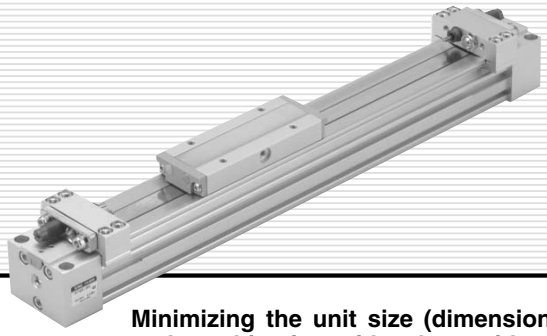
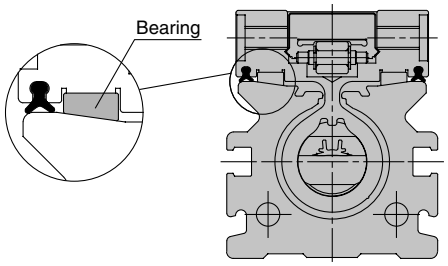
Series MY1B

Basic Type

ø10, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100



Minimizing the unit size (dimensions) and combination with other guides is possible.



Series MY1B
Before Operation

Maximum Allowable Moment/Maximum Load Weight

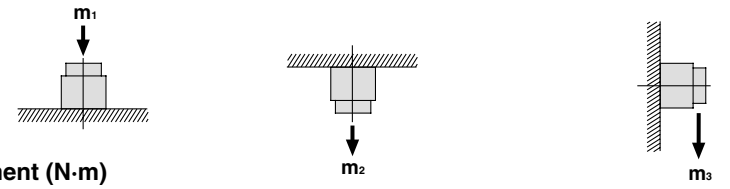
Model	Bore size (mm)	Maximum allowable moment (N·m)			Maximum load weight (kg)		
		M_1	M_2	M_3	m_1	m_2	m_3
MY1B	10	0.8	0.1	0.3	5.0	1.0	0.5
	16	2.5	0.3	0.8	15	3.0	1.7
	20	5.0	0.6	1.5	21	4.2	3.0
	25	10	1.2	3.0	29	5.8	5.4
	32	20	2.4	6.0	40	8.0	8.8
	40	40	4.8	12	53	10.6	14
	50	78	9.3	23	70	14	20
	63	160	19	48	83	16.6	29
	80	315	37	95	120	24	42
	100	615	73	18	150	30	60

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

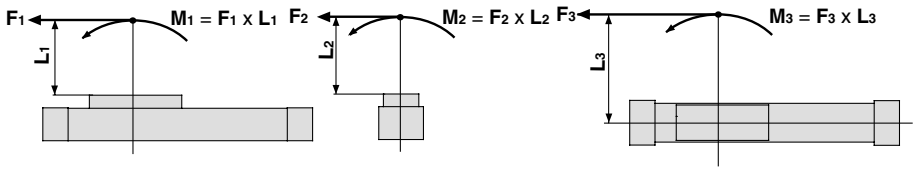
Caution on Design

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

Load weight (kg)



Moment (N·m)



<Calculation of guide load factor>

1. Maximum allowable load (1), static moment (2), and dynamic moment (3) (at the time of impact with stopper) must be examined for the selection calculations.

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

Sum of guide load factors

$$\Sigma\alpha = \frac{\text{Load weight [m]}}{\text{Maximum allowable load [mmax]}} + \frac{\text{Static moment [M]}\ ^{(1)}}{\text{Allowable static moment [Mmax]}} + \frac{\text{Dynamic moment [ME]}\ ^{(2)}}{\text{Allowable dynamic moment [MEmax]}} \leq 1$$

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

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

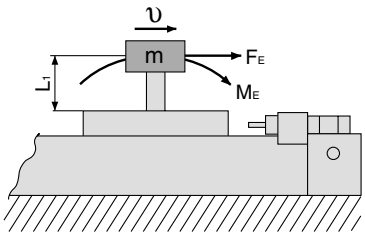
m: Load weight (kg)
F: Load (N)
F_E: Load equivalent to impact (at impact with stopper) (N)
υa: Average speed (mm/s)
M: Static moment (N·m)

$\upsilon = 1.4\upsilon a$ (mm/s) $F_E = 1.4\upsilon a \cdot \delta \cdot m \cdot g$ (Note 4)

$\therefore ME = \frac{1}{3}$ (Note 5) $\cdot F_E \cdot L1 = = 4.57\upsilon a \delta mL$,

υ: Collision speed (mm/s)
L_1: Distance to the load's center of gravity (m)
M_E: Dynamic moment (N·m)
δ: Damper coefficient
With rubber bumper = 4/100 (MY1B10, MY1H10)
With air cushion = 1/100
With shock absorber = 1/100
g: Gravitational acceleration (9.8 m/s²)

