

Mechanically Jointed Rodless Cylinder **New**

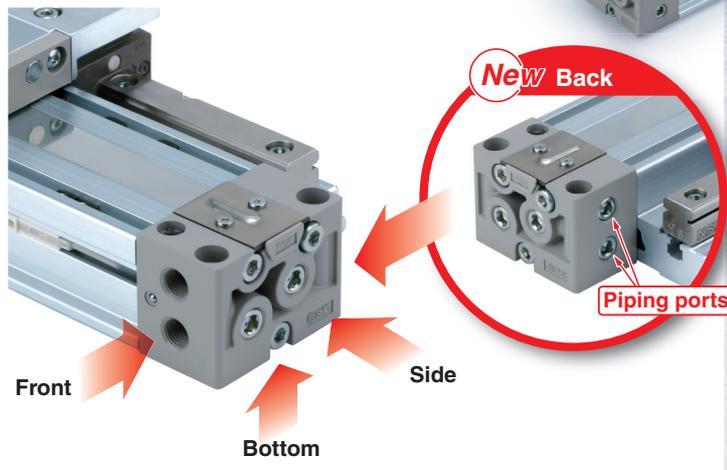
Linear Guide Type: $\varnothing 25$, $\varnothing 32$, $\varnothing 40$

RoHS

- Piping can be connected from 4 directions on the head cover.
- Allows on-site piping to suit the installation conditions.



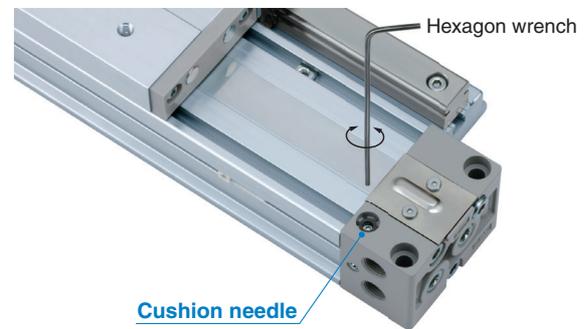
Piping from 3 directions to 4 directions



New

Easy adjustment of cushion needle

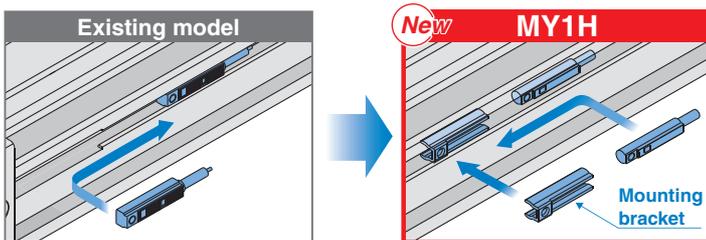
Adjustment is easier by changing the cushion needle adjustment from side to top.



New

Auto switch can be mounted in any desired position. (D-M9□, D-A9□)

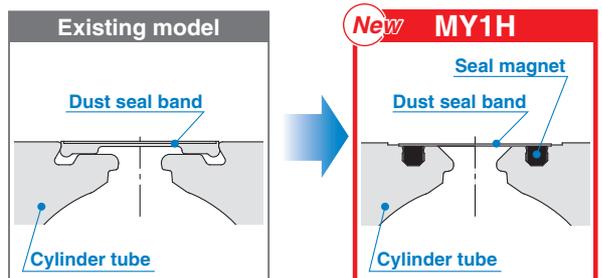
- The auto switch can be fixed in any desired position with a mounting bracket.
- This reduces man-hours for mounting.



Insert it at the notch and slide it along the mounting groove.

New dust seal band improves life.

- The conventional groove mounting is changed to a magnetically sealed type.
- This means the dust seal band is always in contact with the cylinder, which reduces ingress of foreign matter, improving the life of the cylinder.



Series MY1H



CAT.EUS20-221A-UK

Series MY1H

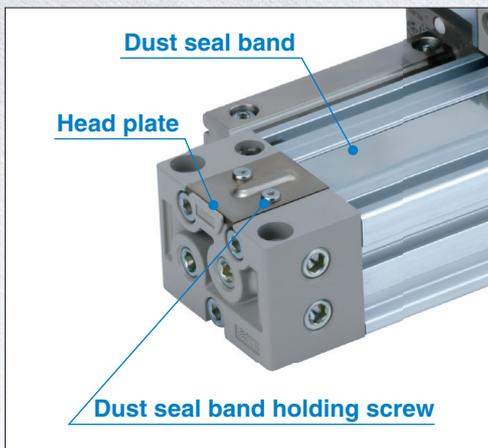
The mounting and performance are the same as before, but the weight is reduced.

- Weight is reduced by the die cast head cover and removal of guide cover.

Bore size [mm]	New MY1H	Reduction rate	Existing model
25	2.17 kg	6%	2.31 kg
32	4.37 kg	6%	4.65 kg
40	5.84 kg	8%	6.37 kg

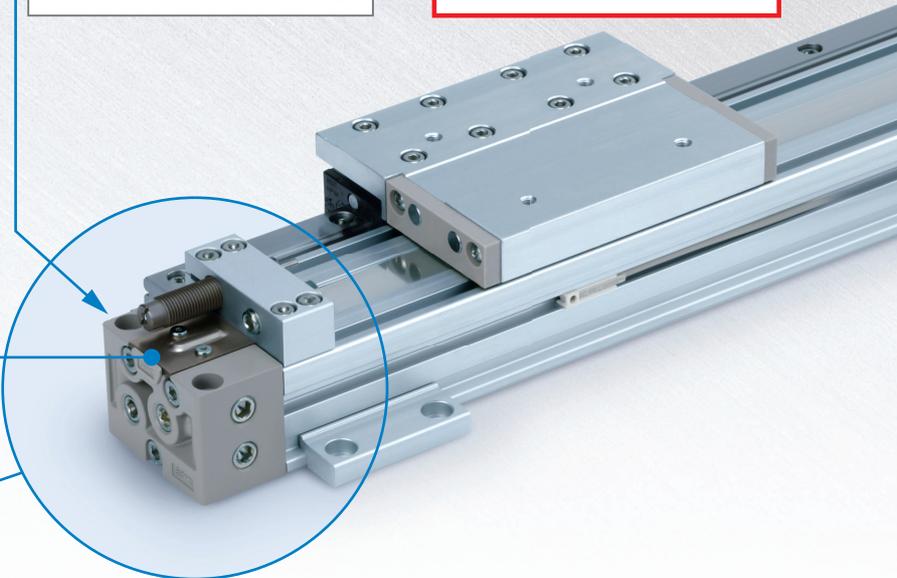
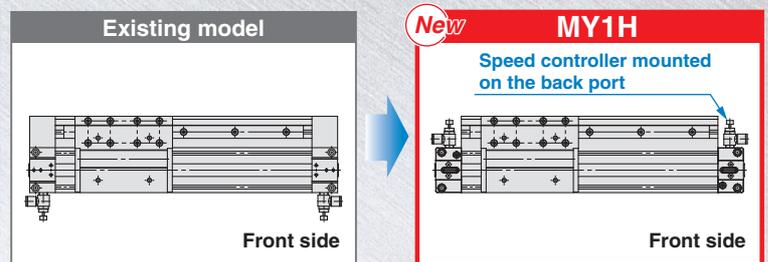
Maintenance of dust seal band improved

- No need to select the dust seal band from two types.
- The dust seal band can be removed by loosening two holding screws (on one side).



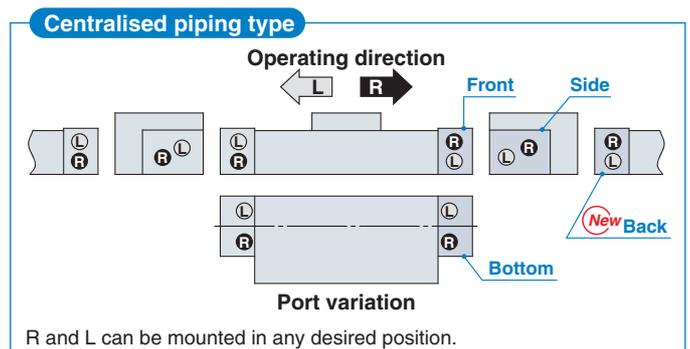
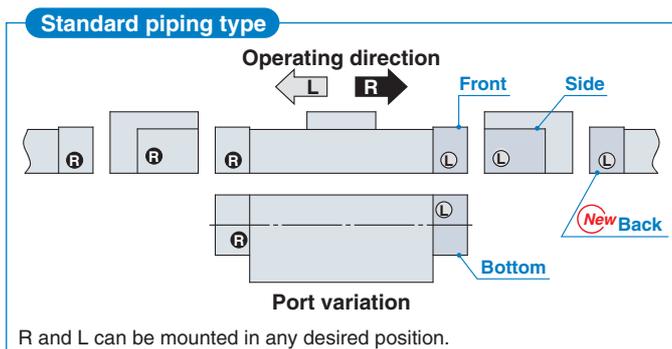
Space saving achieved by piping on the back

When a speed controller is mounted, the cylinder installation area can be reduced significantly.



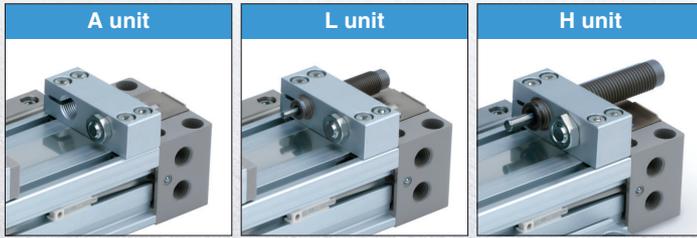
Improvement of port variations

With addition of the back port, piping can be connected to suit the installation conditions.



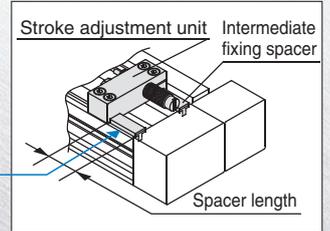
Stroke Adjustment Unit

- With adjustment bolt
- With low/high load shock absorber + adjustment bolt (L/H unit)



Intermediate fixing spacer as standard

Fixture can be selected to hold the stroke adjustment unit at the intermediate stroke position.



Improved shock-less characteristics when a workpiece is stopped

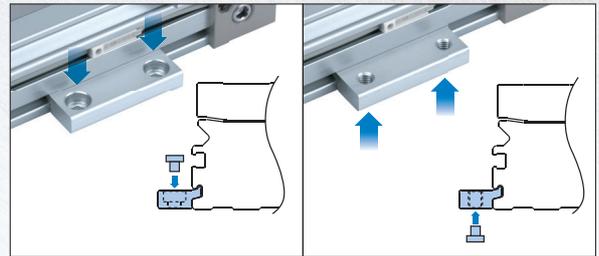
Soft type of shock absorber can be selected for the stroke adjustment unit. (Made to Order: -XB22)

The cross section of the liquid passage is changed in proportion to the stroke by a unique mechanism. This allows a smooth absorption process.



Side Support

Prevents deflection of the cylinder tube at a long stroke.



Improvement of positioning accuracy

Uses a linear guide to achieve high repeatability.

