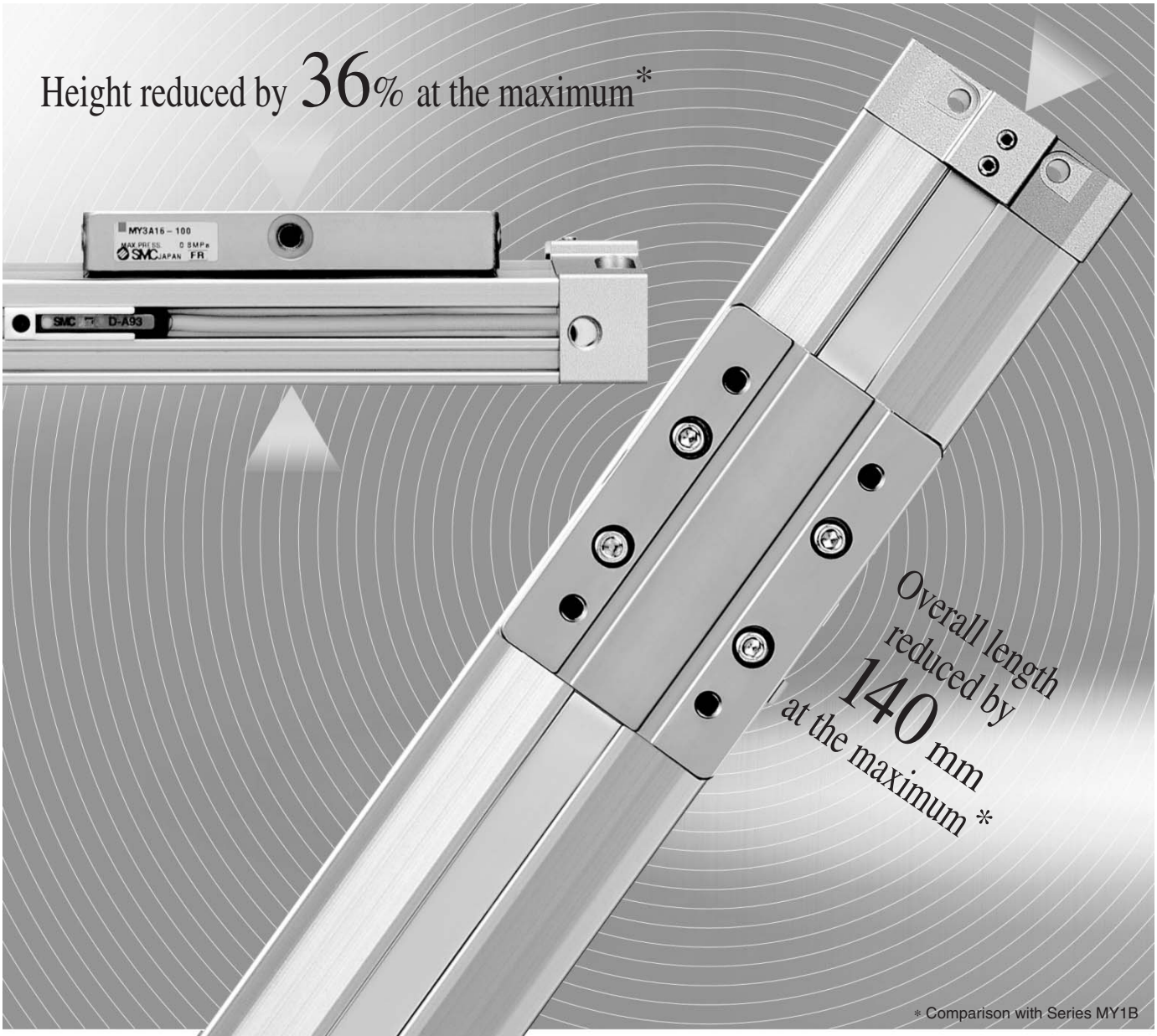
Mechanically Jointed Rodless Cylinder

Series MY3

ø16, ø25, ø40, ø63



High functionality
with reduced height and length

High functionality with reduced height and length

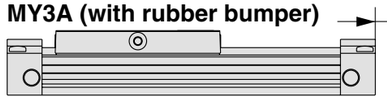
Mechanically Jointed Rodless Cylinder

MY3A/MY3B

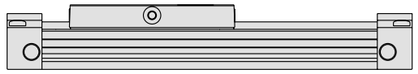
Short type (Rubber bumper)
Basic type (Air cushion)

Overall length (Z) reduced by 140 mm at the maximum

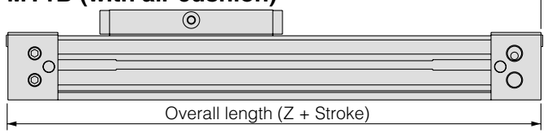
MY3A (with rubber bumper)



MY3B (with air cushion)



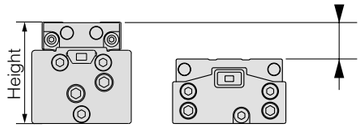
MY1B (with air cushion)



Overall Length (Z) (mm)

Series	ø16	ø25	ø40	ø63
MY3A	110	150	240	320
MY3B	122	178	276	356
MY1B	160	220	340	460

Height (H) reduced by 36% at the maximum



Height (H) (mm)

Series	ø16	ø25	ø40	ø63
MY3A MY3B	27	37	54	84
MY1B	37	54	84	116

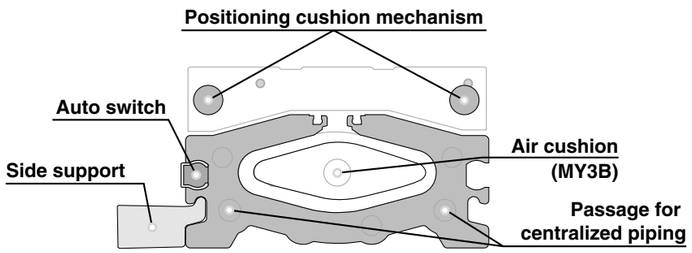
Weight reduced by 53% at the maximum

Weight (kg)

Series	ø16	ø25	ø40	ø63
MY3A	0.34	0.99	2.95	8.26
MY3B	0.35	1.09	3.08	8.99
MY1B	0.73	1.57	4.41	14.5

∗ At a 100 mm stroke

The uniquely designed piston shape enables reduction of the height and length as well as practical arrangement of the common piping passages, cushion mechanism and positioning mechanism. This has achieved drastic miniaturization and weight reduction.

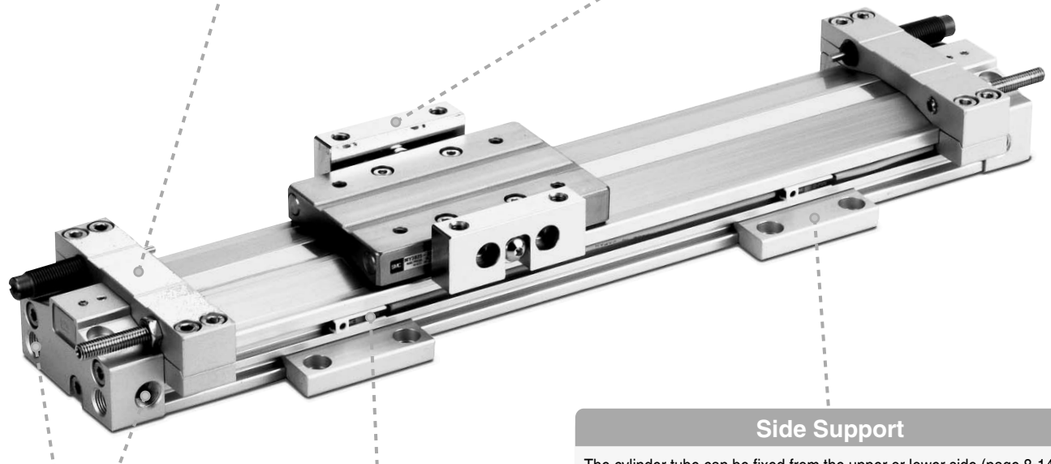


Stroke Adjusting Unit

(MY3B only)

Floating Bracket

Easy connection with external guide. Vertical and lateral mounting is possible. (page 8-14-12)

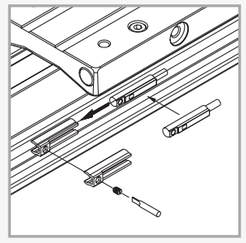


Centralized Piping

Integrated piping in the head cover is possible. (Refer to page 8-14-26.)

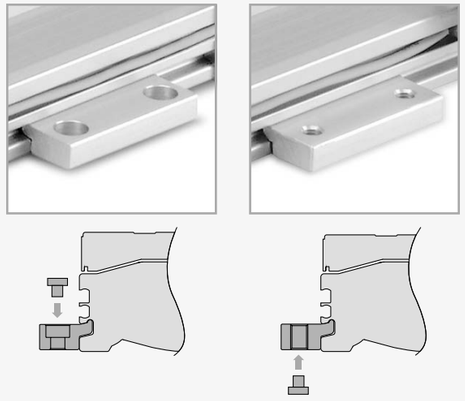
Auto Switch

Can be mounted on both sides from the front direction.



Side Support

The cylinder tube can be fixed from the upper or lower side (page 8-14-11).



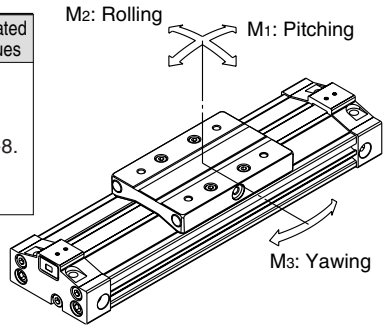
Series Variations

Series	Type	Piping type	Bore size (mm) 16	25	40	63	Rubber bumper	Air cushion	Stroke adjusting unit	Side support	Floating bracket	Made to order
MY3A	Short type	Centralized piping	●	●	●	●	●	●	●	●	●	Long stroke (-XB11) Helical insert threads (-X168)
MY3B	Basic type	Standard piping	●	●	●	●	●	●	●	●	●	Holder mounting bracket (-X416, X417)

Series MY3A/3B
Model Selection 1

Standards for Tentative Model Selection

Cylinder model	Type	Standards for guide selection	Graphs for related allowable values
MY3A	Short type	Guaranteed accuracy not required, generally combined with a separate guide, stroke accuracy not required, overall length to be minimized.	Refer to page 8-14-8.
MY3B	Basic type	Guaranteed accuracy not required, generally combined with a separate guide, stroke accuracy of cylinder body and air cushion required.	

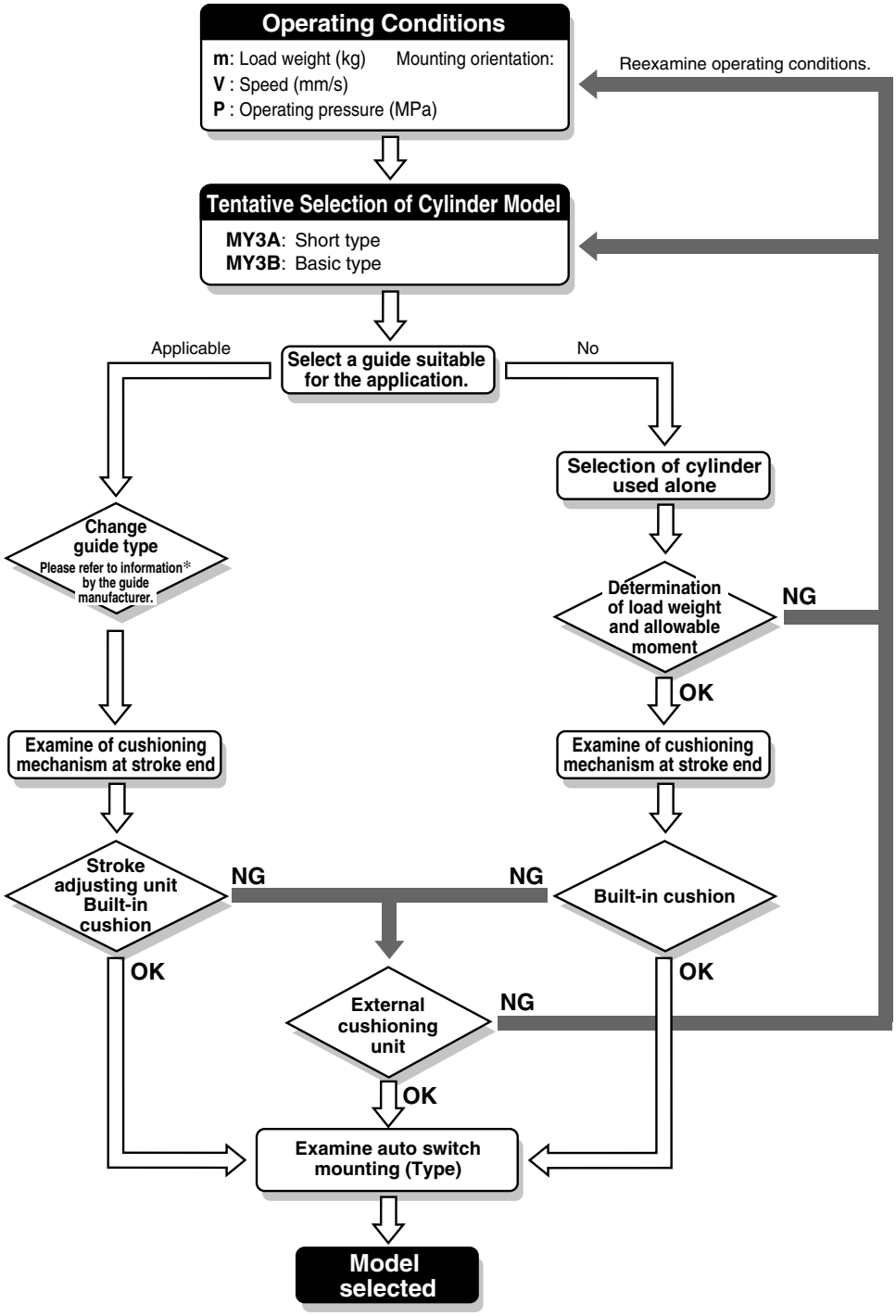


Stroke positioning	External guide	Applicable unit	Maximum operating speed (mm/s): 500 / 800 / 1000 / 1500
Cylinder stroke end	None	—	MY3A
	None	—	MY3B
Stroke adjusting unit (option)	Yes	L H	MY3B — Note 3) — **Use of X416, X417 holder mounting brackets** Note 2) (Holder mounting bracket → Refer to pages 8-14-24 to 25.)
External shock absorber Note 1)	None	—	MY3A MY3B — Note 4)
	Yes	—	MY3A MY3B

Note 1) For operation at a speed exceeding 1000 mm/s, the shock absorber should satisfy the conditions on page 8-14-11.
Note 2) For operation outside the “Stroke Adjusting Unit/Fine Stroke Adjustment Range” on page 8-14-10.
Note 3) The maximum operating speed with the use of the L unit of ø16 is 800 mm/s within the fine stroke adjustment range and 500 mm/s outside the fine stroke adjustment range.
Note 4) As the external shock absorber, a unit with appropriate capacity and features should be installed close to the load center of gravity.
Note 5) The selection confirmation is extremely important with this series. The selection should be confirmed thoroughly according to the selection flow on page 8-14-5.