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



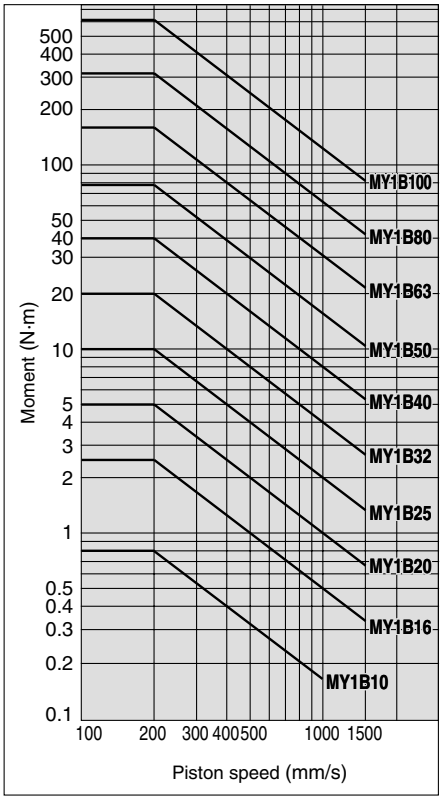
Maximum Allowable Moment

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

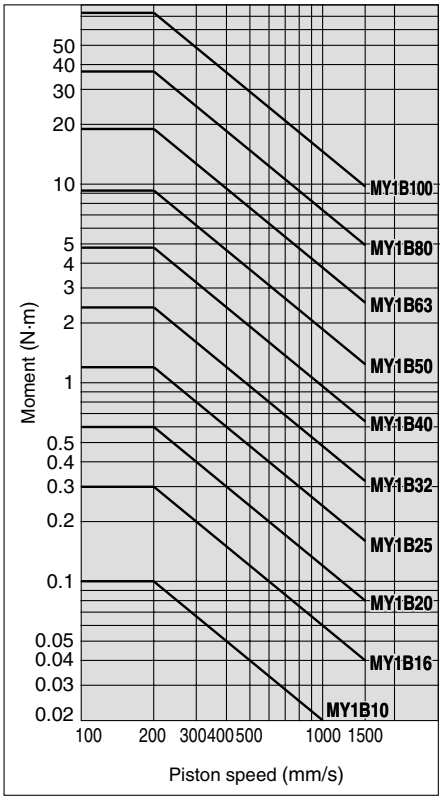
Maximum Load Weight

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

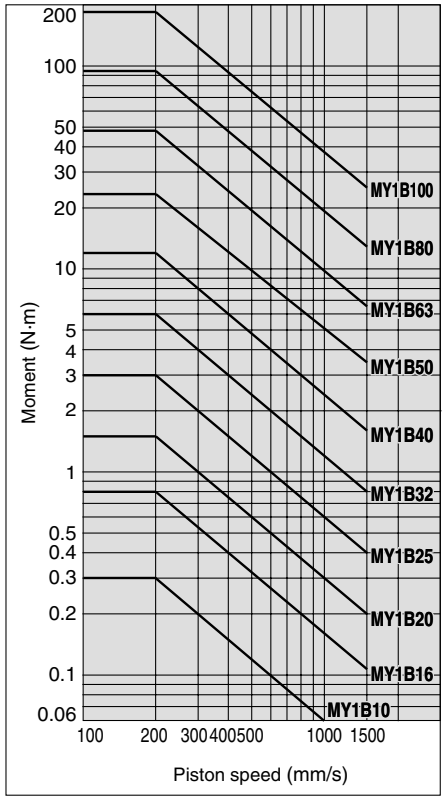
MY1B/M1



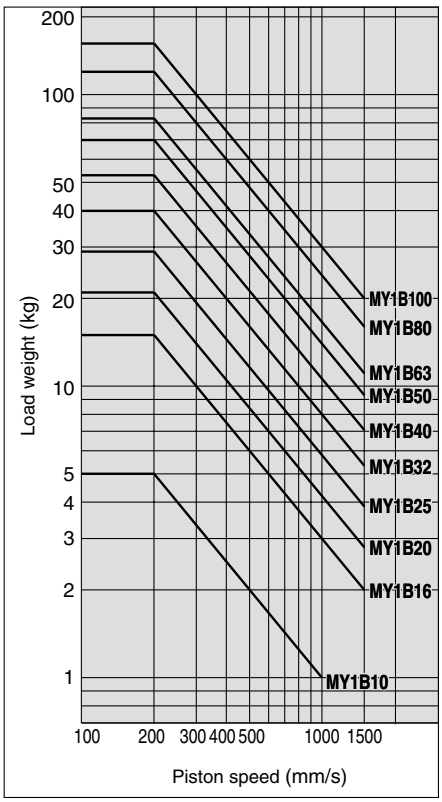
MY1B/M2



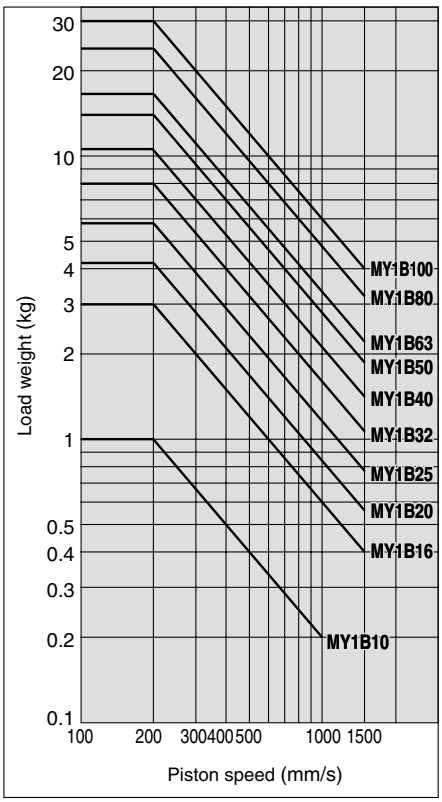
MY1B/M3



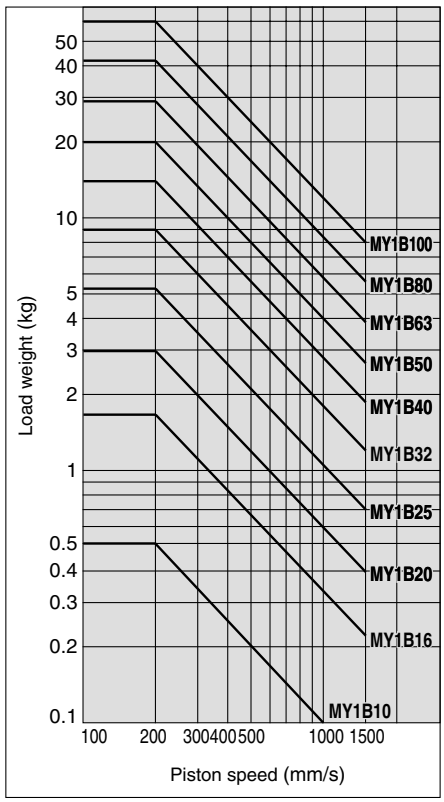
MY1B/m1



MY1B/m2



MY1B/m3



Series ***MY1B***

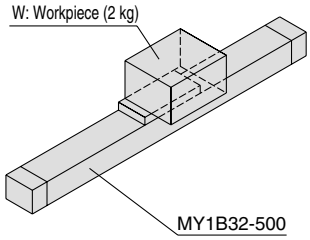
Model Selection

