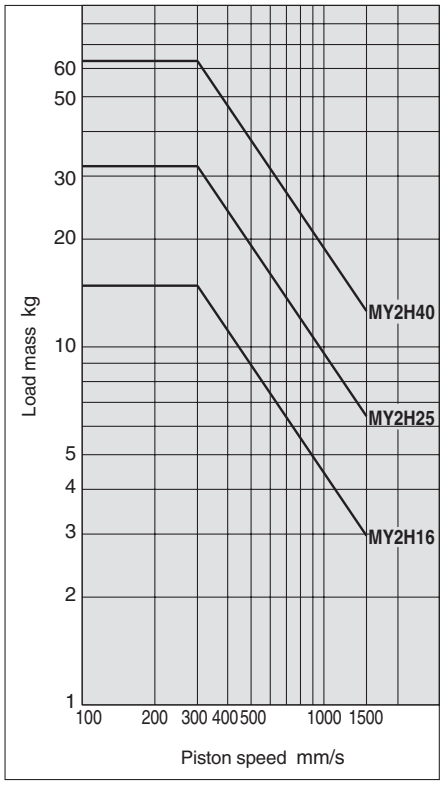


MY2H/M3

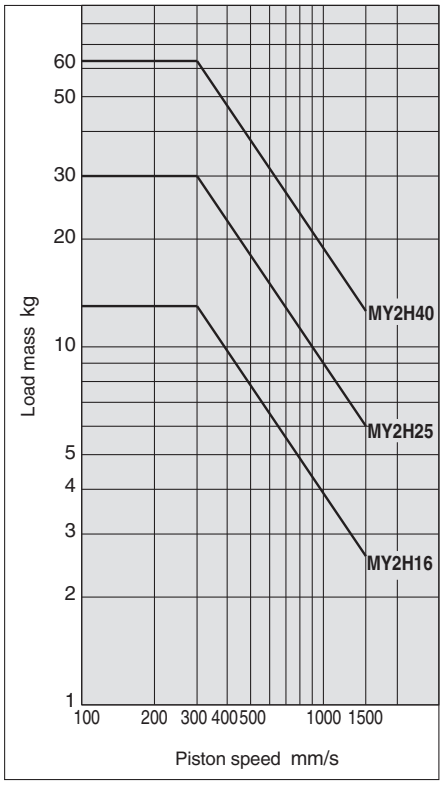


Load Mass/MY2H (Single axis)

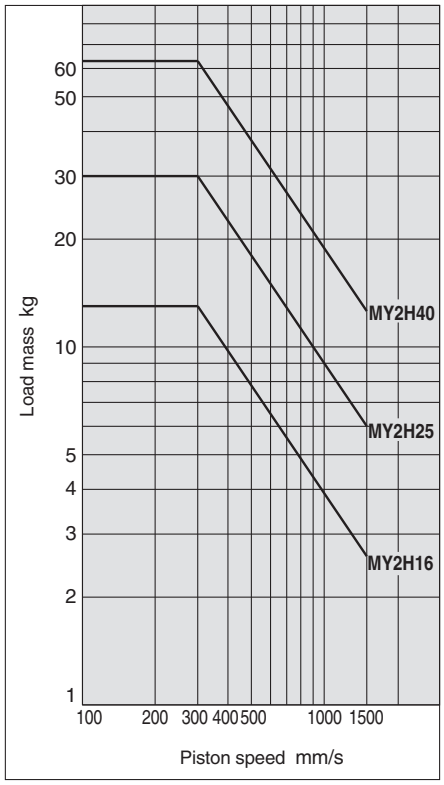
MY2H/m1



MY2H/m2

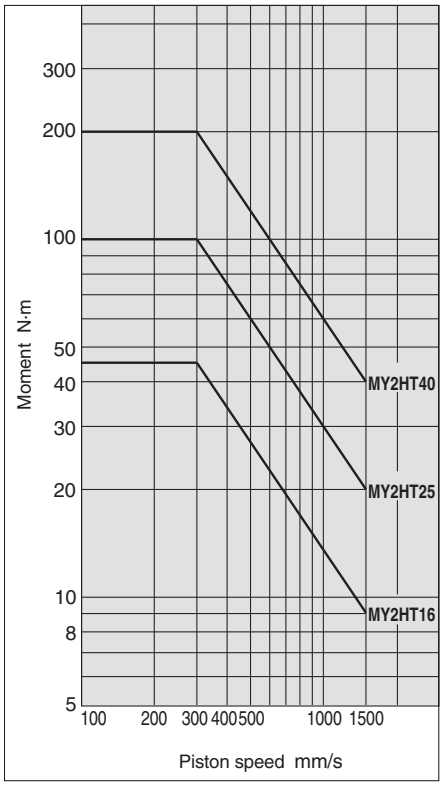


MY2H/m3

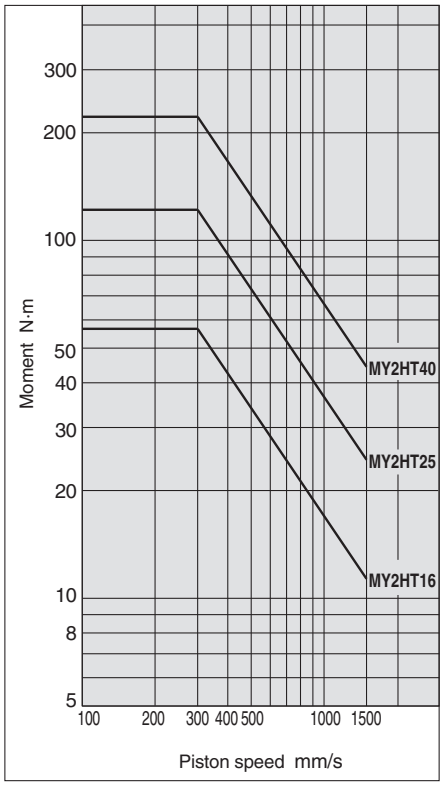


Moment/MY2HT (Double axis)

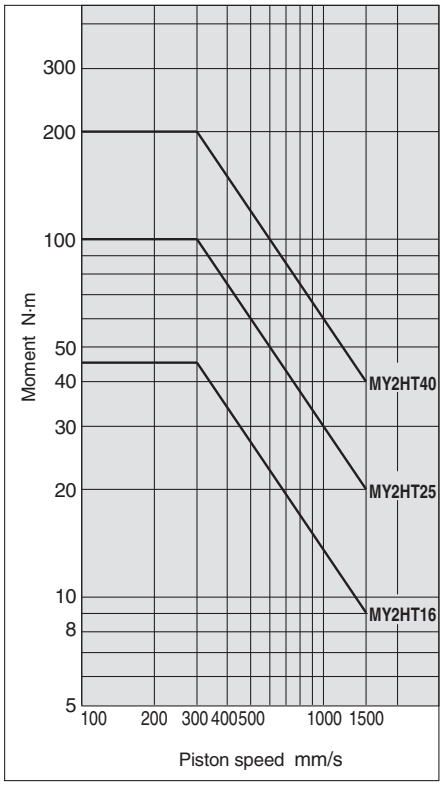
MY2HT/M1



MY2HT/M2

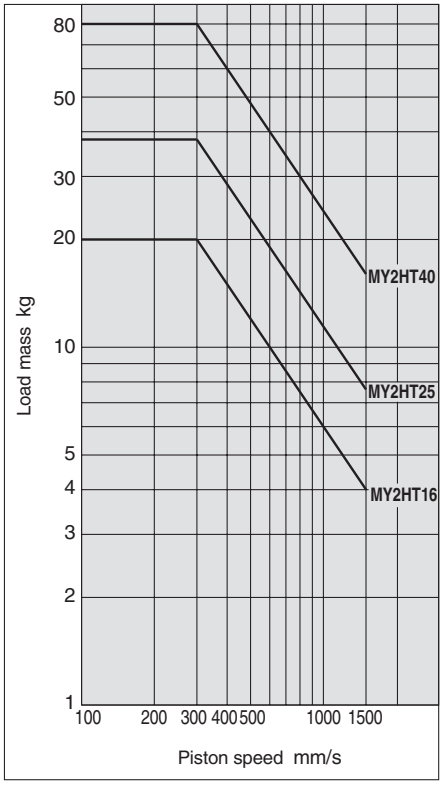


MY2HT/M3

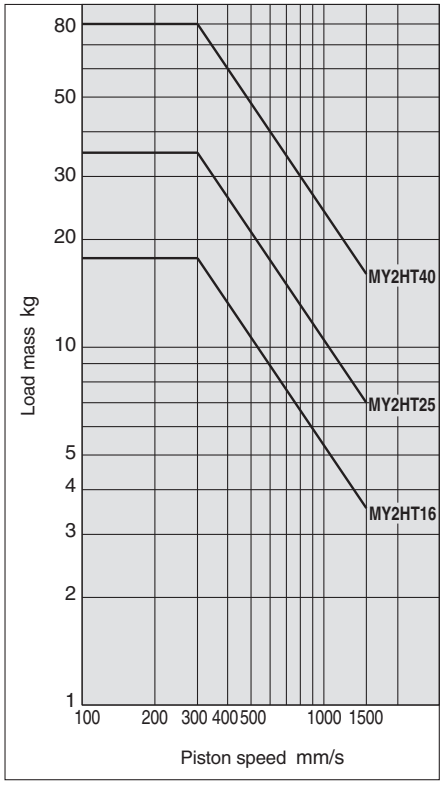


Load Mass/MY2HT (Double axis)

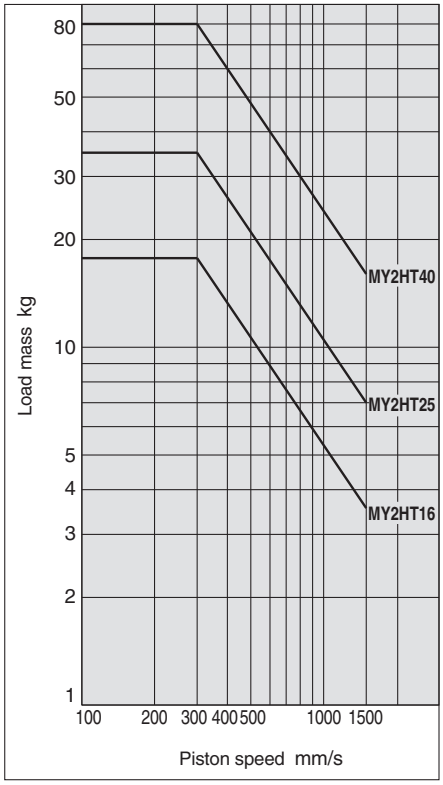
MY2HT/m1



MY2HT/m2



MY2HT/m3



Cushion Capacity

Cushion Selection

<Air cushion>
Air cushions are a standard feature on mechanically jointed rodless cylinders.
The air cushion mechanism is installed to avoid excessive impact of the piston at the stroke end during high speed operation. The air cushion does not act 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 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 cylinder 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.

⚠ Caution

Do not use a shock absorber and air cushion together.

Air Cushion Stroke

[mm]

Bore size [mm]	Cushion stroke
16	12
25	15
40	24

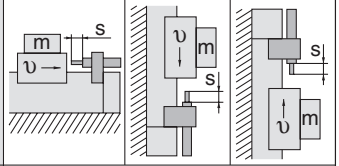
Stroke Adjustment Unit Holding Bolt Tightening Torque

(N·m)

Bore size [mm]	Tightening torque
16	0.7
25	1.8
40	5.8

Calculation of Absorbed Energy for Stroke Adjustment Unit with Shock Absorber

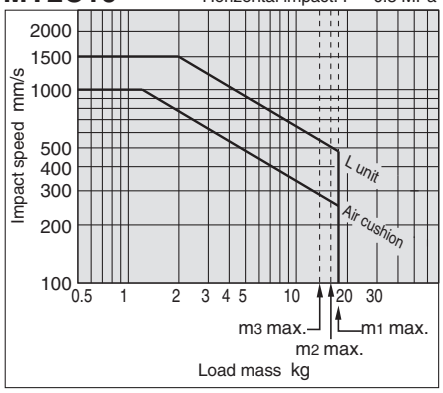
(N·m)

	Horizontal	Vertical (downward)	Vertical (upward)
Type of impact			
Kinetic energy **E_1**	$\frac{1}{2}\,m\cdot\upsilon^2$		
Thrust energy **E_2**	$F\cdot s$	$F\cdot s + m\cdot g\cdot s$	$F\cdot s - m\cdot g\cdot s$
Absorbed energy **E**	$E_1 + E_2$		

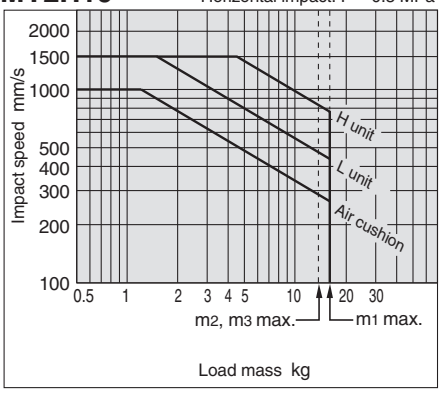
Symbols
υ: Speed of impacting object (m/s) m: Mass of impacting object (kg)
F: Cylinder thrust (N) g: Gravitational acceleration (9.8 m/s^2)
s: Shock absorber stroke (m)
Note) The speed of the impacting object is measured at the time of impact with the shock absorber.

Absorption Capacity of Air Cushion and Stroke Adjustment Units

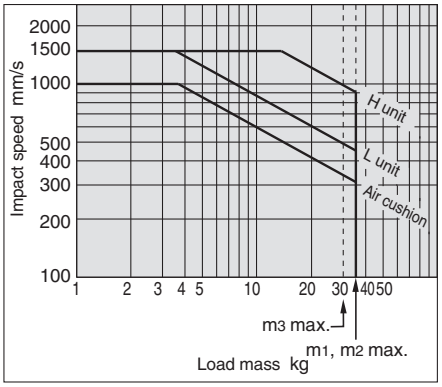
MY2C16 Horizontal impact: P = 0.5 MPa



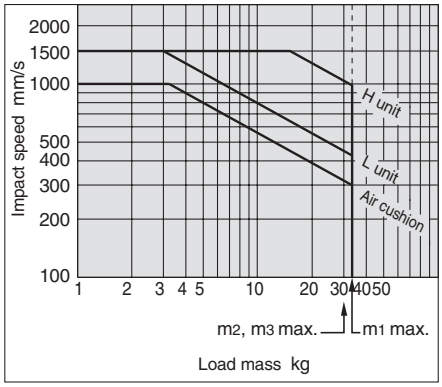
MY2H16 Horizontal impact: P = 0.5 MPa



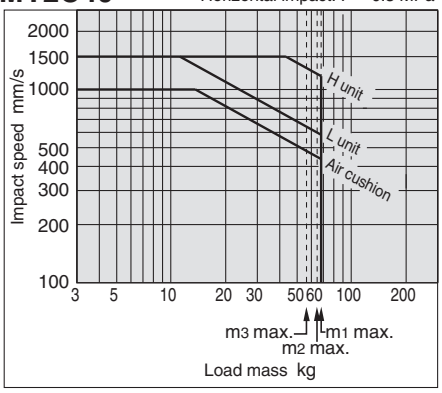
MY2C25 Horizontal impact: P = 0.5 MPa



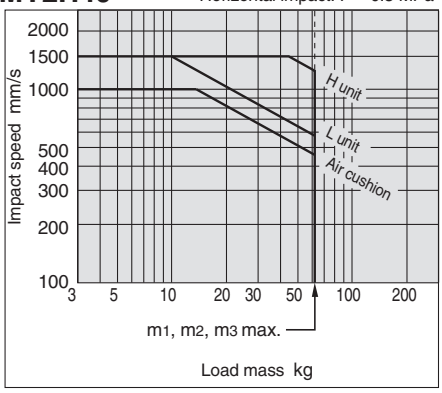
MY2H25 Horizontal impact: P = 0.5 MPa



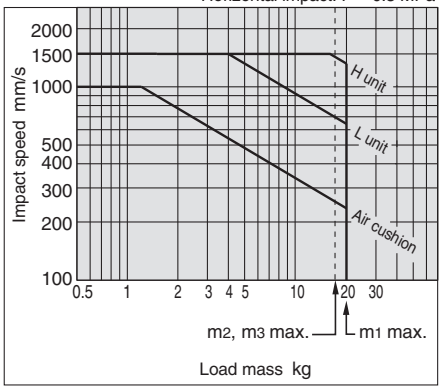
MY2C40 Horizontal impact: P = 0.5 MPa



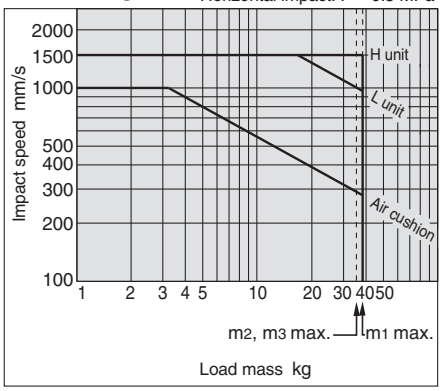
MY2H40 Horizontal impact: P = 0.5 MPa



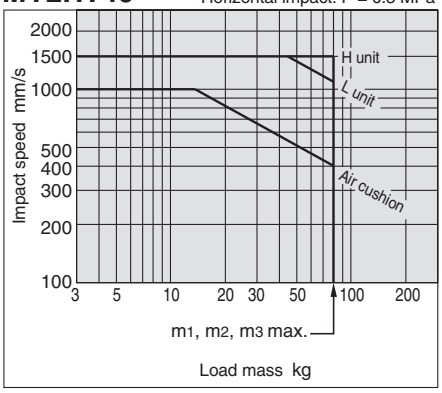
MY2HT16 Horizontal impact: P = 0.5 MPa



MY2HT25 Horizontal impact: P = 0.5 MPa



MY2HT40 Horizontal impact: P = 0.5 MPa



⚠ Specific Product Precautions

Be sure to read this before handling the products. Refer to back page for Safety Instructions.

Handling

⚠ Caution

1. 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.

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

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

For other lengths, please consult with SMC.

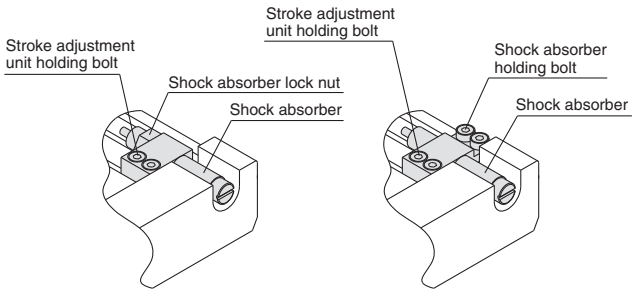
<Securing the unit body>

The unit body is secured by equally tightening the two stroke adjustment unit holding bolts. (See drawings below.)

<Stroke adjustment of shock absorber>

For MY2C and MY2H

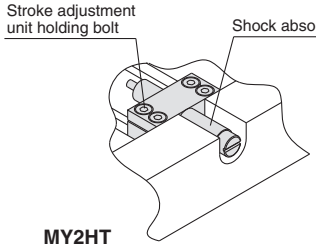
Loosen the shock absorber lock nut (shock absorber holding bolts for MY2H16, H unit), and adjust the stroke by rotating the shock absorber. After the adjustment, tighten the lock nut (holding bolts) to secure the shock absorber.



MY2C unit **MY2H16, H unit**

For MY2HT

Loosen the two unit holding bolts on the shock absorber side, rotate the shock absorber and adjust the stroke. After the adjustment, secure the shock absorber by tightening the unit holding bolts equally.



MY2HT

Tightening torque for stroke adjustment unit holding bolts N·m

Bore size [mm]	Tightening torque
16	0.7
25	1.8
40	5.8

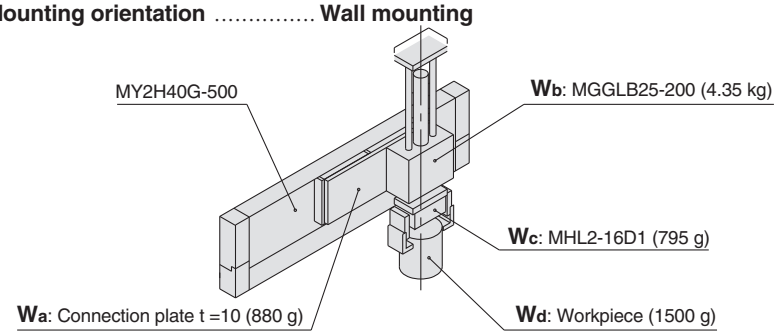
MY2 Series
Model Selection 2

The following are the steps for selection of the MY2 series best suited to your application.