MY1 Series Variations

Series	Bore size [mm]										Page
	10	16	20	25	32	40	50	63	80	100	
MY1B				●	●	●					Digital Catalogue Digital catalogue www.smc.eu
MY1B	●	●	●				●	●	●	●	
MY1M		●	●	●	●	●	●	●			
MY1C		●	●	●	●	●	●	●			Page 1 of this catalogue
New MY1H				●	●	●					
MY1H End lock				●	●	●					
MY1H	●	●	●								Digital Catalogue Digital catalogue www.smc.eu
MY1H End lock		●	●								
MY1HT							●	●			
MY1□W		●	●	●	●	●	●	●			

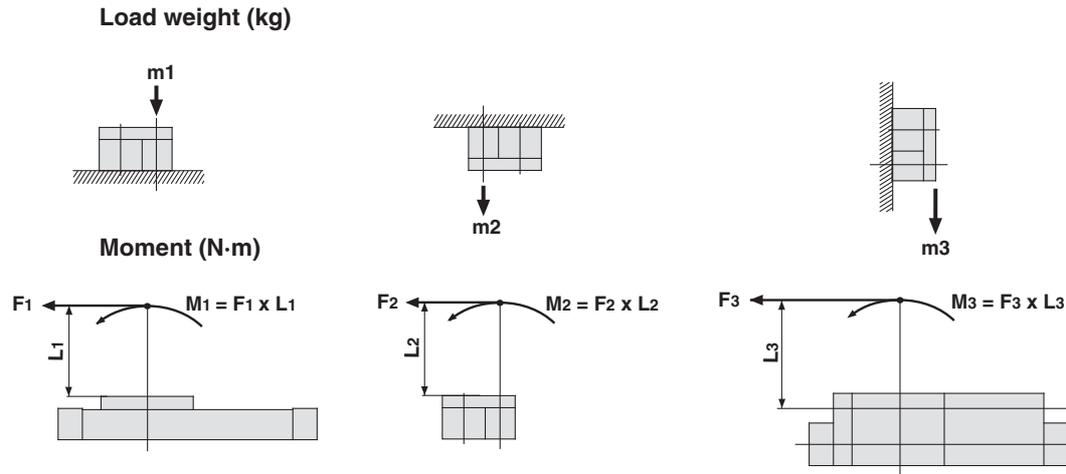
Series MY1H

Prior to Use

Maximum Allowable Moment/Maximum Load Weight

Model	Bore size [mm]	Maximum allowable moment [N·m]			Maximum load weight [kg]		
		M ₁	M ₂	M ₃	m ₁	m ₂	m ₃
MY1H	25	23	26	23	27.5	27.5	27.5
	32	39	50	39	39.2	39.2	39.2
	40	50	50	39	50	50	50

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



Calculation of Guide Load Factor

1) Maximum load weight (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 \bar{v} (average speed) for (1) and (2), and v (collision speed $v = 1.4\bar{v}$) for (3). Calculate m max for (1) from the maximum load weight graph (m_1, m_2, m_3) and M max for (2) and (3) from the maximum allowable moment graph (M_1, M_2, M_3).

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

Note 1) Moment caused by the load, etc., with cylinder in resting condition

Note 2) Moment caused by the load equivalent to impact at the stroke end (at the time of impact with stopper)

Note 3) Depending on the shape of a workpiece, multiple moments may occur. When this happens, the sum of the load factors ($\Sigma\alpha$) is the total of all such moments.

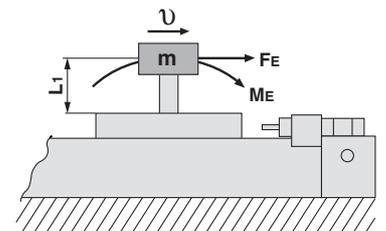
2) Reference formula [Dynamic moment at the time of impact]

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

- m** : Load weight [kg]
- F** : Load [N]
- F_E** : Load equivalent to impact (at the time of impact with stopper) [N]
- \bar{v}** : Average speed [mm/s]
- M** : Static moment [N·m]
- v** : Collision speed [mm/s]
- L₁** : Distance to the load center of gravity [m]
- ME** : Dynamic moment [N·m]
- δ** : Bumper coefficient
With air cushion = 1/100
With shock absorber = 1/100
- g** : Gravitational acceleration (9.8 m/s²)

$$v = 1.4\bar{v} \quad \text{Note 4)} \quad F_E = 1.4\bar{v} \cdot \delta \cdot m \cdot g$$

$$\therefore ME = \frac{1}{3} \cdot F_E \cdot L_1 = 4.57\bar{v} \delta m L_1 \quad \text{Note 5)}$$



Note 4) $1.4\bar{v}\delta$ is a dimensionless coefficient for calculating impact force.

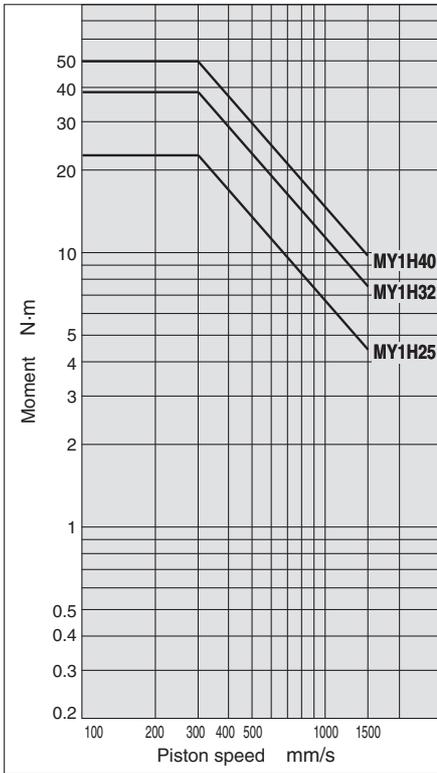
Note 5) Average load coefficient ($= \frac{1}{3}$): For averaging the maximum load moment at the time of impact with stopper according to service life calculations.

3) For detailed selection procedures, refer to Front matter 3 and 4.

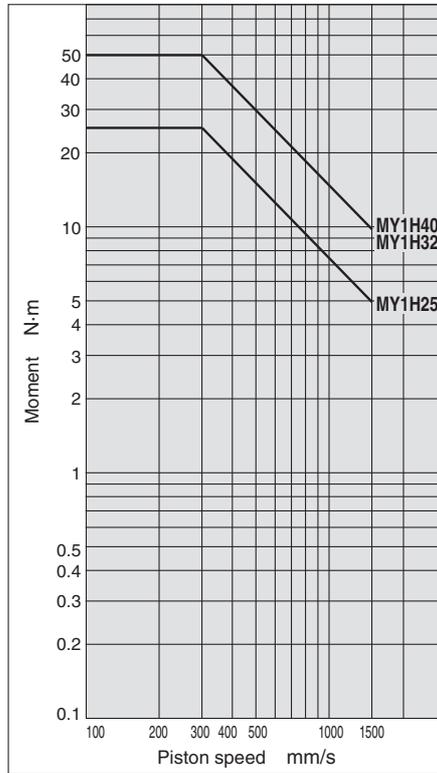
Maximum Allowable Moment

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

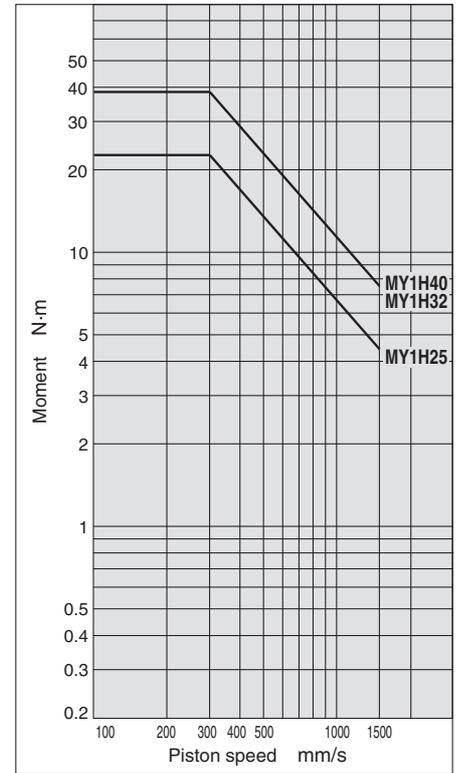
MY1H/M₁



MY1H/M₂



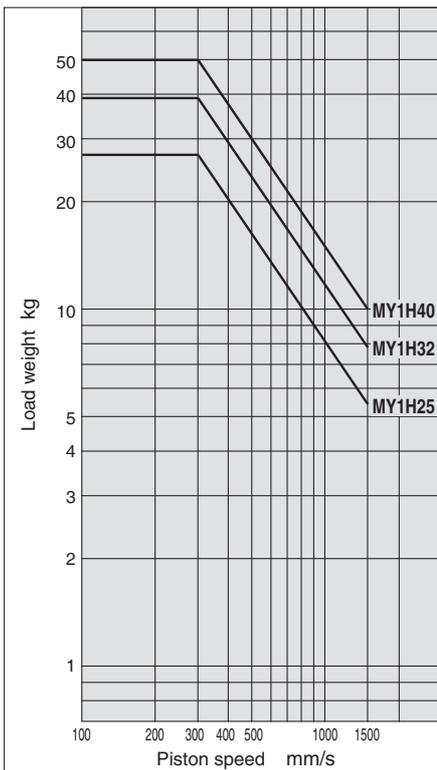
MY1H/M₃



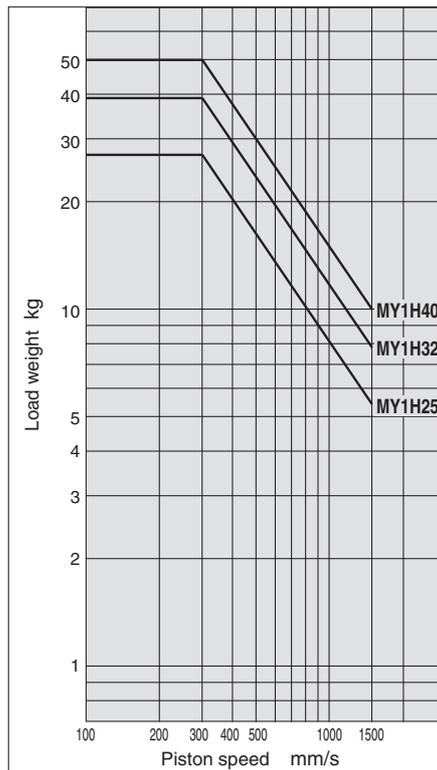
Maximum Load Weight

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

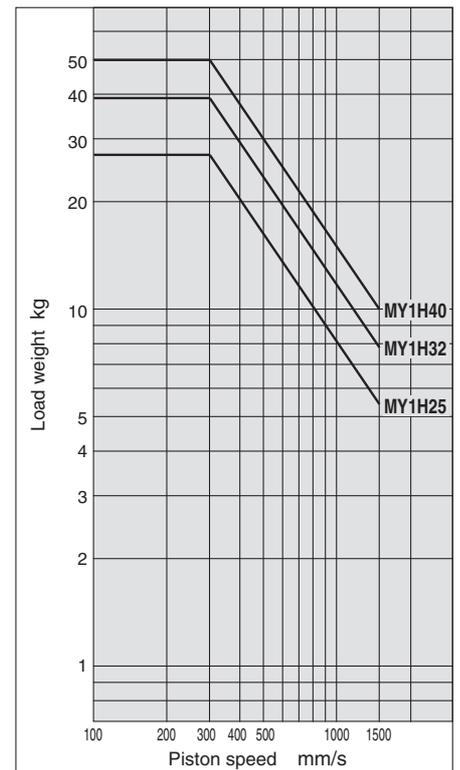
MY1H/m₁



MY1H/m₂



MY1H/m₃



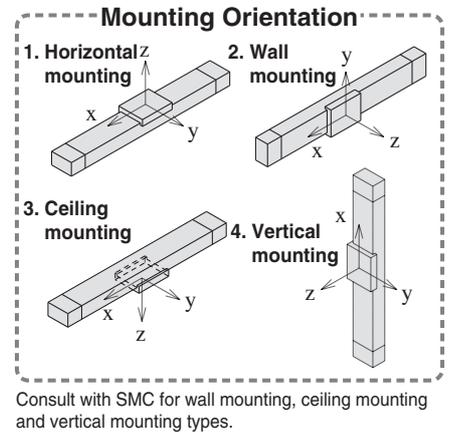
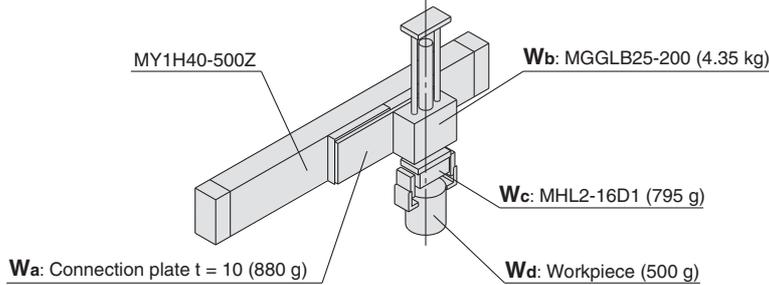
Series MY1H Model Selection

The following is the steps for selecting the most suitable MY1H series to your application.