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

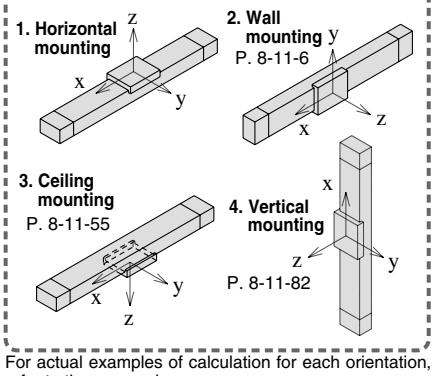
Calculation of Guide Load Factor

1. Operating Conditions

Cylinder ····· MY1B32-500
Average operating speed υa ···· 300 mm/s
Mounting orientation ····· Horizontal mounting
Cushion ····· Air cushion
(δ = 1/100)

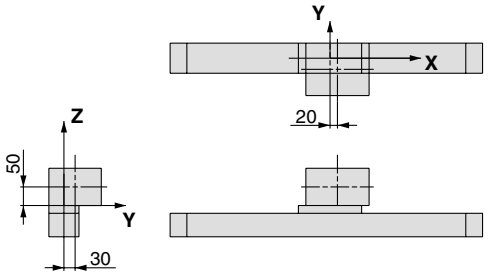


Mounting Orientation



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

2. Load Blocking



Weight and Center of Gravity for Workpiece

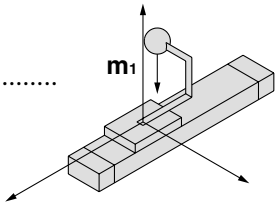
Workpiece no.	Weight m	Center of gravity		
		X-axis	Y-axis	Z-axis
W	2 kg	20 mm	30 mm	50 mm