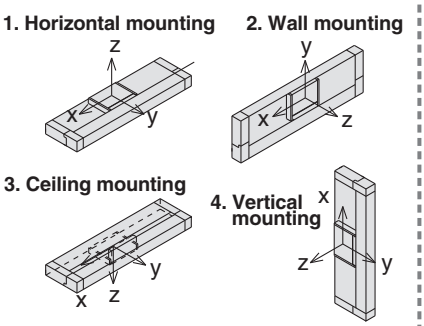
Calculation of Guide Load Factor

1 Operating Conditions

Cylinder **MY2H40G-500**
Average operating speed υa ... **300 mm/s**
Mounting orientation ..... **Wall mounting**

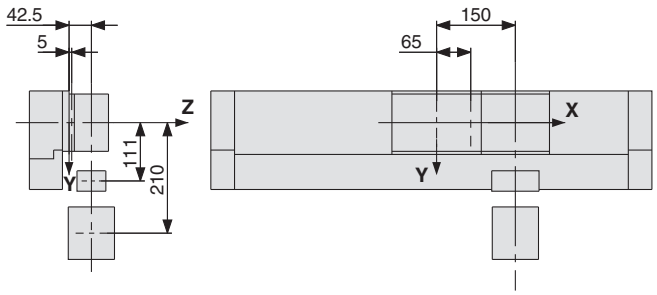


Mounting Orientation



Refer to the pages above for actual examples of calculation for each orientation.

2 Load Blocking



Workpiece Mass and Center of Gravity

Workpiece no. W_n	Mass m_n	Center of gravity		
		X-axis X_n	Y-axis Y_n	Z-axis Z_n
W_a	0.88 kg	65 mm	0 mm	5 mm
W_b	4.35 kg	150 mm	0 mm	42.5 mm
W_c	0.795 kg	150 mm	111 mm	42.5 mm
W_d	1.5 kg	150 mm	210 mm	42.5 mm

n = a, b, c, d

3 Composite Center of Gravity Calculation

$m_3 = \Sigma m_n$
$= 0.88 + 4.35 + 0.795 + 1.5 =$ **7.525 kg**

$$X = \frac{1}{m_3} \times \Sigma (m_n \times x_n)$$
$$= \frac{1}{7.525} (0.88 \times 65 + 4.35 \times 150 + 0.795 \times 150 + 1.5 \times 150) =$$ **140.1 mm**

$$Y = \frac{1}{m_3} \times \Sigma (m_n \times y_n)$$
$$= \frac{1}{7.525} (0.88 \times 0 + 4.35 \times 0 + 0.795 \times 111 + 1.5 \times 210) =$$ **53.6 mm**

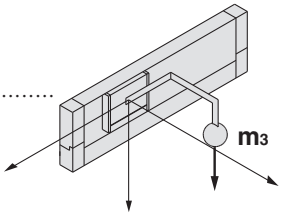
$$Z = \frac{1}{m_3} \times \Sigma (m_n \times z_n)$$
$$= \frac{1}{7.525} (0.88 \times 5 + 4.35 \times 42.5 + 0.795 \times 42.5 + 1.5 \times 42.5) =$$ **38.1 mm**

4 Calculation of Load Factor for Static Load

m_3: Mass

m_3 max (from 1 of graph MY2H/m_3) = 62 (kg) .....

Load factor α_1 = m_3 /**m_3 max** = 7.525/62 = **0.12**

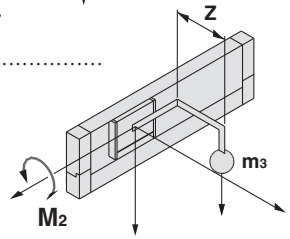


M_2: Moment

M_2 max (from 2 of graph MY2H/M_2) = 50 (N·m) .....

$M_2 = m_3 \times g \times Z = 7.525 \times 9.8 \times 38.1 \times 10^{-3} = 2.81$ (N·m)

Load factor α_2 = M_2/**M_2 max** = 2.81/50 = **0.06**



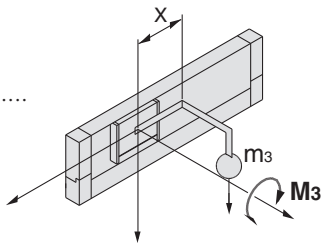
Calculation of Guide Load Factor

M_3: Moment

M_3 max (from 3 of graph MY2H/**M_3**) = 60 (N·m) .....

M_3 = **m_3** x **g** x **X** = 7.525 x 9.8 x 140.1 x 10^{-3} = 10.33 (N·m)

Load factor α_3 = **M_3/M_3 max** = 10.33/60 = **0.17**



5 Calculation of Load Factor for Dynamic Moment

Equivalent load F_E at impact

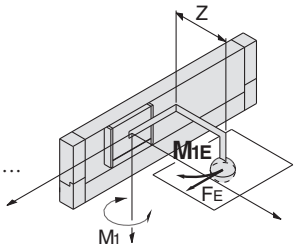
$F_E = \frac{1.4}{100}$ x υ**a** x **g** x **m** = $\frac{1.4}{100}$ x 300 x 9.8 x 7.525 = 309.7 (N)

M_{1E}: Moment

M_{1E} max (from 4 of graph MY2H/**M_1** where 1.4υ**a** = 420 mm/s) = 42.9 (N·m) .....

M_{1E} = $\frac{1}{3}$ x **F_E** x **Z** = $\frac{1}{3}$ x 309.7 x 38.1 x 10^{-3} = 3.93 (N·m)

Load factor α_4 = **M_{1E}/M_{1E} max** = 3.93/42.9 = **0.09**

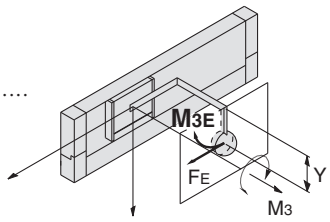


M_{3E}: Moment

M_{3E} max (from 5 of graph MY2H/**M_3** where 1.4υ**a** = 420 mm/s) = 42.9 (N·m) .....

M_{3E} = $\frac{1}{3}$ x **F_E** x **Y** = $\frac{1}{3}$ x 309.7 x 53.6 x 10^{-3} = 5.53 (N·m)

Load factor α_5 = **M_{3E}/M_{3E} max** = 5.53/42.9 = **0.13**



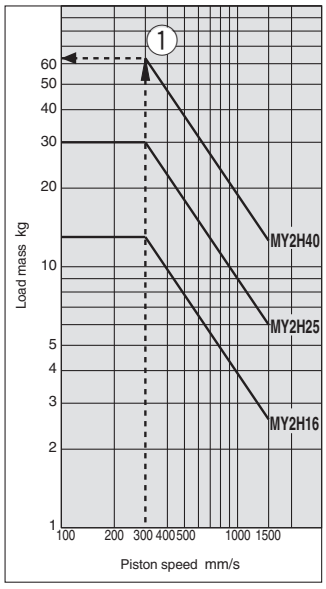
6 Sum and Examination of Guide Load Factors

$\Sigma\alpha = \alpha_1 + \alpha_2 + \alpha_3 + \alpha_4 + \alpha_5$ = **0.57** ≤ **1**

The above calculation is within the allowable value and the selected model can be used.
Select a separate shock absorber.
In an actual calculation, when the sum of guide load factors $\Sigma\alpha$ in the formula above is more than 1, consider decreasing the speed, increasing the bore size, or changing the product series. Also, this calculation can be performed easily with the "SMC Pneumatics CAD System".

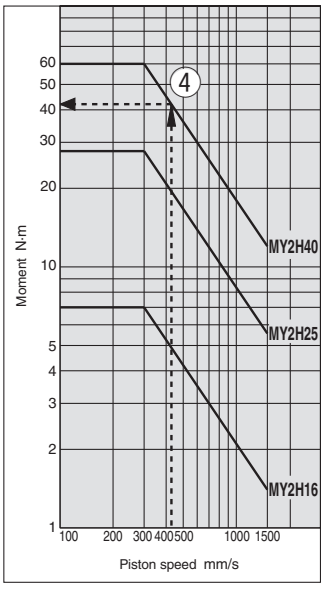
Load Mass

MY2H/m_3

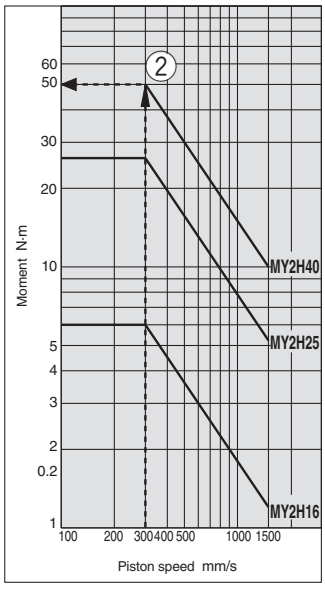


Allowable Moment

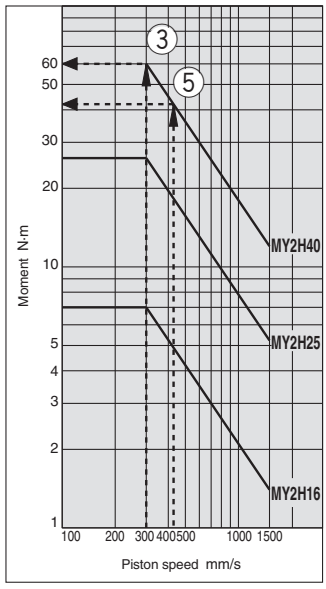
MY2H/M_1



MY2H/M_2



MY2H/M_3



Mechanically Jointed Rodless Cylinder
Cam Follower Guide Type
MY2C Series
Ø 16, Ø 25, Ø 40

How to Order

Cam Follower Guide Type **MY2C 16 □ G – 300 □ – M9BW □ – □**

Guide type

C	Cam follower guide

Bore size

16	16 mm
25	25 mm
40	40 mm

Port thread type

Symbol	Type	Bore size
—	M thread	Ø 16
	Rc	Ø 25, Ø 40
TN	NPT	
TF	G	

Piping

G	Centralized piping type (Standard)

Cylinder stroke [mm]

Bore size	Standard stroke*1	Long stroke	Maximum manufacturable stroke
16	100, 200, 300, 400, 500, 600 700, 800, 900, 1000, 1200 1400, 1600, 1800, 2000	Strokes of 2001 to 3000 mm (1 mm increments) exceeding the standard stroke	3000
25, 40	*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

Stroke adjustment unit symbol
Refer to "Stroke adjustment unit" on page 15.

Auto switch

—	Without auto switch (Built-in magnet)

* Refer to the table below for the applicable auto switch model.

Number of auto switches

—	2 pcs.
S	1 pc.
n	"n" pcs.

Made to Order
Refer to page 15 for details.

Ordering example
* Long stroke can be ordered the same as the standard stroke. MY2C25-3000L-M9BW

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.

Applicable Auto Switches/Refer to pages 28 to 32 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC	Load voltage DC	Load voltage AC	Auto switch model: Perpendicular	Auto switch model: In-line	Lead wire length (m): 0.5 (—)	1 (M)	3 (L)	5 (Z)	Pre-wired connector	Applicable load	
Solid state auto switch	——	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	**M9NV**	**M9N**	●	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				**M9PV**	**M9P**	●	●	●	○	○	IC circuit	
				2-wire		12 V		**M9BV**	**M9B**	●	●	●	○	○	—	
	Diagnostic indication (2-color indicator)			3-wire (NPN)		5 V, 12 V		**M9NWV**	**M9NW**	●	●	●	○	○	IC circuit	
				3-wire (PNP)				**M9PWV**	**M9PW**	●	●	●	○	○	IC circuit	
				2-wire		12 V		**M9BWV**	**M9BW**	●	●	●	○	○	—	
	Water resistant (2-color indicator)			3-wire (NPN)		5 V, 12 V		**M9NAV***1	**M9NA***1	○	○	●	○	○	IC circuit	
				3-wire (PNP)				**M9PAV***1	**M9PA***1	○	○	●	○	○	IC circuit	
				2-wire		12 V		**M9BAV***1	**M9BA***1	○	○	●	○	○	—	
Reed auto switch	——	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	**A96V**	**A96**	●	—	●	—	—	IC circuit	—
			No	2-wire	24 V	12 V	100 V	**A93V***2	**A93**	●	●	●	●	—	—	Relay, PLC
							100 V or less	**A90V**	**A90**	●	—	●	—	—	IC circuit	

*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 1 m type lead wire is only applicable to D-A93.

* Lead wire length symbols: 0.5 m ····· — (Example) M9NW
1 m ····· M (Example) M9NWM
3 m ····· L (Example) M9NWL
5 m ····· Z (Example) M9NWZ

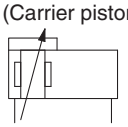
* Solid state auto switches marked with "○" are produced upon receipt of order.

* There are other applicable auto switches than listed above. For details, refer to page 32.
* For details about auto switches with pre-wired connector.
* Auto switches are shipped together (not assembled).

Specifications

Bore size [mm]	16	25	40
Fluid	Air		
Action	Double acting		
Operating pressure range	0.15 to 0.8 MPa	0.1 to 0.8 MPa	
Proof pressure	1.2 MPa		
Ambient and fluid temperature	5 to 60 ˚C		
Cushion	Air cushion, Shock absorber		
Lubrication	Not required (Non-lube)		
Stroke length tolerance	1000 or less $^{+1.8}_{0}$ 1001 to 3000 $^{+2.8}_{0}$	2700 or less $^{+1.8}_{0}$, 2701 to 5000 $^{+2.8}_{0}$	
Port size	M5 x 0.8	Rc 1/8	Rc 1/4

Symbol
Air cushion
(Carrier piston type)



Made to Order

Made to Order: Individual Specifications
(For details, refer to page 38)

Symbol	Specifications
-X168	Helical insert thread

Made to Order Specifications
(Refer to pages 38 to 44 for details.)

Symbol	Specifications
-XB22	Shock absorber soft type RJ series type

Piston Speed

Bore size [mm]		16	25	40
Without stroke adjustment unit		100 to 1000 mm/s(1)		
Stroke adjustment unit	**L unit and H unit**	100 to 1500 mm/s		

Note 1) When exceeding the air cushion stroke ranges on page 10, the **piston speed** should be **100 to 200 mm/s.**
Note 2) Use at a piston speed within the absorption capacity range. Refer to page 10.

Stroke Adjustment Unit Specifications

Bore size [mm]		16	25		40	
Unit symbol		**L**	**L**	**H**	**L**	**H**
Shock absorber model		RB0806	RB1007	RB1412	RB1412	RB2015
Stroke adjustment range by intermediate fixing spacer [mm]	**Without spacer**	0 to -5.6	0 to -11.5		0 to -16	
	With short spacer	-5.6 to -11.2	-11.5 to -23		-16 to -32	
	With long spacer	-11.2 to -16.8	-23 to -34.5		-32 to -48	

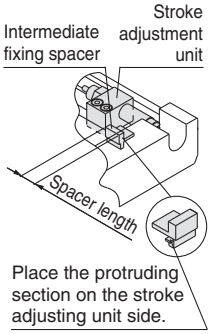
∗ Stroke adjustment range is applicable for one side when mounted on a cylinder.

Stroke Adjustment Unit Symbol

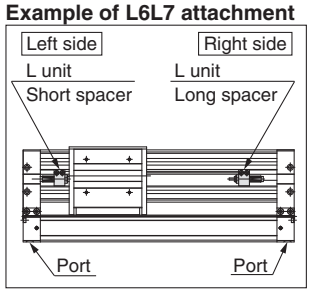
Left side stroke adjustment unit		Right side stroke adjustment unit: Without unit	L: With low load shock absorber	L: With short spacer	L: With long spacer	H: With high load shock absorber	H: With short spacer	H: With long spacer
Without unit		**Nil**	**SL**	**SL6**	**SL7**	**SH**	**SH6**	**SH7**
L: With low load shock absorber		**LS**	**L**	**LL6**	**LL7**	**LH**	**LH6**	**LH7**
	With short spacer	**L6S**	**L6L**	**L6**	**L6L7**	**L6H**	**L6H6**	**L6H7**
	With long spacer	**L7S**	**L7L**	**L7L6**	**L7**	**L7H**	**L7H6**	**L7H7**
H: With high load shock absorber		**HS**	**HL**	**HL6**	**HL7**	**H**	**HH6**	**HH7**
	With short spacer	**H6S**	**H6L**	**H6L6**	**H6L7**	**H6H**	**H6**	**H6H7**
	With long spacer	**H7S**	**H7L**	**H7L6**	**H7L7**	**H7H**	**H7H6**	**H7**

∗ Spacers are used to fix the stroke adjustment unit at an intermediate stroke position.

Stroke adjustment unit mounting diagram



Example of L6L7 attachment



Shock Absorbers for L and H Units

Type	Stroke adjustment unit	Bore size [mm] 16	25	40
Standard (Shock absorber/RB series)	L	RB0806	RB1007	RB1412
	H	—	RB1412	RB2015
Shock absorber/soft type RJ series mounted (-XB22)	L	RJ0806H	RJ1007H	RJ1412H
	H	—	RJ1412H	—

∗ The shock absorber service life is different from that of the MY2C cylinder depending on operating 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.

Shock Absorber Specifications

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

∗ The shock absorber service life is different from that of the MY2C cylinder depending on operating conditions. Refer to the RB Series Specific Product Precautions for the replacement period.

Theoretical Output

(N)

Bore size [mm]	Piston area (mm^2)	Operating pressure (MPa)						
		0.2	0.3	0.4	0.5	0.6	0.7	0.8
16	200	40	60	80	100	120	140	160
25	490	98	147	196	245	294	343	392
40	1256	251	377	502	628	754	879	1005

Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm^2)

Weight

(kg)

Bore size [mm]	Basic weight	Additional weight per each 50 mm of stroke	Weight of moving parts	Side support bracket weight (per set)	Stroke adjustment unit weight (per unit)	
					L unit weight	H unit weight
16	1.05	0.13	0.34	0.01	0.03	—
25	2.59	0.29	0.97	0.02	0.06	0.09
40	8.78	0.67	3.09	0.04	0.17	0.23

Calculation: (Example) **MY2C25G-300L**
- Basic weight ····· 2.59 kg
- Cylinder stroke ····· 300 stroke
- Additional weight ····· 0.29/50 stroke
  2.59 + 0.29 x 300/50 + 0.06 x 2 ≅ 4.45 kg
- Weight of L unit ····· 0.06 kg

Replacement Parts

Drive Unit (Cylinder) Replacement Part No.

Model / Bore size [mm]	MY2C
16	MY2BH16G- Stroke
25	MY2BH25□G- Stroke
40	MY2BH40□G- Stroke

Enter a symbol for port thread type inside □.
Note) Order auto switches separately.

Option

Stroke Adjustment Unit Part No.

MY2C – A 25 L2 – 6N

Stroke adjustment unit

Bore size

16	16 mm
25	25 mm
40	40 mm

Unit no.

Symbol	Stroke adjustment unit	Mounting position
L1	L unit	Left
L2		Right
H1	H unit	Left
H2		Right

Note 1) Refer to page 15 for details about adjustment range.
Note 2) L unit only for Ø 16

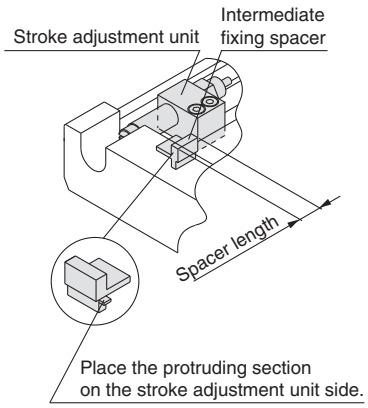
Intermediate fixing spacer

—	Without spacer
6□	Short spacer
7□	Long spacer

Spacer delivery type

—	Unit installed
N	Spacer only

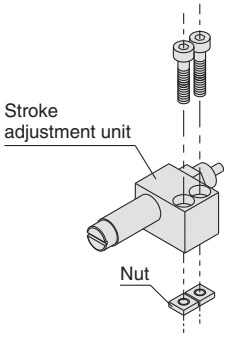
* Spacers are used to fix the stroke adjustment unit at an intermediate stroke position.
* Spacers are shipped for a set of two.