Selection Flow Chart

When an external guide is used, the selection confirmation of the guide capacity should follow the selection procedure of the external guide.
MY3A and MY3B allow direct load application within the allowable range for the built-in guide. The payload in this case will vary depending on the driving speed and the mounting orientation of the cylinder. Please refer to the flow below and confirm the selection. (For more detailed description of the selection flow, please refer to the instruction manual.)

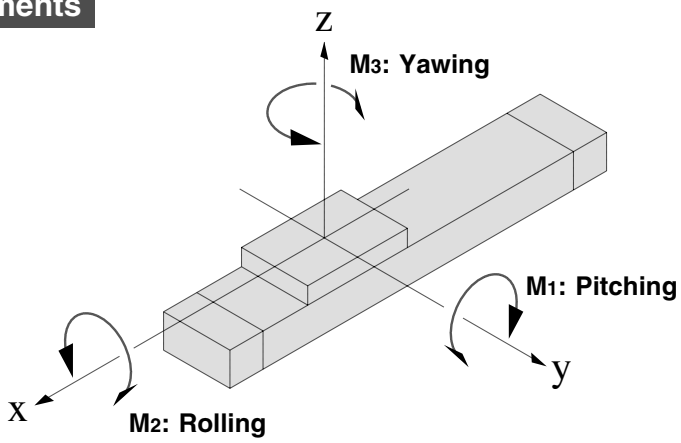


* When using an external cushioning unit, we recommend installing a suitable unit near the load's center of gravity.
It is possible to select all models of mechanically jointed rodless cylinder (series MY3A, MY3B) according to the procedure indicated above.
Refer to the separate instruction manual for further explanation, and please consult with SMC regarding any questions.

Types of Moment Applied on Rodless Cylinders

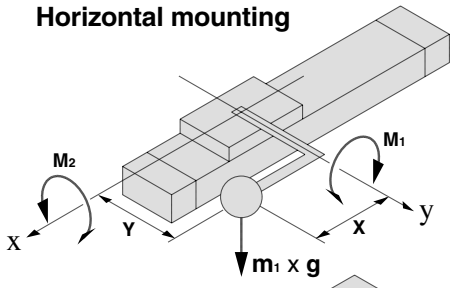
Multiple moments may be generated depending on the mounting orientation, load and position of the center of gravity.

Coordinates and Moments

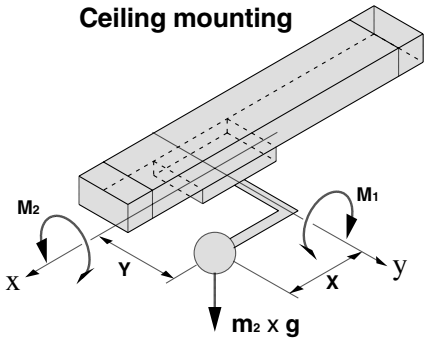


Static Moment

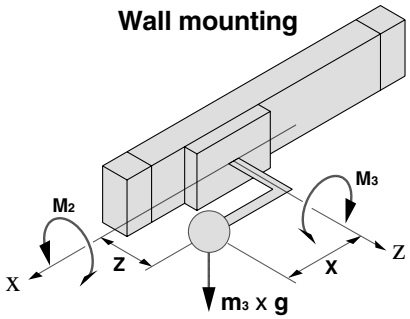
Horizontal mounting



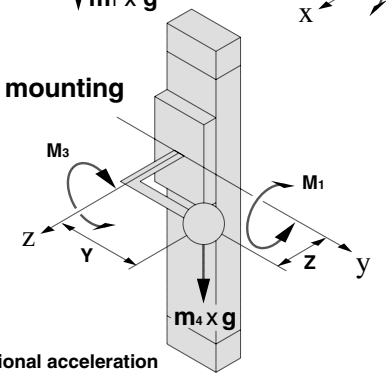
Ceiling mounting



Wall mounting



Vertical mounting

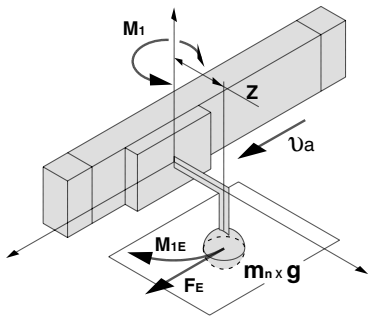


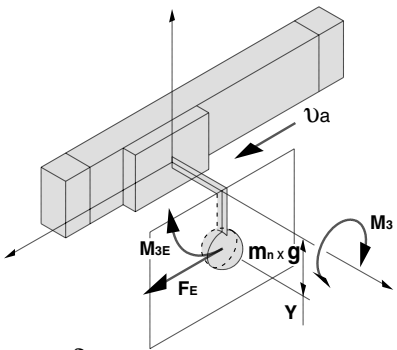
g: Gravitational acceleration

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





Mounting orientation		Horizontal	Ceiling	Wall	Vertical
Dynamic load F_E		$1.4\upsilon a \times \delta \times m_n \times g$			
Dynamic moment	M_{1E}	$\frac{1}{3} \times F_E \times Z$			
	M_{2E}	**Dynamic moment M_{2E} is not generated.**			
	M_{3E}	$\frac{1}{3} \times F_E \times Y$			

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

g: Gravitational acceleration, υa**: Average speed,** δ**: Bumper coefficient** (Refer to page 8-14-25)

Maximum Allowable Moment/Maximum Load Weight

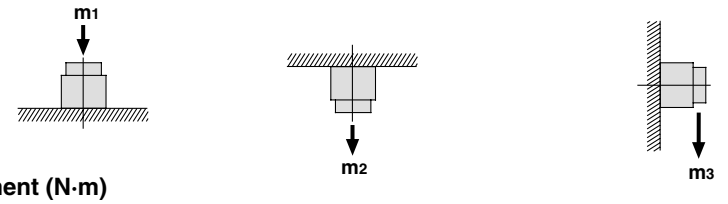
Model	Bore size (mm)	Maximum allowable moment (Nm)			Maximum load weight (kg)		
		M_1	M_2	M_3	m_1	m_2	m_3
MY3A	**16**	1.8	0.3	0.7	6	3	1.5
MY3B							
MY3A	**25**	6	1.2	2	16	6	4
MY3B							
MY3A	**40**	24	4.8	10	40	12	10
MY3B							
MY3A	**63**	70	19	30	80	24	20
MY3B							

The above values are the maximum allowable values for moment and load. Refer to each graph on page 8-14-8 regarding the maximum allowable moment and maximum load weight for a particular piston speed.

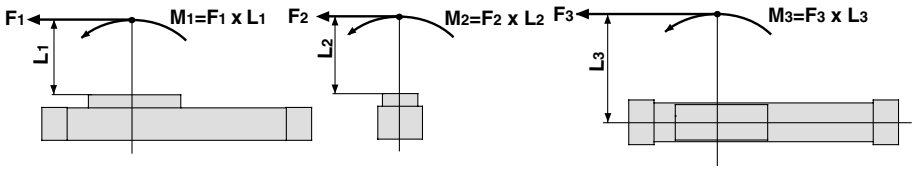
Cautions on Design

Prior to the selection calculation, verify the conformity of the operating conditions, such as the use of an external guide (in case of connection with a floating mechanism bracket, for example) or a stroke adjusting unit, with the maximum operating speed. (Refer to page 8-14-4.)

Load weight (kg)



Moment (N·m)



<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 υa (average speed) for (1) and (2), and υ (impact speed $\upsilon = 1.4\upsilon a$) for (3). Calculate m max for (2) from the maximum allowable load 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).

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

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 weight (kg)
F : Load (N)
F_E : Load equivalent to impact (at impact with stopper) (N)
υa : Average speed (mm/s)
M : Static moment (Nm)

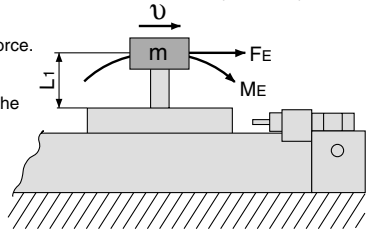
$\upsilon = 1.4\upsilon a$ (mm/s) $\quad F_E \overset{\text{Note 4)}}{=} 1.4\upsilon a \times \delta \times m \cdot g$

$\therefore\ M_E \overset{\text{Note 5)}}{=} \frac{1}{3} \cdot F_E \cdot L_1 = 4.57\upsilon a \delta m\, L_1$ (N·m)

υ : Impact speed (mm/s)
L_1 : Distance to the load's center of gravity (m)
M_E : Dynamic moment (Nm)
δ : Bumper coefficient (kg)
With rubber bumper = 4/100
With air cushion = 1/100
With shock absorber = 1/100
g : Gravitational acceleration (9.8 m/s²)

Note 4) $1.4\upsilon a\delta$ is a dimension less coefficient for calculating impact force.