3. Calculation of Load Factor for Static Load

m_1: Weight

$m_1$max (from (1) of graph MY1B/m_1) = 27 (kg)·····

Load factor $\alpha_1 = m_1/m_1\text{max} = 2/27 =$ **0.07**

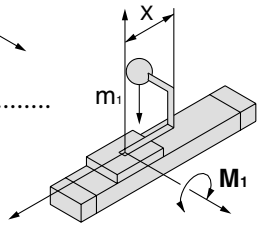


M_1: Moment

M_1max (from (2) of graph MY1B/M_1) = 13 (N·m)·····

$M_1 = m_1 \times g \times X = 2 \times 9.8 \times 20 \times 10^{-3} = 0.39$ (N·m)

Load factor $\alpha_2 = M_1/M_1\text{max} = 0.39/13 =$ **0.03**

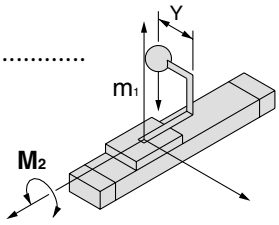


M_2: Moment

M_2max (from (3) of graph MY1B/M_2) = 1.6 (N·m)·····

$M_3 = m_1 \times g \times Y = 2 \times 9.8 \times 30 \times 10^{-3} = 0.59$ (N·m)

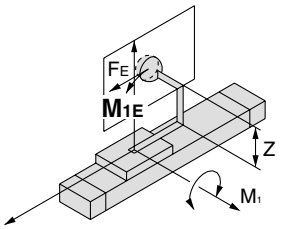
Load factor $\alpha_3 = M_2/M_2\text{max} = 0.59/1.6 =$ **0.37**



4. Calculation of Load Factor for Dynamic Moment

Equivalent load F_E at impact

$F_E = 1.4\upsilon a \times \delta \times m \times g = 1.4 \times 300 \times \frac{1}{100} \times 2 \times 9.8 = 82.3$ (N)

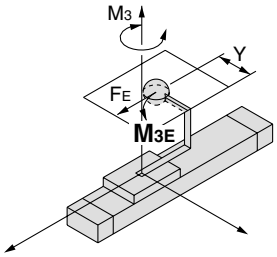


M_{1E}: Moment

M_{1E}max (from (4) of graph MY1B/M_1 where $1.4\upsilon a$ = 420 mm/s) = 9.5 (N·m)·····

$M_{1E} = \frac{1}{3} \times F_E \times Z = \frac{1}{3} \times 82.3 \times 50 \times 10^{-3} = 1.37$ (N·m)

Load factor $\alpha_4 = M_{1E}/M_{1E}$max = 1.37/9.5 = **0.14**



M_{3E}: Moment

M_{3E}max (from (5) of graph MY1B/M_3 where $1.4\upsilon a$ = 420 mm/s) = 2.9 (N·m)·····

$M_{3E} = \frac{1}{3} \times F_E \times Y = \frac{1}{3} \times 82.3 \times 30 \times 10^{-3} = 0.82$ (N·m)

Load factor $\alpha_5 = M_{3E}/M_{3E}$max = 0.82/2.9 = **0.28**

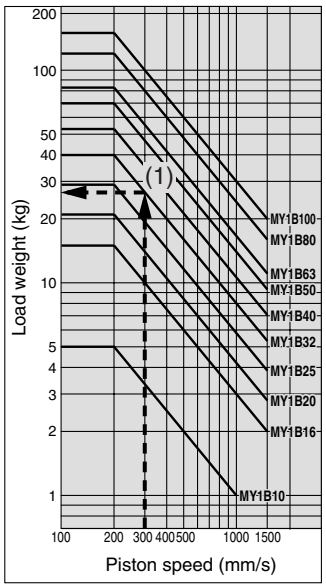
5. Sum and Examination of Guide Load Factors

$\sum\alpha = \alpha_1 + \alpha_2 + \alpha_3 + \alpha_4 + \alpha_5 = \mathbf{0.89} \leq \mathbf{1}$