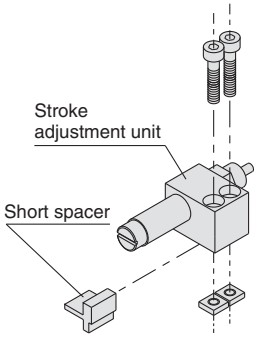
* When ordering the intermediate fixing spacer for the stroke adjustment unit, the intermediate fixing spacer is shipped together.

Component Parts

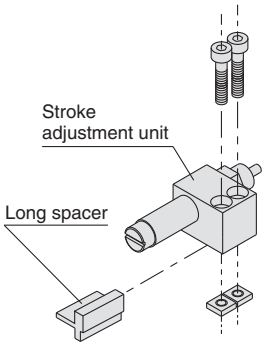
MY2C-A25L2 (Without spacer)



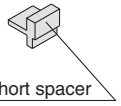
MY2C-A25L2-6 (With short spacer)



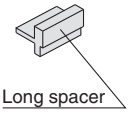
MY2C-A25L2-7 (With long spacer)



MY2C-A25L2-6N (Short spacer only)



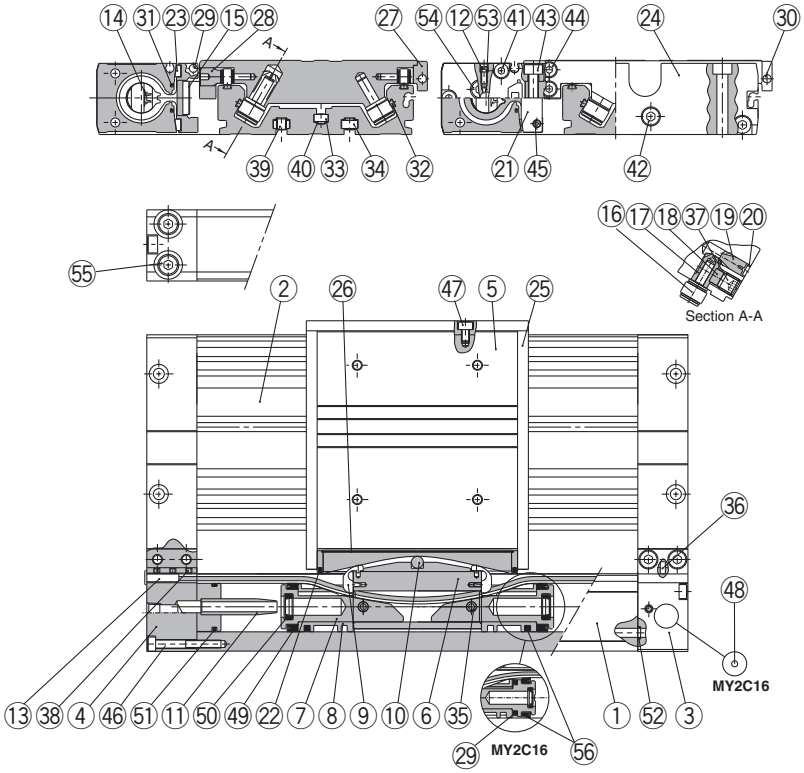
MY2C-A25L2-7N (Long spacer only)



* Nuts are equipped on the cylinder body.

Construction

MY2C



Component Parts

No.	Description	Material	Note
1	**Cylinder tube**	Aluminium alloy	Hard anodised
2	**Body**	Aluminium alloy	Hard anodised
3	**Head cover WR**	Aluminium alloy	Hard anodised
4	**Head cover WL**	Aluminium alloy	Hard anodised
5	**Slide table**	Aluminium alloy	Hard anodised
6	**Piston yoke**	Aluminium alloy	Hard anodised
7	**Piston**	Aluminium alloy	Chromated
8	**Wear ring**	Special resin	
9	**Belt separator**	Special resin	
10	**Parallel pin**	Stainless steel	
11	**Cushion ring**	Aluminum alloy	Anodized
12	**Cushion needle**	Rolled steel	Nickel plated
13	**Belt clamp**	Special resin	
16	**Cam follower**	—	
17	**Eccentric gear**	Stainless steel	
18	**Gear fixture**	Stainless steel	
19	**Adjustment gear**	Stainless steel	
20	**Retaining ring**	Stainless steel	
21	**End cover**	Aluminium alloy	Hard anodised
23	**Bearing**	Special resin	
24	**End plate**	Aluminium alloy	Hard anodised
25	**Stopper**	Carbon steel	Nickel plated after quenching
26	**Top cover**	Stainless steel	
27	**Side cover**	Aluminium alloy	Hard anodised

No.	Description	Material	Note
28	**Cam follower cap**	Aluminium alloy	Hard anodised
29	**Magnet**	—	
30	**Magnet**	—	
31	**Seal magnet**	Rubber magnet	
32	**Rail**	Hard steel wire material	
33	**Square nut**	Carbon steel	Chromated
34	**Square nut**	Carbon steel	Chromated
35	**Spring pin**	Carbon tool steel	
36	**Parallel pin**	Stainless steel	
37	**Hexagon socket set screw**	Chrome molybdenum steel	Black zinc chromated
38	**Hexagon socket set screw**	Chrome molybdenum steel	Black zinc chromated
39	**Hexagon socket set screw**	Chrome molybdenum steel	Chromated
40	**Hexagon socket set screw**	Chrome molybdenum steel	Chromated
41	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
42	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
43	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
44	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
45	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
46	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
47	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
48	**Steel ball**	Spring steel	Nickel plated
54	**Hexagon socket head (taper) plug**	Carbon steel	Chromated
55	**Hexagon socket head (taper) plug**	Carbon steel	Chromated
56	**Lube retainer**	Special resin	

Replacement Parts: Seal Kit

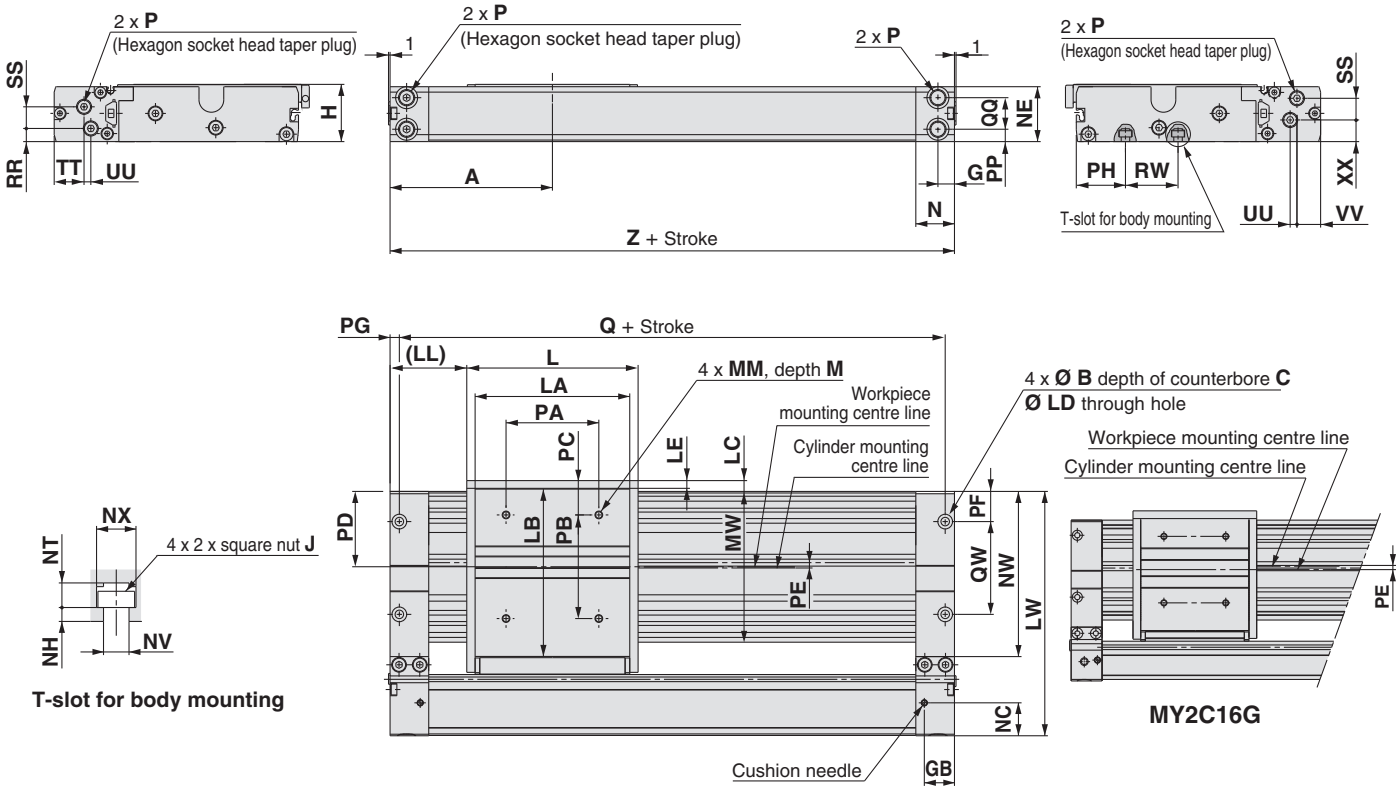
No.	Description	Qty.	MY2C16G	MY2C25G	MY2C40G
14	**Seal belt**	1	MY16-16C-Stroke	MY25-16C-Stroke	MY40-16C-Stroke
15	**Dust seal band**	1	MY2H16-16B-Stroke	MY2H25-16B-Stroke	MY2H40-16B-Stroke
53	**O-ring**	2	KA00309 (Ø 4 x Ø 1.8 x Ø 1.1)	KA00309 (Ø 4 x Ø 1.8 x Ø 1.1)	KA00320 (Ø 7.15 x Ø 3.75 x Ø 1.7)
22	**Scraper**	2	MY2B16-PS	MY2B25-PS	MY2B40-PS
49	**Piston seal**	2			
50	**Cushion seal**	2			
51	**Tube gasket**	2			
52	**O-ring**	4			

* Seal kit includes ㉒, ㊾, ㊿, ㊶ and ㊷. Order the seal kit based on each bore size.

* Seal kit includes a grease pack (10 g).
When ⑭ and ⑮ are shipped as single units, a grease pack (10 g per 1000 strokes) 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)

Ø 16, Ø 25, Ø 40

MY2C Bore size **G –** Stroke



[mm]

Model	A	B	C	G	GB	H	L	J	LA	LB	LC	LD	LE	(LL)	LW	M	MM	MW	N	NC	NE	NH	NT
MY2C16G	80	6.5	3.3	8.5	17	28	80	M3 x 0.5	70	72.4	6	3.4	5	40	104	7	M4 x 0.7	64.6	20	14	27	2	3.5
MY2C25G	105	9.5	5.4	10.7	19.5	37	110.8	M5 x 0.8	100	108.7	7	5.5	5	49.6	158	9	M5 x 0.8	97.5	25	21.3	35.5	3	5.3
MY2C40G	165	14	8.6	15.5	31.5	58	180	M6 x 1	158	135.3	7	9	5	75	214	13	M6 x 1	121.5	40	32.4	56.5	4	6.5

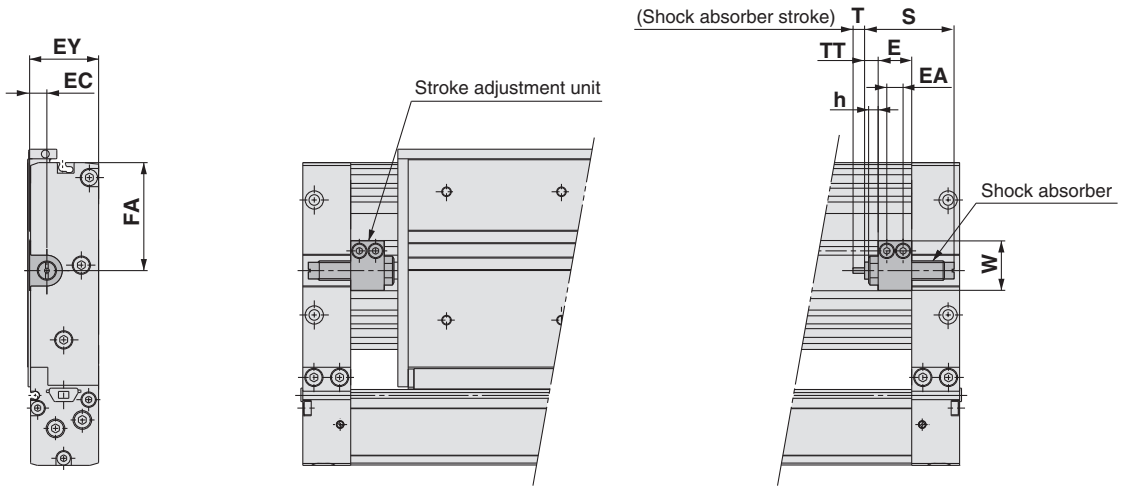
Model	NV	NW	NX	P	PA	PB	PC	PD	PE	PF	PG	PH	PP	Q	QQ	QW	RR	RW	SS	TT	UU	VV	XX	Z
MY2C16G	3.4	69.2	5.8	M5 x 0.8	40	43	16.5	32	2.2	9.8	4	21.3	5.3	152	16.4	40	5.3	22	9.7	12.5	3	10.5	12	160
MY2C25G	5.5	106.8	8.5	$^{1}/_{8}$	60	67	22.2	48.7	0.8	19.5	6	31.8	8	198	20.4	60	8.5	34	14	19.3	4.4	15.3	14	210
MY2C40G	6.6	135.1	10.5	$^{1}/_{4}$	100	77	29	60.5	8.5	40.5	9	38	16	312	25.5	57	11	45	21.5	35.4	2	29	23	330

"P" indicates cylinder supply ports. ∗ The plug for "P" MY2C16G is a hexagon socket head plug.

Stroke adjustment unit

Low load shock absorber

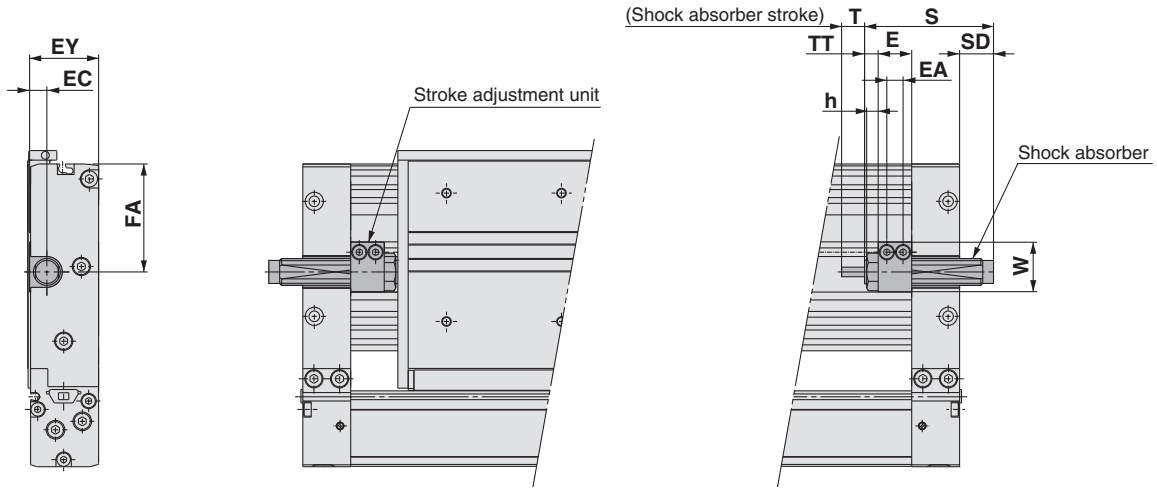
MY2C Bore size G – Stroke L



Applicable cylinder	E	EA	EC	EY	FA	h	S	T	TT	W	Shock absorber model
MY2C16	14.4	7	6	27	38.5	4	40.8	6	5.6 (Max. 11.2)	16.5	RB0806
MY2C25	17.5	8.5	9	36	56.4	5	46.7	7	7.1 (Max. 18.6)	25.8	RB1007
MY2C40	25	13	13.5	56.5	67.8	6	67.3	12	10 (Max. 26)	38	RB1412

High load shock absorber

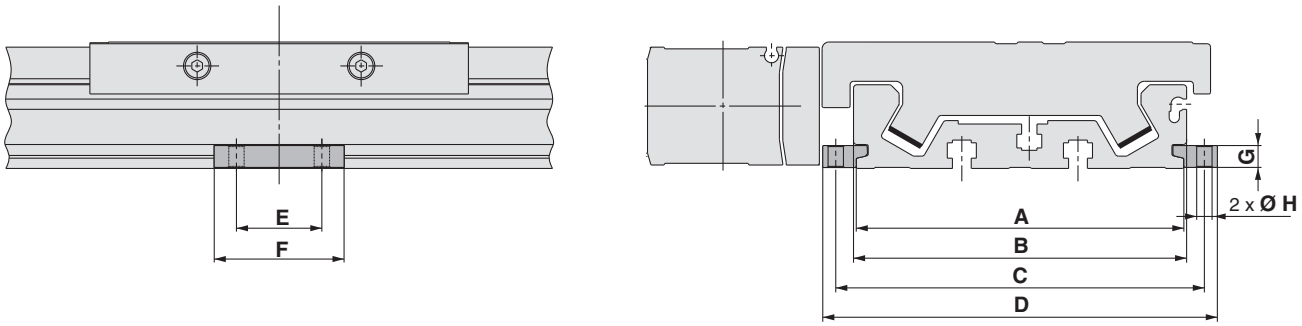
MY2C Bore size G – Stroke H



Applicable cylinder	E	EA	EC	EY	FA	h	S	SD	T	TT	W	Shock absorber model
MY2H25	17.5	8.5	9	36	56.4	6	67.3	17.7	12	7.1 (Max. 18.6)	25.8	RB1412
MY2H40	25	13	13.5	56.5	67.8	6	73.2	—	15	10 (Max. 26)	38	RB2015

Side Support

Side support
MYC-S□A

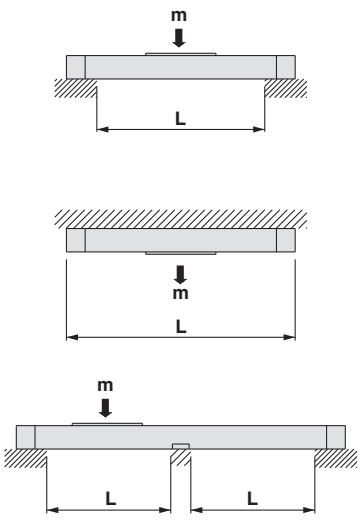


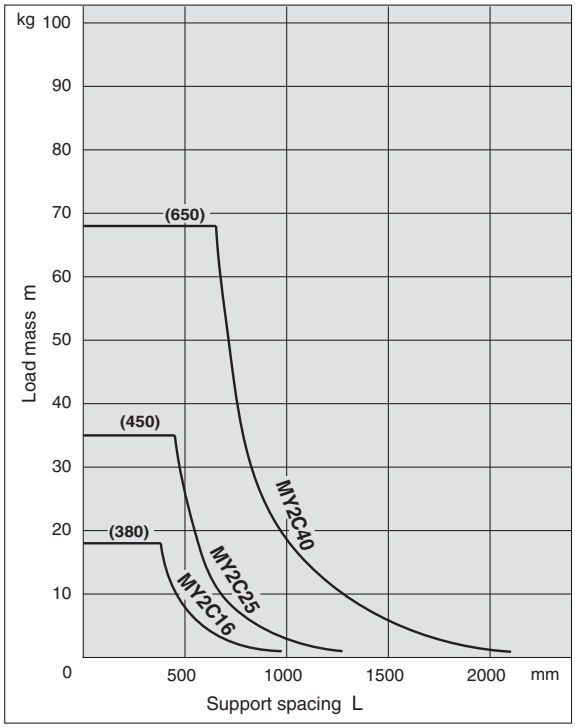
Model	Applicable cylinder	A	B	C	D	E	F	G	Ø H
MYC-S16A	**MY2C16**	60.6	64.6	70.6	77.2	15	26	4.9	3.4
MYC-S25A	**MY2C25**	95.9	97.5	107.9	115.5	25	38	6.4	4.5
MYC-S40A	**MY2C40**	121.5	121.5	134.5	145.5	45	64	11.7	6.6

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

Guide for Using Side Support

For long stroke operation, the cylinder tube may deflect due to its own weight and/or load mass. In such cases, install a side support at the intermediate stroke position. The spacing (L) of the side support must be no more than the values shown in the graph at right.