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



3. For detailed selection procedure, please refer to pages 8-14-12 to 13.

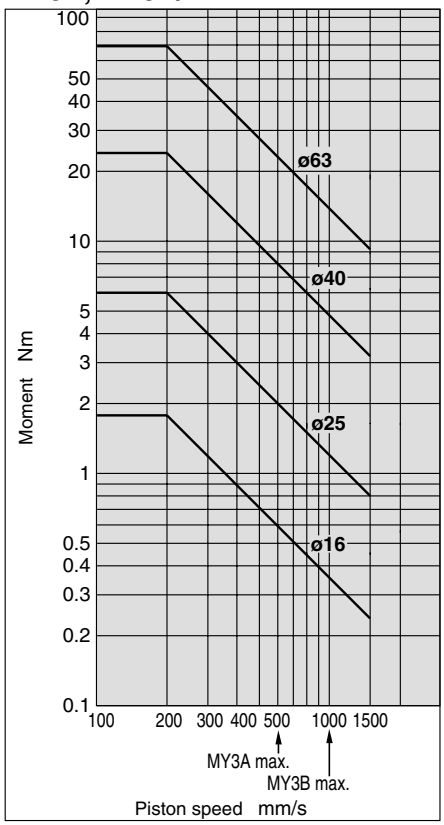
Series MY3A/3B

Maximum Allowable Moment/Maximum Allowable Load

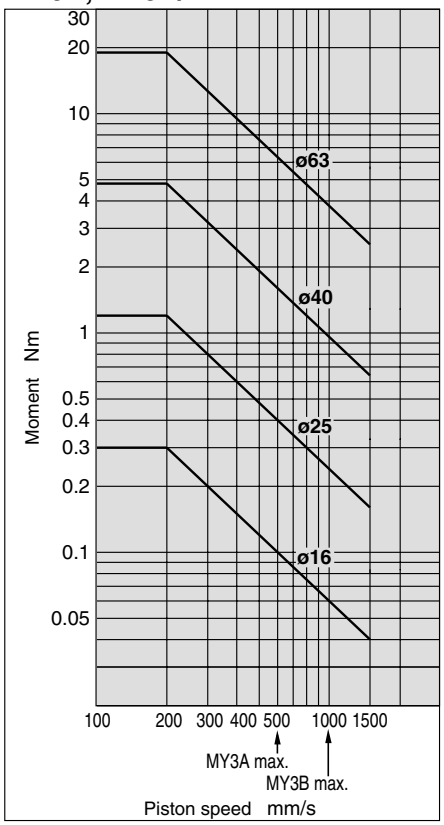
Maximum Allowable Moment

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

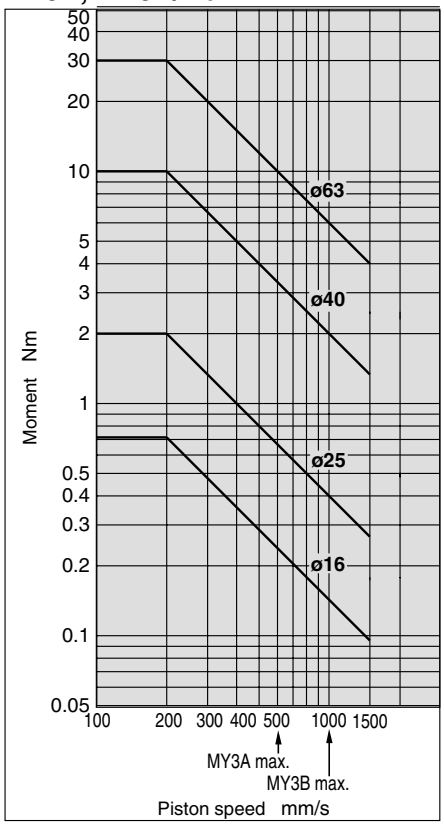
MY3A, MY3B/M1



MY3A, MY3B/M2



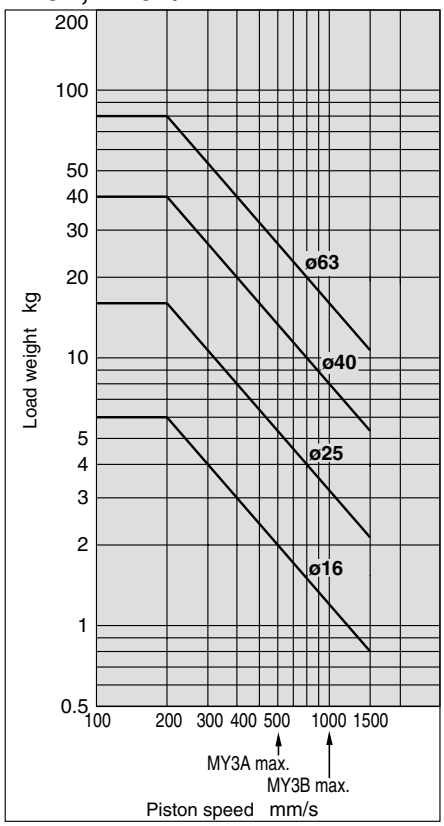
MY3A, MY3B/M3



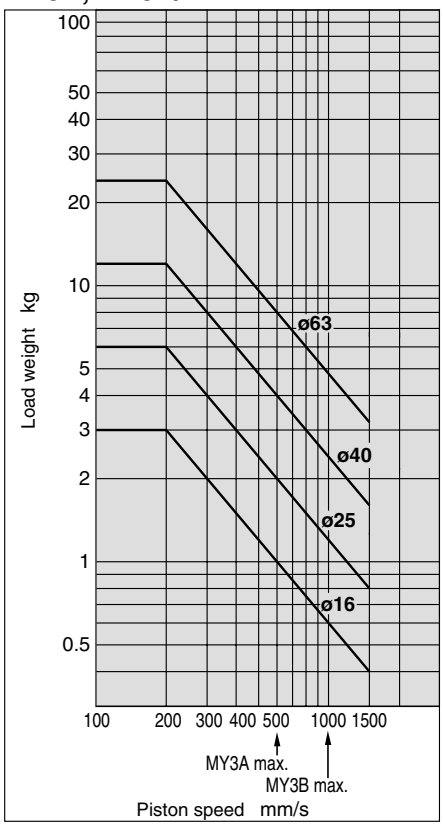
Maximum Allowable Load

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

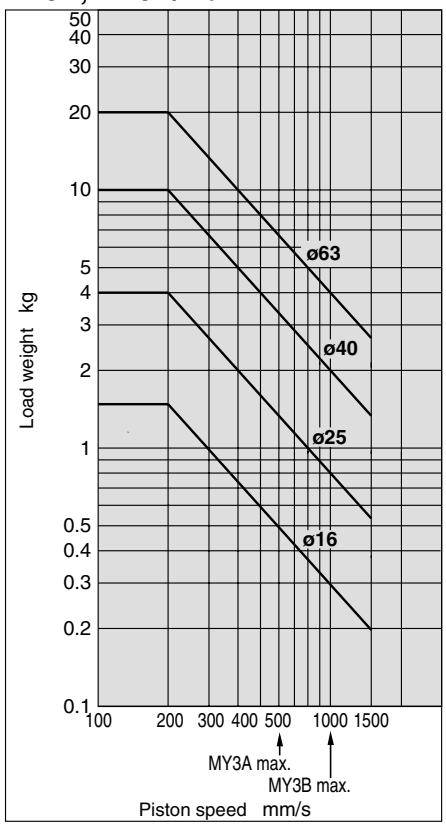
MY3A, MY3B/m1



MY3A, MY3B/m2



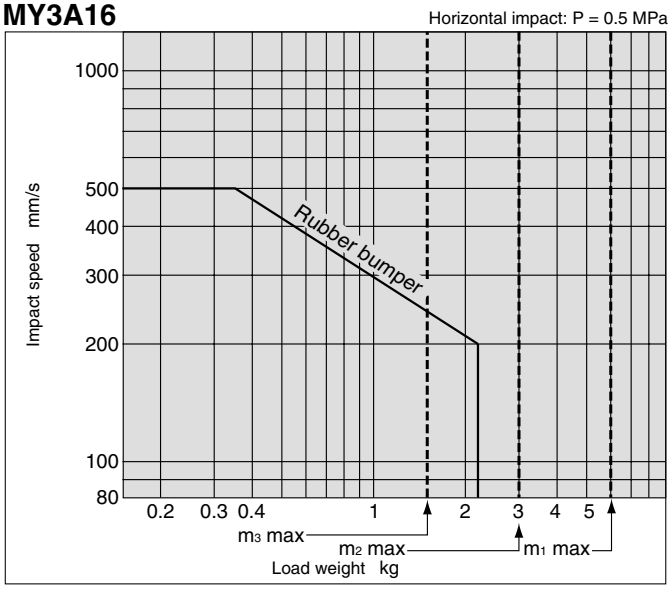
MY3A, MY3B/m3



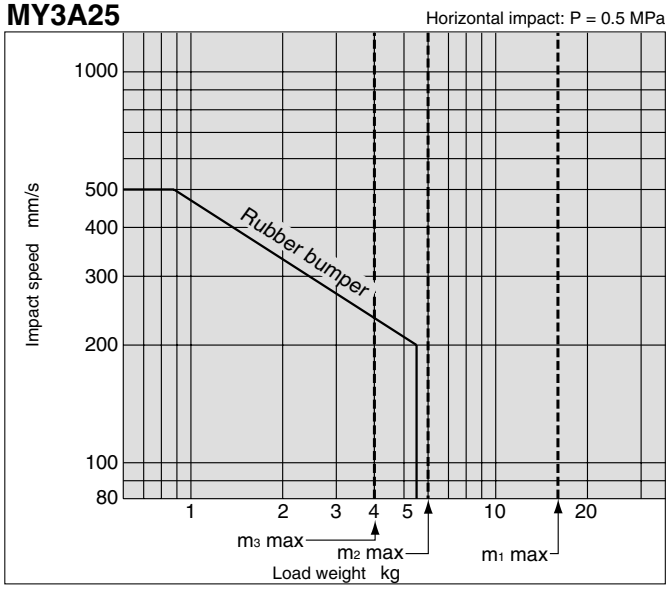
Cushion Capacity

Absorption Capacity of Rubber Bumper (MY3A)

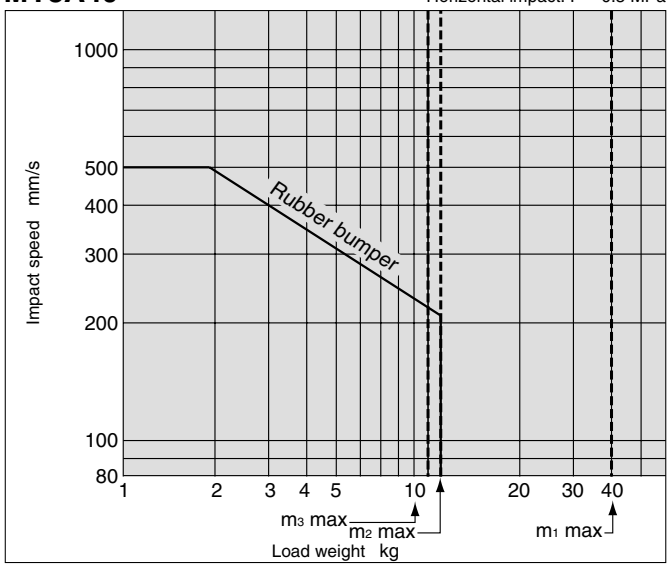
MY3A16



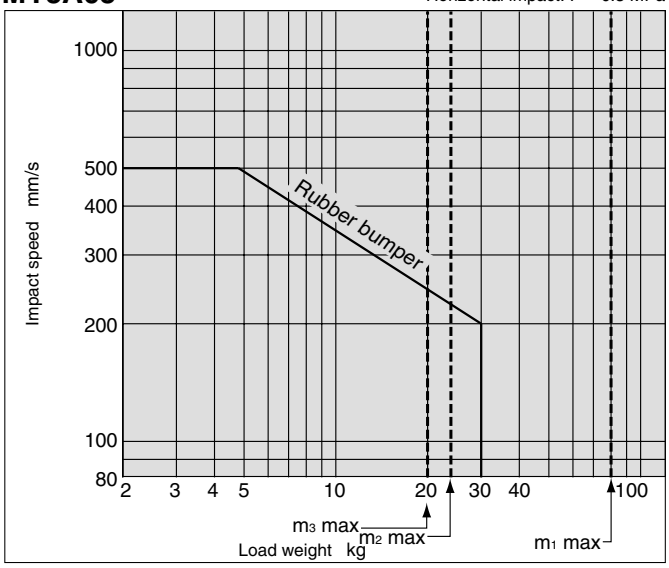
MY3A25



MY3A40



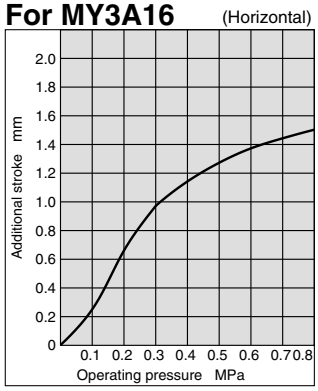
MY3A63



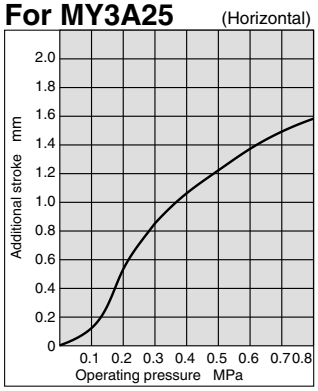
Rubber Bumper Displacement (Additional Stroke due to Pressure on Each Side)

The stop position of the built-in rubber bumper of Series MY3A varies depending on the operating pressure. For alignement at the stroke end, find the guideline for the stroke end position in operation as follows. Find the incremental displacement at the operating pressure in the graph and add it to the stroke end position at no pressurization. If positioning accuracy is required for the stop position at the stroke end, consider installing an external positioning mechanism or switching to the air cushion type (MY3B).

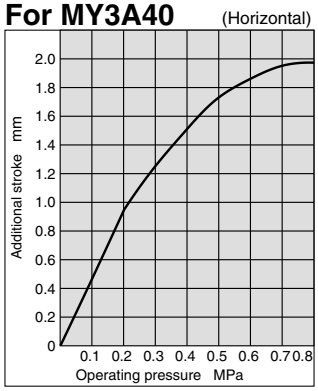
For MY3A16 (Horizontal)



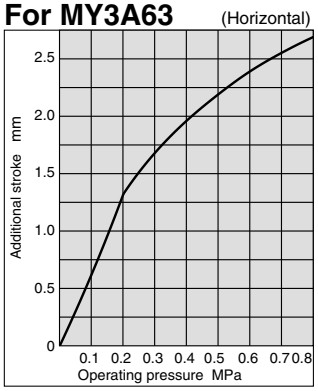
For MY3A25 (Horizontal)



For MY3A40 (Horizontal)



For MY3A63 (Horizontal)

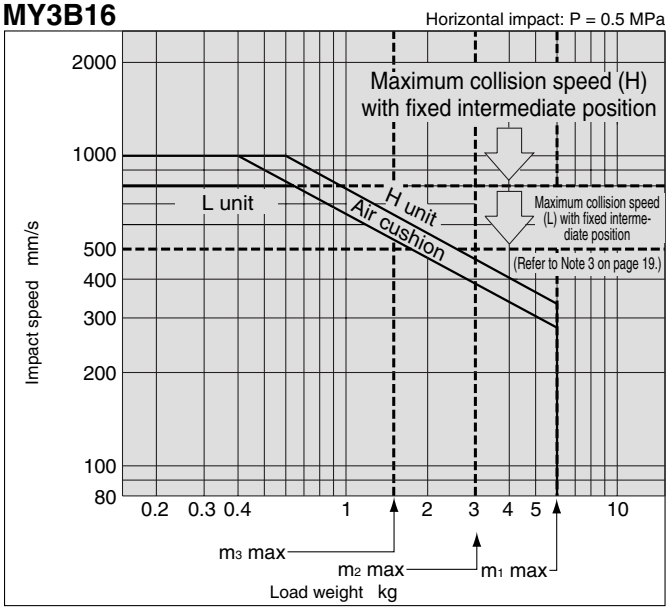


Note) In vertical operation, find the guideline for the stroke end position by adding, in case of the lower end, or subtracting, in case of the upper end, the pressure displacement equivalent to the self weight of the load.

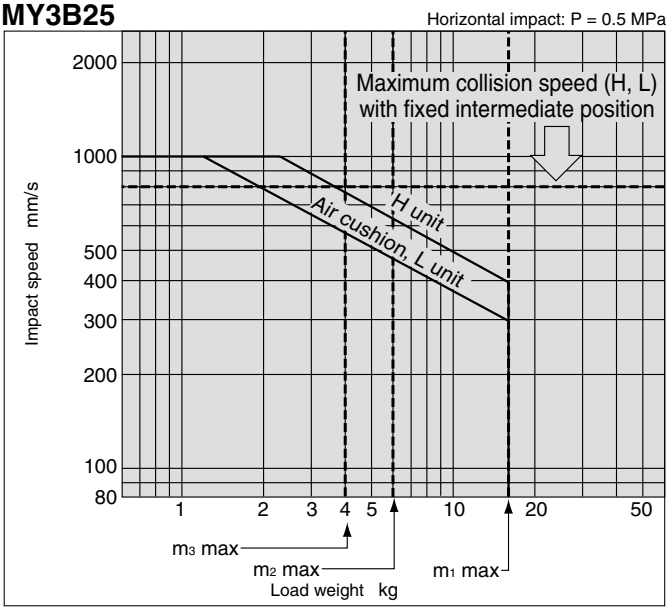
Cushion Capacity

Absorption Capacity of Air Cushion and Stroke Adjusting Unit (MY3B)

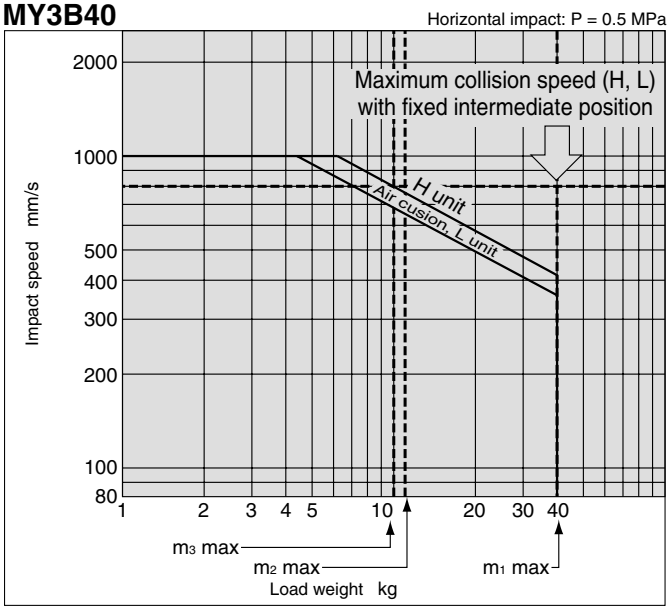
MY3B16



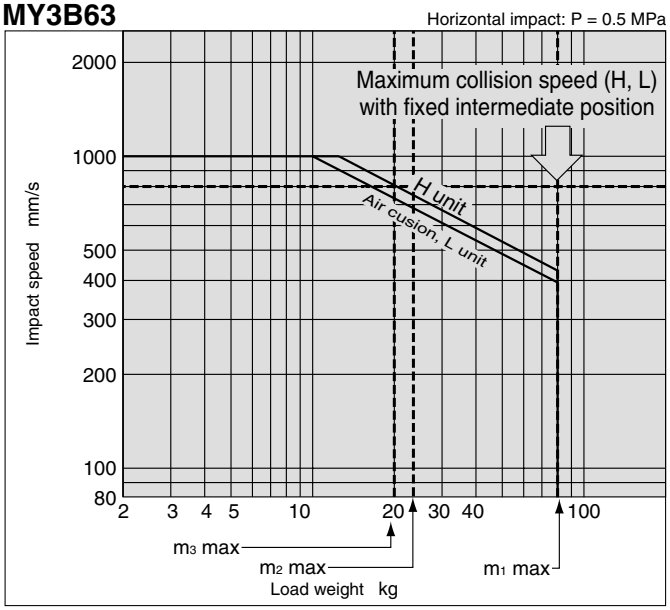
MY3B25



MY3B40



MY3B63



Air Cushion Stroke

(mm)

Bore size (mm)	Cushion stroke
16	13
25	18
40	25
63	30

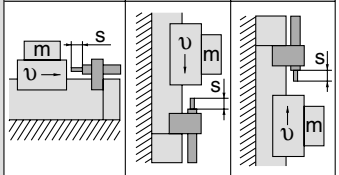
Stroke Adjusting Unit/ Fine Stroke Adjustment Range (mm)

Bore size (mm)	Fine stroke adjusting range (mm)
16	0 to -10
25	0 to -12
40	0 to -16
63	

Note) The maximum operating speed will differ when the stroke adjusting unit is used outside the maximum fine stroke adjustment range (with reference to the fixed stroke end), such as at a fixed intermediate position (X416, X417). (Refer to the graph above.)