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

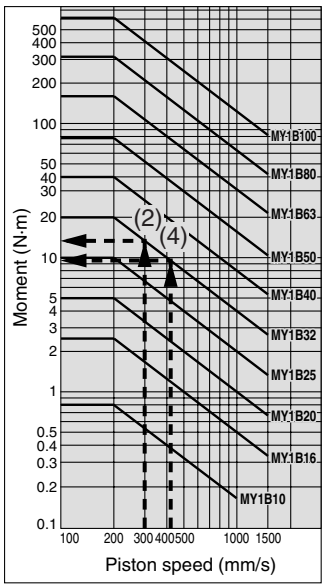
Load Weight

MY1B/m_1

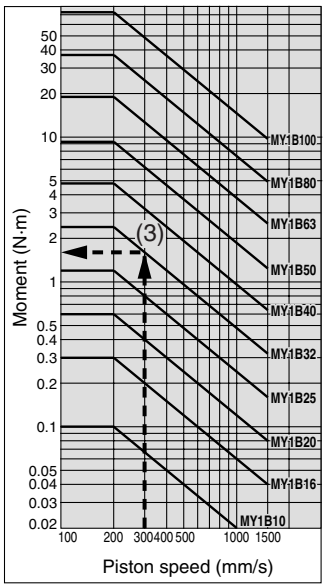


Allowable Moment

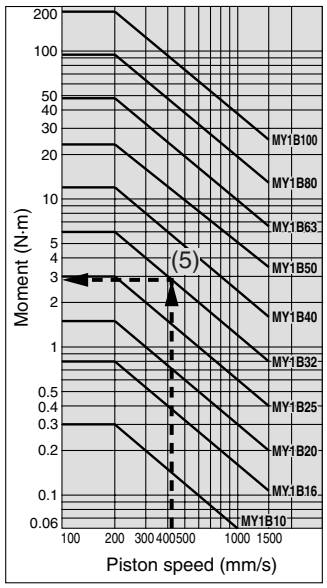
MY1B/M_1



MY1B/M_2



MY1B/M_3



Mechanically Jointed Rodless Cylinder
Basic Type

Series MY1B

ø10, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

How to Order

MY1B **25** □ — **300** □ □ - XG For 25mm bore and above

Basic type

Bore size (mm)

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

Piping

Nil	Standard type
G	Centralized piping type

Note) For ø10, only G is available.

Stroke

Refer to "Standard Stroke"

Stroke adjusting unit

Only the A unit is available for ø16. Stroke adjusting unit is not available for ø50, ø63, ø80 and ø100.

Nil	Without adjusting unit
A	With adjusting bolt
L	With low load shock absorber + Adjusting bolt
H	With high load shock absorber + Adjusting bolt
AL	With one A unit and one L unit
AH	With one A unit and one H unit each
LH	With one L unit and one H unit each

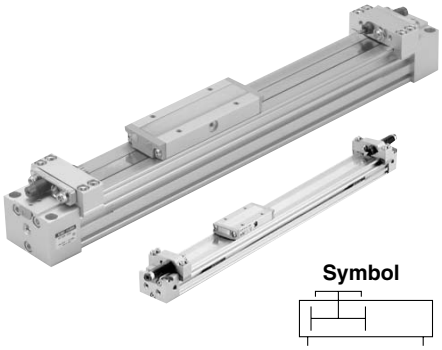
Suffix for stroke adjusting unit Note)

Nil	Both sides
S	One side

Note) "S" is applicable for stroke adjusting units A, L and H.

Shock Absorbers for L and H Units

Unit no. \ Bore size (mm)	**10**	**20**	**25**	**32**	**40**
L unit	—	RB0806	RB1007	RB1412	
H unit	RB0805	RB1007	RB1412	RB2015	



Specifications

Bore size (mm)		10	16	20	25	32	40	50	63	80	100
Fluid		Air									
Action		Double acting									
Operating pressure range		0.2 to 0.8 MPa	0.1 to 0.8 MPa								
Proof pressure		1.2 MPa									
Ambient and fluid temperature		5 to 60°C									
Cushion		Rubber bumper	Air cushion								
Lubrication		Non-lube									
Stroke length tolerance		1000 or less $^{+1.8}_{0}$ 1001 to 3000 $^{+2.8}_{0}$	2700 or less $^{+1.8}_{0}$, 2701 to 5000 $^{+2.8}_{0}$								
Piping Port size	Front/Side port	M5 x 0.8			1/8		1/4	3/8		1/2	
	Bottom port		ø4		ø5	ø6	ø8	ø10	ø11	ø16	ø18

Stroke Adjusting Unit Specifications

Bore size (mm)	10		16	20			25			32			40		
Unit symbol	A	H	A	A	L	H	A	L	H	A	L	H	A	L	H
Configuration Shock absorber model	With adjusting bolt	RB 0805 with adjusting bolt	With adjusting bolt	With adjusting bolt	RB 0806 with adjusting bolt	RB 0807 with adjusting bolt	With adjusting bolt	RB 1007 with adjusting bolt	RB 1412 with adjusting bolt	With adjusting bolt	RB 1412 with adjusting bolt	RB 2015 with adjusting bolt	With adjusting bolt	RB 1412 with adjusting bolt	RB 2015 with adjusting bolt
Fine stroke adjustment range (mm)	0 to –5		0 to –5.6	0 to –6			0 to –11.5			0 to –12			0 to –16		
Stroke adjustment range	When exceeding the stroke fine adjustment range: Utilize a made-to-order specifications “-X416” and “-X417”.														