⚠ Caution

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

② Support brackets are not for mounting. They should be used only to provide support.

Mechanically Jointed Rodless Cylinder
Linear Guide Type
MY2H/HT Series
Ø 16, Ø 25, Ø 40

How to Order

Linear Guide Type MY2 **H** **16** □ **G** – **300** □ – **M9NW** □ – □

Guide type

H	Linear guide, Single axis
HT	Linear guide, Double axis

Bore size

16	16 mm
25	25 mm
40	40 mm

Port thread type

Symbol	Type	Bore size
—	M thread	Ø 16
	Rc	Ø 25, Ø 40
TN	NPT	
TF	G	

Piping

G	Centralized piping type (Standard)

Cylinder stroke [mm]

Bore size	Standard stroke	Intermediate stroke	Long stroke	Maximum manufacturable stroke
16	50, 100, 150 200, 250, 300 350, 400, 450 500, 550, 600	Intermediate strokes of 51 to 599 mm (1 mm increments) other than standard strokes	Strokes of 601 to 1000 mm (1 mm increments) exceeding the standard stroke	1000
25, 40			Strokes of 601 to 1500 mm (1 mm increments) exceeding the standard stroke	1500

Stroke adjustment unit symbol
Refer to "Stroke adjustment unit" on page 23.

Auto switch

—	Without auto switch (Built-in magnet)

∗ Refer to the table below for the applicable auto switch model.

Number of auto switches

—	2 pcs.
S	1 pc.
n	"n" pcs.

Made to Order
Refer to page 23 for details.

Ordering example
∗ Intermediate stroke can be ordered the same as the standard stroke. MY2H16-60-M9BW
∗ Long stroke can be ordered the same as the standard stroke. MY2H25-800L-M9BW

Applicable Auto Switches/Refer to pages 28 to 32 for further information on auto switches.

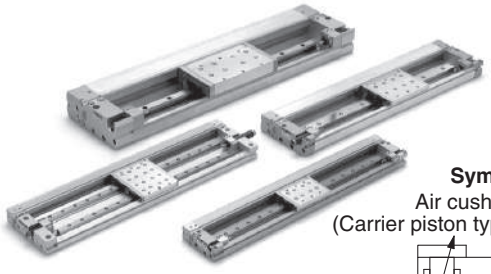
Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC		Load voltage AC	Auto switch model Perpendicular	Auto switch model In-line	Lead wire length (m) 0.5 (—)	1 (M)	3 (L)	5 (Z)	Pre-wired connector	Applicable load	
Solid state auto switch	——	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	**M9NV**	**M9N**	●	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				**M9PV**	**M9P**	●	●	●	○	○		
				2-wire		12 V		**M9BV**	**M9B**	●	●	●	○	○	—	
	Diagnostic indication (2-colour indicator)			3-wire (NPN)		5 V, 12 V		**M9NWV**	**M9NW**	●	●	●	○	○	IC circuit	
				3-wire (PNP)				**M9PWV**	**M9PW**	●	●	●	○	○		
				2-wire		12 V		**M9BWV**	**M9BW**	●	●	●	○	○	—	
	Water resistant (2-colour indicator)			3-wire (NPN)		5 V, 12 V		**M9NAV**∗1	**M9NA**∗1	○	○	●	○	○	IC circuit	
				3-wire (PNP)				**M9PAV**∗1	**M9PA**∗1	○	○	●	○	○		
				2-wire		12 V		**M9BAV**∗1	**M9BA**∗1	○	○	●	○	○	—	
Reed auto switch	——	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	**A96V**	**A96**	●	—	●	—	—	IC circuit	—
			No	2-wire	24 V	12 V	100 V	**A93V**∗2	**A93**	●	●	●	●	—	—	Relay, PLC
							100 V or less	**A90V**	**A90**	●	—	●	—	—	IC circuit	

∗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 1 m type lead wire is only applicable to D-A93.

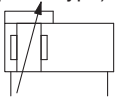
∗ Lead wire length symbols: 0.5 m ····· — (Example) M9NW
1 m ····· M (Example) M9NWM
3 m ····· L (Example) M9NWL
5 m ····· Z (Example) M9NWZ

∗ Solid state auto switches marked with "○" are produced upon receipt of order.

∗ There are other applicable auto switches than listed above. For details, refer to page 32.
∗ For details about auto switches with pre-wired connector.
∗ Auto switches are shipped together (not assembled).



Symbol
Air cushion
(Carrier piston type)



Made to Order

Made to Order: Individual Specifications
(For details, refer to page 38)

Symbol	Specifications
-X168	Helical insert thread

Made to Order Specifications

Symbol	Specifications
-XB20	Stroke adjusting unit with adjusting bolt
-XB22	Shock absorber soft type RJ series type
-XC56	With knock pin holes

Specifications

Bore size [mm]	16	25	40
Fluid	Air		
Action	Double acting		
Operating pressure range	0.15 to 0.8 MPa	0.1 to 0.8 MPa	
Proof pressure	1.2 MPa		
Ambient and fluid temperature	5 to 60 °C		
Cushion	Air cushion, Shock absorber		
Lubrication	Not required (Non-lube)		
Stroke length tolerance	$^{+1.8}_{0}$		
Port size	M5 x 0.8	Rc 1/8	Rc 1/4

Piston Speed

Bore size [mm]		16	25	40
Without stroke adjustment unit		100 to 1000 mm/s Note 1)		
Stroke adjustment unit	**L unit and H unit**	100 to 1500 mm/s		

Note 1) When exceeding the air cushion stroke ranges on page 10, the **piston speed** should be **100 to 200 mm/s.**
Note 2) Use at a piston speed within the absorption capacity range. Refer to page 10.

Stroke Adjustment Unit Specifications

Bore size [mm]		16		25		40	
Unit symbol		**L**	**H**	**L**	**H**	**L**	**H**
Shock absorber model	**MY2H**	RB0806	RB1007	RB1007	RB1412	RB1412	RB2015
	MY2HT	RB1007	RB1412	RB1412	RB2015	RB2015	RB2725
Stroke adjustment range by intermediate fixing spacer [mm]	**Without spacer**	0 to -5.6		0 to -11.5		0 to -16	
	With short spacer	-5.6 to -11.2		-11.5 to -23		-16 to -32	
	With long spacer	-11.2 to -16.8		-23 to -34.5		-32 to -48	

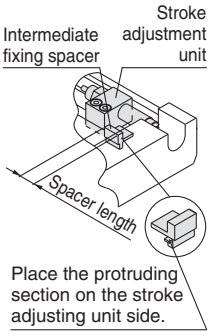
∗ Stroke adjustment range is applicable for one side when mounted on a cylinder.

Stroke Adjustment Unit Symbol

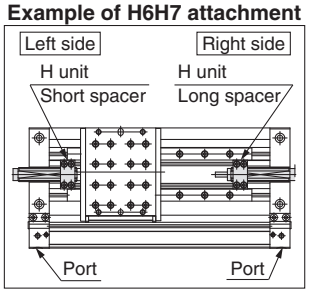
Left side stroke adjustment unit	Right side stroke adjustment unit: Without unit	L: With low load shock absorber, With short spacer	L: With low load shock absorber, With long spacer	H: With high load shock absorber	H: With high load shock absorber, With short spacer	H: With high load shock absorber, With long spacer
Without unit	**Nil**	**SL**	**SL6**	**SL7**	**SH**	**SH6**	**SH7**
L: With low load shock absorber	**LS**	**L**	**LL6**	**LL7**	**LH**	**LH6**	**LH7**
L: With low load shock absorber, With short spacer	**L6S**	**L6L**	**L6**	**L6L7**	**L6H**	**L6H6**	**L6H7**
L: With low load shock absorber, With long spacer	**L7S**	**L7L**	**L7L6**	**L7**	**L7H**	**L7H6**	**L7H7**
H: With high load shock absorber	**HS**	**HL**	**HL6**	**HL7**	**H**	**HH6**	**HH7**
H: With high load shock absorber, With short spacer	**H6S**	**H6L**	**H6L6**	**H6L7**	**H6H**	**H6**	**H6H7**
H: With high load shock absorber, With long spacer	**H7S**	**H7L**	**H7L6**	**H7L7**	**H7H**	**H7H6**	**H7**

∗ Spacers are used to fix the stroke adjustment unit at an intermediate stroke position.

Stroke adjustment unit mounting diagram



Example of H6H7 attachment



Shock Absorbers for L and H Units

Model	Type	Stroke adjustment unit	Bore size [mm] 16	25	40
MY2H	Standard (Shock absorber/RB series)	L	RB0806	RB1007	RB1412
		H	RB1007	RB1412	RB2015
	Shock absorber/soft type RJ series mounted (-XB22)	L	RJ0806H	RJ1007H	RJ1412H
		H	RJ1007H	RJ1412H	—
MY2HT	Standard (Shock absorber/RB series)	L	RB1007	RB1412	RB2015
		H	RB1412	RB2015	RB2725
	Shock absorber/soft type RJ series mounted (-XB22)	L	RJ1007H	RJ1412H	—
		H	RJ1412H	—	—

∗ The shock absorber service life is different from that of the MY2H/HT cylinder depending on operating 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 43.

Shock Absorber Specifications

Model		RB 0806	RB 1007	RB 1412	RB 2015	RB 2725
Max. energy absorption (J)		2.9	5.9	19.6	58.8	147
Stroke absorption [mm]		6	7	12	15	25
Max. collision speed (mm/s)		1500	1500	1500	1500	1500
Max. operating frequency (cycle/min)		80	70	45	25	10
Spring force (N)	**Extended**	1.96	4.22	6.86	8.34	8.83
	Retracted	4.22	6.86	15.98	20.50	20.01
Operating temperature range (°C)		5 to 60				

∗ The shock absorber service life is different from that of the MY2H/HT cylinder depending on operating conditions. Refer to the RB Series Specific Product Precautions for the replacement period.

Theoretical Output

(N)

Bore size (mm)	Piston area (mm^2)	Operating pressure (MPa)						
		0.2	0.3	0.4	0.5	0.6	0.7	0.8
16	200	40	60	80	100	120	140	160
25	490	98	147	196	245	294	343	392
40	1256	251	377	502	628	754	879	1005

Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm^2)

Weight

(kg)

Model	Bore size (mm)	Basic weight	Additional weight per each 50 mm of stroke	Weight of moving parts	Stroke adjustment unit weight (per unit)	
					L unit weight	H unit weight
MY2H	**16**	0.86	0.22	0.21	0.03	0.04
	25	2.35	0.42	0.64	0.06	0.09
	40	6.79	0.76	2.20	0.16	0.22
MY2HT	**16**	1.27	0.31	0.33	0.04	0.08
	25	3.70	0.61	1.20	0.10	0.18
	40	10.05	1.13	3.35	0.27	0.46

Calculation: (Example) **MY2H25G-300L**
- Basic weight ····· 2.35 kg
- Cylinder stroke ····· 300 stroke
- Additional weight ····· 0.42/50 stroke
  2.35 + 0.42 x 300/50 + 0.06 x 2 ≅ 4.99 kg
- Weight of L unit ····· 0.06 kg

Replacement Parts

Drive Unit (Cylinder) Replacement Part No.

Model / Bore size (mm)	MY2H	MY2HT
16	MY2BH16G- Stroke	
25	MY2BH25□G- Stroke	
40	MY2BH40□G- Stroke	

Enter a symbol for port thread type inside □.
Note) Order auto switches separately.

Option

Stroke Adjustment Unit Part No.

MY 2H – A 25 L2 – 6N

Guide type

2H	MY2H16
2H	MY2H25
2H	MY2H40
2HT	MY2HT16
2HT	MY2HT25
2HT	MY2HT40

Stroke adjustment unit

Bore size

16	16 mm
25	25 mm
40	40 mm

Unit no.

Symbol	Stroke adjustment unit	Mounting position
L1	L unit	Left
L2		Right
H1	H unit	Left
H2		Right

Note) Refer to page 23 for details about adjustment range.

Intermediate fixing spacer

—	Without spacer
6□	Short spacer
7□	Long spacer

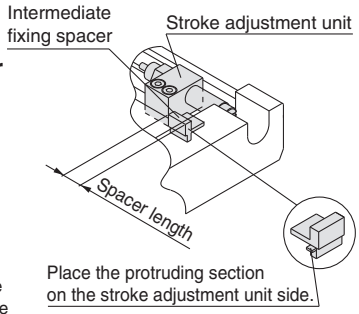
Spacer delivery type

—	Unit installed
N	Spacer only

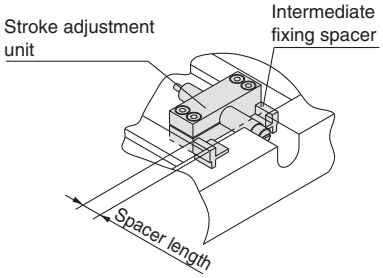
∗ Spacers are used to fix the stroke adjustment unit at an intermediate stroke position.
∗ Spacers are shipped for a set of two.

∗ When ordering the intermediate fixing spacer for the stroke adjustment unit, the intermediate fixing spacer is shipped together.

MY2H

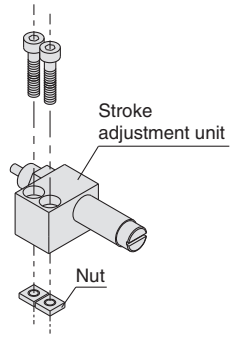


MY2HT

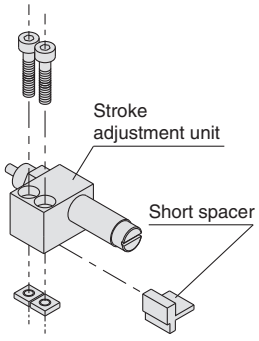


Component Parts

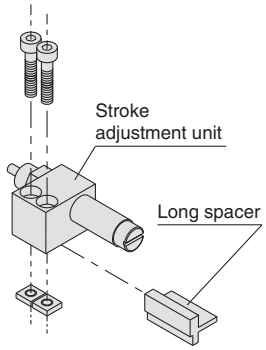
MY2H-A25L2 (Without spacer)



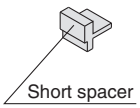
MY2H-A25L2-6 (With short spacer)



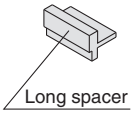
MY2H-A25L2-7 (With long spacer)



MY2H-A25L2-6N (Short spacer only)



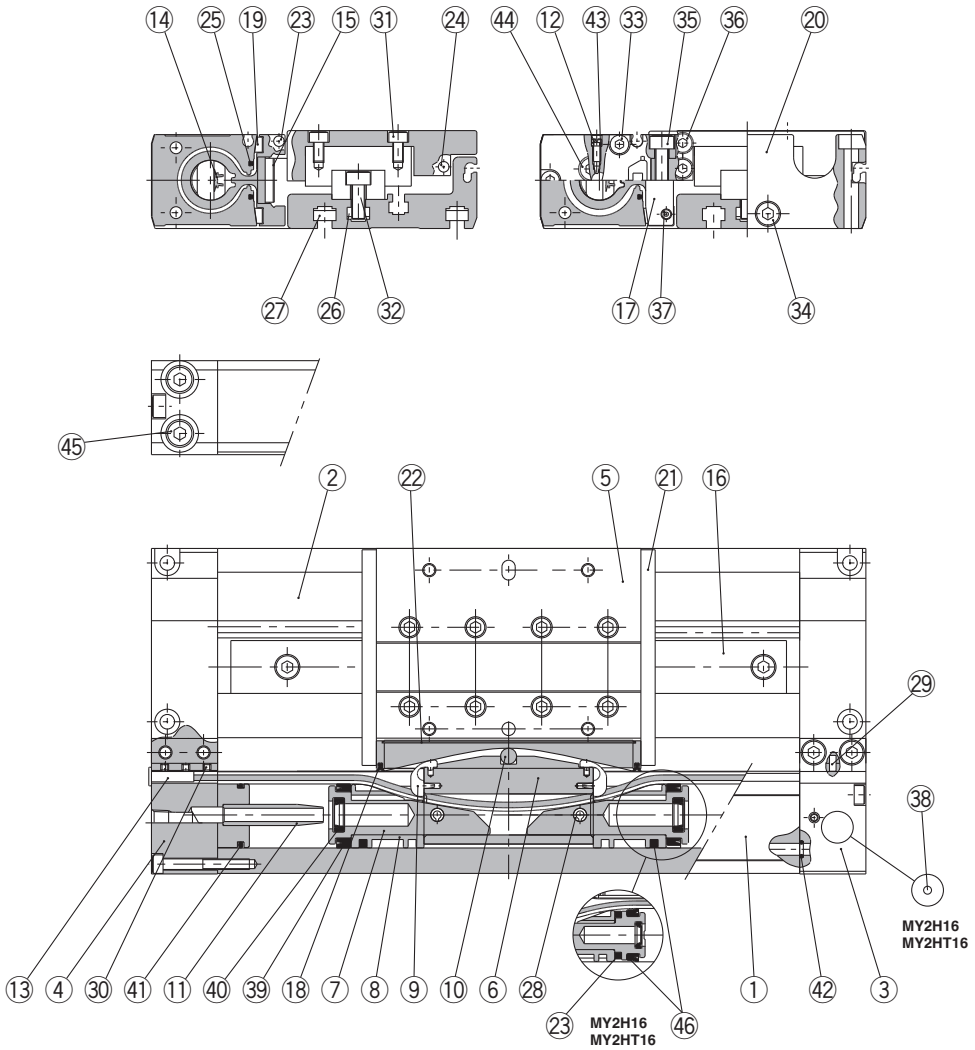
MY2H-A25L2-7N (Long spacer only)



∗ Nuts are equipped on the cylinder body.