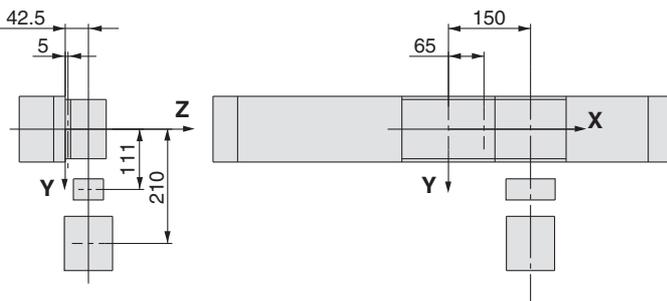
Calculation of Guide Load Factor

1. Operating Conditions

Cylinder MY1H40-500Z
 Average operating speed v_a ... 300 mm/s
 Mounting orientation Wall mounting
 Cushion Air cushion ($\delta = 1/100$)



2. Load Blocking



Weight and Centre of Gravity for Each Workpiece

Workpiece W_n	Weight m_n	Centre of gravity		
		X-axis X_n	Y-axis Y_n	Z-axis Z_n
Wa	0.88 kg	65 mm	0 mm	5 mm
Wb	4.35 kg	150 mm	0 mm	42.5 mm
Wc	0.795 kg	150 mm	111 mm	42.5 mm
Wd	0.5 kg	150 mm	210 mm	42.5 mm

$n = a, b, c, d$

3. Calculation of Composite Centre of Gravity

$$m_3 = \sum m_n = 0.88 + 4.35 + 0.795 + 0.5 = 6.525 \text{ kg}$$

$$X = \frac{1}{m_3} \times \sum (m_n \times X_n) = \frac{1}{6.525} (0.88 \times 65 + 4.35 \times 150 + 0.795 \times 150 + 0.5 \times 150) = 138.5 \text{ mm}$$

$$Y = \frac{1}{m_3} \times \sum (m_n \times Y_n) = \frac{1}{6.525} (0.88 \times 0 + 4.35 \times 0 + 0.795 \times 111 + 0.5 \times 210) = 29.6 \text{ mm}$$

$$Z = \frac{1}{m_3} \times \sum (m_n \times Z_n) = \frac{1}{6.525} (0.88 \times 5 + 4.35 \times 42.5 + 0.795 \times 42.5 + 0.5 \times 42.5) = 37.4 \text{ mm}$$

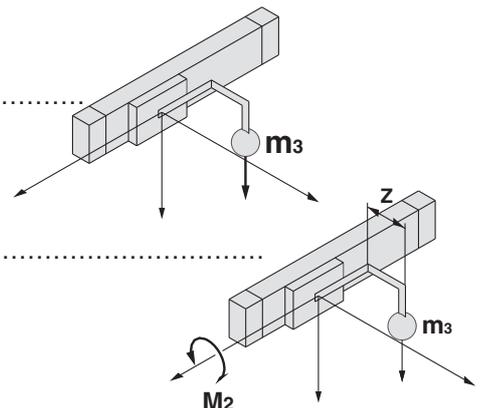
4. Calculation of Load Factor for Static Load

m_3 : Weight

$m_3 \text{ max}$ (from ① of graph MY1H/ m_3) = 50 [kg].....
 Load factor $\alpha_1 = m_3 / m_3 \text{ max} = 6.525 / 50 = 0.13$

M_2 : Moment

$M_2 \text{ max}$ (from ② of graph MY1H/ M_2) = 50 [N·m].....
 $M_2 = m_3 \times g \times Z = 6.525 \times 9.8 \times 37.4 \times 10^{-3} = 2.39 \text{ [N·m]}$
 Load factor $\alpha_2 = M_2 / M_2 \text{ max} = 2.39 / 50 = 0.05$

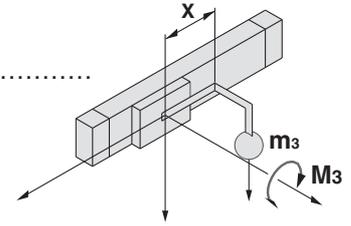


M₃: Moment

M₃ max (from ③ of graph MY1H/M₃) = 38.7 [N·m].....

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

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



5. Calculation of Load Factor for Dynamic Moment

Equivalent load F_E at impact

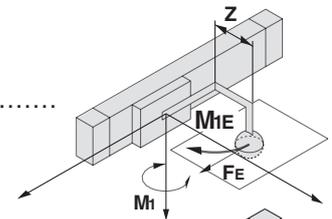
$$F_E = 1.4 \nu a \times \delta \times m \times g = 1.4 \times 300 \times \frac{1}{100} \times 6.525 \times 9.8 = 268.6 \text{ [N]}$$

M_{1E}: Moment

M_{1E} max (from ④ of graph MY1H/M₁ where 1.4νa = 420 mm/s) = 35.9 [N·m].....

$$M_{1E} = \frac{1}{3} \times F_E \times Z = \frac{1}{3} \times 268.6 \times 37.4 \times 10^{-3} = 3.35 \text{ [N·m]}$$

$$\text{Load factor } \alpha_4 = M_{1E} / M_{1E} \text{ max} = 3.35 / 35.9 = 0.09$$

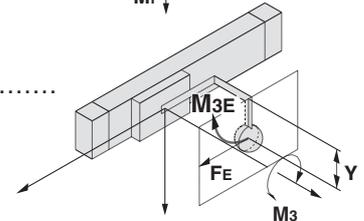


M_{3E}: Moment

M_{3E} max (from ⑤ of graph MY1H/M₃ where 1.4νa = 420 mm/s) = 27.6 [N·m].....

$$M_{3E} = \frac{1}{3} \times F_E \times Y = \frac{1}{3} \times 268.6 \times 29.6 \times 10^{-3} = 2.65 \text{ [N·m]}$$

$$\text{Load factor } \alpha_5 = M_{3E} / M_{3E} \text{ max} = 2.65 / 27.6 = 0.10$$



6. Sum and Examination of Guide Load Factors

$$\Sigma \alpha = \alpha_1 + \alpha_2 + \alpha_3 + \alpha_4 + \alpha_5 = 0.60 \leq 1$$

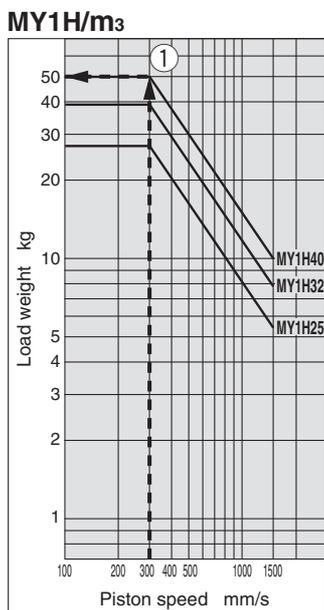
The above calculation is within the allowable value, and therefore the selected model can be used.

Select a shock absorber separately.

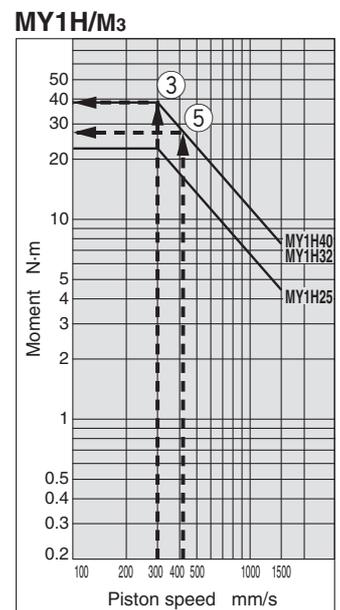
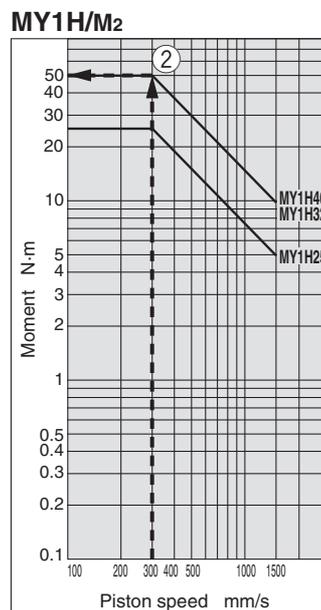
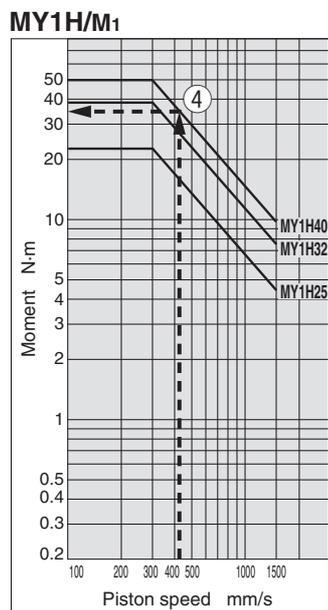
In an actual calculation, when the total sum of guide load factors Σα in the formula above is over 1, consider either decreasing the speed, increasing the bore size, or changing the product series.

This calculation can be easily made using the "Guide Cylinder Selection Software", download it from <http://www.smc.eu>.

Load Weight



Allowable Moment



Mechanically Jointed Rodless Cylinder Linear Guide Type

Series MY1H ø25, ø32, ø40



How to Order

Linear guide type **MY1H25** **300** **Z-M9BW**

Linear guide type

Bore size

25	25 mm
32	32 mm
40	40 mm

Port thread type

Symbol	Type	Bore size
—	Rc	
TN	NPT	ø25, ø32, ø40
TF	G	

Piping

—	Standard type
G	Centralised piping type

Cylinder stroke [mm]

Bore size [mm]	Standard stroke [mm]*	Maximum manufacturable stroke [mm]
25, 32, 40	50, 100, 150, 200, 250, 300 350, 400, 450, 500, 550, 600	1500

* Strokes are manufacturable in 1 mm increments, up to the maximum stroke. However, add "-XB10" to the end of the part number for non-standard strokes from 51 to 599. Also when exceeding a 600 mm stroke, specify "-XB11" at the end of the part number.