Shock Absorber Specifications

Model		RB 0805	RB 0806	RB 1007	RB 1412	RB 2015
Max. energy absorption (J)		1.0	2.9	5.9	19.6	58.8
Stroke absorption (mm)		5	6	7	12	15
Max. collision speed (mm/s)		1000	1500	1500	1500	1500
Max. operating frequency(cycle/min)		80	80	70	45	25
Spring force (N)	Extended	1.96	1.96	4.22	6.86	8.34
	Retracted	3.83	4.22	6.86	15.98	20.50
Operating temperature range (°C)		5 to 60				

Piston Speed

Bore size (mm)		10	16 to 100
Without stroke adjusting unit		100 to 500 mm/s	100 to 1000 mm/s
Stroke adjusting unit	A unit	100 to 200 mm/s	100 to 1000 mm/s(1)
	L unit and H unit	100 to 1000 mm/s	100 to 1500 mm/s(2)

Note 1) Be aware that when the stroke adjusting range is increased by manipulating the adjusting bolt, the air cushion capacity decreases. Also, when exceeding the air cushion stroke ranges , the piston speed should be 100 to 200 mm per second.

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

Standard Stroke

Bore size (mm)	Standard stroke (mm)*	Maximum manufacturable stroke (mm)
10, 16	100, 200, 300, 400, 500, 600, 700 800, 900, 1000, 1200, 1400, 1600 1800, 2000	3000
20, 25, 32, 40 50, 63, 80, 100		5000

* Strokes are manufacturable in 1 mm increments, up to the maximum stroke. However, when exceeding a 2000 mm stroke, specify “-XB11” at the end of the model number.

Theoretical Output

(N)

Bore size (mm)	Piston area (mm²)	Operating pressure (MPa)						
		0.2	0.3	0.4	0.5	0.6	0.7	0.8
10	78	15	23	31	39	46	54	62
16	200	40	60	80	100	120	140	160
20	314	62	94	125	157	188	219	251
25	490	98	147	196	245	294	343	392
32	804	161	241	322	402	483	563	643
40	1256	251	377	502	628	754	879	1005
50	1962	392	588	784	981	1177	1373	1569
63	3115	623	934	1246	1557	1869	2180	2492
80	5024	1004	1507	2009	2512	3014	3516	4019
100	7850	1570	2355	3140	3925	4710	5495	6280

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

Weight

(kg)

Bore size (mm)	Basic weight	Additional weight per each 50mm of stroke	Side support weight (per set)	Stroke adjusting unit weight (per unit)		
			Type A and B	A unit weight	L unit weight	H unit weight
10	0.15	0.04	0.003	0.01	—	0.02
16	0.61	0.06	0.01	0.04	—	—
20	1.06	0.10	0.02	0.05	0.05	0.10
25	1.33	0.12	0.02	0.06	0.10	0.18
32	2.65	0.18	0.02	0.12	0.21	0.40
40	3.87	0.27	0.04	0.23	0.32	0.49
50	7.78	0.44	0.04	—	—	—
63	13.10	0.70	0.08	—	—	—
80	20.70	1.18	0.17	—	—	—
100	35.70	1.97	0.17	—	—	—

Calculation: (Example) MY1B25-300A

- Basic weight ····· 1.33 kg
- Cylinder stroke ····· 300 stroke
- Additional weight ····· 0.12/50 stroke

1.33 + 0.12 x 300/50 + 0.06 x 2 2.17 kg

- Weight of A unit ····· 0.06 kg

Option

Stroke Adjusting Unit Part No.

Unit no. \ Bore size (mm)	10	16	20	25	32
A unit	MY-A10A	MY-A16A	MY-A20A	MY-A25A	MY-A32A
L unit	—	—	MY-A20L	MY-A25L	MY-A32L
H unit	MY-A10H	—	MY-A20H	MY-A25H	MY-A32H

Unit no. \ Bore size (mm)	40
A unit	MY-A40A
L unit	MY-A40L
H unit	MY-A40H

Side Support Part No.

Type \ Bore size (mm)	10	16	20	25	32
Side support A	MY-S10A	MY-S16A	MY-S20A	MY-S25A	
Side support B	MY-S10B	MY-S16B	MY-S20B	MY-S25B	

Type \ Bore size (mm)	40	50	63	80	100
Side support A	MY-S32A		MY-S50A	MY-S63A	
Side support B	MY-S32B		MY-S50B	MY-S63B	

Cushion Capacity

Cushion Selection

<Rubber bumper>
Rubber bumpers are a standard feature on MY1B10.
Since the stroke absorption of rubber bumpers is short, when adjusting the stroke with an A unit, install an external shock absorber.
The load and speed range which can be absorbed by a rubber bumper is inside the rubber bumper limit line of the graph.

<Air cushion>
Air cushions are a standard feature on mechanically jointed rodless cylinders. (Except ø10.)
The air cushion mechanism is incorporated to prevent excessive impact of the piston at the stroke end during high speed operation. The purpose of air cushion, thus, is not to decelerate the piston near the stroke end.
The ranges of load and speed that air cushions can absorb are within the air cushion limit lines shown in the graphs.