Calculation of Absorbed Energy for Stroke Adjusting Unit with Built-In Shock Absorber

(N·m)

	Horizontal	Vertical (downward)	Vertical (upward)
Type of impact			
Kinetic energy E_1	$\frac{1}{2}m \cdot \upsilon^2$		
Kinetic 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: Weight of impacting object (kg)
- F: Cylinder thrust (N)
- g: Gravitational acceleration (9.8 m/s²)
- s: Shock absorber stroke (m)

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

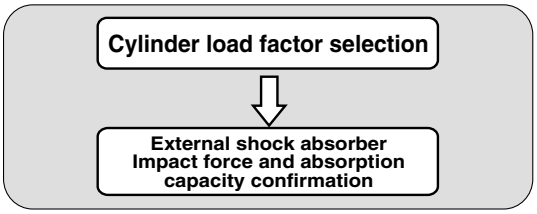
Note) With an operating pressure of 0.6 MPa or larger, the use of a cushion or an external shock absorber conforming to the conditions on page 8-14-11 is recommended.

External Shock Absorber Selection

When the positioning of the stop position is necessary or the absorption capacity of the built-in cushion is not sufficient, refer to the selection procedure below and consider the installation of an external shock absorber.

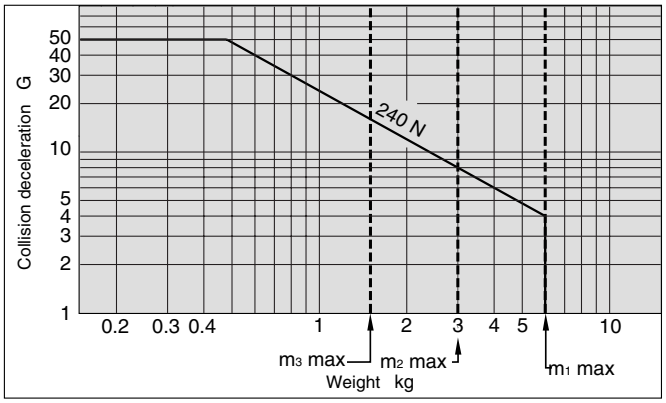
Selection Confirmation Items with Use of External Shock Absorber

1. Cylinder is used alone.

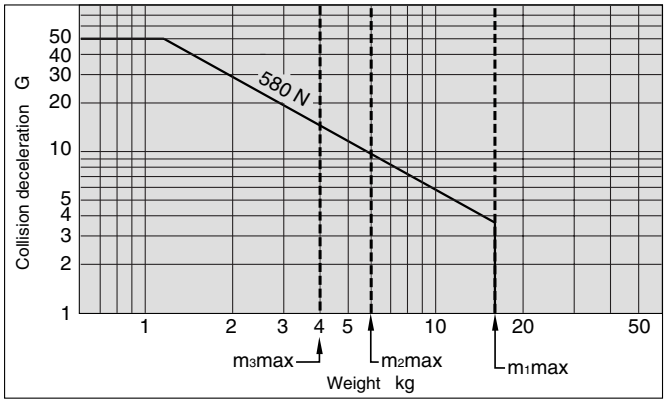


Allowable impact force with use of external shock absorber

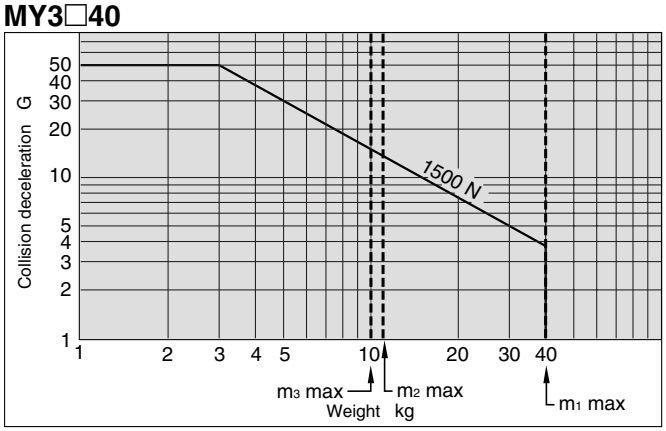
MY3□16



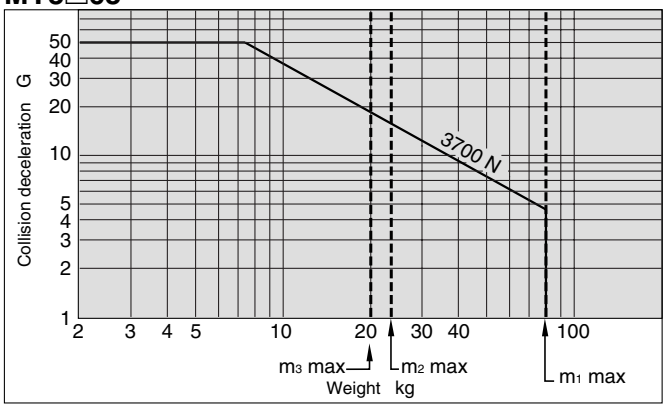
MY3□25



MY3□40

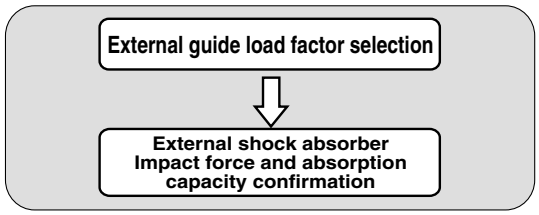


MY3□63



Note) The weight represents the equivalent weight including the thrust energy.

2. External guide is used.



Piston Speed with Use of External Shock Absorber

Bore size (mm)	16	25	40	63
MY3A	80 to 1500 mm/s			
MY3B				

An external shock absorber can be used within the above piston speed range. In conjunction with the absorption capacity selection, however, also confirm the conditions which make the shock absorber collision impact force to stay within the allowable range in the graph.
Use of an external shock absorber with conditions exceeding the allowable range may damage the cylinder.

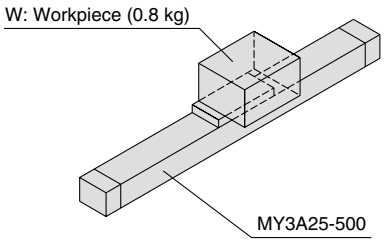
To confirm the collision impact force of the shock absorber, first find the impact force or acceleration under the operating conditions using the selection information or selection software provided by the manufacturer, and then refer to the graph.
(The selection should allow a sufficient margin because the value calculated by the selection software involves an error with reference to the actual value.)

Series MY3A/3B
Model Selection 2

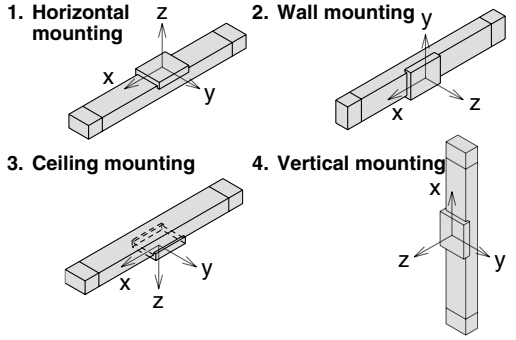
Calculation of Guide Load Factor

1. Operating Conditions

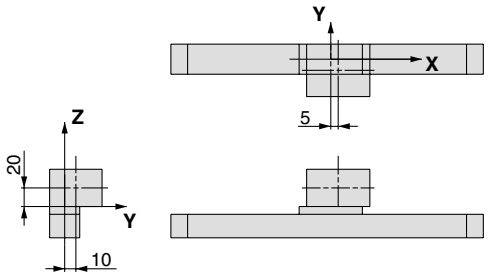
Cylinder ····· MY3A25-500
Average operating speed υa ····· 300 mm/s
Mounting orientation ····· Horizontal mounting
Cushion ····· Rubber bumper (δ = 4/100)



Mounting Orientation



2. Load Blocking



Workpiece Weight and Center of Gravity

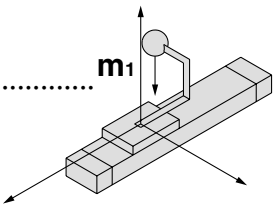
Workpiece no.	Weight (m)	Center of gravity		
		X axis	Y axis	Z axis
W	0.8 kg	5 mm	10 mm	20 mm

3. Calculation of Load Factor for Static Load

m_1: Mass

m_1 max (from ① of graph MY3A/m_1) = 10.7 (kg) ·····

Load factor $\alpha_1 = m_1/m_1$ max = 0.8/10.7 = **0.08**

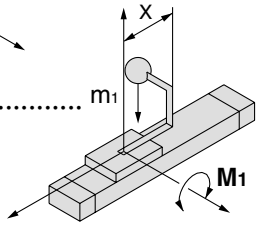


M_1: Moment

M_1 max (from ② of graph MY3A/M_1) = 4 (N·m) ·····

$M_1 = m_1 \times g \times X = 0.8 \times 9.8 \times 5 \times 10^{-3} = 0.04$ (N·m)

Load factor $\alpha_2 = M_1/M_1$ max = 0.04/4 = **0.01**

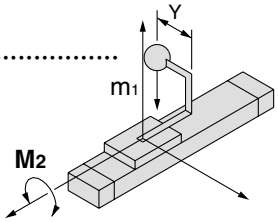


M_2: Moment

M_2 max (from ③ of graph MY3A/M_2) = 0.8 (N·m) ·····

$M_3 = m_1 \times g \times Y = 0.8 \times 9.8 \times 10 \times 10^{-3} = 0.08$ (N·m)

Load factor $\alpha_3 = M_2/M_2$ max = 0.08/0.8 = **0.1**



Calculation of Guide Load Factor

4. Calculation of Load Factor for Dynamic Moment

Equivalent load F_E at impact

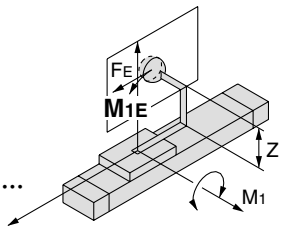
$F_E = 1.4\upsilon a \times \delta \times m \times g = 1.4 \times 300 \times \frac{4}{100} \times 0.8 \times 9.8 = 131.7$ (N)

M_{1E}: Moment

M_{1E} max (from ④ of graph MY3A/M_1 where $1.4\upsilon a$ = 420 mm/s) = 2.85 (N·m) .....

$M_{1E} = \frac{1}{3} \times F_E \times Z = \frac{1}{3} \times 131.7 \times 20 \times 10^{-3} = 0.88$ (N·m)

Load factor $\alpha_4 = M_{1E}/M_{1E}$ max = 0.88/2.85 = **0.31**

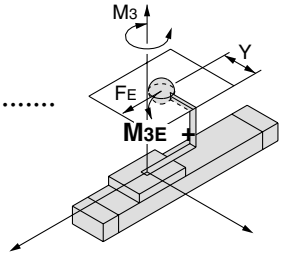


M_{3E}: Moment

M_{3E} max (from ⑤ of graph MY3A/M_3 where $1.4\upsilon a$ = 420 mm/s) = 0.95 (N·m) .....

$M_{3E} = \frac{1}{3} \times F_E \times Y = \frac{1}{3} \times 131.7 \times 10 \times 10^{-3} = 0.44$ (N·m)

Load factor $\alpha_5 = M_{3E}/M_{3E}$ max = 0.44/0.95 = **0.43**



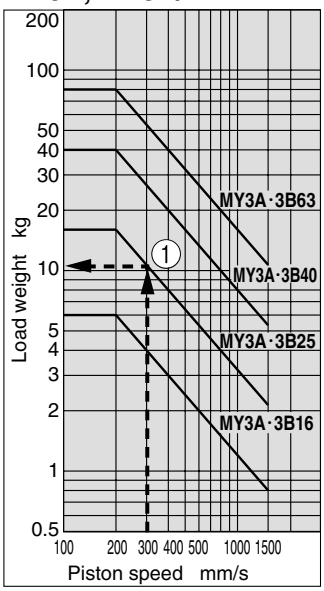
5. Sum and Examination of Guide Load Factors

$\Sigma\alpha = \alpha_1 + \alpha_2 + \alpha_3 + \alpha_4 + \alpha_5 = 0.08 + 0.01 + 0.1 + 0.31 + 0.43 = 0.93 \leq 1$

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 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.

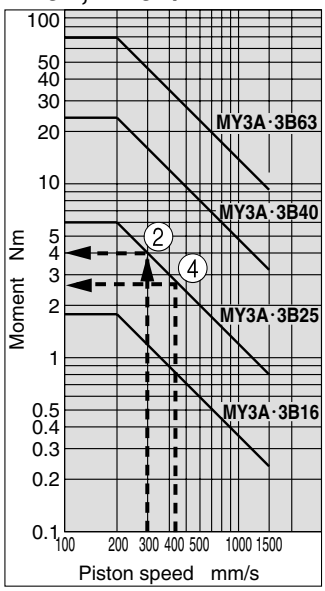
Load Weight

MY3A, MY3B/m_1

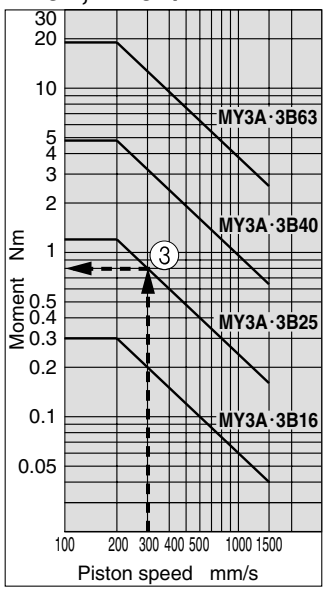


Allowable Moment

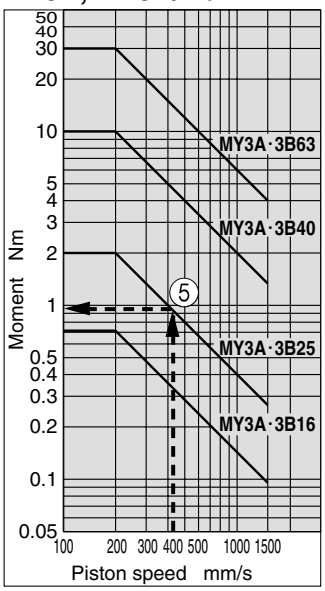
MY3A, MY3B/M_1



MY3A, MY3B/M_2



MY3A, MY3B/M_3



Mechanically Jointed Rodless Cylinder
Short Type/Basic Type
Series MY3A/3B
ø16, ø25, ø40, ø63

How to Order

MY3 A 16 — 300 LS — M9B

Type

A	Short type (Rubber bumper)
B	Basic type (Air cushion)

Cylinder bore size

16	16 mm
25	25 mm
40	40 mm
63	63 mm

Thread type

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

Stroke
Refer to "Standard Stroke" on page 8-14-15.