Made to Order
Refer to page 2 for details.

Number of auto switches

—	2 pcs.
S	1 pc.
n	"n" pcs.

Auto switch

—	Without auto switch (Built-in magnet)
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* Refer to the table below for the applicable auto switch model.

End lock position

—	Without end lock
E	Right end
F	Left end
W	Both ends

* For end lock positions, refer to page 13.

Stroke adjustment unit symbol

For stroke adjustment unit, refer to page 2. Intermediate fixing spacer is not available for end lock mounting side.

Applicable Auto Switches/Refer to auto switch guide for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length [m]					Pre-wired connector	Applicable load		
					DC	AC	Perpendicular	In-line	0.5 (—)	1 (M)	3 (L)	5 (Z)	None (N)		IC circuit	Relay, PLC	
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				M9BV	M9B	●	●	●	○	○			
	3-wire (NPN)			M9NV				M9NW	●	●	●	○	○				
	3-wire (PNP)			M9PV				M9PW	●	●	●	○	○				
	2-wire			M9BV				M9BW	●	●	●	○	○				
	Diagnostic indication (2-colour indication)	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NAV**	M9NA**	○	○	●	○	—	○	IC circuit	Relay, PLC
				3-wire (PNP)				M9PAV**	M9PA**	○	○	●	○	—			
				2-wire				M9BAV**	M9BA**	○	○	●	○	—			
Water resistant (2-colour indication)	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NAV**	M9NA**	○	○	●	○	—	○	IC circuit	Relay, PLC	
			3-wire (PNP)				M9PAV**	M9PA**	○	○	●	○	—				
			2-wire				M9BAV**	M9BA**	○	○	●	○	—				
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	24 V	12 V	100 V or less	A96V	A96	●	—	●	—	—	IC circuit	—	
				2-wire				A93V	A93	●	—	●	●	—	—	—	Relay, PLC
Reed auto switch	—	Grommet	No	3-wire (NPN equivalent)	24 V	12 V	100 V or less	A90V	A90	●	—	●	—	—	IC circuit	—	
				2-wire				A93V	A93	●	—	●	●	—	—	—	Relay, PLC

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

* Lead wire length symbols: 0.5 m — (Example) M9NW * Solid state auto switches marked with "○" are produced upon receipt of order.
1 m M (Example) M9NWM * Mounting bracket (BMY3-016) is separately required to retrofit the above auto switches.
3 m L (Example) M9NWL
5 m Z (Example) M9NWZ

* There are other applicable auto switches other than listed above. For details, refer to page 15.
* For details about auto switches with pre-wired connector, refer to auto switch guide.
* Auto switches are shipped together, (but not assembled). (For details about auto switch mounting, refer to page 15.)

Mechanically Jointed Rodless Cylinder Linear Guide Type **Series MY1H**



Specifications

Bore size [mm]		25	32	40
Fluid		Air		
Action		Double acting		
Operating pressure range		0.1 to 0.8 MPa		
Proof pressure		1.2 MPa		
Ambient and fluid temperature		5 to 60°C		
Cushion		Air cushion		
Lubrication		Non-lube		
Stroke length tolerance		+1.8 0		
Piping port size	Front/Side/Back port	Rc1/8		Rc1/4
	Bottom port	Rc1/16	Rc1/16	Rc1/8

Lock Specifications

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



Made to Order
(For details, refer to pages 17 and 18.)

Symbol	Specifications
-XB10	Intermediate stroke (Using exclusive body)
-XB11	Long stroke
-XB22	Shock absorber/soft type RJ series mounted
-XC56	With knock pin holes
-X168	Helical insert thread

Piston Speed

Bore size [mm]		25 to 40
Without stroke adjustment unit		100 to 1000 mm/s
Stroke adjustment unit	A unit	100 to 1000 mm/s ^{Note 1)}
	L unit and H unit	100 to 1500 mm/s ^{Note 2)}

Note 1) Be aware that when the stroke adjustment range is increased with the adjustment bolt, the air cushion capacity decreases. Also, when exceeding the air cushion stroke ranges on page 4, **the piston speed should be 100 to 200 mm/s.**

Note 2) The piston speed is 100 to 1000 mm/s for centralised piping.

Note 3) Use at a speed within the absorption capacity range. Refer to page 4.

Stroke adjustment Unit Specifications

Bore size [mm]		25			32			40		
Unit symbol		A	L	H	A	L	H	A	L	H
Configuration		With adjustment bolt	RB1007 + with adjustment bolt	RB1412 + with adjustment bolt	With adjustment bolt	RB1412 + with adjustment bolt	RB2015 + with adjustment bolt	With adjustment bolt	RB1412 + with adjustment bolt	RB2015 + with adjustment bolt
Stroke adjustment range by intermediate fixing spacer [mm]	Without spacer	0 to -11.5			0 to -12			0 to -16		
	With short spacer	-11.5 to -23			-12 to -24			-16 to -32		
	With long spacer	-23 to -34.5			-24 to -36			-32 to -48		

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

Stroke Adjustment Unit Symbol

		Right side stroke adjustment unit										
		Without unit	A: With adjustment bolt		L: With low load shock absorber + adjustment bolt			H: With high load shock absorber + adjustment bolt				
Left side stroke adjustment unit	Without unit	—	SA	SA6	SA7	SL	SL6	SL7	SH	SH6	SH7	
	A: With adjustment bolt	AS	A	AA6	AA7	AL	AL6	AL7	AH	AH6	AH7	
		With short spacer	A6S	A6A	A6	A6A7	A6L	A6L6	A6L7	A6H	A6H6	A6H7
		With long spacer	A7S	A7A	A7A6	A7	A7L	A7L6	A7L7	A7H	A7H6	A7H7
	L: With low load shock absorber + adjustment bolt	LS	LA	LA6	LA7	L	LL6	LL7	LH	LH6	LH7	
		With short spacer	L6S	L6A	L6A6	L6A7	L6L	L6	L6L7	L6H	L6H6	L6H7
		With long spacer	L7S	L7A	L7A6	L7A7	L7L	L7L6	L7	L7H	L7H6	L7H7
	H: With high load shock absorber + adjustment bolt	HS	HA	HA6	HA7	HL	HL6	HL7	H	HH6	HH7	
		With short spacer	H6S	H6A	H6A6	H6A7	H6L	H6L6	H6L7	H6H	H6	H6H7
		With long spacer	H7S	H7A	H7A6	H7A7	H7L	H7L6	H7L7	H7H	H7H6	H7

* Intermediate fixing spacer is not available for end lock mounting side.

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

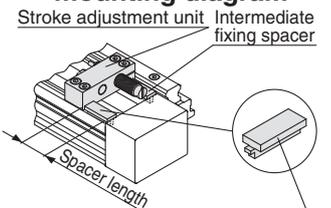
Shock Absorber Model for L and H Units

Type	Stroke adjustment unit	Bore size [mm]		
		25	32	40
Standard (Shock absorber/RB series)	L	RB1007	RB1412	
	H	RB1412	RB2015	
Shock absorber/soft type RJ series mounted (-XB22)	L	RJ1007H	RJ1412H	
	H	RJ1412H	—	—

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

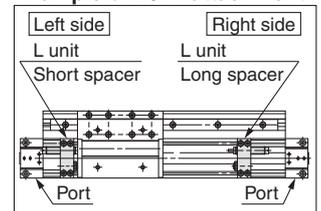
* Shock absorber/soft type RJ series mounted (-XB22) is made to order. For details, refer to page 17.

Stroke adjustment unit mounting diagram



Place the protruding section on the stroke adjustment unit side.

Example of L6L7 attachment



Shock Absorber Specifications

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

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

Series MY1H

Theoretical Output

Unit: 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
25	490	98	147	196	245	294	343	392
32	804	161	241	322	402	483	563	643
40	1256	251	377	502	628	754	879	1005

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

Weight

Unit: kg

Bore size [mm]	Basic weight	Additional weight per each 50 mm of stroke	Side support bracket weight (per set)	Stroke adjustment unit weight (per unit)		
			A/B type weight	A unit weight	L unit weight	H unit weight
25	2.17	0.30	0.02	0.04	0.07	0.11
32	4.37	0.46	0.04	0.08	0.14	0.23
40	5.84	0.55	0.08	0.12	0.19	0.28

Calculation: (Example) MY1H25-300AZ

Basic weight 2.17 kg
 Cylinder stroke 300 mm stroke
 Additional weight 0.30 kg/50 mm stroke
 A unit weight 0.04 kg

 2.17 + 0.30 x 300 ÷ 50 + 0.04 x 2 ≈ 4.05 kg

Options

Stroke Adjustment Unit/Part No.

MYH-A 25 L2-6N

Stroke adjustment unit

Bore size

25	25 mm
32	32 mm
40	40 mm

Unit type

Symbol	Stroke adjustment unit	Mounting position
A1	A unit	Left
A2		Right
L1	L unit	Left
L2		Right
H1	H unit	Left
H2		Right

Note) For details about adjustment range, refer to page 2.

Stroke adjustment unit

Intermediate fixing spacer

Spacer length

—	Without spacer
6	Short spacer
7	Long spacer

Spacer delivery style

—	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.

Place the protruding section on the stroke adjustment unit side.

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

Component Parts

MYH-A25L2 (Without spacer)	MYH-A25L2-6 (With short spacer)	MYH-A25L2-7 (With long spacer)	MYH-A25L2-6N (Short spacer only)

* Nuts are equipped on the cylinder body.

Side Support/Part No.

Type	Bore size [mm]	25	32	40
Side support A		MY-S25A	MY-S32A	MY-S40A
Side support B		MY-S25B	MY-S32B	MY-S40B

For details about dimensions, etc., refer to page 14.
 Side supports consist of a set of right and left support.

Cushion Capacity

Cushion Selection

<Air cushion>

Air cushions are a standard feature on mechanically jointed rodless cylinders.

The air cushion mechanism is incorporated to prevent excessive impact of the piston with high kinetic energy at the stroke end. The purpose of air cushion, thus, is not to decelerate the piston near the stroke end.

The ranges of load and speed that air cushions can absorb are within the air cushion limit lines shown in the graphs.

<Stroke adjustment unit with shock absorber>

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

L unit

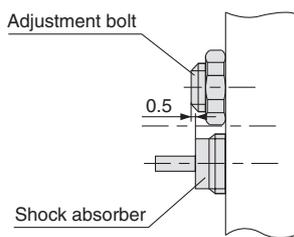
Use this unit when cushioning is necessary outside of the effective air cushion range even if the load and speed are within the air cushion limit line, or when the cylinder is operated in a load and speed range above the air cushion limit line and below the L unit limit line.