Construction

Single axis type: MY2H

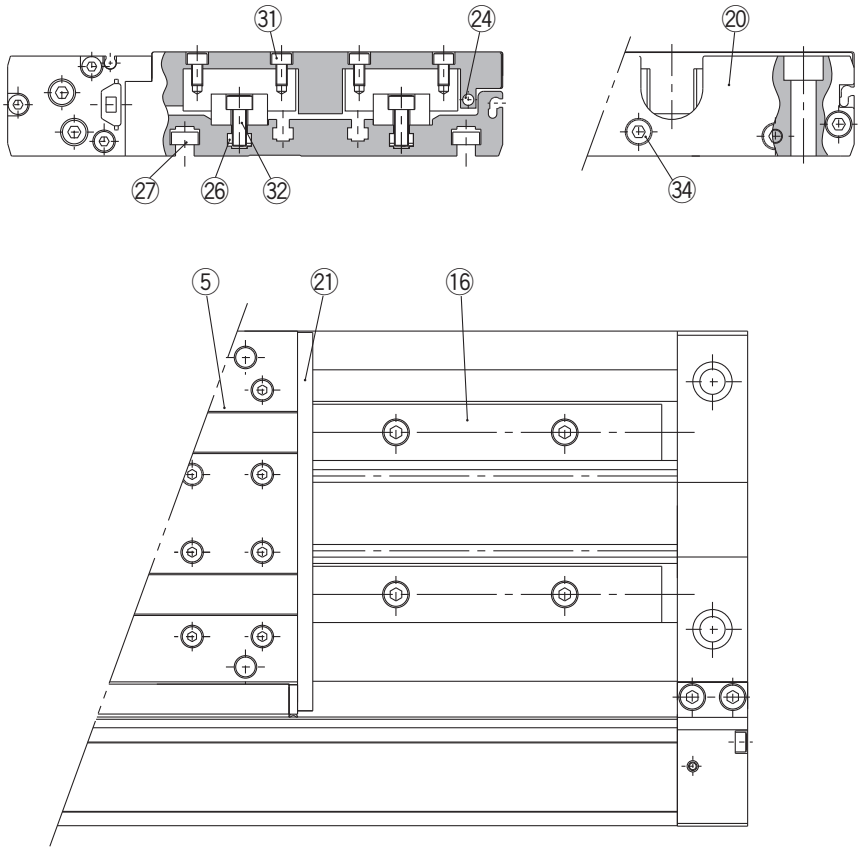


Component Parts

No.	Description	Material	Note
1	**Cylinder tube**	Aluminium alloy	Hard anodised
2	**Body**	Aluminium alloy	Anodized
3	**Head cover WR**	Aluminium alloy	Hard anodised
4	**Head cover WL**	Aluminium alloy	Hard anodised
5	**Slide table**	Aluminium alloy	Hard anodised
6	**Piston yoke**	Aluminium alloy	Hard anodised
7	**Piston**	Aluminium alloy	Chromated
8	**Wear ring**	Special resin	
9	**Belt separator**	Special resin	
10	**Parallel pin**	Stainless steel	
11	**Cushion ring**	Aluminium alloy	Anodized
12	**Cushion needle**	Rolled steel	Nickel plated
13	**Belt clamp**	Special resin	
16	**Guide**	—	
17	**End cover**	Aluminium alloy	Hard anodised
19	**Bearing**	Special resin	
20	**End plate**	Aluminium alloy	Hard anodised
21	**Stopper**	Carbon steel	Nickel plated after quenching
22	**Top cover**	Stainless steel	

No.	Description	Material	Note
23	**Magnet**	—	
24	**Magnet**	—	
25	**Seal magnet**	Rubber magnet	
26	**Square nut**	Carbon steel	Chromated
27	**Square nut**	Carbon steel	Chromated
28	**Spring pin**	Carbon tool steel	
29	**Parallel pin**	Stainless steel	
30	**Hexagon socket set screw**	Chrome molybdenum steel	Black zinc chromated
31	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
32	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
33	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
34	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
35	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
36	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
37	**Hexagon socket head cap screw**	Chrome molybdenum steel	Chromated
38	**Steel ball**	Spring steel	Nickel plated
44	**Hexagon socket head (taper) plug**	Carbon steel	Chromated
45	**Hexagon socket head (taper) plug**	Carbon steel	Chromated
46	**Lubretainer**	Special resin	

Double axis type: MY2HT



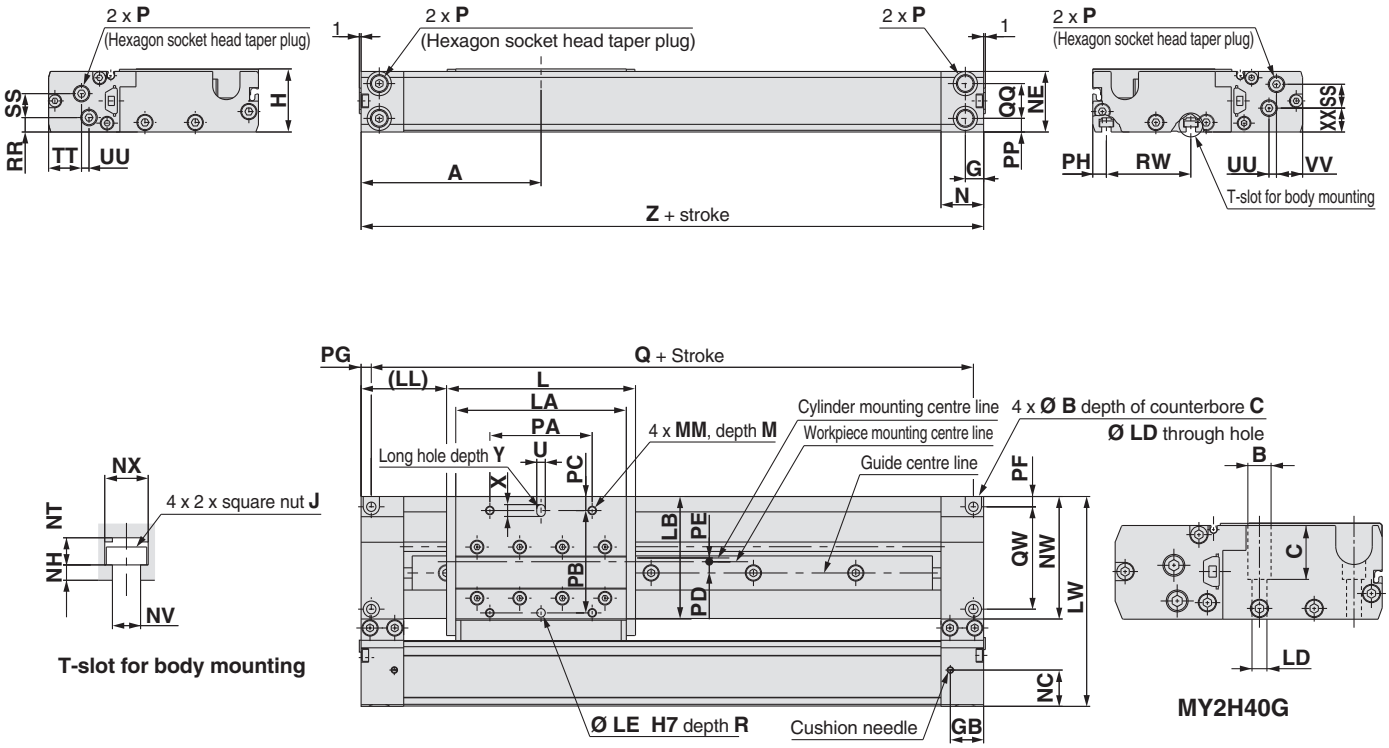
Replacement Parts: Seal Kit

No.	Description	Qty.	MY2H16G/MY2HT16G	MY2H25G/MY2HT25G	MY2H40G/MY2HT40G
14	**Seal belt**	1	MY16-16C-Stroke	MY25-16C-Stroke	MY40-16C-Stroke
15	**Dust seal band**	1	MY2H16-16B-Stroke	MY2H25-16B-Stroke	MY2H40-16B-Stroke
43	**O-ring**	2	KA00309 (ø4 x ø1.8 x ø1.1)	KA00309 (ø4 x ø1.8 x ø1.1)	KA00320 (ø7.15 x ø3.75 x ø1.7)
18	**Scraper**	2	MY2B16-PS	MY2B25-PS	MY2B40-PS
39	**Piston seal**	2			
40	**Cushion seal**	2			
41	**Tube gasket**	2			
42	**O-ring**	4			

∗ Seal kit includes ⑱, ㊴, ㊵, ㊶ and ㊷. Order the seal kit based on each bore size.
∗ Seal kit includes a grease pack (10 g).
When ⑭ and ⑮ are shipped as single units, 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)

Single Axis Type: Ø 16, Ø 25, Ø 40

MY2H Bore size G – Stroke



[mm]

Model	A	B	C	G	GB	H	L	J	LA	LB	LD	LE	(LL)	LW	M	MM	N	NC	NE	NH	NT	NV	NW	NX	P
MY2H16G	80	6.5	3.3	8.5	17	28	80	M3 x 0.5	70	50.4	3.4	4	40	83	7	M4 x 0.7	20	14	27	2	3.5	3.4	48.2	5.8	M5 x 0.8
MY2H25G	105	9.5	5.4	10.7	19.5	37	110.8	M5 x 0.8	100	71.7	5.5	5	49.6	123	9	M5 x 0.8	25	21.3	35.5	3	5.3	5.5	71.8	8.5	$^1/_8$
MY2H40G	165	14	32.5	15.5	31.5	58	180	M6 x 1	158	80.3	9	6	75	161	13	M6 x 1	40	32.4	56.5	4	6.5	6.6	82.1	10.5	$^1/_4$

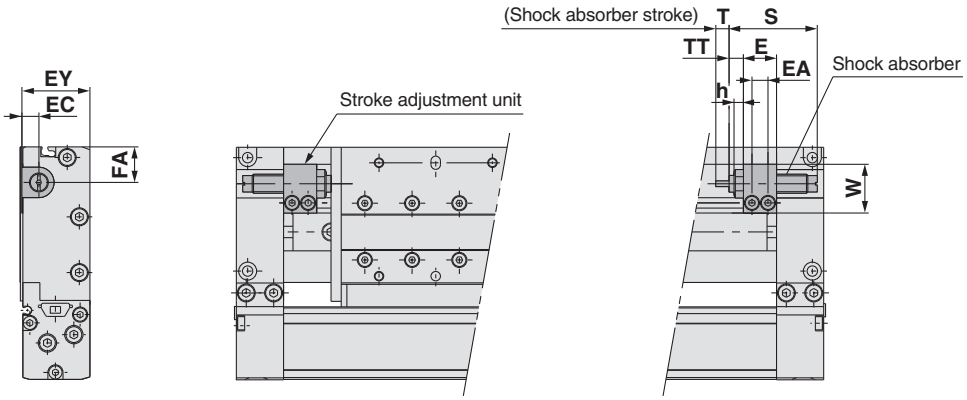
Model	PA	PB	PC	PD	PE	PF	PG	PH	PP	Q	QQ	QW	R	RR	RW	SS	TT	U	UU	VV	X	XX	Y	Z
MY2H16G	40	40	7.2	2.8	3.7	3.5	4	5.1	5.3	152	16.4	40	5	5.3	40	9.7	12.5	4	3	10.5	6	12	5	160
MY2H25G	60	60	8.2	6.6	2.7	5.5	6	7.5	8	198	20.4	60	5	8.5	50	14	19.3	5	4.4	15.3	7.5	14	5	210
MY2H40G	100	70	5.5	8.5	5	17	9	9.5	16	312	25.5	57	8	11	53.5	21.5	35.4	6	2	29	9	23	8	330

"P" indicates cylinder supply ports. ∗ The plug for "P" MY2H16G is a hexagon socket head plug.

Stroke adjustment unit

Low load shock absorber

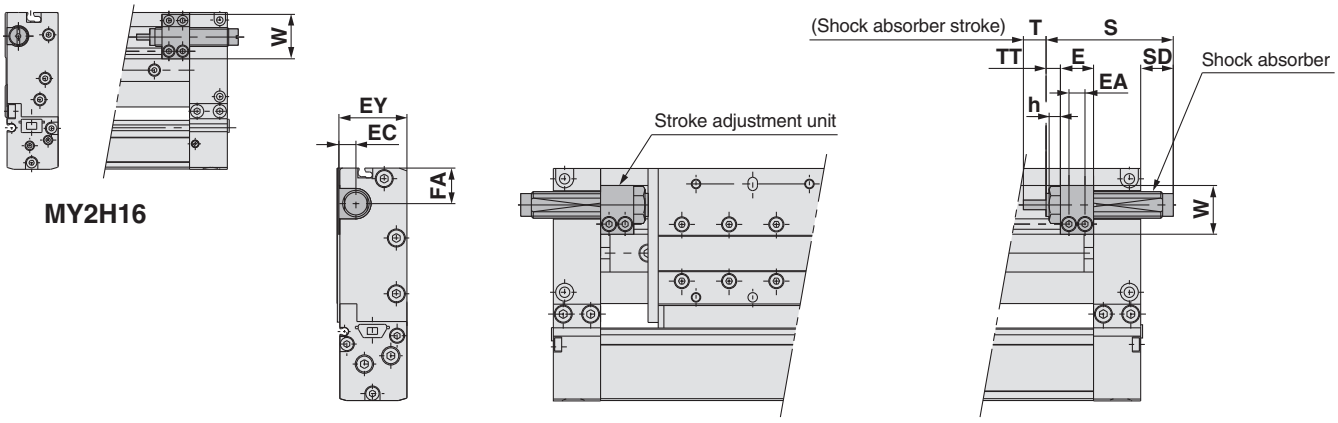
MY2H Bore size G – Stroke L



Applicable cylinder	E	EA	EC	EY	FA	h	S	T	TT	W	Shock absorber model
MY2H16	14.4	7	6	27	12.5	4	40.8	6	5.6 (Max. 11.2)	16.5	RB0806
MY2H25	17.5	8.5	9	36	19.3	5	46.7	7	7.1 (Max. 18.6)	25.8	RB1007
MY2H40	25	13	13	57	17	6	67.3	12	10 (Max. 26)	38	RB1412

High load shock absorber

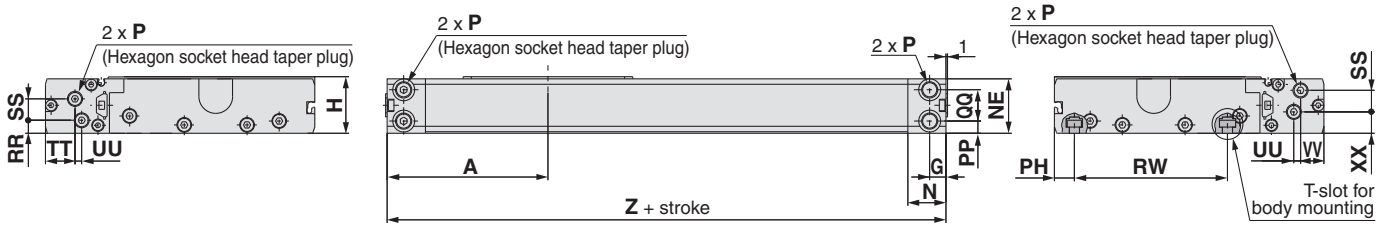
MY2H Bore size G – Stroke H

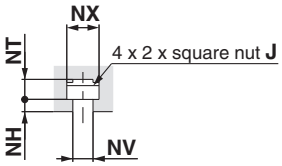


Applicable cylinder	E	EA	EC	EY	FA	h	S	SD	T	TT	W	Shock absorber model
MY2H16	14.4	7	6	27	12.5	—	46.7	6.7	7	5.6 (Max. 11.2)	23.5	RB1007
MY2H25	17.5	8.5	9	36	19.3	6	67.3	17.7	12	7.1 (Max. 18.6)	25.8	RB1412
MY2H40	25	13	13	57	17	6	73.2	—	15	10 (Max. 26)	38	RB2015

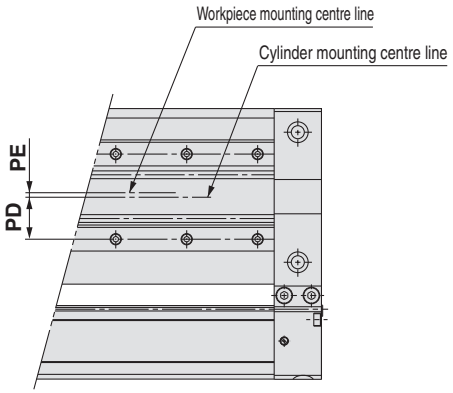
Double Axis Type: Ø 16, Ø 25, Ø 40

MY2HT Bore size G – Stroke

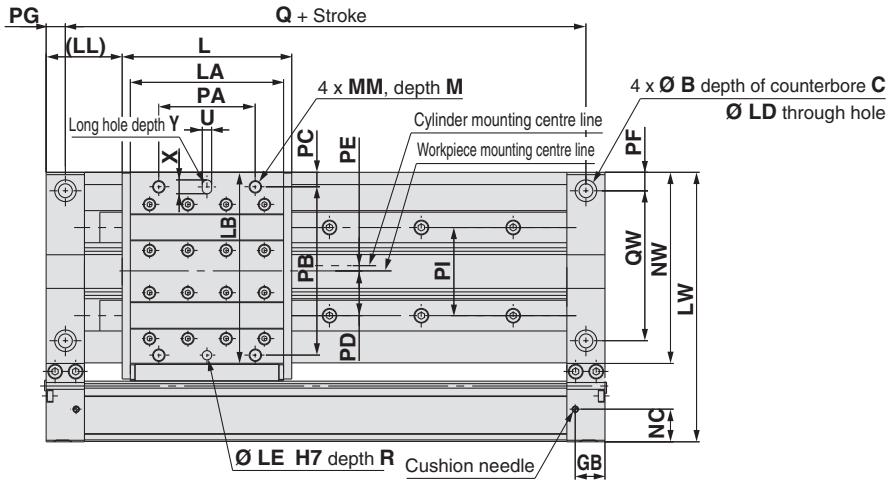




T-slot for body mounting



MY2HT40G



Model	A	B	C	G	GB	H	L	J	LA	LB	LD	LE	(LL)	LW	M	MM	N	NC	NE	NH	NT
MY2HT16G	80	9.5	5.4	8.5	17	28	80	M4 x 0.7	70	87.4	5.5	5	40	120	9	M5 x 0.8	20	14	27	3	4.7
MY2HT25G	105	14	8.6	10.7	19.5	37	110.8	M6 x 1	100	124.7	9	6	49.6	176	12	M8 x 1.25	25	21.3	35.5	4	6.5
MY2HT40G	165	17.5	10.8	15.5	31.5	58	180	M8 x 1.25	158	148.3	11	8	75	229	16	M10 x 1.5	40	32.4	56.5	5	9

Model	NV	NW	NX	P	PA	PB	PC	PD	PE	PF	PG	PH	PI	PP	Q	QQ	QW	R	RR	RW	SS	TT
MY2HT16G	4.5	85.2	7.3	M5 x 0.8	44	80	4	23	1	10	10	10.2	41	5.3	140	16.4	66	5	5.3	69	9.7	12.5
MY2HT25G	6.6	124.8	10.5	$^1/_8$	63	110	9.4	29.2	3.4	12	12.5	13	57.6	8	185	20.4	98	8	8.5	100	14	19.3
MY2HT40G	9	150.1	14	$^1/_4$	113	132	8.5	35.5	0.5	20	20	18.5	72	16	290	25.5	110	12	11	116	21.5	35.4

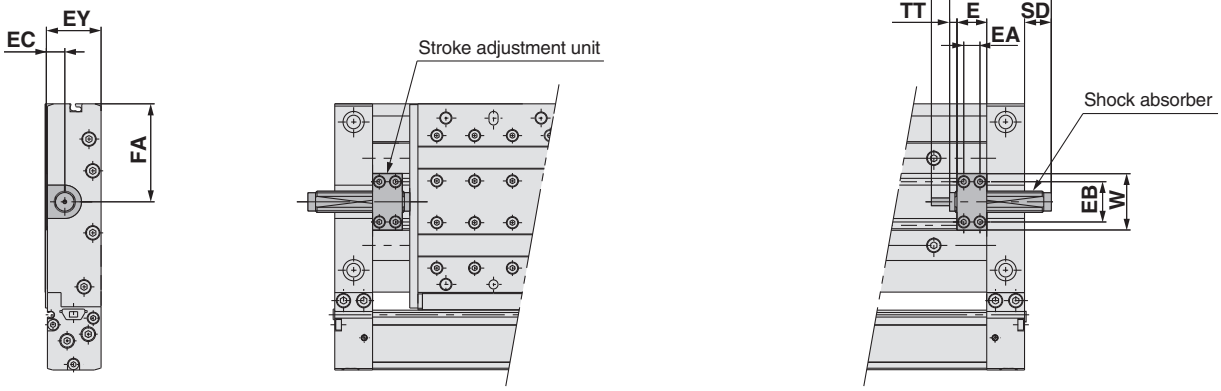
Model	U	UU	VV	X	XX	Y	Z
MY2HT16G	5	3	10.5	7	12	5	160
MY2HT25G	6	4.4	15.3	9	14	8	210
MY2HT40G	8	2	29	12	23	12	330

"P" indicates cylinder supply ports. ∗ The plug for "P" MY2HT16G is a hexagon socket head plug.