Stroke adjusting unit (MY3B only)

Nil	Without adjusting unit
L	With shock absorber for low load on both sides
H	With shock absorber for high load on both sides
LS	With shock absorber for low load on left side
SL	With shock absorber for low load on right side
HS	With shock absorber for high load on left side
SH	With shock absorber for high load on right side
LH	One L unit at left side and one H unit on right side
HL	One H unit at left side and one L unit on right side

Auto switch

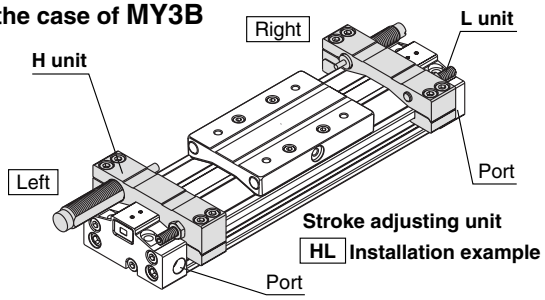
Nil	Without auto switch

∗ For the applicable auto switch model, refer to the table below.
∗ Auto switches are shipped together, (but not assembled).

Number of auto switches

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

Stroke adjusting unit appearance and mounting direction
In the case of MY3B



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

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

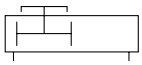
∗ Lead wire length symbols: 0.5 m..... Nil (Example) F9NW
3 m..... L F9NWL
5 m..... Z F9NWZ

Notes) ∗ Solid state switches marked with a "○" symbol are produced upon receipt of order.
∗ In addition to the models in the above table, there are some other auto switches that are applicable. For more information, please refer to page 8-14-23.

MY3A

MY3B

JIS Symbol



Specifications

Bore size (mm)	16	25	40	63
Fluid	Air			
Action	Double acting			
Operating pressure range	0.15 to 0.8 MPa			
Proof pressure	1.2 MPa			
Ambient and fluid temperature	5 to 60°C			
Cushion	Rubber bumper (MY3A)/Air cushion (MY3B)			
Lubricaton	Non-lube			
Stroke length tolerance	1000 mm or less $^{+1.8}_{0}$, 1001 mm to $^{+2.8}_{0}$ Note)			
Port size (Rc, NPT, G)	M5 x 0.8	1/8	1/4	3/8

Note) The tolerance of MY3A is a value with no pressurization. When a rubber bumper is used, the stroke of MY3A varies according to the operating pressure.
To find the stroke length tolerance at each operating pressure, double the additional stroke due to pressure on each side (page 8-14-9) and add it.

Stroke Adjusting Unit Specifications

Bore size (mm)		16		25		40		63	
Unit symbol		L	H	L	H	L	H	L	H
Shock absorber model		RB0806	RB1007	RB1007	RB1412	RB1412	RB2015	RB2015	RB2725
Fine stroke adjusting range (mm)	MY3B	0 to −10		0 to −12		0 to −16		0 to −16	

Piston Speed

Bore size (mm)	16	25	40	63
Without stroke adjusting unit (MY3A)	80 to 500 mm/s			
Without stroke adjusting unit (MY3B)	80 to 1000 mm/s			
Stroke adjusting unit (L and H unit/MY3B)	80 to 1000 mm/s (ø16L unit: 80 to 800 mm/s)			
External shock absorber (Low reaction type)*	80 to 1500 mm/s			

* Refer to "External Shock Absorber Selection" on page 8-14-11.
When Series RB is used, operate at a piston speed that will not exceed the absorption capacity of the air cushion and stroke adjusting unit.

Standard Stroke

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

* Strokes are manufacturable in 1mm increments, up to the maximum stroke. However, when exceeding a 2000 mm stroke, specify "-XB11" at the end of the model number. Refer to the made to order specifications on page 8-14-24.

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
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
63	3115	623	934	1246	1557	1869	2180	2492

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

Option

Stroke Adjusting Unit Model

Model	Unit \ Bore size (mm)		16	25	40	63
MY3B	**L unit**	Left	MY3B-A16L1	MY3B-A25L1	MY3B-A40L1	MY3B-A63L1
		Right	MY3B-A16L2	MY3B-A25L2	MY3B-A40L2	MY3B-A63L2
	H unit	Left	MY3B-A16H1	MY3B-A25H1	MY3B-A40H1	MY3B-A63H1
		Right	MY3B-A16H2	MY3B-A25H2	MY3B-A40H2	MY3B-A63H2

Shock Absorber Specifications

Model		RB 0806	RB 1007	RB 1412	RB 2015	RB 2725
Max. energy absorption (J)		0.84	2.4	10.1	29.8	46.6
Stroke absorption (mm)		6	7	12	15	25
Max. impact speed (mm/s)		1000				
Max. operating frequency (cycles/min)		80	70	45	25	10
Spring force (N)	Extended	1.96	4.22	6.86	8.34	8.83
	Compressed	4.22	6.86	15.98	20.50	20.01
Operating temperature range (°C)		5 to 60				

Weight

Unit: kg

Model	Bore size (mm)	Basic weight	Additional weight per each 50 mm of stroke	Stroke adjusting unit weight (per unit)	
				Weight of L unit	Weight of H unit
MY3A	**16**	0.22	0.06		
	25	0.65	0.17		
	40	2.45	0.25		
	63	7.14	0.56		
MY3B	**16**	0.23	0.06	0.04	0.05
	25	0.75	0.17	0.10	0.15
	40	2.58	0.25	0.26	0.30
	63	7.87	0.56	0.57	0.92

Calculation method
Example: MY3B25-300L
Basic weight ····· 0.75 kg
Additional weight ····· 0.17/50 st
Weight of L unit ····· 0.1 kg
Cylinder stroke ····· 300 st
$0.75 + 0.17 \times 300 \div 50 + 0.1 \times 2 \cong 1.97$ kg

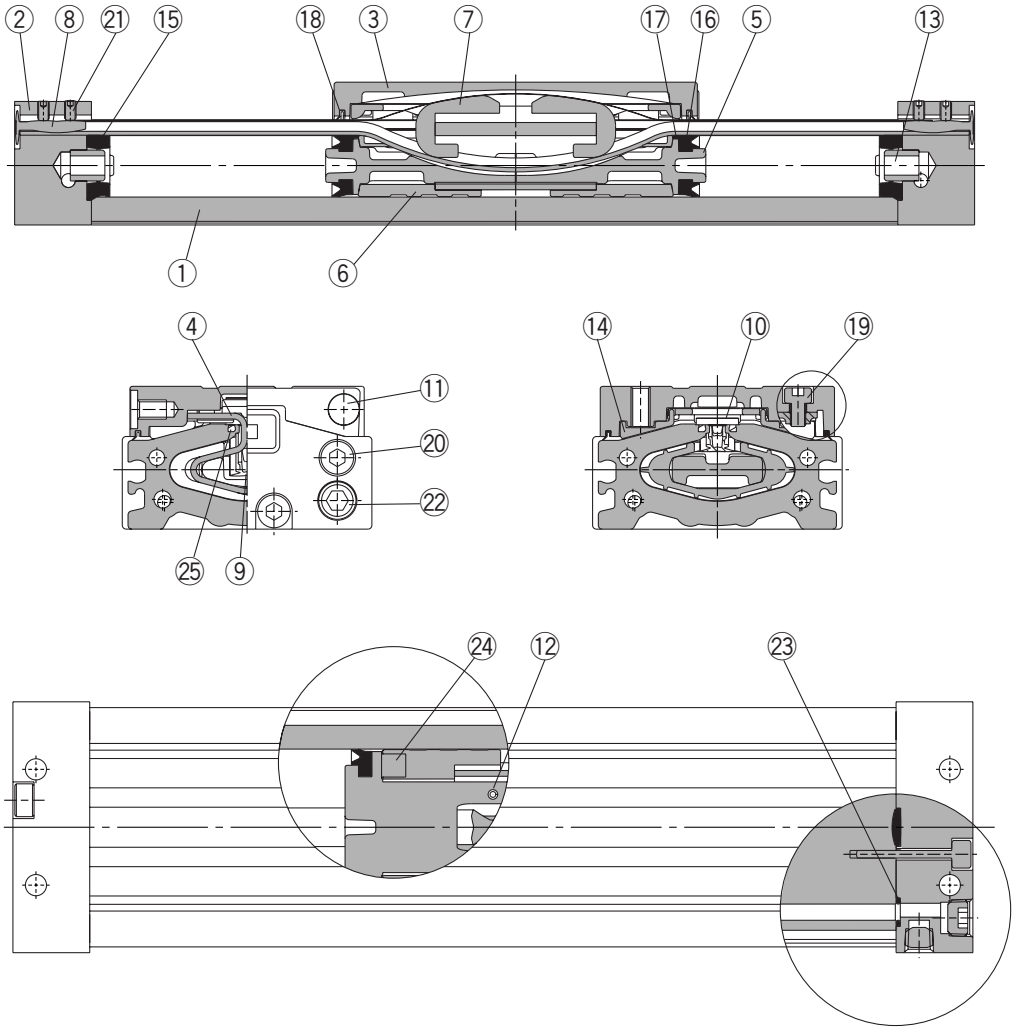
Made to Order Specifications

Refer to pages 8-14-24 to 8-14-25 regarding made to order specifications for Series MY3A/B.

Series MY3A/3B

Construction

MY3A



Component Parts

No.	Description	Material	Note
①	Cylinder tube	Aluminum alloy	Hard anodized
②	Head cover	Aluminum alloy	Hard anodized
③	Slide table	Aluminum alloy	Electroless nickel plated
④	Piston yoke	Stainless steel	
⑤	Piston	Aluminum alloy	Chromated
⑥	Wear ring	Special resin	
⑦	Belt separator	Special resin	
⑧	Belt clamp	Special resin	
⑪	Stopper	Carbon steel	Nickel plated

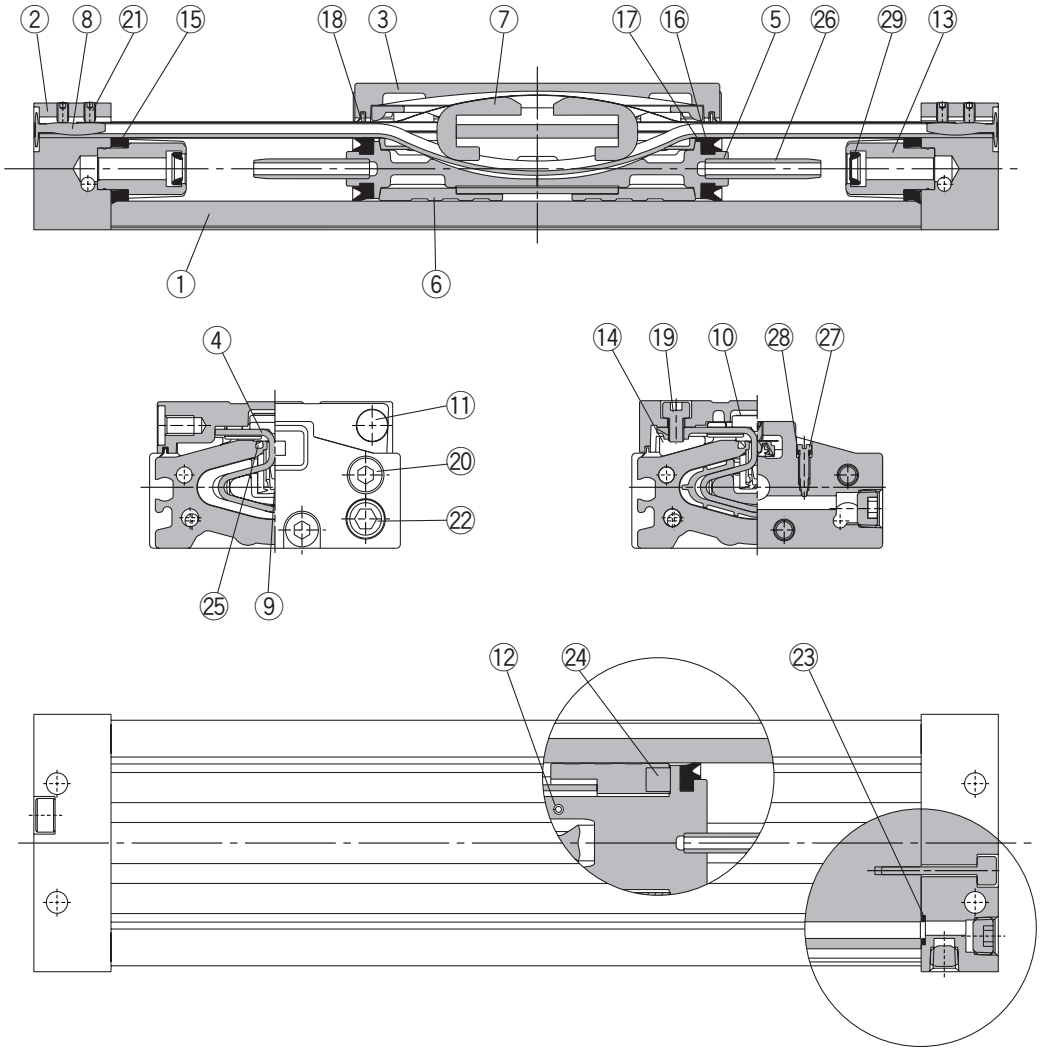
No.	Description	Material	Note
⑫	Spring pin	Carbon tool steel	Black zinc chromated
⑬	Seal ring	Brass	
⑭	Bearing	Special resin	
⑰	Inner wiper	Special resin	
⑲	Hexagon socket head cap screw	Chrome molybdenum steel	Nickel plated
⑳	Hexagon socket head cap screw	Chrome molybdenum steel	Nickel plated
㉑	Hexagon socket head set screw	Chrome molybdenum steel	Nickel plated
㉒	Hexagon socket head taper plug	Carbon steel	Nickel plated
㉔	Magnet	Rare earth magnet	
㉕	Seal magnet	Rubber magnet	