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

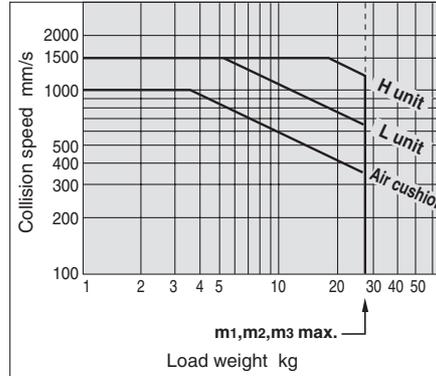
1. Refer to the below figure when using the adjustment bolt to perform stroke adjustment. When the effective stroke of the shock absorber decreases as a result of stroke adjustment, the absorption capacity decreases dramatically. Secure the adjustment bolt at the position where it protrudes approximately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



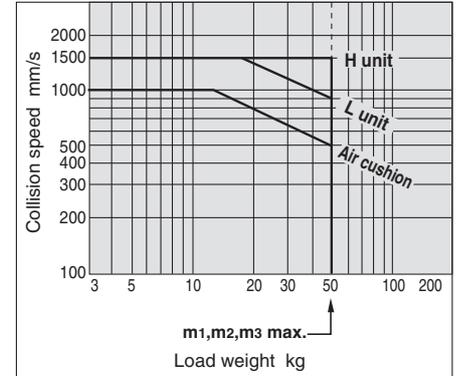
2. Do not use a shock absorber together with air cushion.

Absorption Capacity of Air Cushion and Stroke Adjustment Units

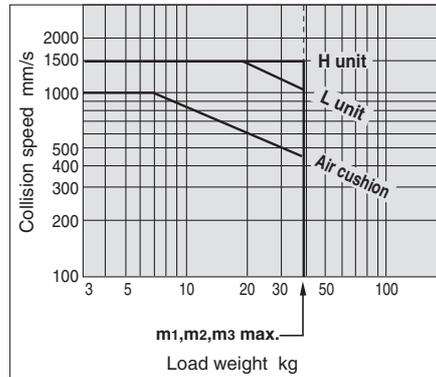
MY1H25 Horizontal collision: P = 0.5 MPa



MY1H40 Horizontal collision: P = 0.5 MPa



MY1H32 Horizontal collision: P = 0.5 MPa



Air Cushion Stroke Unit: mm

Bore size [mm]	Cushion stroke
25	15
32	19
40	24

Calculation of Absorbed Energy for Stroke

Adjustment Unit with Shock Absorber Unit: N·m

Type of impact	Horizontal collision	Vertical collision (Downward)	Vertical collision (Upward)
Kinetic energy E ₁	$\frac{1}{2} m \cdot v^2$		
Thrust energy E ₂	F · s	F · s + m · g · s	F · s - m · g · s
Absorbed energy E	E ₁ + E ₂		

Symbols

v: Speed of impact object [m/s]

F: Cylinder thrust [N]

s: Shock absorber stroke [m]

m: Weight of impact object [kg]

g: Gravitational acceleration (9.8 m/s²)

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



Series MY1H

Specific Product Precautions 1

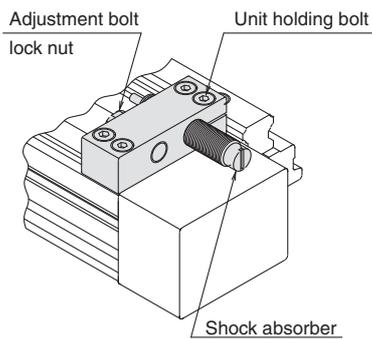
Be sure to read the below before handling. Refer to back cover for Safety Instructions. For Actuator and Auto Switch Precautions, refer to “Handling Precautions for SMC Products” (M-E03-3) and Operation Manual. Please download it via our website <http://www.smcworld.com>

Operating Precautions

⚠ Caution

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

- When using a product with stroke adjustment unit, the space between the slide table (slider) and the stroke adjustment unit becomes narrow at the stroke end, causing a danger of hands getting caught. Install a protective cover to prevent direct contact with the human body.



<Fastening of unit>

The unit can be secured by evenly tightening the four unit holding bolts.

Tightening Torque for Stroke

Bore size [mm]	Tightening torque	Unit: N·m
25	1.8	
32	3.5	
40	5.8	

⚠ Caution

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 that case, use a short spacer or a long spacer. For other lengths, please consult with SMC. (Refer to “Tightening Torque for Stroke Adjustment Unit Holding Bolts.”)

<Adjustment bolt stroke adjustment>

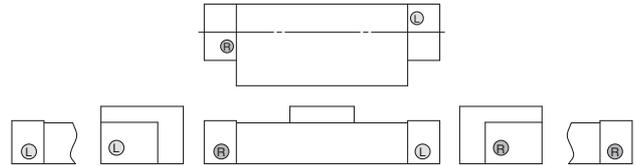
Loosen the adjustment bolt lock nut, and adjust the stroke from the lock cover side using a hexagon wrench. Then, retighten the lock nut.

<Shock absorber stroke adjustment>

Loosen the two unit holding bolts at the shock absorber side, turn the shock absorber and adjust the stroke. Then, uniformly retighten the unit holding bolts to secure the shock absorber.

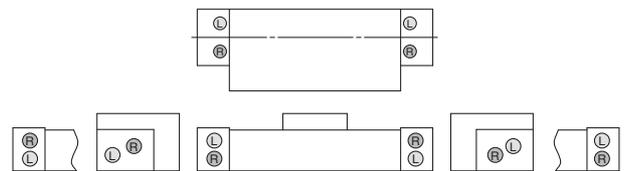
Port Variation

Operating direction
L ← ⇒ R



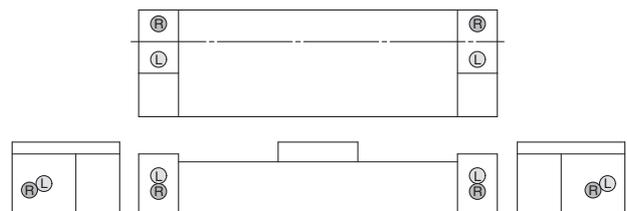
Port variation (Standard piping)

Operating direction
L ← ⇒ R



Port variation (Centralised piping)

Operating direction
L ← ⇒ R



Port variation (End lock)



Series MY1H

Specific Product Precautions 2

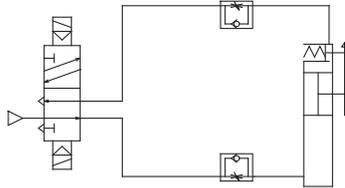
Be sure to read the below before handling. Refer to back cover for Safety Instructions. For Actuator and Auto Switch Precautions, refer to "Handling Precautions for SMC Products" (M-E03-3) and Operation Manual. Please download it via our website <http://www.smcworld.com>

With End Lock

Recommended Pneumatic Circuit

Caution

This is necessary for the correct locking and unlocking actions.



Operating Precautions

Caution

1. Do not use 3-position solenoid valves.

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

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

2. Back pressure is required when releasing the lock.

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

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

If mounting or other work is performed when the cylinder is locked, the lock unit may be damaged.

4. Operate at 50% or less of the theoretical output.

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

5. Do not operate multiple cylinders in synchronisation.

Avoid applications in which two or more end lock cylinders are synchronised to move one workpiece, as one of the cylinder locks may not be able to release when required.

6. Use a speed controller with meter-out control.

Lock cannot be released occasionally by meter-in control.

7. Be sure to operate completely to the cylinder stroke end on the side with the lock.

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

Operating Pressure

Caution

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

Exhaust Speed

Caution

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

Relation to Cushion

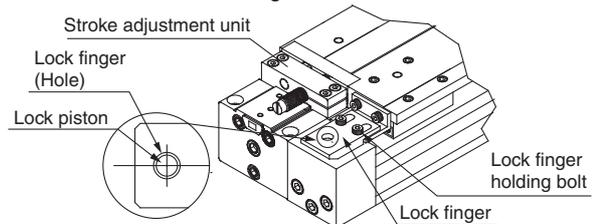
Caution

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

End Lock Mechanism Adjustment

Caution

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



Lock Release

Warning

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

Manual Release

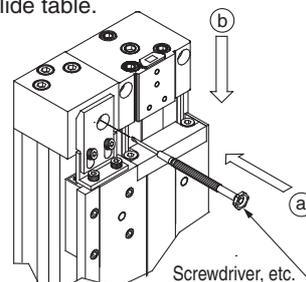
Caution

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

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

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

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

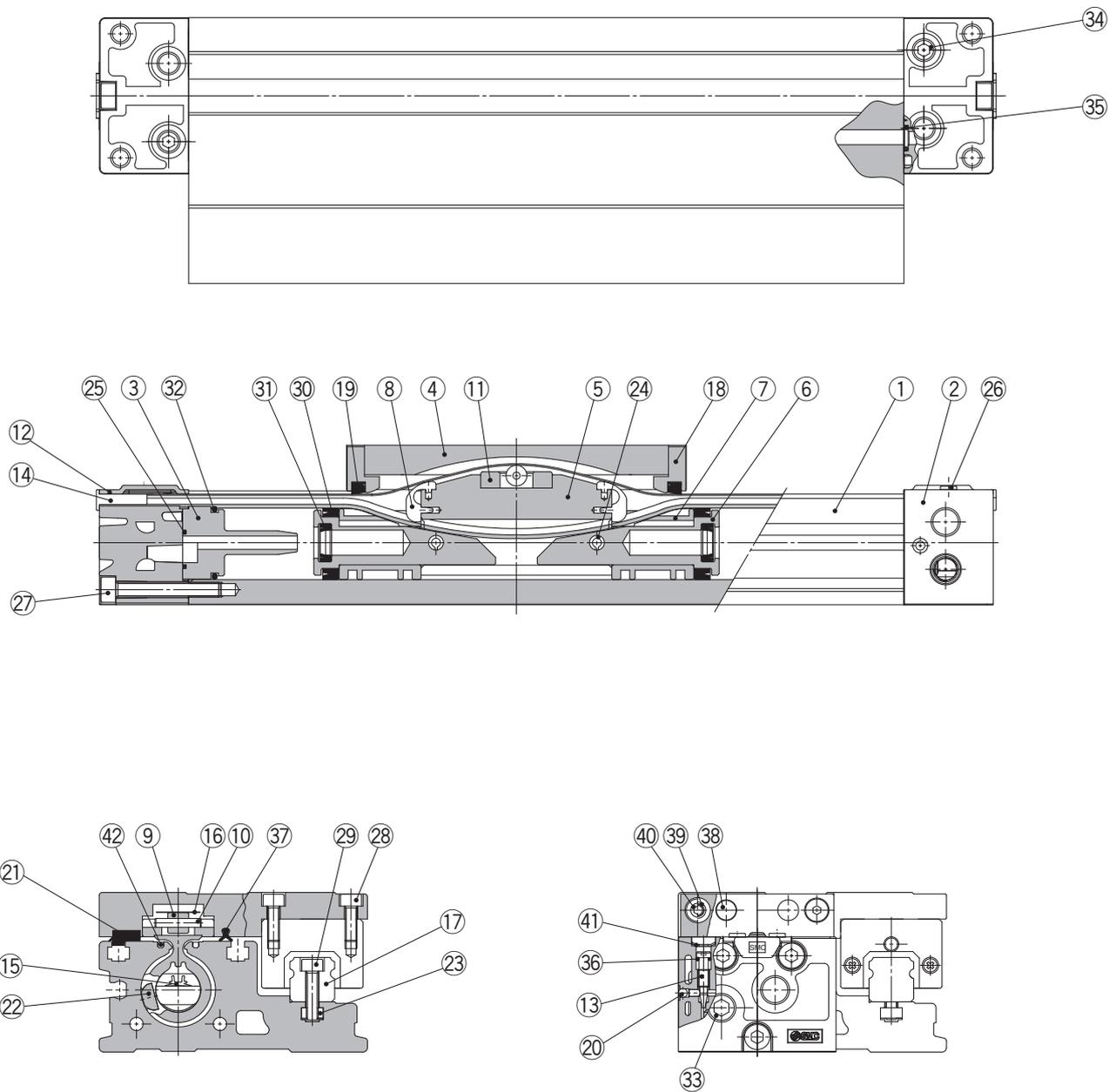


Other handling precautions regarding mounting, piping and environment are the same as the standard series.