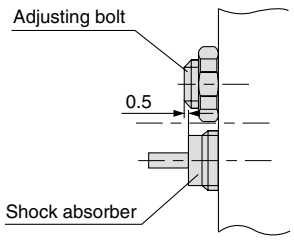
<Stroke adjusting unit with shock absorber>
Use this unit when operating with a load or speed exceeding the air cushion limit line, or when cushioning is required outside of the effective air cushion stroke range due to stroke adjustment.

L unit
Use this unit when 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

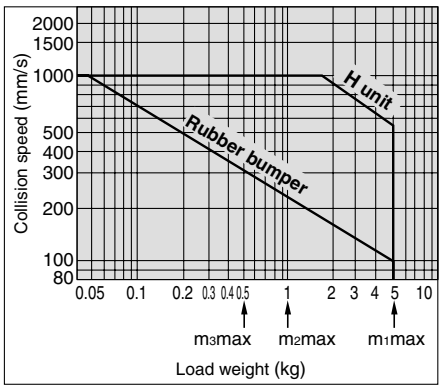
1. Refer to the figure below when using the adjusting bolt to perform stroke adjustment.
When the effective stroke of the shock absorber decreases as a result of stroke adjustment, the absorption capacity decreases dramatically. Secure the adjusting bolt at the position where it protrudes approximately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



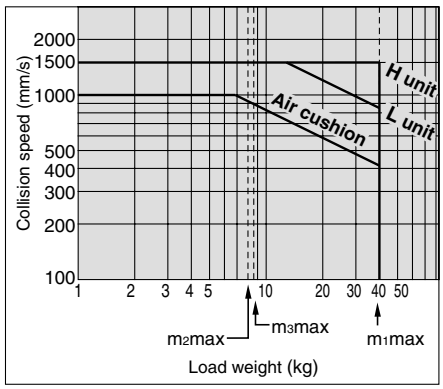
2. Do not use a shock absorber together with air cushion.

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

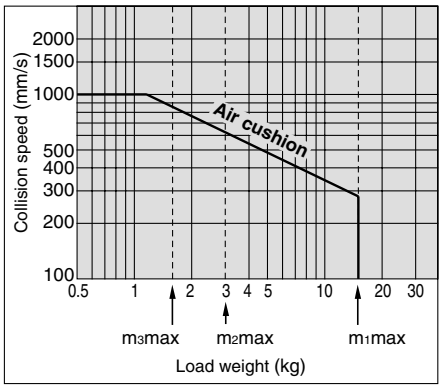
MY1B10 Horizontal collision: P = 0.5 MPa



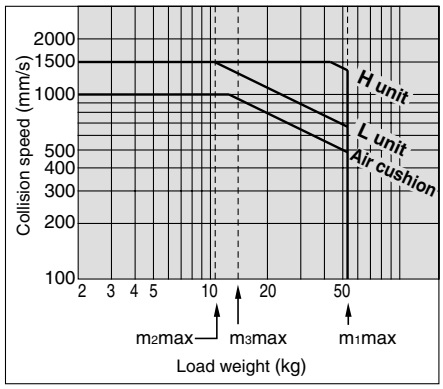
MY1B32 Horizontal collision: P = 0.5 MPa



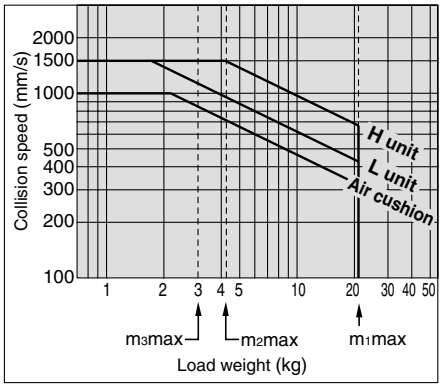
MY1B16 Horizontal collision: P = 0.5 MPa



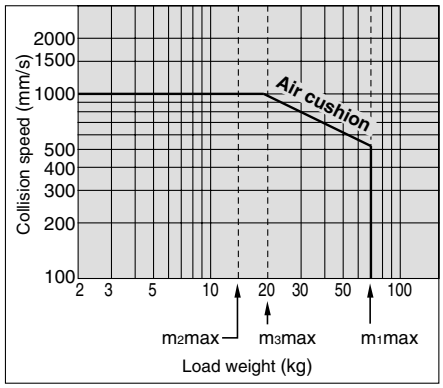
MY1B40 Horizontal collision: P = 0.5 MPa



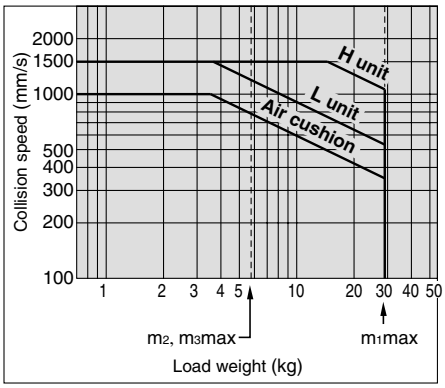
MY1B20 Horizontal collision: P = 0.5 MPa