Replacement Parts: Seal Kit

No.	Description	Material	Qty.	MY3A16	MY3A25	MY3A40	MY3A63
⑨	Seal belt	Special resin	1	MY3A16-16A-Stroke	MY3A25-16A-Stroke	MY3A40-16A-Stroke	MY3A63-16A-Stroke
⑩	Dust seal band	Stainless steel	1	MY3A16-16B-Stroke	MY3A25-16B-Stroke	MY3A40-16B-Stroke	MY3A63-16B-Stroke
⑮	Gasket bumper	NBR	2	RMA-16	RMA-25	RMA-40	RMA-63
⑯	Piston seal	NBR	2	RMY-16	RMY-25	RMY-40	RMY-63
⑱	Scraper	Special resin	1	MYA16-15-R6656	MYA25-15-R6657	MYA40-15-R6658	MYA63-15-R6659
㉓	O-ring	NBR	4	ø6.2 x ø3 x ø1.6	C-5	ø10.5 x ø8.5 x ø1	C-14

Construction

MY3B



Component Parts

No.	Description	Material	Note
①	Cylinder tube	Aluminum alloy	Hard anodized
②	Head cover	Aluminum alloy	Hard anodized
③	Slide table	Aluminum alloy	Electroless nickel plated
④	Piston yoke	Stainless steel	
⑤	Piston	Aluminum alloy	Chromated
⑥	Wear ring	Special resin	
⑦	Belt separator	Special resin	
⑧	Belt clamp	Special resin	
⑪	Stopper	Carbon steel	Nickel plated
⑫	Spring pin	Carbon tool steel	Black zinc chromated

No.	Description	Material	Note
⑬	Cushion boss	Aluminum alloy	Chromated
⑭	Bearing	Special resin	
⑰	Inner wiper	Special resin	
⑲	Hexagon socket head cap screw	Chrome molybdenum steel	Nickel plated
⑳	Hexagon socket head cap screw	Chrome molybdenum steel	Nickel plated
㉑	Hexagon socket head set screw	Chrome molybdenum steel	Nickel plated
㉒	Hexagon socket head taper plug	Carbon steel	Nickel plated
㉔	Magnet	Rare earth magnet	
㉕	Seal magnet	Rubber magnet	
㉖	Cushion ring	Brass	
㉗	Cushion needle	Rolled steel	Nickel plated

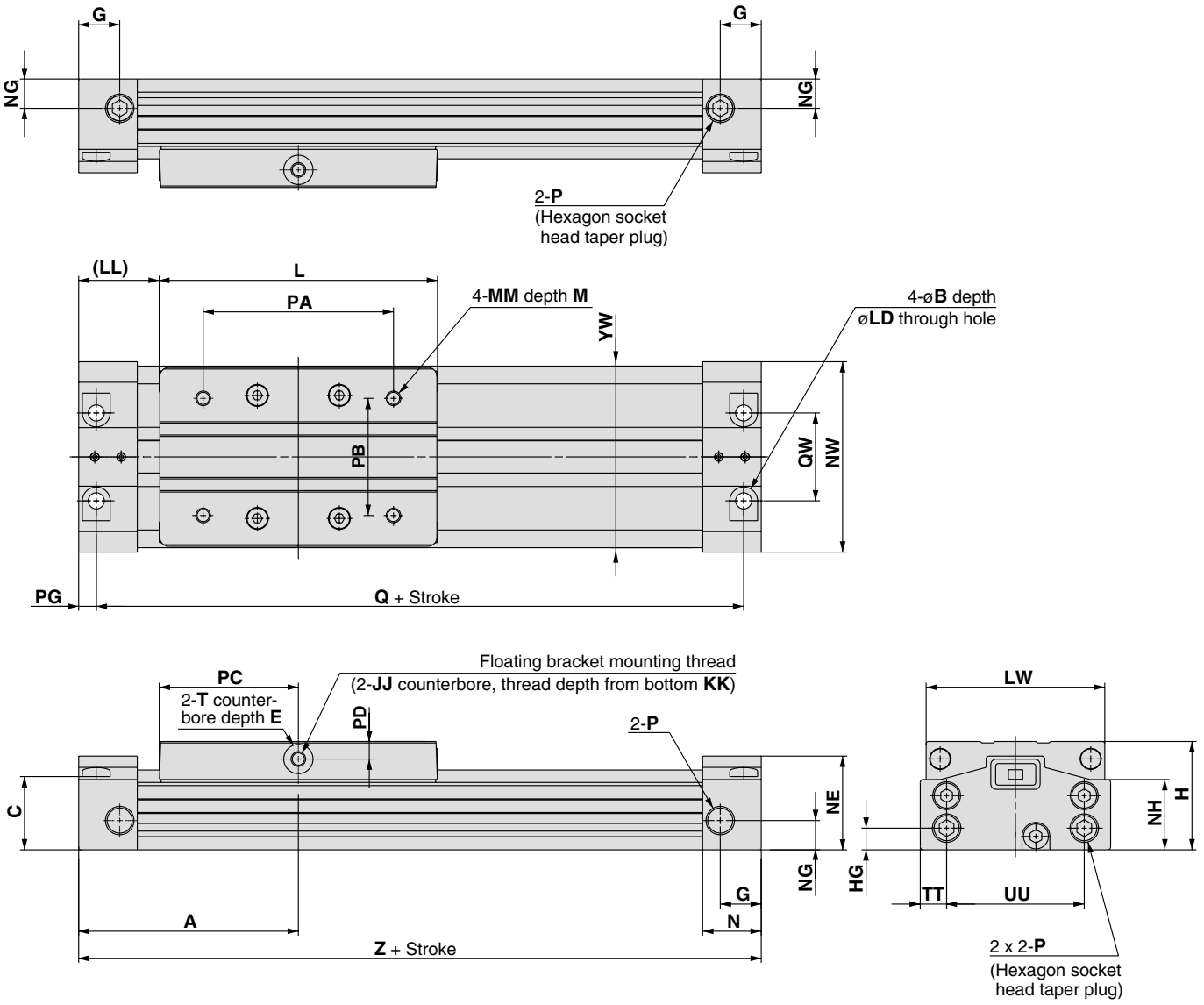
Replacement Parts: Seal Kit

No.	Description	Material	Qty.	MY3B16	MY3B25	MY3B40	MY3B63
⑨	Seal belt	Special resin	1	MY3B16-16A-Stroke	MY3B25-16A-Stroke	MY3B40-16A-Stroke	MY3B63-16A-Stroke
⑩	Dust seal band	Stainless steel	1	MY3B16-16B-Stroke	MY3B25-16B-Stroke	MY3B40-16B-Stroke	MY3B63-16B-Stroke
⑮	Tube gasket	NBR	2	RMB-16	RMB-25	RMB-40	RMB-63
⑯	Piston seal	NBR	2	RMY-16	RMY-25	RMY-40	RMY-63
⑱	Scraper	Special resin	1	MYA16-15-R6656	MYA25-15-R6657	MYA40-15-R6658	MYA63-15-R6659
㉓	O-ring	NBR	4	ø6.2 x ø3 x ø1.6	C-5	ø10.5 × ø8.5 × ø1	C-14
㉘	O-ring	NBR	2	ø4 x ø1.8 x ø1.1	ø4 x ø1.8 x ø1.1	ø7.15 x ø3.75 x ø1.7	ø8.3 x ø4.5 x ø1.9
㉙	Cushion seal	NBR	2	MCS-3	MCS-5	RCS-8	RCS-12

Series MY3A/3B

Short Type: ø16, ø25, ø40, ø63

MY3A Bore size — Stroke



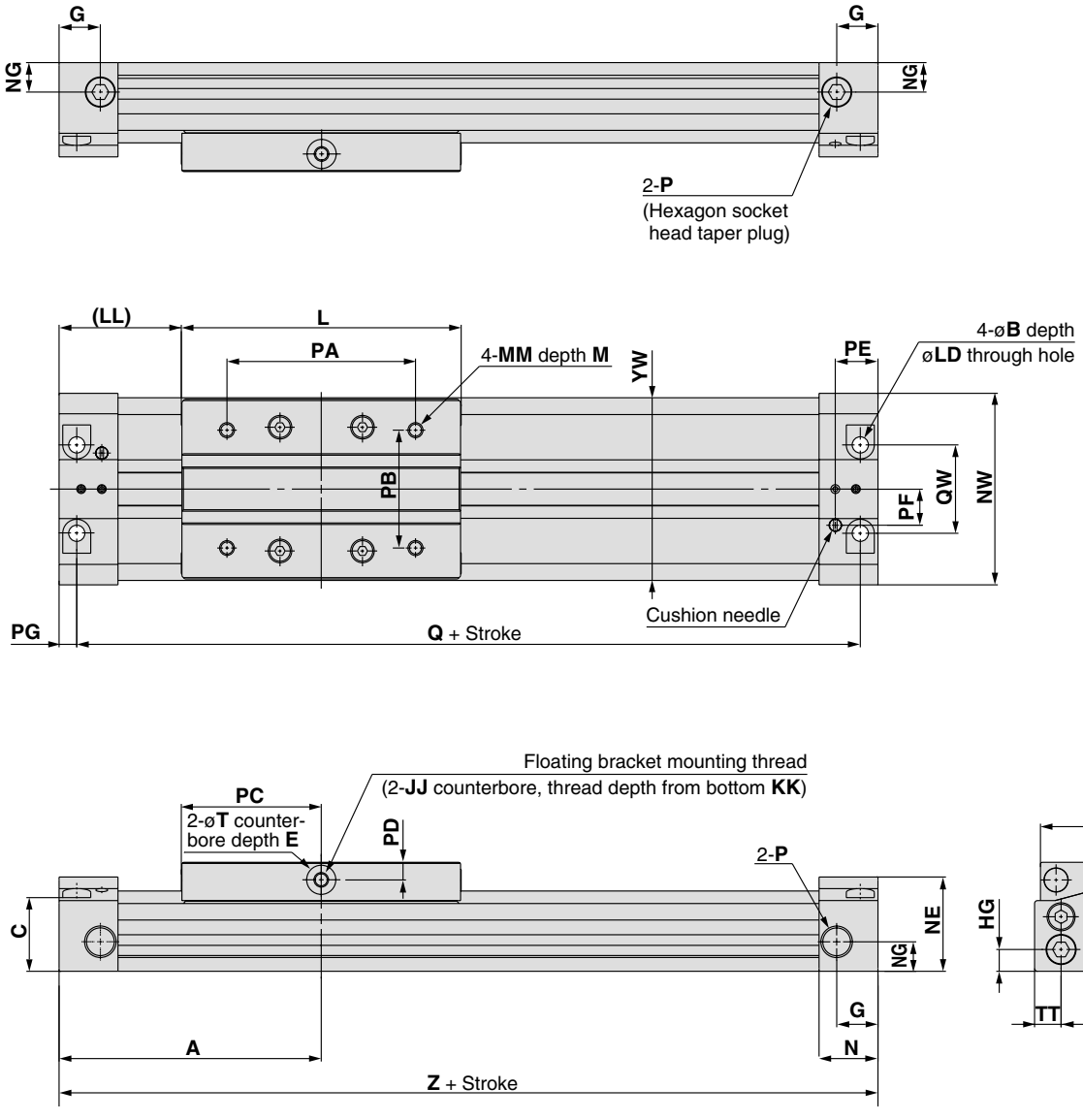
(mm)

Model	A	B	C	E	G	H	HG	JJ	KK	L	LD	LL	LW	M	MM	N
MY3A16	55	6	18	2	9.5	27	5	M4 x 0.7	5	65	3.5	22.5	41	6	M4 x 0.7	13.5
MY3A25	75	9.5	25	2	14	37	7.4	M5 x 0.8	7.5	95	5.5	27.5	61	8	M5 x 0.8	20
MY3A40	120	14	38	2	18	54	12	M6 x 1	12	160	8.6	40	90	12	M6 x 1	27
MY3A63	160	17	60	3	20.5	84	16.5	M8 x 1.25	22	220	11	50	134	16	M8 x 1.25	31

Model	NE	NG	NH	NW	P	PA	PB	PC	PD	PG	Q	QW	T	TT	UU	YW	Z
MY3A16	22.5	8	17.2	43	M5 x 0.8	44	26	32.5	4	4	102	19	7	6.5	30	42	110
MY3A25	32	10	24	65	Rc, NPT, $G^1/_8$	64	40	47.5	6	6	138	30	10	9	47	62	150
MY3A40	46	15	37	94	Rc, NPT, $G^1/_4$	112	60	80	7.5	8.5	223	40	14	14	66	92	240
MY3A63	70	29	58	139	Rc, NPT, $G^3/_8$	162	84	110	10	10	300	64	16	20	99	136	320

Basic Type: ø16, ø25, ø40, ø63

MY3B **Bore size** — **Stroke**



(mm)

Model	A	B	C	E	G	H	HG	JJ	KK	L	LD	LL	LW	M	MM	N
MY3B16	61	6	18	2	9.5	27	5	M4 x 0.7	5	65	3.5	28.5	41	6	M4 x 0.7	13.5
MY3B25	89	9.5	25	2	14	37	7.4	M5 x 0.8	7.5	95	5.5	41.5	61	8	M5 x 0.8	20
MY3B40	138	14	38	2	18	54	12	M6 x 1	12	160	8.6	58	90	12	M6 x 1	27
MY3B63	178	17	60	3	20.5	84	16.5	M8 x 1.25	22	220	11	68	134	16	M8 x 1.25	31

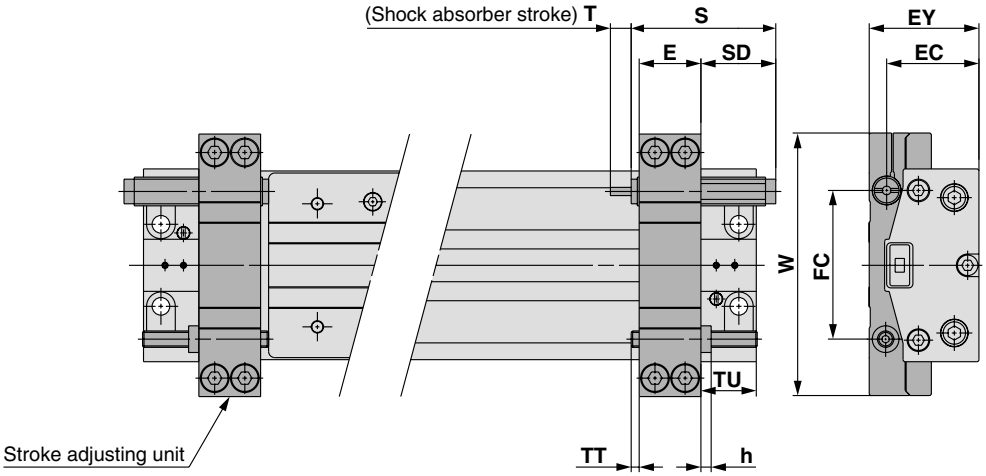
Model	NE	NG	NH	NW	P	PA	PB	PC	PD	PE	PF	PG	Q	QW	T	TT	UU	YW	Z
MY3B16	22.5	8	17.2	43	M5 × 0.8	44	26	32.5	4	9.7	8.5	4	114	19	7	6.5	30	42	122
MY3B25	32	10	24	65	Rc, NPT, $G^{1}/_{8}$	64	40	47.5	6	14.5	12.2	6	166	30	10	9	47	62	178
MY3B40	46	15	37	94	Rc, NPT, $G^{1}/_{4}$	112	60	80	7.5	19.5	16.5	8.5	259	40	14	14	66	92	276
MY3B63	70	29	58	139	Rc, NPT, $G^{3}/_{8}$	162	84	110	10	23.5	27.5	10	336	64	16	20	99	136	356