Series MY1H

Construction

Standard type



Component Parts

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

Replacement Parts: Seal Kit

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

* Seal kit includes 19, 30, 31, 32 and 35. Order the seal kit based on each bore size.

* Seal kit includes a grease pack (10 g). When 15 or 16 is shipped independently, a grease pack (20 g) is included.

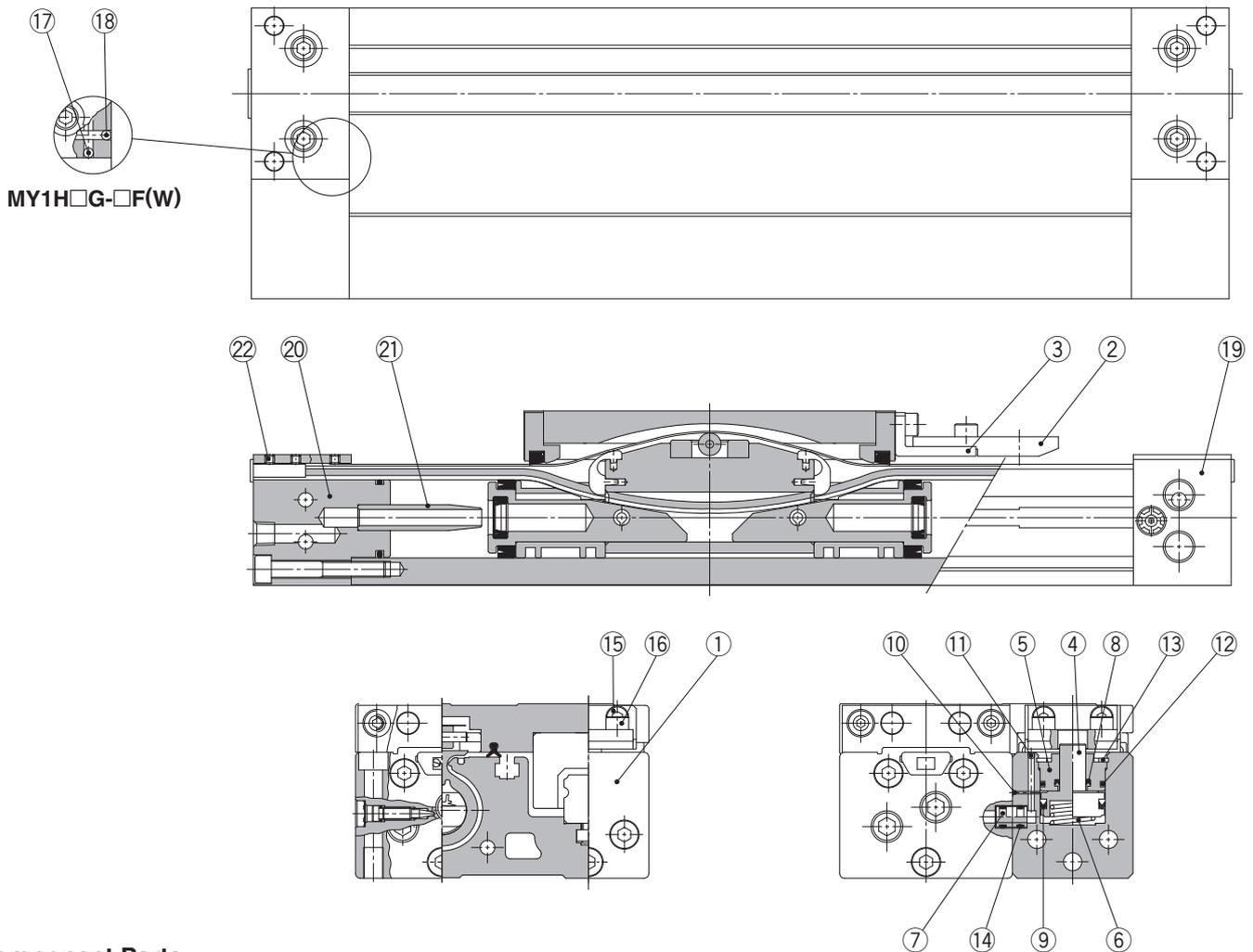
Order with the following part number when only the grease pack is needed.

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

Series MY1H

Construction

End lock



Component Parts

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

Replacement Parts: Seal Kit

No.	Description	Material	Qty.	MY1H25	MY1H32	MY1H40
8	Rod seal	NBR	1	DYR8K	DYR8K	DYR8K
9	Piston seal	NBR	1	DYP-20	DYP-20	DYP-20
12	O-ring	NBR	1	C-18	C-18	C-18
14	O-ring	NBR	2	C-5	C-5	C-5

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

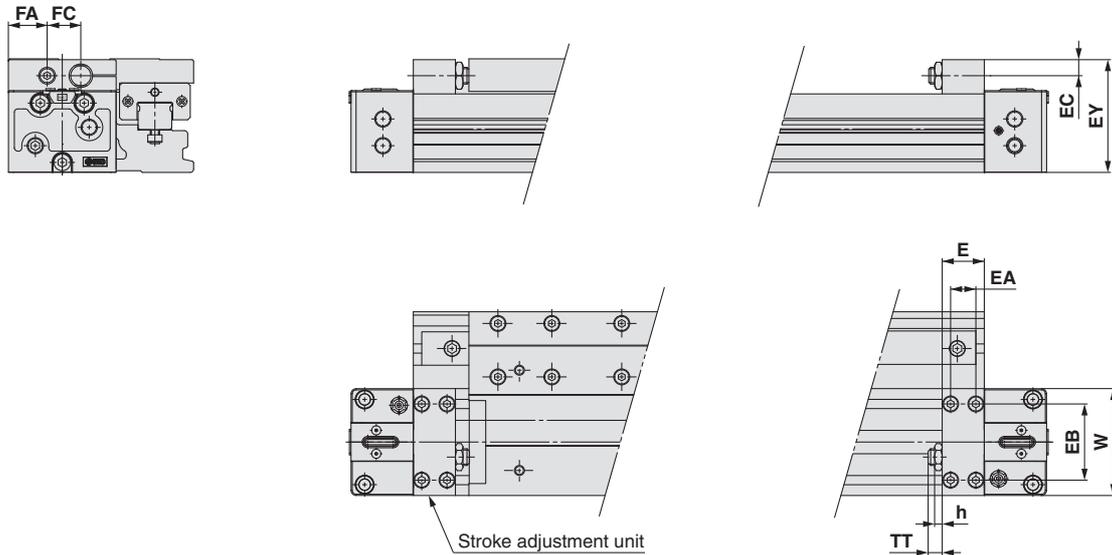
Grease pack part no.: GR-S-010 (10 g)

Series MY1H

Stroke Adjustment Unit

With adjustment bolt

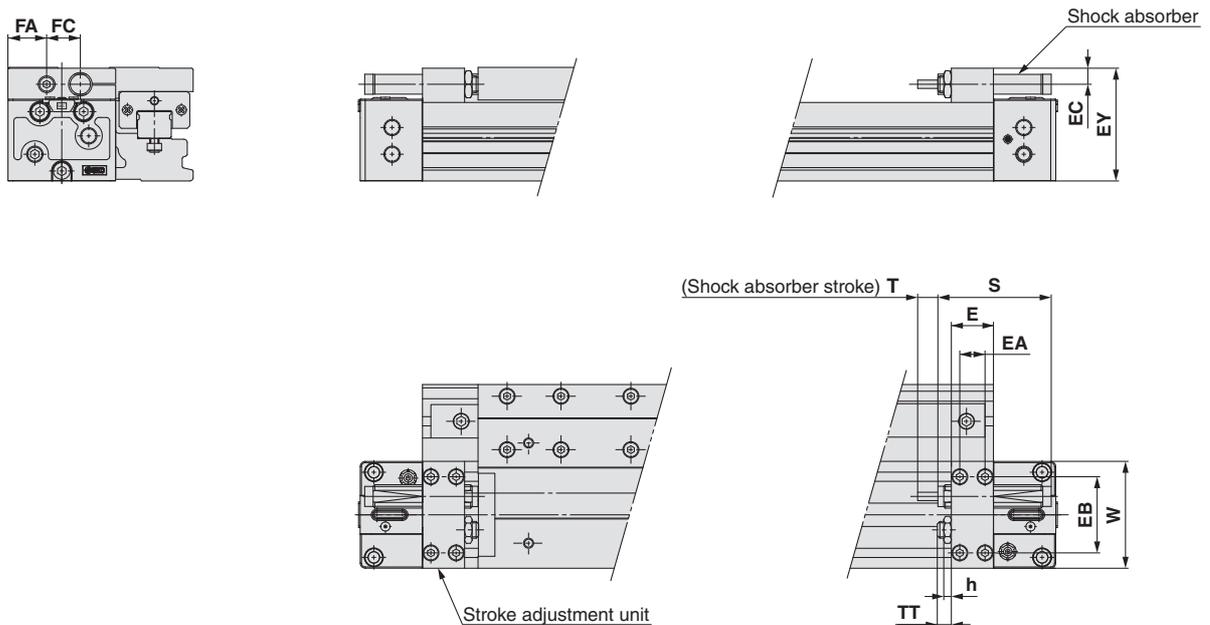
MY1H Bore size – Stroke AZ



Applicable cylinder	E	EA	EB	EC	EY	FA	FC	h	TT	W
MY1H25	18	9	40	7.5	53.5	16	21	3.5	5 (Max.16.5)	53
MY1H32	25	14	45.6	9.5	67.5	23	20	4.5	8 (Max.20)	64
MY1H40	31	19	55	11	82	24.5	26	4.5	9 (Max.25)	75