Stroke adjustment unit

Low load shock absorber

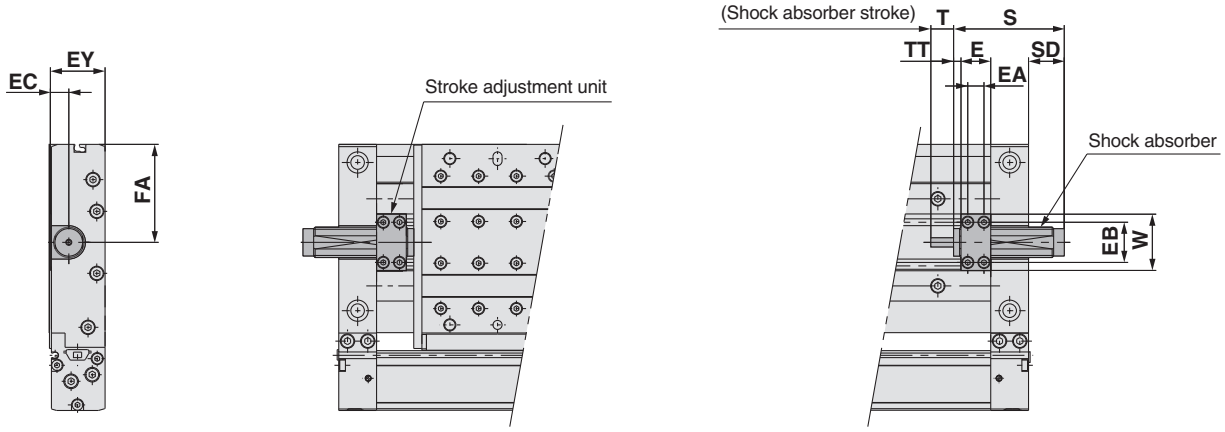
MY2HT [Bore size] G – [Stroke] L



Applicable cylinder	E	EA	EB	EC	EY	FA	S	SD	T	TT	W	Shock absorber model
MY2HT16	14.4	7	21	8	27	46.5	46.7	6.7	7	5.6 (Max. 11.2)	28.6	RB1007
MY2HT25	19.7	10.7	26.6	11.2	36	64.8	67.3	17.7	12	4.9 (Max. 16.4)	37.2	RB1412
MY2HT40	29.1	15.1	37	17.2	57	74.5	73.2	—	15	5.9 (Max. 21.9)	51.6	RB2015

High load shock absorber

MY2HT [Bore size] G – [Stroke] H

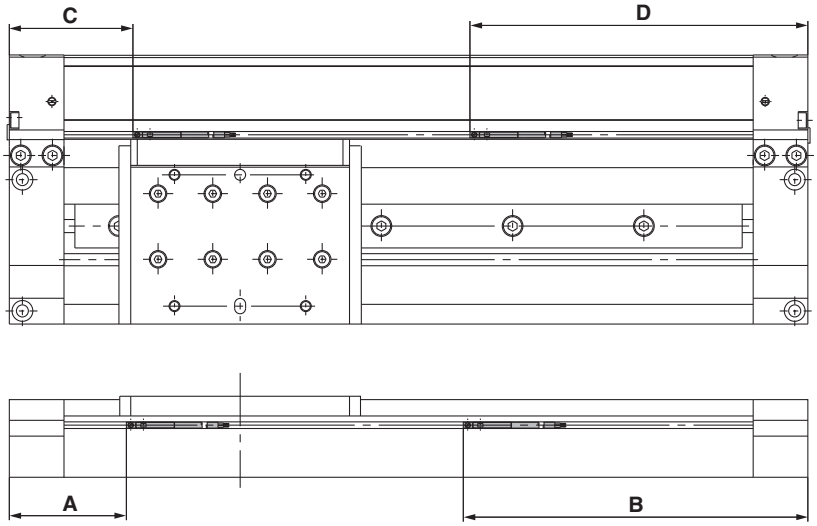


Applicable cylinder	E	EA	EB	EC	EY	FA	S	SD	T	TT	W	Shock absorber model
MY2HT16	14.4	7	21	8	27	46.5	67.3	27.3	12	5.6 (Max. 11.2)	28.6	RB1412
MY2HT25	19.7	10.7	26.6	11.2	36	64.8	73.2	23.6	15	4.9 (Max. 16.4)	37.2	RB2015
MY2HT40	29.1	15.1	37	17.2	57	74.5	99	24	25	5.9 (Max. 21.9)	51.6	RB2725

MY2 Series
Auto Switch Mounting

Proper Auto Switch Mounting Position (Detection at stroke end)

Note) The operating range is a standard including hysteresis, and is not guaranteed. There may be large variations depending on the surrounding environment (variations on the order of ±30 %).



D-A9□, D-A9□V

Series model	A	B	Operating range
MY2C16	44	116	11
MY2H16	46	114	
MY2HT16	70	90	
MY2C/H/HT25	54	156	
MY2C/H/HT40	85	245	

Series model	C	D	Operating range
MY2C/H/HT16	27.6	132.4	6.5
MY2C/H/HT25	69	141	11
MY2C/H/HT40	90.2	239.8	

D-M9□, D-M9□V, D-M9□W, D-M9□WV, D-M9□A, D-M9□AV

Series model	A	B	Operating range
MY2C16	48	112	8.5
MY2H16	50	110	
MY2HT16	74	86	
MY2C/H/HT25	58	152	
MY2C/H/HT40	89	241	

Series model	C	D	Operating range
MY2C/H/HT16	31.6	128.4	4
MY2C/H/HT25	73	137	8.5
MY2C/H/HT40	94.2	235.8	

* Adjust the auto switch after confirming the operating conditions in the actual setting.

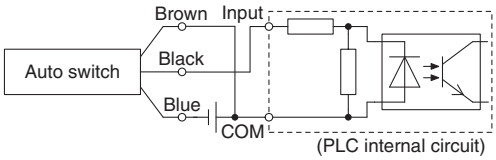
Besides the models listed in How to Order, the following auto switches are applicable.

* For solid state auto switches, auto switches with a pre-wired connector are also available.
* Normally closed (NC = b contact) solid state auto switches (D-F9G/F9H types) are also available.

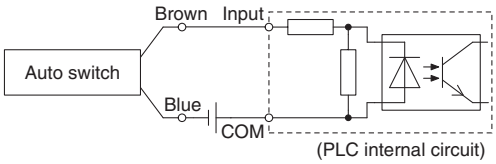
Prior to Use
Auto Switch Connections and Examples

Sink Input Specifications

3-wire, NPN

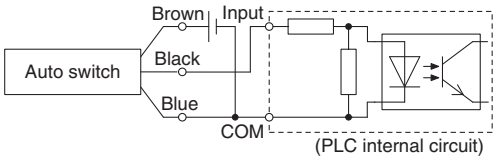


2-wire

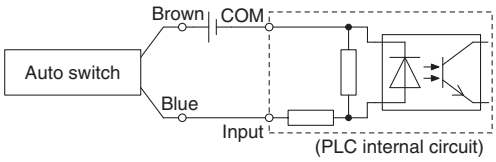


Source Input Specifications

3-wire, PNP



2-wire



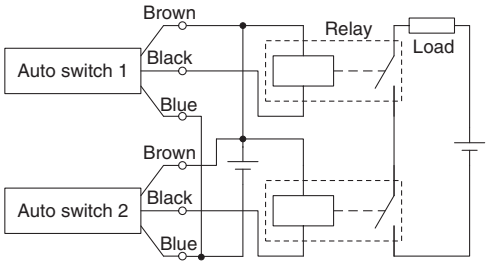
Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

Examples of AND (Series) and OR (Parallel) Connections

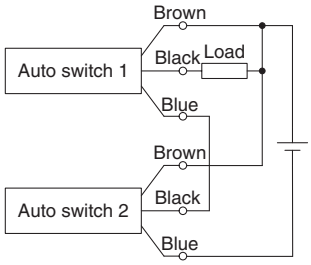
∗ When using solid state auto switches, ensure the application is set up so the signals for the first 50 ms are invalid.

3-wire AND connection for NPN output

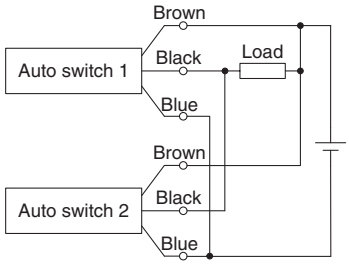
(Using relays)



(Performed with auto switches only)

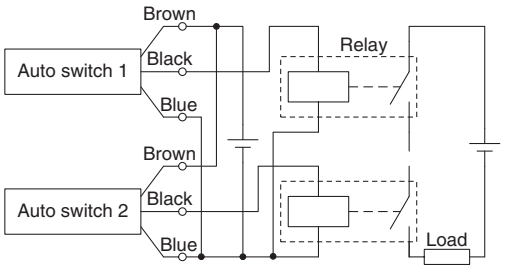


3-wire OR connection for NPN output

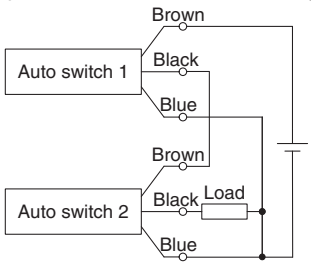


3-wire AND connection for PNP output

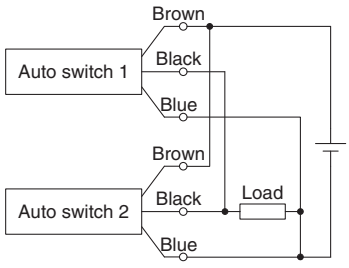
(Using relays)



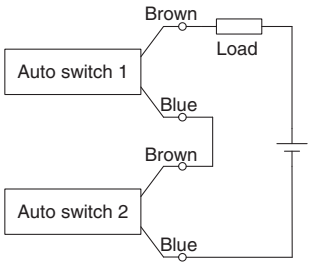
(Performed with auto switches only)



3-wire OR connection for PNP output



2-wire AND connection

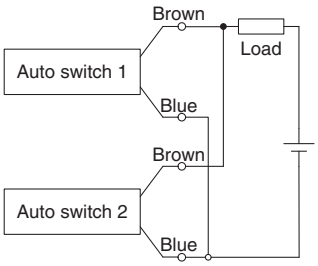


When two auto switches are connected in series, a load may malfunction because the load voltage will decline when in the ON state.
The indicator lights will light up when both of the auto switches are in the ON state.
Auto switches with a load voltage less than 2 0 V cannot be used.

Load voltage at ON = Power supply voltage – Residual voltage x 2 pcs.
= 24 V – 4 V x 2 pcs.
= 16 V

Example: Power supply is 24 VDC
Internal voltage drop in auto switch is 4 V.

2-wire OR connection



(Solid state)
When two auto switches are connected in parallel, malfunction may occur because the load voltage will increase when in the OFF state.

(Reed)
Because there is no current leakage, the load voltage will not increase when turned OFF. However, depending on the number of auto switches in the ON state, the indicator lights may sometimes grow dim or not light up, due to the dispersion and reduction of the current flowing to the auto switches.

Load voltage at OFF = Leakage current x 2 pcs. x Load impedance
= 1 mA x 2 pcs. x 3 kΩ
= 6 V

Example: Load impedance is 3 kΩ.
Leakage current from auto switch is 1 mA.

Solid State Auto Switch
Direct Mounting Type
D-M9N(V)/D-M9P(V)/D-M9B(V)

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **2-wire load current is reduced (2.5 to 40 mA).**
- **Using flexible cable as standard spec.**

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□, D-M9□V (With indicator light)						
Auto switch model	D-M9N	D-M9NV	D-M9P	D-M9PV	D-M9B	D-M9BV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Red LED illuminates when turned ON.					
Standard	CE marking, RoHS					

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-M9N(V)	D-M9P(V)	D-M9B(V)
Sheath	Outside diameter [mm]	2.6		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	0.88		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	0.05		
Minimum bending radius [mm] (Reference values)		17		

⚠Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Weight

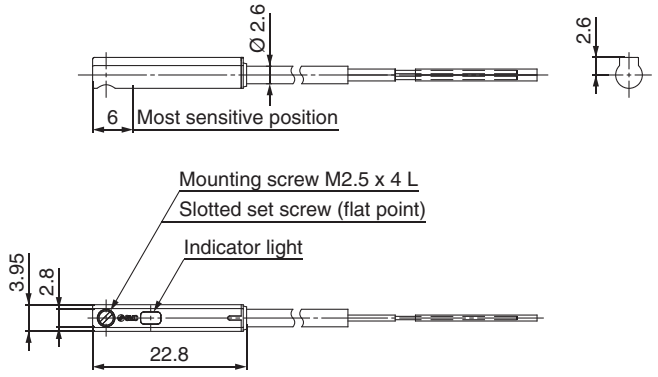
(g)

Auto switch model		D-M9N(V)	D-M9P(V)	D-M9B(V)
Lead wire length	0.5 m (—)	8		7
	1 m (**M**)	14		13
	3 m (**L**)	41		38
	5 m (**Z**)	68		63

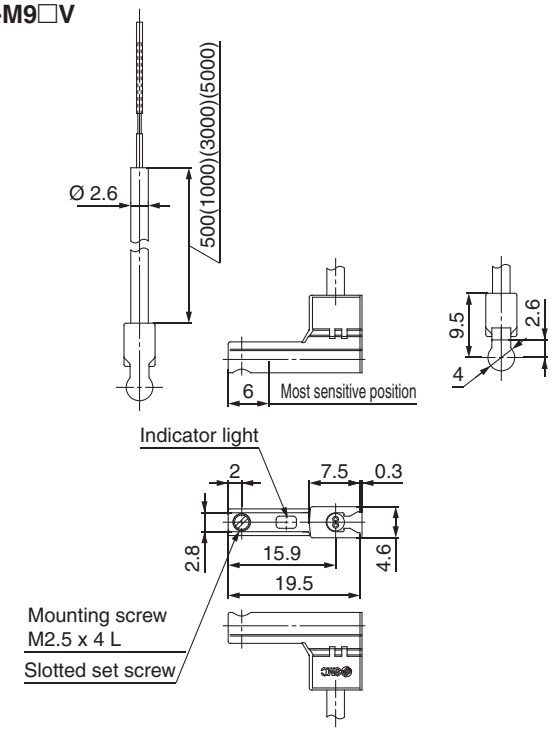
Dimensions

[mm]

D-M9□



D-M9□V



SMC

2-Colour Indicator Solid State Auto Switch Direct Mounting Type
D-M9NW(V)/D-M9PW(V)/D-M9BW(V)

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **2-wire load current is reduced (2.5 to 40 mA).**
- **Using flexible cable as standard spec.**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

⚠Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□W, D-M9□WV (With indicator light)						
Auto switch model	D-M9NW	D-M9NWV	D-M9PW	D-M9PWV	D-M9BW	D-M9BWV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.					
Standard	CE marking, RoHS					

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NW(V)	D-M9PW(V)	D-M9BW(V)
Sheath	Outside diameter [mm]	2.6		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	0.88		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	0.05		
Minimum bending radius [mm] (Reference values)		17		

Weight

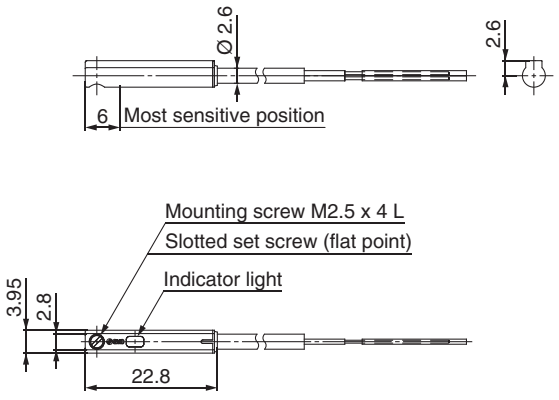
(g)

Auto switch model		D-M9NW(V)	D-M9PW(V)	D-M9BW(V)
Lead wire length	0.5 m (—)	8		7
	1 m (**M**)	14		13
	3 m (**L**)	41		38
	5 m (**Z**)	68		63

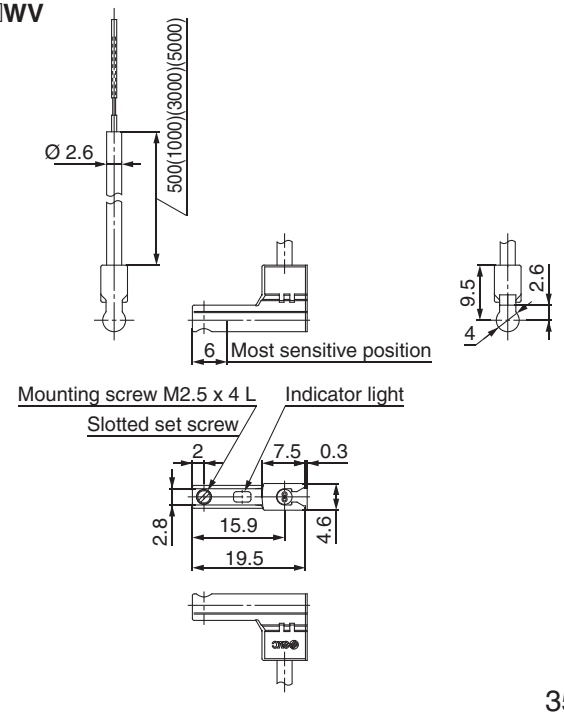
Dimensions

[mm]

D-M9□W



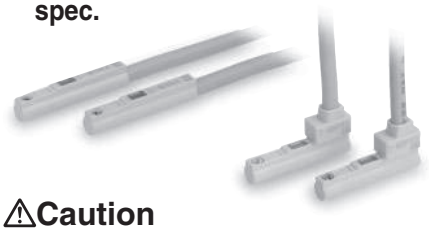
D-M9□WV



Water Resistant 2-Colour Indicator
Solid State Auto Switch: Direct Mounting Type
D-M9NA(V)/D-M9PA(V)/D-M9BA(V) CE RoHS

Grommet

- **Water (coolant) resistant type**
- **2-wire load current is reduced (2.5 to 40 mA).**
- **The proper operating range can be determined by the colour of the light. (Red → Green ← Red)**
- **Using flexible cable as standard spec.**



⚠Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.
Please consult with SMC if using coolant liquid other than water based solution.