Basic Type: ø16, ø25, ø40, ø63

Stroke Adjusting Unit

Shock absorber for low load + Adjusting bolt

MY3B Bore size — Stroke L

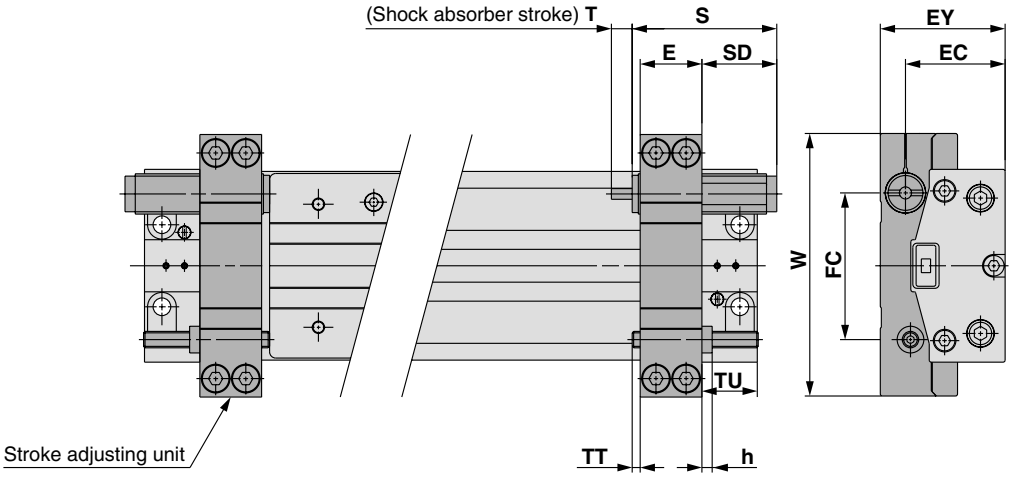


(mm)

Applicable cylinder	E	EC	EY	FC	h	S	SD	T	TT	TU	W	Shock absorber model
MY3B16	14.1	21.5	26.5	34.5	2.4	40.8	25.8	6	0.9	25	62	RB0806
MY3B25	20.1	29.8	36.5	51.5	3.6	46.7	25.2	7	1.4	28.5	90	RB1007
MY3B40	30.1	45	53.5	72.5	5	67.3	36.3	12	0.9	39	128	RB1412
MY3B63	36.1	70.5	83.5	108	6	73.2	36.2	15	0.9	43	178	RB2015

Shock absorber for high load + Adjusting bolt

MY3B Bore size — Stroke H

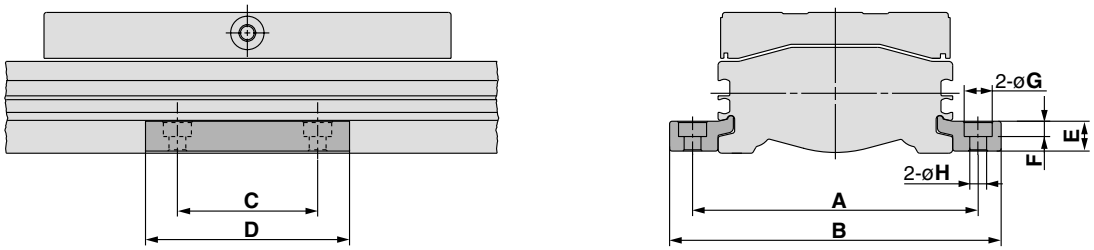


(mm)

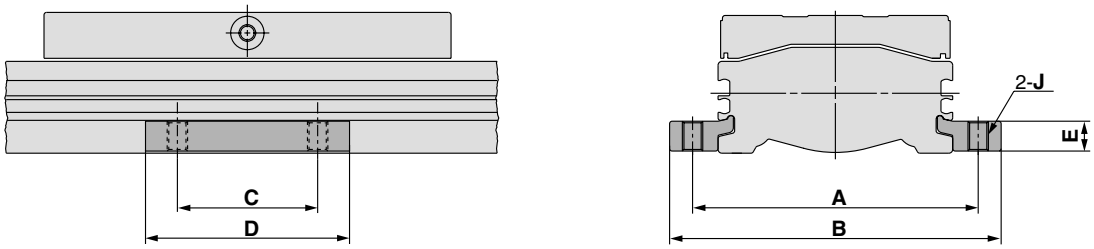
Applicable cylinder	E	EC	EY	FC	h	S	SD	T	TT	TU	W	Shock absorber model
MY3B16	14.1	23	29.5	34.5	2.4	46.7	31.7	7	0.9	25	62	RB1007
MY3B25	20.1	31.8	41	52.2	3.6	67.3	45.8	12	1.4	28.5	90	RB1412
MY3B40	30.1	48	60.5	73.5	5	73.2	42.2	15	0.9	39	128	RB2015
MY3B63	36.1	74.5	91	108	6	99	62	25	0.9	43	178	RB2725

Side Support

Side support A
MY-S□A



Side support B
MY-S□B

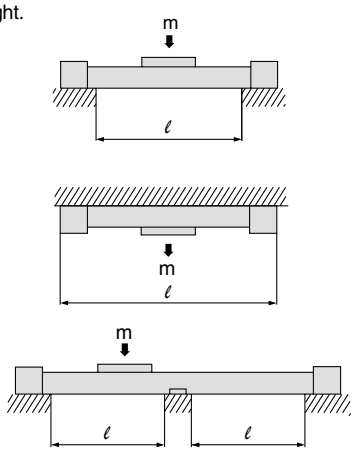


(mm)

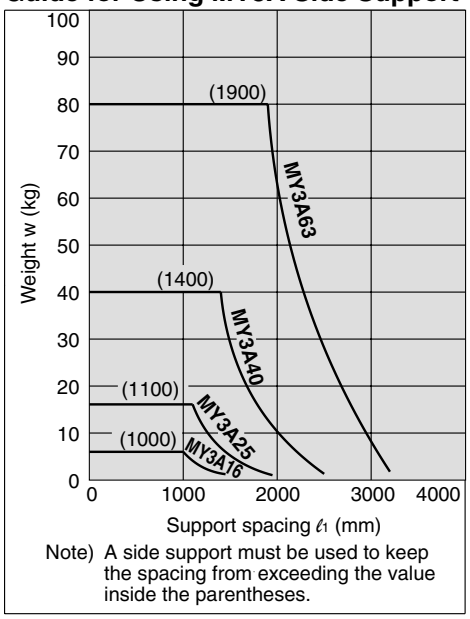
Model	Applicable cylinder	A	B	C	D	E	F	G	H	J
MY-S16 A/B	**MY3A16, MY3B16**	53	63.6	15	26	4.9	3	6.5	3.4	M4 x 0.7
MY-S25 A/B	**MY3A25, MY3B25**	77	91	35	50	8	5	9.5	5.5	M6 x 1
MY-S32 A/B	**MY3A40, MY3B40**	112	130	45	64	11.7	6	11	6.6	M8 x 1.25
MY-S40 A/B	**MY3A63, MY3B63**	160	182	55	80	14.8	8.5	14	9	M10 x 1.5

Guide for Using Side Support

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

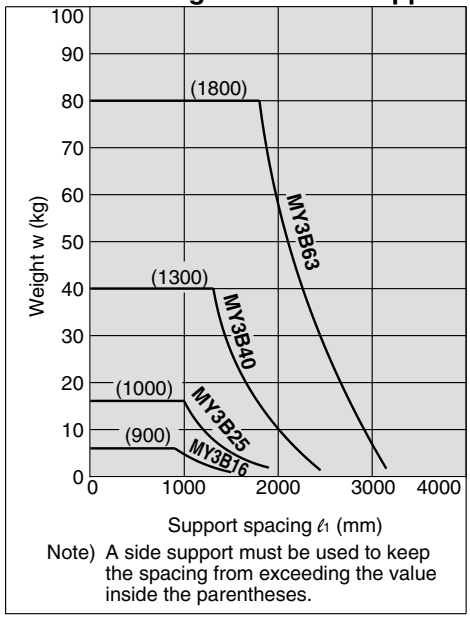


Guide for Using MY3A Side Support



Note) A side support must be used to keep the spacing from exceeding the value inside the parentheses.

Guide for Using MY3B Side Support



Note) A side support must be used to keep the spacing from exceeding the value inside the parentheses.

⚠ Caution

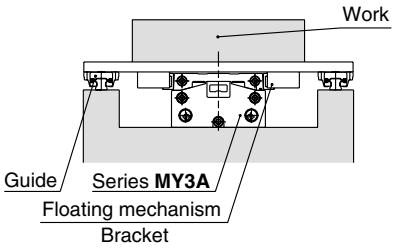
1. If the cylinder mounting surfaces are not measured accurately, using a side support may cause poor operation. Therefore, be sure to level the cylinder tube when mounting. Also, for long stroke operation involving vibration and impact, use of a side support is recommended even if the spacing value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

Floating Bracket

Facilitates connection to other guide systems.

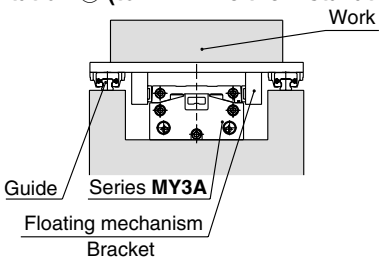
Application

Mounting orientation ① (to minimize the installation width)

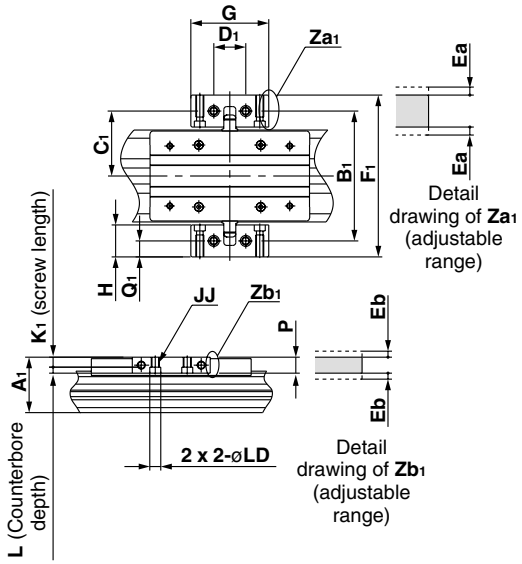


Application

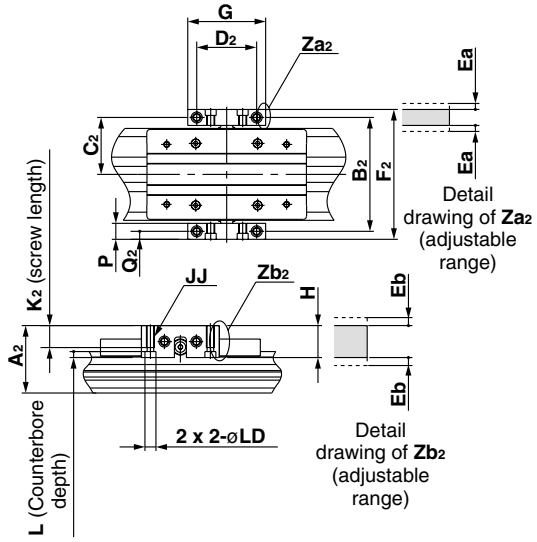
Mounting orientation ② (to minimize the installation height)



Mounting Example



Mounting Example



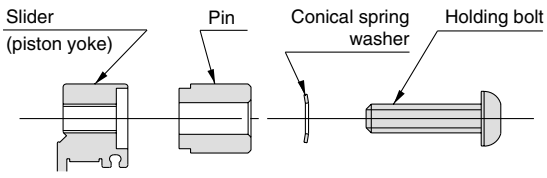
MY3□ Floating Bracket Mounting Dimensions (mm)

Model	Applicable cylinder	Common						Adjusting range	
		G	H	JJ	L	P	LD	Ea	Eb
MYAJ16	MY3□16	38	20	M4 x 0.7	4.5	10	6	1	1
MYAJ25	MY3□25	55	22	M6 x1	5.5	12	9.5	1	1
MYAJ40	MY3□40	72	32	M8 x1.25	6.5	16	11	1	1
MYAJ63	MY3□63	100	40	M10 x1.5	9	19	14	1	1

Model	Applicable cylinder	Mounting direction ①						
		A1	B1	C1	D1	F1	K1	Q1
MYAJ16	MY3□16	29	68	34	18	88	5.5	10
MYAJ25	MY3□25	38.5	90	45	24	112	6.5	11
MYAJ40	MY3□40	56	130	65	32	162	9.5	16
MYAJ63	MY3□63	86	186	93	50	226	10	20

Model	Applicable cylinder	Mounting direction ②						
		A2	B2	C2	D2	F2	K2	Q2
MYAJ16	MY3□16	36	58	29	30	68	10	5
MYAJ25	MY3□25	46	80	40	40	92	14	6
MYAJ40	MY3□40	68	114	57	55	130	19	8
MYAJ63	MY3□63	100	166	83	80	185	23	9.5

Installation of holding bolt



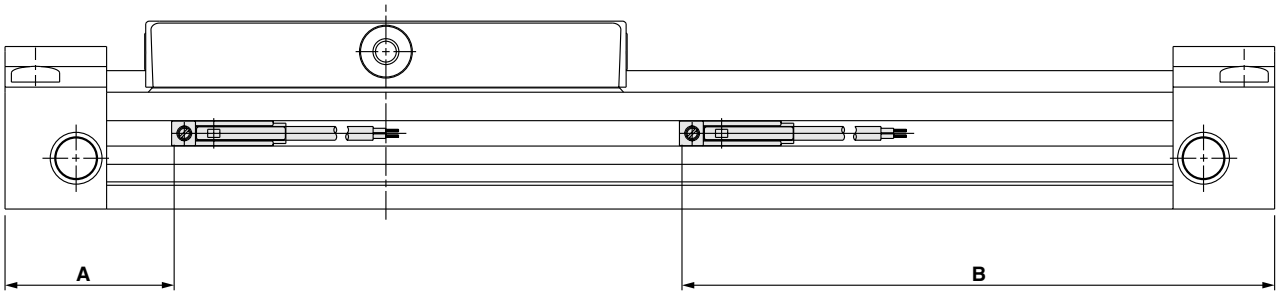
Tighting Torque for Holding Bolt

Unit: N·m

Model	Tighting torque	Model	Tighting torque
MYAJ16	1.5	MYAJ40	5
MYAJ25	3	MYAJ63	13

Proper Auto Switch Mounting Position (Detection at stroke end)

Note) The operating ranges are provided as guidelines including the hysteresis and are not guaranteed values (with approx. ±30% variations). They may vary significantly with the surrounding environment.