With low load shock absorber + adjustment bolt

MY1H Bore size – Stroke LZ



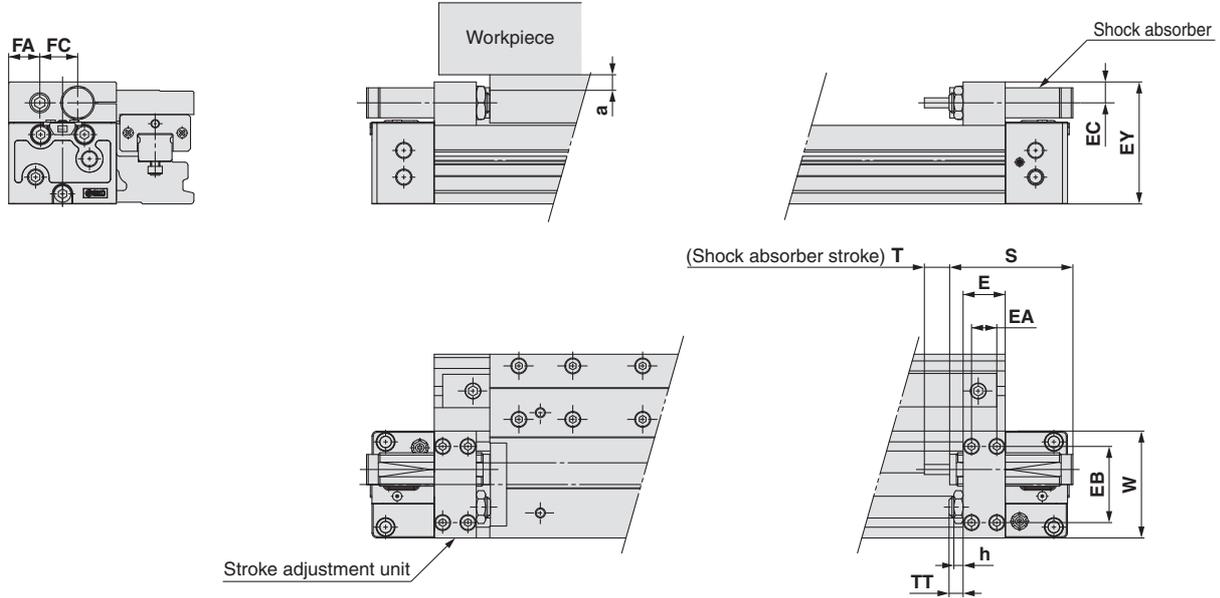
Applicable cylinder	E	EA	EB	EC	EY	F	FA	FC	h	S	T	TT	W	Shock absorber model
MY1H25	18	9	40	7.5	53.5	—	16	21	3.5	46.7	7	5 (Max.16.5)	53	RB1007
MY1H32	25	14	45.6	9.5	67.5	—	23	20	4.5	67.3	12	8 (Max.20)	64	RB1412
MY1H40	31	19	55	11	82	—	24.5	26	4.5	67.3	12	9 (Max.25)	75	RB1412

[mm]

Stroke Adjustment Unit

With high load shock absorber + adjustment bolt

MY1H Bore size - Stroke HZ

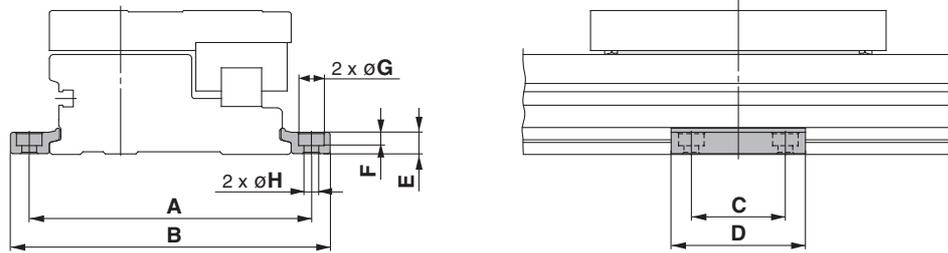


* Since the EY dimension of H unit is greater than the table top height (H dimension), when a workpiece exceeding the overall length (L dimension) of the slide table is mounted, allow a clearance of size "a" or larger at the workpiece side.

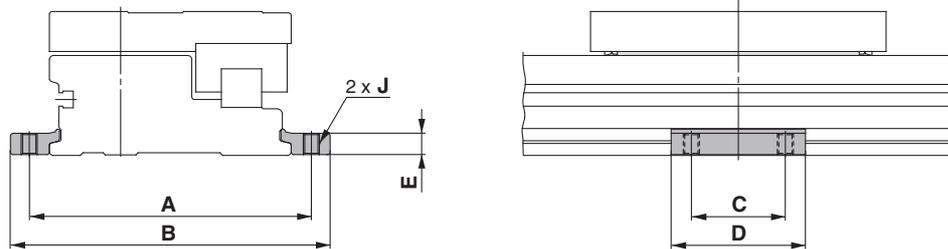
Applicable cylinder	E	EA	EB	EC	EY	F	FA	FC	h	S	T	TT	W	Shock absorber model	a
MY1H25	18	9	40	9	57	—	18	17.5	4.5	67.3	12	5 (Max.16.5)	53	RB1412	3.5
MY1H32	25	14	45.6	12.4	73	—	18.5	22.5	5.5	73.2	15	8 (Max.20)	64	RB2015	5.5
MY1H40	31	19	55	12.4	86	—	26.5	22	5.5	73.2	15	9 (Max.25)	75	RB2015	2.5

Side Support

Side support A MY-S□A



Side support B MY-S□B

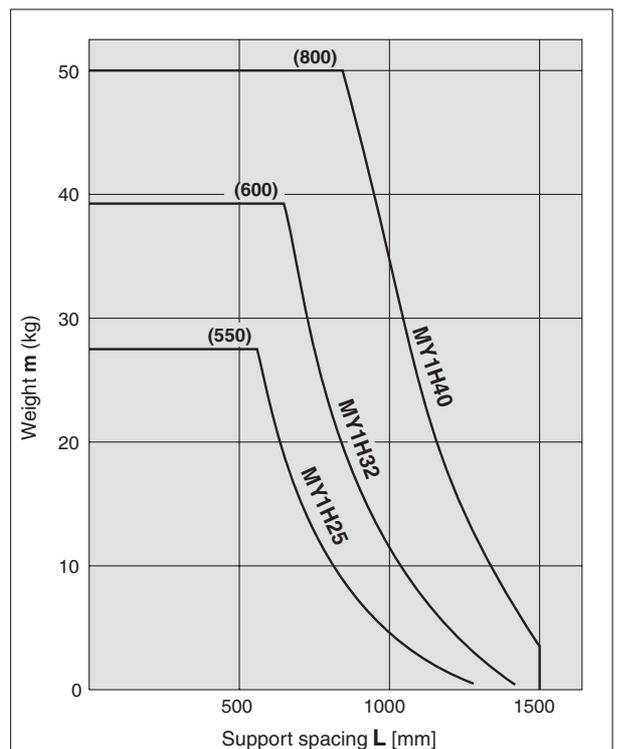
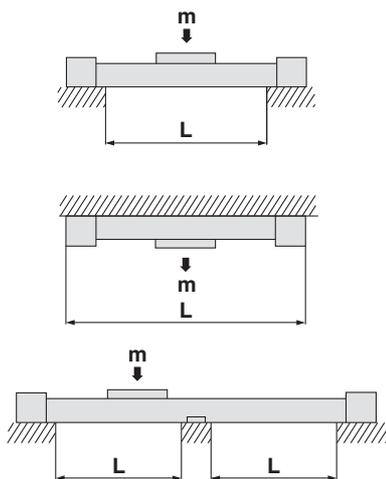


Part no.	Applicable cylinder	A	B	C	D	E	F	G	H	J
MY-S25 ^A _B	MY1H25	105	119	35	50	8	5	9.5	5.5	M6 x 1
MY-S32 ^A _B	MY1H32	130	148	45	64	11.7	6	11	6.6	M8 x 1.25
MY-S40 ^A _B	MY1H40	145	167	55	80	14.8	8.5	14	9	M10 x 1.5

* Side supports consist of a set of right and left supports.

Guide to Side Support Application

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

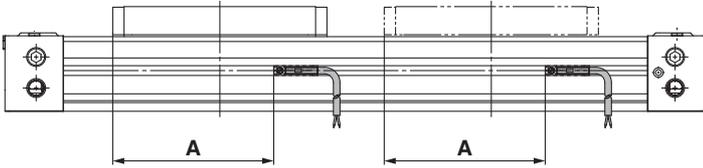


⚠ Caution

1. If the cylinder mounting surfaces are not measured accurately, using a side support may cause poor operation. Therefore, be sure to level the cylinder tube when mounting it. Also, for long stroke operation involving vibration and impact, use of a side support is recommended.
2. Support brackets are not for mounting; use them solely for providing support.

Series MY1H Auto Switch Mounting

Auto Switch Proper Mounting Position



Auto Switch Proper Mounting Position [mm]

Auto switch model	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□AL D-M9□AVL	D-A9□ D-A9□V
	Bore size	
25	85	81
32	116.5	112.5
40	137.5	133.5

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

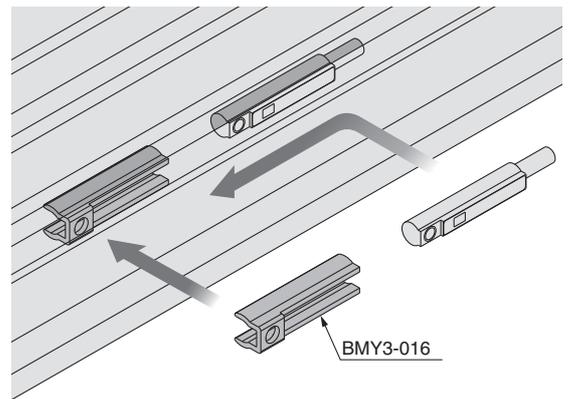
Operating Range

Auto switch model	Bore size [mm]		
	25	32	40
D-M9□/M9□V D-M9□W/M9□WV D-M9□AL/M9□AVL	5.0	5.5	5.5
D-A9□/A9□V	7.0	10.0	9.0

Note) Values which include hysteresis are for guideline purposes only, they are not a guarantee (assuming approximately ±30% dispersion) and may change substantially depending on the ambient environment.

Auto Switch Mounting Bracket/Part No.

Auto switch model	Bore size [mm]
	ø25 to ø40
D-M9□/M9□V D-M9□W/M9□WV D-M9□AL/M9□AVL D-A9□/A9□V	BM Y3-016



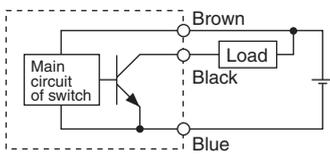
Other than the applicable auto switches listed in “How to Order”, the following auto switches are mountable.

- * Normally closed (NC = b contact) solid state auto switches (D-F9G/F9H) are also available. For details, consult with SMC.
- * With pre-wired connector is also available for solid state auto switches. For details, consult with SMC.

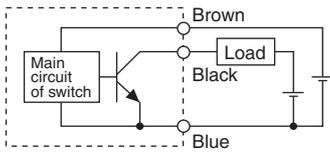
Series MY1H Auto Switches Connection and Example

Basic Wiring

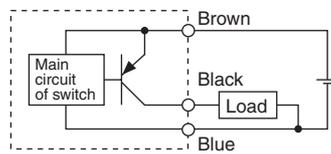
Solid state 3-wire, NPN



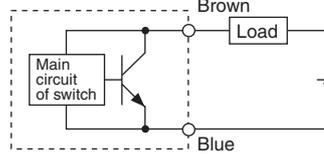
(Power supply for switch and load are separate.)