Weight

(g)

Auto switch model		D-M9NA(V)	D-M9PA(V)	D-M9BA(V)
Lead wire length	0.5 m (**Nil**)	8		7
	1 m (**M**)	14		13
	3 m (**L**)	41		38
	5 m (**Z**)	68		63

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□A, D-M9□AV (With indicator light)						
Auto switch model	D-M9NA	D-M9NAV	D-M9PA	D-M9PAV	D-M9BA	D-M9BAV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.					
Standard	CE marking, RoHS					

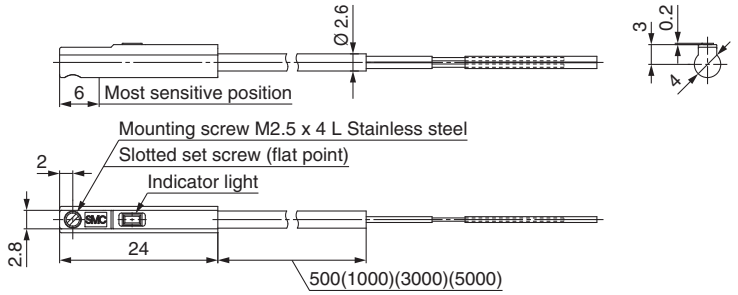
Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NA□	D-M9NAV□	D-M9PA□	D-M9PAV□	D-M9BA□	D-M9BAV□
Sheath	Outside diameter [mm]	2.6	2.7 x 3.2 (ellipse)	2.6	2.7 x 3.2 (ellipse)	2.6	2.6
Insulator	Number of cores	3 cores (Brown/Blue/Black)				2 cores (Brown/Blue)	
	Outside diameter [mm]	0.88	0.9	0.88	0.9	0.88	
Conductor	Effective area [mm²]	0.15					
	Strand diameter [mm]	0.05					
Minimum bending radius [mm] (Reference values)		17	20	17	20	17	

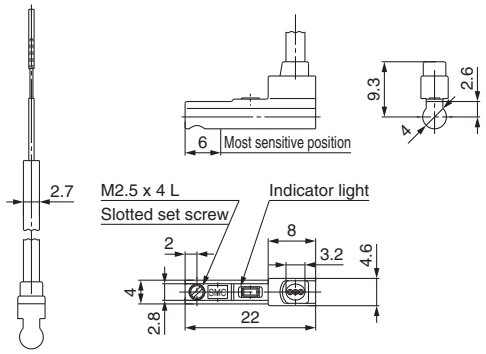
Dimensions

[mm]

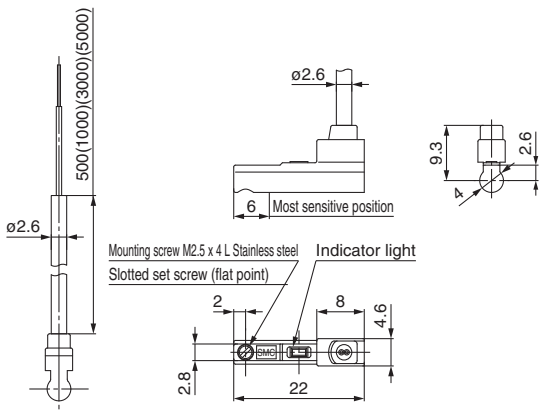
D-M9□A



D-M9NAV□/D-M9PAV□



D-M9BAV□



SMC

Reed Auto Switch
Direct Mounting Style
D-A90(V)/D-A93(V)/D-A96(V) CE

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

⚠Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A90, D-A90V (Without indicator light)			
Auto switch model	D-A90, D-A90V		
Applicable load	IC circuit, Relay, PLC		
Load voltage	24 V AC/DC or less	48 V AC/DC or less	100 V AC/DC or less
Maximum load current	50 mA	40 mA	20 mA
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		

D-A93, D-A93V, D-A96, D-A96V (With indicator light)			
Auto switch model	D-A93, D-A93V		D-A96, D-A96V
Applicable load	Relay, PLC		IC circuit
Load voltage	24 VDC(2)	100 VAC	4 to 8 VDC
Load current range and Maximum load current (1)	5 to 40 mA	5 to 20 mA	20 mA
Contact protection circuit	None		
Internal voltage drop	D-A93: 2.4 V or less (up to 20 mA)/3 V or less (up to 40 mA) D-A93V: 2.7 V or less		0.8 V or less
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-A90(V)	D-A93(V)	D-A96(V)
Sheath	Outside diameter [mm]	Ø 2.7		
Insulator	Number of cores	2 cores (Brown/Blue)		3 cores (Brown/Blue/Black)
	Outside diameter [mm]	Ø 0.96		Ø 0.91
Conductor	Effective area [mm²]	0.18		0.15
	Strand diameter [mm]	Ø 0.08		
Lead wire minimum bending radius [mm] (Reference values)		17		

Note 1) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Note 2) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions.

Weight

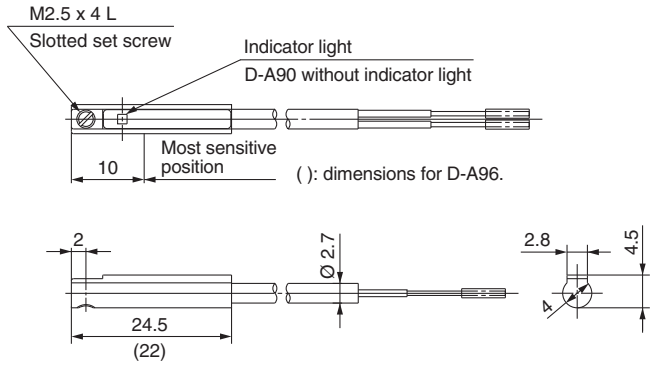
(g)

Model		D-A90	D-A90V	D-A93	D-A93V	D-A96	D-A96V
Lead wire length	0.5 m (—)	6	6	6	6	8	8
	3 m (L)	30	30	30	30	41	41
	5 m (Z)	—	—	47	47	—	—

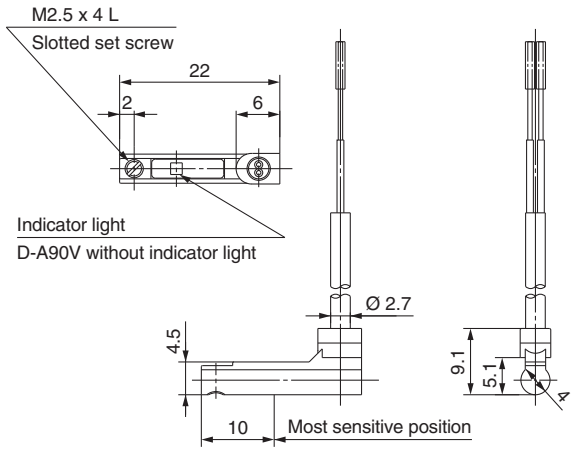
Dimensions

[mm]

D-A90/D-A93/D-A96



D-A90V/D-A93V/D-A96V



MY2 Series
Made to Order Specifications

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

Made to Order

1 Intermediate Stroke -XB10

Intermediate strokes are available within the standard stroke range.
The stroke can be set in 1 mm increments.

■Stroke range: 51 to 599 mm

MY2 □ Bore size – Stroke – Auto switch – Symbol – **XB10**

Series/Bore size

		16	25	40
H	High precision guide type (Single axis)	●	●	●
HT	High precision guide type (Double axis)	●	●	●

Example) MY2H40G-599L-A93-XB10

2 Long Stroke -XB11

Available with long strokes exceeding the standard strokes.
The stroke can be set in 1mm increments.

■Stroke range: 2001 to 5000 mm (2001 to 3000 mm for Ø 16)

MY2 □ Bore size – Stroke – Auto switch – Symbol – **XB11**

Series/Bore size

		16	25	40
C	Cam follower guide type	●	●	●

Example) MY2C40G-4999L-A93-XB11

■Stroke range: 601 to 1500 mm (601 to 1000 mm for Ø 16)

MY2 □ Bore size – Stroke – Auto switch – Symbol – **XB11**

Series/Bore size

		16	25	40
H	High precision guide type (Single axis)	●	●	●
HT	High precision guide type (Double axis)	●	●	●

Example) MY2H40G-999L-A93-XB11

3 Helical Insert Thread Specification -X168

The mounting threads of the slider are changed to helical insert threads. The thread size is the same as standard.

MY2 □ Bore size – Stroke – Auto switch – Symbol – **X168**

Series/Bore size

		16	25	40
C	Cam follower guide Type	●	●	●
H	High precision guide type (Single axis)	●	●	●
HT	High precision guide type (Double axis)	●	●	●

Example) MY2H40G-300L-A93-X168

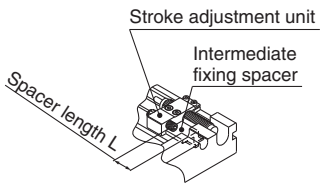
4 Stroke Adjustment Unit with Adjustment Bolt -XB20

Stroke adjustment unit with an adjustment bolt.

Applicable Series

Series	Description	Model	Action
MY2	Mechanically jointed rodless cylinder	MY2H	Linear guide (Single axis)
		MY2HT	Linear guide (Double axes)

Stroke adjustment unit mounting diagram



How to Order

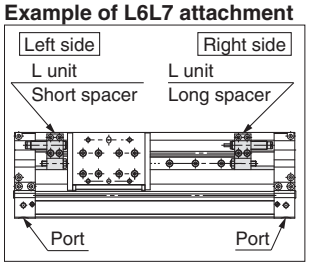
MY2H / MY2HT [Standard model no.] **−XB20**

Stroke Adjustment Unit Specifications

Bore size (mm)		16		25		40	
Unit symbol		L	H	L	H	L	H
Shock absorber model	MY2H	RB0806	RB1007	RB1007	RB1412	RB1412	RB2015
	MY2HT	RB1007	RB1412	RB1412	RB2015	RB2015	RB2725
Stroke adjustment range by intermediate fixing spacer (mm)	Without spacer	0 to –5.6		0 to –11.5		0 to –16	
	With short spacer	–5.6 to –11.2		–11.5 to –23		–16 to –32	
	With long spacer	–11.2 to –16.8		–23 to –34.5		–32 to –48	

∗ Spacers are used to fix the stroke adjustment unit at an intermediate stroke position.
∗ Stroke adjustment range is applicable for one side when mounted on a cylinder.

Example of L6L7 attachment



Stroke Adjustment Unit Model

Note) Stroke adjustment unit with adjusting bolt (-XB20) cannot be mounted on the standard cylinder.

MY2 H − A 25 L2 − 6N − XB20

Guide symbol

H	MY2H16
H	MY2H25
H	MY2H40
HT	MY2HT16
HT	MY2HT25
HT	MY2HT40

Stroke adjustment unit

Cylinder bore size

16	16 mm
25	25 mm
40	40 mm

Unit part no.

Symbol	Stroke adjustment unit	Mounting position
L1	L unit	For left
L2		For right
H1	H unit	For left
H2		For right

∗ L unit only for ø16

Intermediate fixing spacer

—	Without spacer
6□	Short spacer
7□	Long spacer

Spacer shipping method

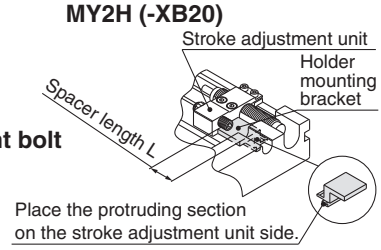
—	Assembled as a unit
N	Spacer only

∗ Spacers for MY2HT are shipped in 2 piece sets.

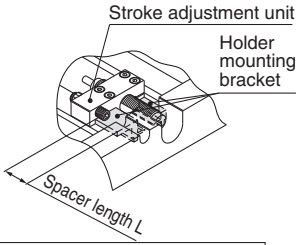
∗ Intermediate fixing spacers are shipped together.

With adjustment bolt

MY2H (-XB20)

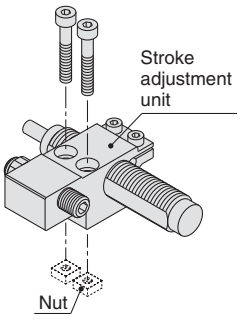


MY2HT (-XB20)

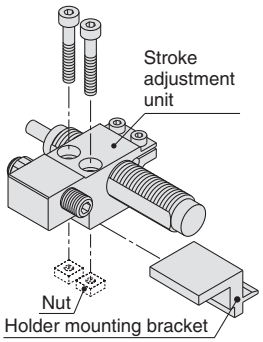


Components Parts

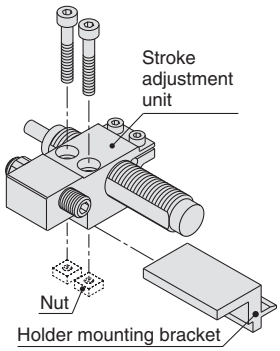
MY2H-A25L2-XB20 (Without spacer)



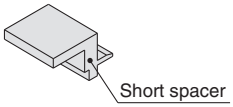
MY2H-A25L2-6-XB20 (With short spacer)



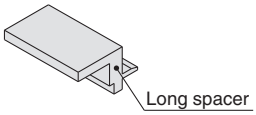
MY2H-A25L2-7-XB20 (With long spacer)



MY2H-A25L2-6N-XB20 (Short spacer only)



MY2H-A25L2-7N-XB20 (Long spacer only)

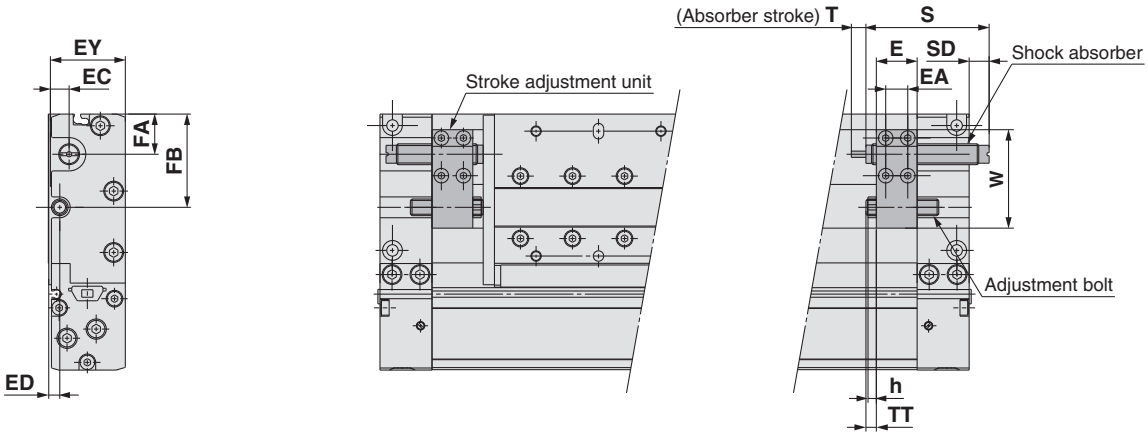


∗ Nuts are installed onto the cylinder body.

4 Stroke Adjustment Unit with Adjustment Bolt -XB20

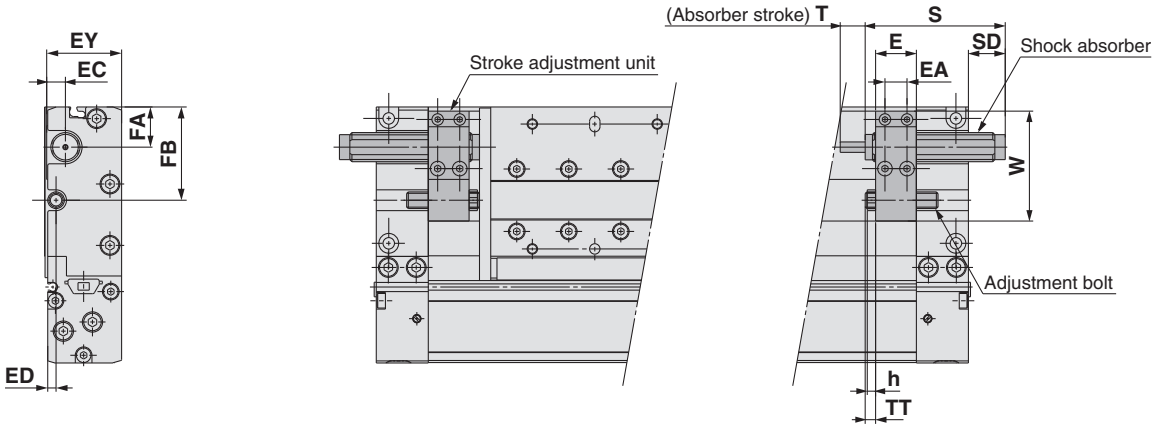
Dimensions (Dimensions other than below are the same as standard type.)

MY2H L unit

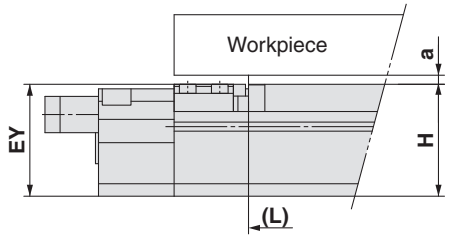


Applicable cylinder	E	EA	EC	ED	EY	FA	FB	h	S	T	SD	TT	W	Shock absorber model	Adjusting bolt	Adjustment range
MY2H16	15.8	8.4	6.2	5	28	12.4	30	3.2	40.8	6	1.3	4.2 (Max. 9.8)	34.5	RB0806	M5 x 0.8 x 25L	5.6
MY2H25	19.6	10.6	10	5.5	37	19.3	44.8	4	46.7	7	—	5 (Max. 16.5)	47.3	RB1007	M8 x 1.0 x 35L	11.5
MY2H40	29	16	13	8	57	17	49	5	67.3	12	—	6 (Max. 22)	59	RB1412	M10 x 1.0 x 50L	16

MY2H H unit



Applicable cylinder	E	EA	EC	ED	EY	FA	FB	h	S	SD	T	TT	W	Shock absorber model	Adjustment bolt	Adjustment range
MY2H16	15.8	8.4	6.2	5	28	12.4	30	3.2	46.7	7.2	7	4.2 (Max. 9.8)	35.5	RB1007	M5 x 0.8 x 25L	5.6
MY2H25	19.6	10.6	10	5.5	37	19.3	44.8	4	67.3	18.2	12	5 (Max. 16.5)	52.8	RB1412	M8 x 1.0 x 35L	11.5
MY2H40	29	16	13	8	57	17	49	5	73.2	—	15	6 (Max. 22)	59	RB2015	M10 x 1.0 x 50L	16



⚠ Caution

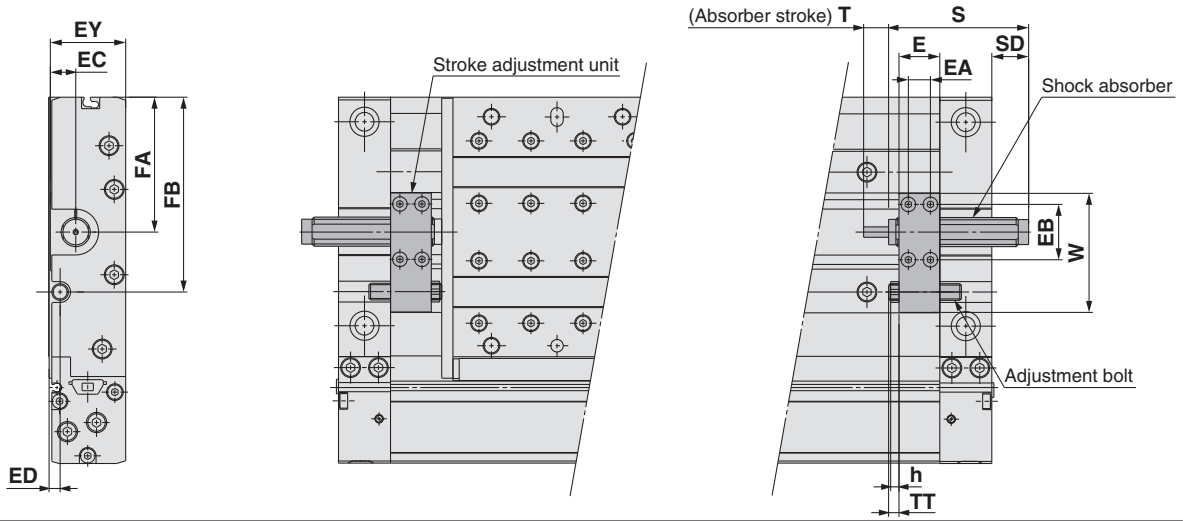
Since the dimension **EY** of the unit is greater than the table top height (dimension **H**), when a workpiece is loaded that is larger than the full length (dimension **L**) of the slide table, allow a clearance of size "**a**" or larger at the workpiece side.

Applicable cylinder	a	EY	H
MY2H16 L/H Unit	1	28	28
MY2H25 L/H Unit	1	37	37
MY2H40 L/H Unit	0	57	58

4 Stroke Adjustment Unit with Adjustment Bolt -XB20

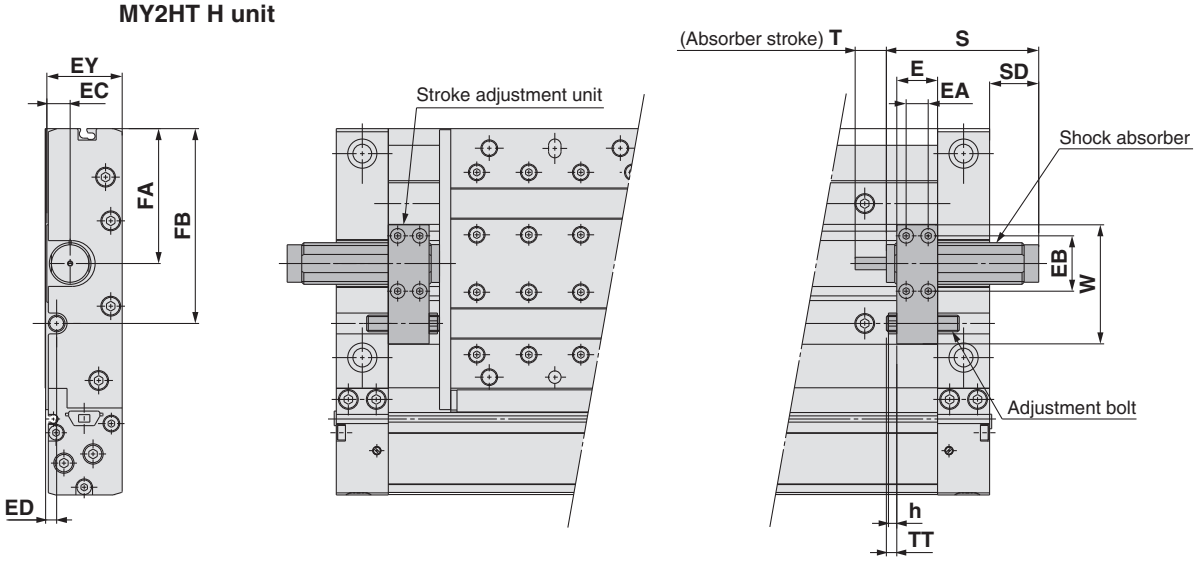
Dimensions (Dimensions other than below are the same as standard type.)