MY3A

D-A9, D-A9□V (mm)

Bore size	A	B	Operating range
16	22	88	6.5
25	29	121	10.5
40	42.5	197.5	15
63	53.5	266.5	14

D-F9□W, D-F9□(W)V (mm)

Bore size	A	B	Operating range
16	26	84	3.0
25	33	117	4.5
40	46.5	193.5	6.3
63	57.5	262.5	6.6

D-M9□, D-M9□V (mm)

Bore size	A	B	Operating range
16	26	84	2
25	33	117	3
40	46.5	193.5	4
63	57.5	262.5	4.5

MY3B

D-A9, D-A9□V (mm)

Bore size	A	B	Operating range
16	28	94	6.5
25	43	135	10.5
40	60.5	215.5	15
63	71.5	284.5	14

D-F9□W, D-F9□(W)V (mm)

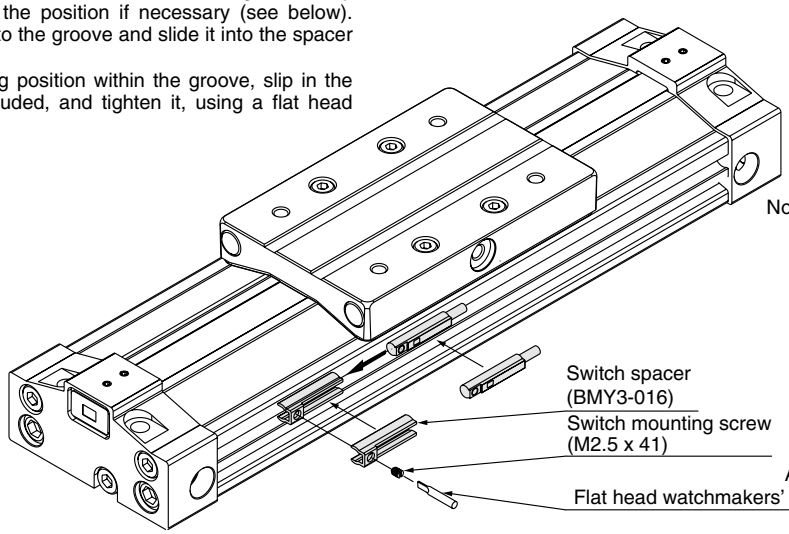
Bore size	A	B	Operating range
16	32	90	3.0
25	47	131	4.5
40	64.5	211.5	6.3
63	75.5	280.5	6.6

D-M9□, D-M9□V (mm)

Bore size	A	B	Operating range
16	32	90	2
25	47	131	3
40	64.5	211.5	4
63	75.5	280.5	4.5

Mounting of Auto Switch

When mounting an auto switch, first hold the switch spacer with your fingers and push it into the groove. Confirm that it is aligned evenly within the groove and adjust the position if necessary (see below). Then, insert the auto switch into the groove and slide it into the spacer (refer to the drawing at right).
After deciding on the mounting position within the groove, slip in the mounting screw, which is included, and tighten it, using a flat head watchmakers' screwdriver.



Note) Use a watchmakers' screwdriver with a handle diameter of 5 to 6 mm to fasten the auto switch mounting screws.
The tightening torque should be approximately 0.05 to 0.1 N·m.
The guideline is a 90° rotation after the fastening is felt.

Switch Spacer (mm)

Applicable bore size (mm)	16	25	40	63
Switch spacer	BMY3-016			

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

Type	Model	Lead wire electrical entry	Features
Reed switch	D-A90	Grommet (In-line)	Without indicator light
	D-A90V	Grommet (Perpendicular)	

The normally closed type (NC = b contact) solid state switches (D-F9G/F9H) are also available. For detailed information, please consult with SMC.

Made to Order

Series MY3A/3B

Made to Order Specifications 1

Please contact with SMC for further information on specifications, dimensions and delivery.

Made to Order Combinations

		Long stroke	Helical insert threads	Holder mounting bracket
		XB11	**X168**	**X416/X417**
MY3A	Short type	●	●	—
MY3B	Basic type	●	●	●

1 Long Stroke — Symbol -XB11

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

■ **Stroke range: 2001 to 3000 mm**

MY3 **A** | Bore size | Stroke | Auto switch | Symbol | **-XB11**

Series/Bore size

		16	25	40	63
A	Short type	●	●	●	●
B	Basic type	●	●	●	●

(Example) MY3A40-2700-F9B-XB11

2 Helical Insert Thread Specifications — Symbol -X168

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

MY3 **B** | Bore size | Stroke | Auto switch | Symbol | **-X168**

Series/Bore size

		16	25	40	63
A	Short type	●	●	●	●
B	Basic type	●	●	●	●

(Example) MY3B16-300L-F9B-X168

3 Holder Mounting Bracket ····· ①, ② — Symbol -X416/X417

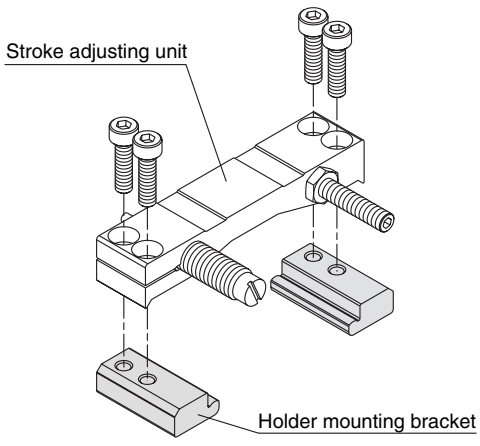
Holder mounting brackets are used to fasten the stroke adjusting unit at an intermediate stroke position.

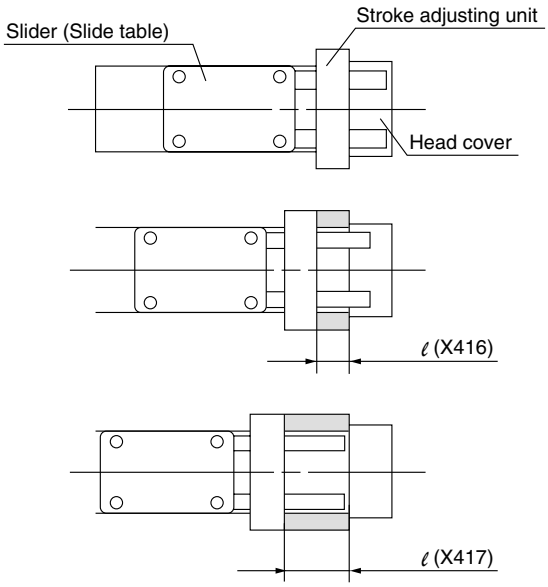
Holder mounting bracket ① ····· -X416 Holder mounting bracket ② ····· -X417

Fine Stroke Adjustment Range

(Treated as a special order when exceeding the adjustment ranges shown below.) Unit: mm

Bore size (mm)	**-X416** (one side)		**-X417** (one side)	
	Spacer	Adjustment range	Spacer	Adjustment range
	Length (ℓ)	**MY3B**	Length (ℓ)	**MY3B**
16	10	−10 to −20	20	−20 to −30
25	12	−12 to −24	24	−24 to −36
40	16	−16 to −32	32	−32 to −48
63	24	−24 to −48	48	−48 to −72





Made to Order

Series MY3A/3B

Made to Order Specifications 2

Please contact with SMC for further information on specifications, dimensions and delivery.

3 Holder Mounting Bracket ..... ①, ②

Symbol: **-X416/X417**

MY3 **B** [Bore size] – 300 **L** – **X416** [ ]

- [ ] **Combination symbol**: Refer to the table below for applicable symbols.
- **X416** **Holder mounting bracket**: Refer to the table below for applicable symbols.
- **L** **Stroke adjusting unit**: Refer to the table below for applicable symbols.
- 300 **Stroke**: Note) Indicates the stroke prior to mounting the stroke adjusting unit.
- **B** **Series/Bore size**: Basic type — 16, 25, 40, 63

MY3B stroke adjustment range

		0 to −10	−10 to −20	−20 to −30	−30 to −40	−40 to −50	−50 to −60
MY3B16	L unit / H unit	0 to 10	10 to 20	20 to 30			
		Standard	-X416	-X417			
MY3B25	L unit / H unit	0 to 12	12 to 24	24 to 36			
		Standard	-X416	-X417			
MY3B40	L unit / H unit	0 to 16	16 to 32	32 to 48			
		Standard	-X416	-X417			
MY3B63	L unit / H unit	0 to 16	16 to 32	32 to 48			
		Standard	-X416	-X417			

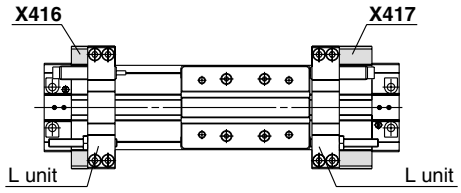
Stroke adjusting unit	Holder mounting bracket	Symbol	Mounting pcs. X416	Mounting pcs. X417	Combination description
L, H, LS, SL, HS, SH	X416	Nil	1		X416 on one side ∗Note 2)
L, H	X416	W	2		X416 on both sides
L, H	X416	Z	1	1	X416 on one side, X417 on the other side ∗Note 2)
LH, HL	X416	L	1		X416 on L unit side
LH, HL	X416	H	1		X416 on H unit side
LH, HL	X416	LZ	1	1	X416 on L unit side, X417 on the other side
LH, HL	X416	HZ	1	1	X416 on H unit side, X417 on the other side
L, H, LS, SL, HS, SH	X417	Nil		1	X417 on one side ∗Note 2)
L, H	X417	W		2	X417 on both sides
LH, HL	X417	L		1	X417 on L unit side
LH, HL	X417	H		1	X417 on H unit side

Note 1) For LS, SL, HS and SH, the stroke adjusting unit is mounted on one side only.
Note 2) The stroke adjusting unit is installed on the left side (or right side in case of SL and SH) at the time of shipment. It can however be moved to the right side (or left side).

Example

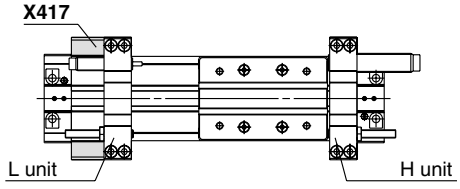
● **L units with one each of X416 and X417**

MY3B25-300L-X416Z



● **L and H units, where X417 is mounted on L unit only and nothing on H unit**

MY3B25-300LH-X417L



● **How to order single pieces of stroke adjusting unit**

MY3B-A16L1 – X417

- **X417** **Holder mounting bracket**

X416	Holder mounting bracket 1
X417	Holder mounting bracket 2

- **MY3B-A16L1** **Stroke adjusting unit model**

Note) Refer to the options table of "How to Order" for each series.
MY3B → Page 8-14-15

Example) MY3B25-A25L1-X416
(X416 bracket for left side L unit of MY3B25)

Example

● **How to order single pieces of holder mounting bracket**

MY3B 25 – X417 N

- **X417** **Holder mounting bracket**

X416	Holder mounting bracket 1
X417	Holder mounting bracket 2

- **25** **Series/Bore size**: Basic type — 16, 25, 40, 63

Note) The holder mounting bracket can be commonly used on the L and H units as well as the left and right sides.

Example) MY3B25-A25-X416N
(X416 bracket for L and H units of MY3B)

Series MY3A/3B
Specific Product Precautions 1

Be sure to read before handing.

Handling

⚠ Caution

1. Use caution not to have your hands caught in the unit.

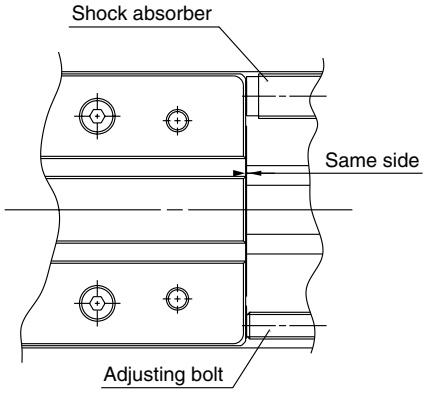
When using a cylinder with stroke adjusting unit, the space between the slide table (slider) and the stroke adjusting unit is very narrow. Care should be taken to avoid the danger of hands being caught in this small space. Install a protective cover to prevent the risk of accidents to the human body.

2. Use an external guide (MY3B).

The stroke adjusting unit must be used on condition that an external guide is used. If a stroke adjusting unit is used where the cylinder is used alone, the collision reaction may cause damage to the cylinder.

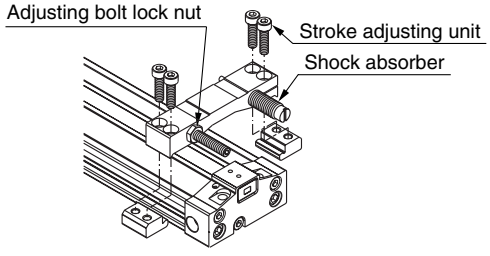
3. Conduct stroke adjustment with an adjustment bolt as follows:

The adjustment bolt should be secured on the same surface as the shock absorber after stroke adjustment.
If the stopper surface of the shock absorber and the end surface of the adjustment bolt are not on the same level, it may result in an unstable stop position of the slide table or reduced durability.



4. Securing the unit body

<MY3B>



Tighten the four unit fixing bolts equally to secure the unit body.

5. Do not fix and use the stroke adjusting unit at an intermediate position (MY3B).

If the stroke adjusting unit is fixed at an intermediate position, an error may result depending on the collision energy. In that case, the use of the holder mounting bracket for adjustment is recommended. It is provided with the "-X416" or "-X417" made-to-order specification.
(Refer to the tightening torque for the stroke adjusting unit fixing bolt.)
If the stroke adjusting unit is used at an intermediate position, the energy absorption capacity may be different. Refer to the maximum absorbed energy on page 8-14-15 and operate within the allowable absorption energy.

<Stroke adjustment with adjustment bolt>

Loosen the lock nut for the adjustment bolt, adjust the stroke on the head cover side with a hexagon wrench, and secure with a lock nut.

<Stroke adjustment with shock absorber>

Loosen the two unit fixing bolts on the shock absorber side and rotate the shock absorber for stroke adjustment. Tighten the unit fixing bolts equally to secure the shock absorber (MY3B). Use caution not to overtighten the fixing bolts.
(Refer to the tightening torque for the MY3B stroke adjusting unit fixing bolt.)

MY3B stroke adjusting unit
Tightening torque for holding bolts (N·m)

Bore size (mm)	Unit	Tightening torque
16	L	0.6
	H	
25	L	3.0
	H	
40	L	12
	H	
63	L	24
	H	

⚠ Caution

Centralized Piping Port Variations

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

Port variations