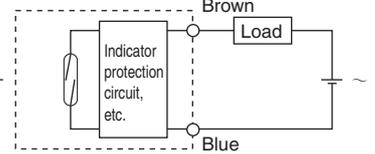
Solid state 3-wire, PNP



2-wire (Solid state)

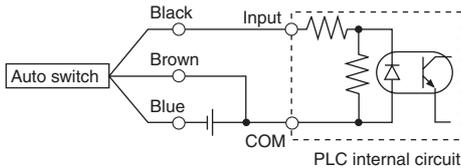


2-wire (Reed)

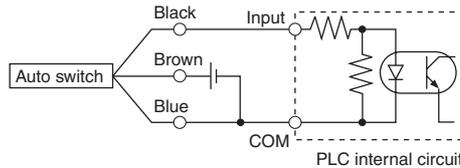


Example of Connection with PLC (Programmable Logic Controller)

• Sink input specifications 3-wire, NPN

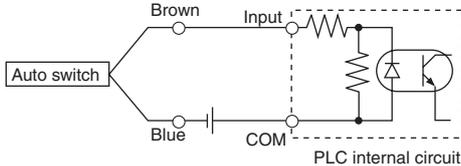


• Source input specifications 3-wire, PNP

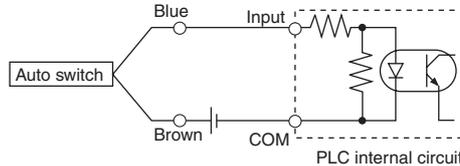


Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

2-wire



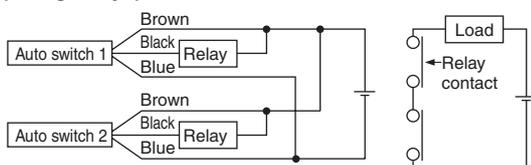
2-wire



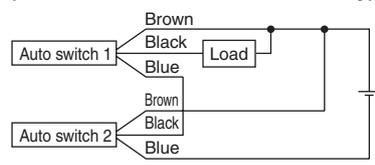
Example of AND (Series) and OR (Parallel) Connection

• 3-wire

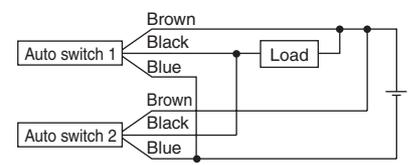
AND connection for NPN output (Using relays)



AND connection for NPN output (Performed with auto switches only)



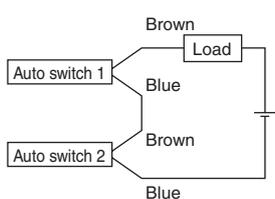
OR connection for NPN output



The indicator lights will light up when both of the auto switches are in the ON state.

• 2-wire

2-wire with 2-switch AND connection

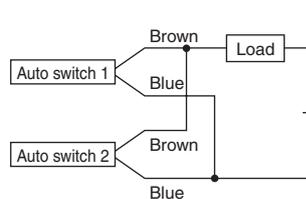


When two auto switches are connected in series, malfunction may occur because the load voltage will decrease in the ON state. The indicator lights will light up when both of the auto switches are in the ON state.

$$\begin{aligned} \text{Load voltage at ON} &= \text{Power supply voltage} - \text{Residual voltage} \times 2 \text{ pcs.} \\ &= 24 \text{ V} - 4 \text{ V} \times 2 \text{ pcs.} \\ &= 16 \text{ V} \end{aligned}$$

Example: Power supply voltage 24 VDC
Auto switch internal voltage drop 4 V

2-wire with 2-switch OR connection



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

$$\begin{aligned} \text{Load voltage at OFF} &= \text{Leakage current} \times 2 \text{ pcs.} \times \text{Load impedance} \\ &= 1 \text{ mA} \times 2 \text{ pcs.} \times 3 \text{ k}\Omega \\ &= 6 \text{ V} \end{aligned}$$

Example: Load impedance 3 kΩ
Auto switch leakage current 1 mA

(Reed)
Because there is no leakage current, the load voltage will not increase in the OFF state. 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.

Series MY1H

Made to Order

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



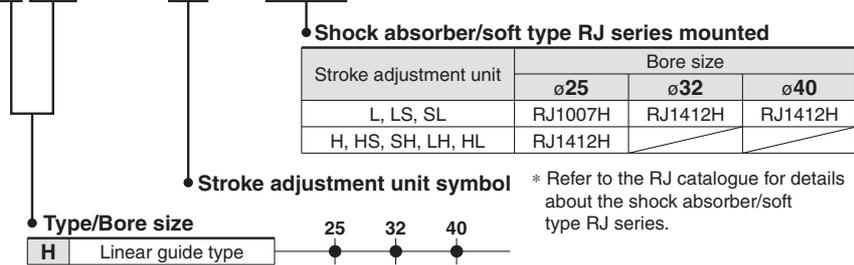
Made-to-Order List

Series	Type	Shock absorber/ soft type mounted	With knock pin holes	Helical insert thread
		-XB22	-XC56	-X168
MY1H	Basic type	●	●	●

1 Shock Absorber/Soft Type RJ Series Mounted Symbol **-XB22**

The shock absorber/soft type RJ series is mounted onto the standard cylinder, making a soft stop at the stroke end possible.

MY1H **25** - 200 **L** Z - XB22



Example

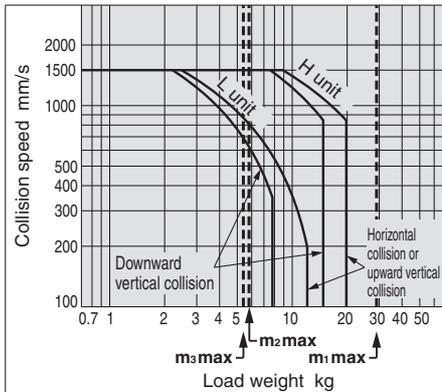
- How to order stroke adjustment unit

MYH-A25L2 - XB22

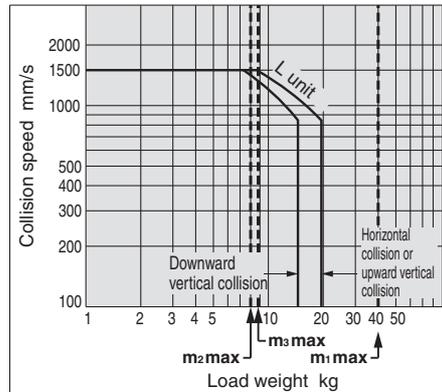
- Shock absorber/soft type RJ series mounted
- Stroke adjustment unit model
Refer to "How to Order" on page 3.

Absorption Capacity of Stroke Adjustment Units

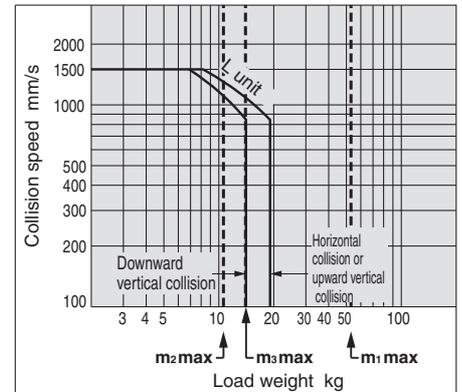
MY1H25



MY1H32



MY1H40



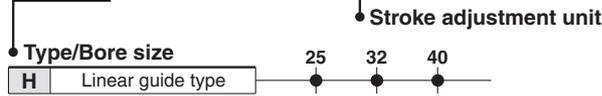
Symbol
-XC56

2 With Knock Pin Holes

Cylinder with knock positioning pin hole

■ Stroke range: 601 to 1500 mm

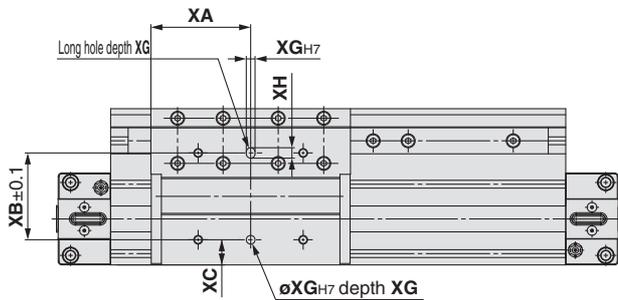
MY1 H **Bore size** - **Stroke** **Z** - **Auto switch** **Suffix** - XC56



Example) MY1H40G-200LZ-M9BW-XC56

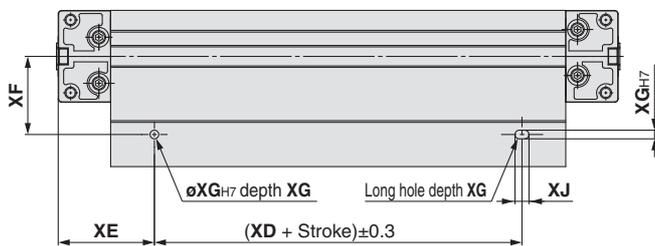
Specifications: Same as standard type

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



Bore size [mm]	XA	XB	XC	XD	XE
25	57	50	14.5	110	55
32	70	60	15	140	70
40	85	80	20.5	180	80

Mounting surface of a workpiece for the slide table



Bore size [mm]	XF	XG	XH	XJ
25	45	5	6	8
32	60	6	7	9
40	60.5	6	7	9

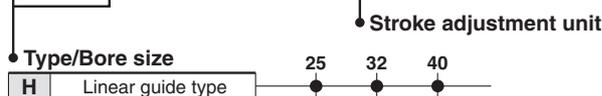
Mounting surface of cylinder tube

3 Helical Insert Thread

Symbol
-X168

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

MY1 H **Bore size** - **Stroke** **Z** - **Auto switch** **Suffix** - X168



Example) MY1H40G-200LZ-M9BW-X168

Specifications: Same as standard type

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.*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.

Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

SMC Corporation (Europe)

Austria	☎+43 (0)22622800	www.smc.at	office@smc.at
Belgium	☎+32 (0)33551464	www.smc-pneumatics.be	info@smc-pneumatics.be
Bulgaria	☎+359 (0)2807670	www.smc.bg	office@smc.bg
Croatia	☎+385 (0)13707288	www.smc.hr	office@smc.hr
Czech Republic	☎+420 541424611	www.smc.cz	office@smc.cz
Denmark	☎+45 70252900	www.smc-dk.com	smc@smc-dk.com
Estonia	☎+372 6510370	www.smc-pneumatics.ee	smc@smc-pneumatics.ee
Finland	☎+358 207513513	www.smc.fi	smc-fi@smc.fi
France	☎+33 (0)164761000	www.smc-france.fr	promotion@smc-france.fr
Germany	☎+49 (0)61034020	www.smc.de	info@smc.de
Greece	☎+30 210 2717265	www.smc-hellas.gr	sales@smc-hellas.gr
Hungary	☎+36 23511390	www.smc.hu	office@smc.hu
Ireland	☎+353 (0)14039000	www.smc-pneumatics.ie	sales@smc-pneumatics.ie
Italy	☎+39 0292711	www.smc-italia.it	mailbox@smc-italia.it
Latvia	☎+371 67817700	www.smc-lv.lv	info@smc-lv.lv

Lithuania	☎+370 5 2308118	www.smclt.lt	info@smclt.lt
Netherlands	☎+31 (0)205318888	www.smc-pneumatics.nl	info@smc-pneumatics.nl
Norway	☎+47 67129020	www.smc-norge.no	post@smc-norge.no
Poland	☎+48 (0)222119616	www.smc.pl	office@smc.pl
Portugal	☎+351 226166570	www.smc.eu	postpt@smc.smces.es
Romania	☎+40 213205111	www.smcromania.ro	smcromania@smcromania.ro
Russia	☎+7 8127185445	www.smc-pneumatik.ru	info@smc-pneumatik.ru
Slovakia	☎+421 (0)413213212	www.smc.sk	office@smc.sk
Slovenia	☎+386 (0)73885412	www.smc.si	office@smc.si
Spain	☎+34 902184100	www.smc.eu	post@smc.smces.es
Sweden	☎+46 (0)86031200	www.smc.nu	post@smc.nu
Switzerland	☎+41 (0)523963131	www.smc.ch	info@smc.ch
Turkey	☎+90 212 489 0 440	www.smc-pneumatik.com.tr	info@smc-pneumatik.com.tr
UK	☎+44 (0)845 121 5122	www.smc-pneumatics.co.uk	sales@smc-pneumatics.co.uk