MY2HT L unit

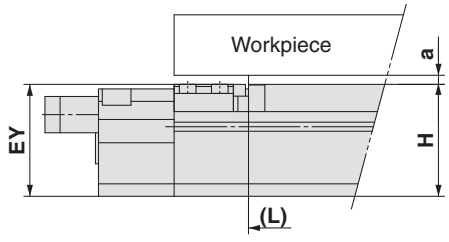


Applicable cylinder	E	EA	EB	EC	ED	EY	FA	FB	h	S	SD	T	TT	W	Shock absorber model	Adjustment bolt	Adjustment range
MY2HT16	15.8	8.4	21	9	5	28	46.5	67	3.2	46.7	7.2	7	4.2 (Max. 9.8)	40.6	RB1007	M5 x 0.8 x 25L	5.6
MY2HT25	19.6	10.6	26.6	12.2	5.5	37	64.8	93.6	4	67.3	18.2	12	5 (Max. 16.5)	57.2	RB1412	M8 x 1.0 x 35L	11.5
MY2HT40	29	16	37	18.2	8	58	74.5	110.5	5	73.2	—	15	6 (Max. 22)	71.6	RB2015	M10 x 1.0 x 50L	16

MY2HT H unit



Applicable cylinder	E	EA	EB	EC	ED	EY	FA	FB	h	S	SD	T	TT	W	Shock absorber model	Adjustment bolt	Adjustment range
MY2HT16	15.8	8.4	21	9	5	28	46.5	67	3.2	67.3	27.8	12	4.2 (Max. 9.8)	40.6	RB1412	M5 x 0.8 x 25L	5.6
MY2HT25	19.6	10.6	26.6	12.2	5.5	37	64.8	93.6	4	73.2	24.1	15	5 (Max. 16.5)	57.2	RB2015	M8 x 1.0 x 35L	11.5
MY2HT40	29	16	37	18.2	8	58	74.5	110.5	5	99	24.5	25	6 (Max .22)	71.6	RB2725	M10 x 1.0 x 50L	16



⚠ Caution

Since the dimension **EY** of the 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.

Applicable cylinder	a	EY	H
MY2HT16 L/H Unit	1	28	28
MY2HT25 L/H Unit	1	37	37
MY2HT40 L/H Unit	1	58	58

4 Stroke Adjustment Unit with Adjustment Bolt -XB20

XB20 (Stroke Adjustment Unit with Adjustment Bolt)

⚠Caution

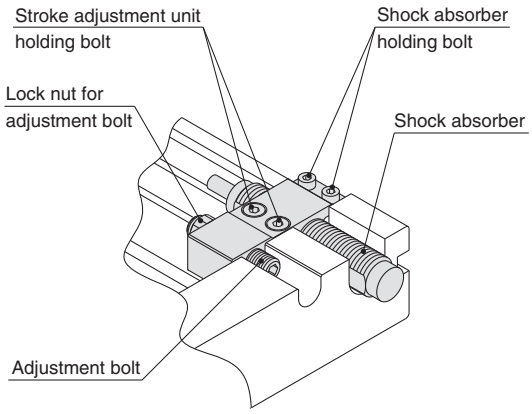
<Stroke adjustment with adjusting bolt>

1. Loosen the lock nut for the adjustment bolt and adjust a stroke by rotating the adjustment bolt.

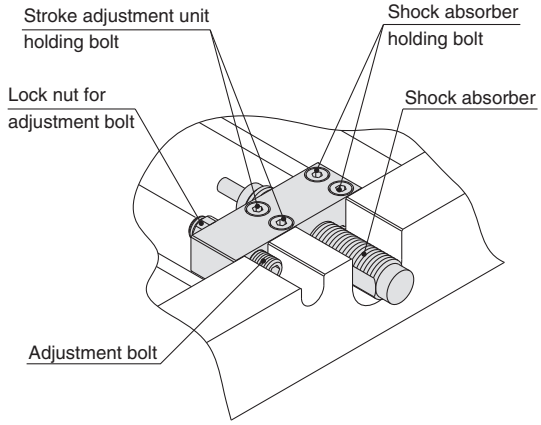
   After adjusting the stroke, secure the adjustment bolt by tightening the lock nut.

   If the effective stroke of the shock absorber is shortened by the stroke adjustment, its absorption capacity will be drastically reduced. Therefore, the adjustment bolt should be secured at a position where it projects about 0.5 mm farther than the shock absorber.

   Tighten shock absorber holding bolts equally with the specified tightening torque.



MY2H(-XB20)



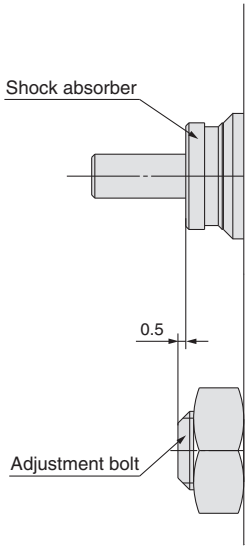
MY2HT(-XB20)

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

Bore size (mm)	MY2H		MY2HT	
	L unit	H unit	L unit	H unit
16	0.6			
25	1.5			
40	5.0			

Tightening Torque for Shock Absorber Holding Bolt (N·m)

Bore size (mm)	MY2H		MY2HT	
	L unit	H unit	L unit	H unit
16	0.6			
25	1.5	0.6	1.5	
40	5.0	1.5	5.0	



2. Do not use the shock absorber and air cushion together.

5 Shock Absorber Soft Type Series RJ Type -XB22

■ The standard cylinder has been equipped with shock absorber soft type Series RJ type to enable soft stopping at the stroke end.
■ Two different shock absorbers are available in accordance with the operating conditions.

Applicable Series

Series	Description	Model	Bearing type	Applicable bore size
MY	Mechanically jointed rodless cylinder	MY1B-Z	Basic type	Ø 25, Ø 32, Ø 40
		MY1H-Z	Single-axis linear guide type	Ø 25, Ø 32, Ø 40
		MY1B	Basic type	Ø 10 to Ø 40 (except Ø 16)
		MY1M	Slide bearing type	Ø 16 to Ø 40
		MY1C	Cam follower type	Ø 16 to Ø 40
		MY1H	Single-axis linear guide type	Ø 10 to Ø 40
		MY1□W	With protective cover	Ø 16 to Ø 40
		MY2C	Cam follower type	Ø 16, Ø 25, Ø 40
		MY2H	Single-axis linear guide type	Ø 16, Ø 25, Ø 40
		MY2HT	Double-axis linear guide type	Ø 16, Ø 25
		MY3B	Basic type	Ø 16 to Ø 50
		MY3M	Slide bearing type	Ø 16, Ø 25, Ø 40
CY	Magnetically coupled rodless cylinder	CY1S	Slide bearing type	Ø 6 to Ø 25
		CY1L	Ball bushing bearing type	Ø 6 to Ø 25
		CY1H	Single-axis linear guide type	Ø 10 to Ø 25
		CY1HT	Double-axis linear guide type	Ø 25
MGP	Compact guide cylinder	MGP	Slide bearing type, Ball bushing bearing type	Ø 12 to Ø 40
MGG	Guide cylinder	MGG	Slide bearing type, Ball bushing bearing type	Ø 20 to Ø 32
CX2	Slide unit	CX2N	Slide bearing type	Ø 10, Ø 15, Ø 25
CXT	Platform cylinder	CXT	Slide bearing type, Ball bushing bearing type	Ø 12 to Ø 25

How to Order

Standard model no. – XB22

● Shock absorber soft type Series RJ type

How to Order a Stroke Adjustment Unit for MY Itself

Stroke adjustment unit model – XB22

Specifications

Performance, absorbed energy	Refer to the table below and the maximum impact weight graph.
Dimensions	Shock absorber overall length: 0 to -1.4 mm shorter than the standard type
Specifications other than above	Same as standard type

Model		Short stroke type	RJ/H type		
		RJ0805	**RJ0806H**	**RJ1007H**	**RJ1412H**
Max. energy absorption (J) Note)		0.5	1	3	10
O.D. thread size (mm)		8	8	10	14
Stroke (mm)		5	6	7	12
Collision speed (m/s)		0.05 to 1	0.05 to 2		
Max. operating frequency (cycle/min) Note)		80	80	70	45
Spring force (N)	**Extended**	2.8	2.8	5.4	6.4
	Retracted	4.9	5.4	8.4	17.4
Max. allowable thrust (N)		245	245	422	814
Ambient temperature (°C)		-10 to 60 °C (No freezing)			
Weight (g)	**Basic**	15	15	23	65

Note) At ordinary temperature (20 to 25 °C)

∗ The shock absorber service life is different from that of each cylinder. Refer to the "Specific Product Precautions" of Series RJ for the replacement period.

6 With Knock Pin Holes -XC56

Cylinder with knock positioning pin hole.

How to Order

Standard model no. **−XC56**

With knock pin holes

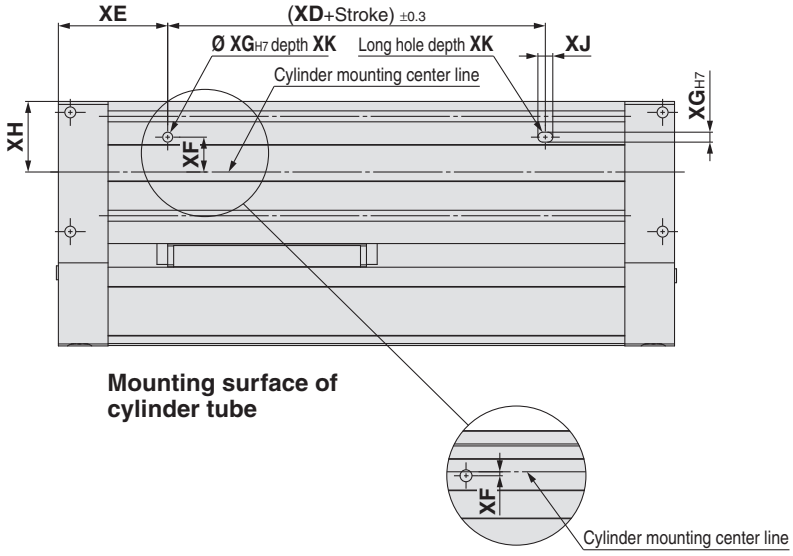
Specifications: Same as standard type.

Dimensions (Dimensions other than below are the same as standard type.)

MY2H series
Ø 16, Ø 25, Ø 40

MY2HT series
Ø 16, Ø 25, Ø 40

∗ The workpiece mounting surface of the slide table supports knock pin holes as standard.



MY2HT16, 25

MY2H series [mm]

Bore size [mm]	XD	XE	XF	XG	XH	XJ	XK
16	80	40	11.5	4	23.5	6	5
25	100	55	17.5	5	35.5	7.5	5
40	170	80	25.5	6	45.5	9	8

MY2HT series [mm]

Bore size [mm]	XD	XE	XF	XG	XH	XJ	XK
16	80	40	3.5	5	43	7.5	5
25	100	55	2	6	61	9	8
40	170	80	3	8	75	12	12

MY2 Series
Specific Product Precautions 1

Be sure to read this before handling the products.

Selection

⚠Caution

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 (MY2C series) on page 20.

2. 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 travelling parallelism. When accuracy in travelling parallelism and a middle position of stroke is required, please consult with SMC.

Mounting

⚠Caution

1. Do not apply a strong impact or moment on the slide table (slider).

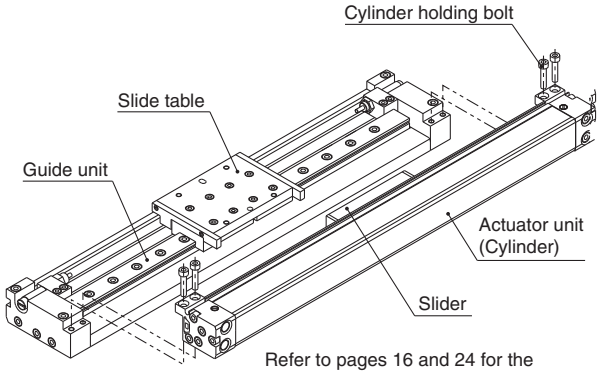
Since the slide table (slider) is supported by precision bearings, do not subject it to strong impact or excessive moment when mounting workpieces.

2. When connecting to a load which has an external guide mechanism, use another absorption mechanism.

A mechanically jointed rodless cylinder can be used with a direct load within the allowable range for each guide type, however, align carefully when connecting to a load with an external guide mechanism.

3. Attaching and detaching the actuator unit (cylinder)

When detaching the actuator unit, remove the four cylinder holding bolts and take the actuator unit off the guide unit. When attaching the actuator unit, insert the slider into the slide table on the guide unit, and tighten the four holding bolts equally. Since loosened holding bolts may cause damage or malfunction, be sure to secure them tightly.



Refer to pages 16 and 24 for the actuator unit (cylinder) replacement part numbers.

Mounting

⚠Caution

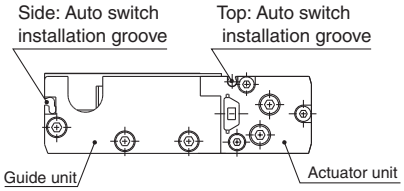
4. Auto Switch Mounting

The MY2 series can be equipped with auto switches on the top of the actuator unit (cylinder) and on the side of the guide unit, but use caution in the following cases.

<Mounting an auto switch on the top of the actuator unit (cylinder)>

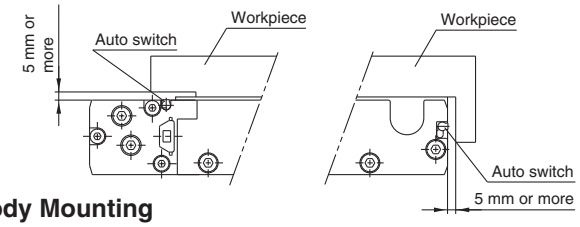
For auto switches with perpendicular electrical entry, the lead wire may interfere with the workpiece depending on the workpiece mounting type and shape.

Be sure to allow a clearance in order to keep the lead wire from interfering with the workpiece.



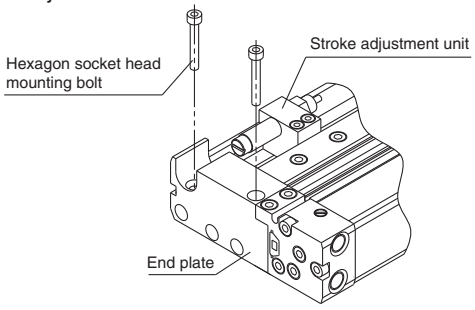
5. Workpiece Mounting

When mounting a magnetic workpiece, the auto switch may stop working due to a loss of magnetic force in the cylinder depending on the mounting position. Allow a clearance of 5 mm or more between the auto switch and workpiece.



6. Body Mounting

When mounting MY2H40G with stroke adjustment unit from the top, move the stroke adjustment unit and secure the body with the end plate mounting holes. After mounting, return the stroke adjustment unit to the stroke end and secure it again.



7. Do not generate negative pressure in the cylinder tube.

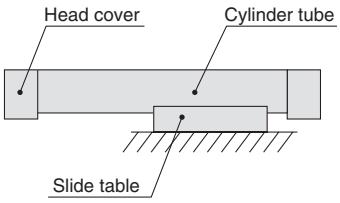
Take precautions under operating conditions in which negative pressure is generated inside the cylinder by external forces or inertial forces. Air leakage may occur due to separation of the seal belt. Do not generate negative pressure in the cylinder by forcibly moving it with an external force during the trial operation or dropping it with self-weight under the non-pressure state, etc. When the negative pressure is generated, slowly move the cylinder by hand and move the stroke back and forth. (When using with a stroke adjustment unit, please either remove the unit or adjust the stroke to the full stroke.) After doing so, if air leakage still occurs, please consult with SMC.

8. 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.

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

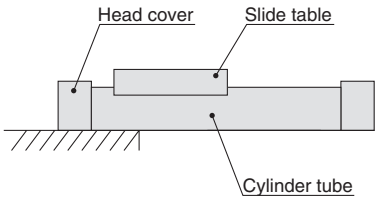
It may cause damage or malfunctions since an excessive load is applied to the bearing.



Mounting with a slide table (slider)

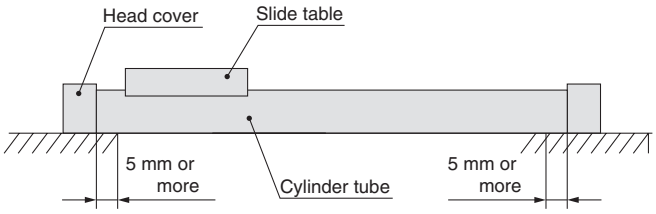
10. Consult with SMC when mounting in a cantilevered way.

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



Mounting in a cantilevered way

11. 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.



12. 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

13. 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.

MY2 Series
Specific Product Precautions 3
Be sure to read this before handling the products.

Operating Environment

⚠ Warning

1. Do not use in environments where the cylinder will come in contact with coolants, cutting oil, water drops, adhesive foreign particles, dust, etc., and do not operate the cylinder with compressed air that contains drainage and foreign matter.

Foreign matter or liquids on the cylinder interior or exterior can wash away the lubricating grease, which can lead to deterioration and damage of the dust seal band and seal materials, causing a danger of malfunction.

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

2. 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 with SMC for the cleaning of the slide table (slider) interior and grease application.

Service Life and Replacement Period of Shock Absorber

⚠ Caution

1. Allowable operating cycle under the specifications set in this catalogue is shown below.

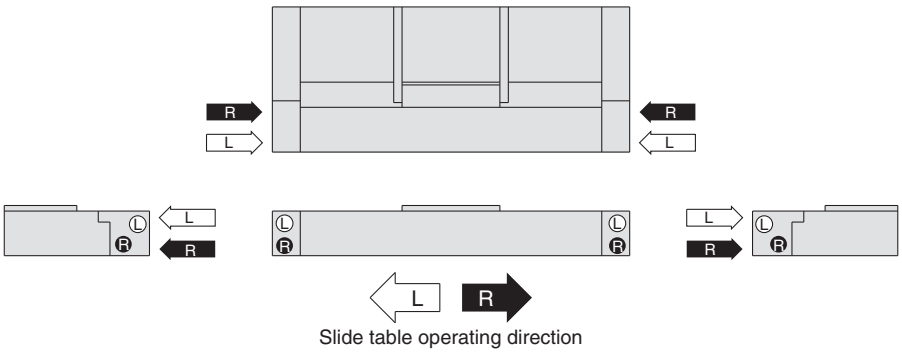
1.2 million times RB08□□
2 million times RB10□□ to RB2725

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.

Centralised Piping Port Variations

⚠ Caution

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

Applicable cylinder	Port variation
MY2C16/25/40 **MY2H16/25/40** **MY2HT16/25/40**	 Slide table operating direction

⚠ Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution," "Warning"** or **"Danger."** They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC) [1], and other safety regulations.

⚠ **Caution:**	**Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
⚠ **Warning:**	**Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
⚠ **Danger:**	**Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots - Safety.
etc.

⚠ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.
Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.
The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.
1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

⚠ Caution

1. The product is provided for use in manufacturing industries.
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first. [2] Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

2) Vacuum pads are excluded from this 1 year warranty.
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

⚠ Caution

SMC products are not intended for use as instruments for legal metrology.
Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country.
Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

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