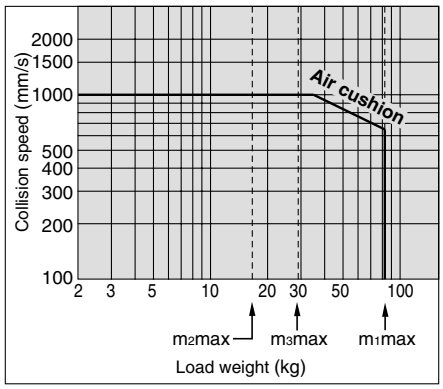
MY1B50 Horizontal collision: P = 0.5 MPa



MY1B25 Horizontal collision: P = 0.5 MPa



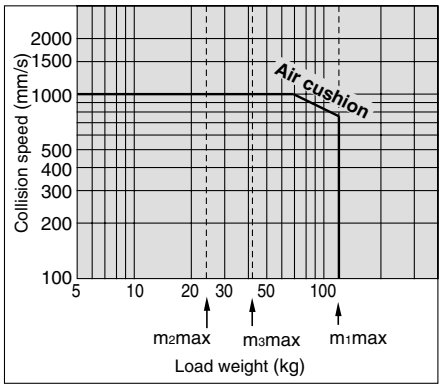
MY1B63 Horizontal collision: P = 0.5 MPa



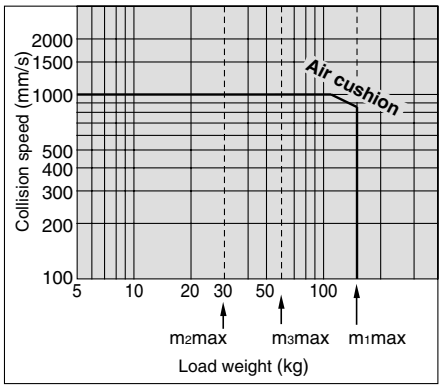
Cushion Capacity

Rubber Bumper/Air Cushion Stroke Adjustment Unit Absorption Capacity

MY1B80 Horizontal collision: P = 0.5 MPa



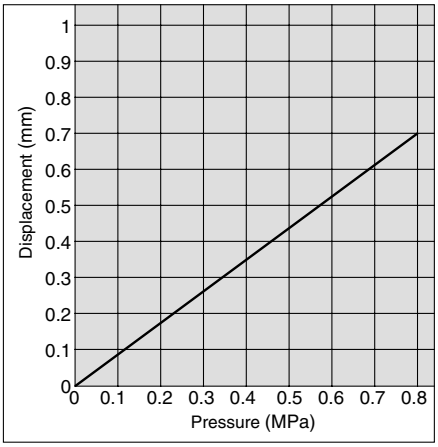
MY1B100 Horizontal collision: P = 0.5 MPa



Air Cushion Stroke

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

Rubber Bumper (ø10 only) Positive Stroke from One End Due to Pressure



Tightening Torque for Stroke Adjusting Unit Holding Bolts

(N·m)

Bore size (mm)	Unit	Tightening torque
10	A	0.3
	H	
16	A	0.6
20	A	1.5
	L	
	H	
25	A	3.0
	L	
	H	
32	A	5.0
	L	
	H	
40	A	10
	L	
	H	

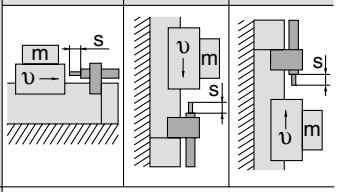
Tightening Torque for Stroke Adjusting Unit Lock Plate Holding Bolts

(N·m)

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

Calculation of Absorbed Energy for Stroke Adjusting Unit with Shock Absorber

(N·m)

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

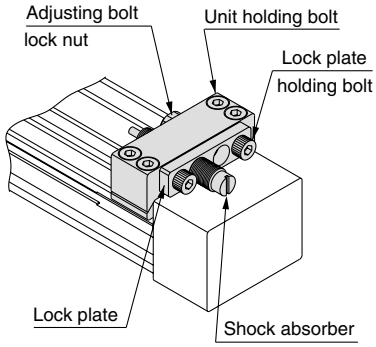
Symbol
υ: Speed of impact object (m/s)
F: Cylinder thrust (N)
s: Shock absorber stroke (m)
m: Weight of impact object (kg)
g: Gravitational acceleration (9.8 m/s²)
Note) The speed of the impact object is measured at the time of impact with the shock absorber.

⚠ Precautions

⚠ Caution

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

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



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

⚠ Caution

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

When the stroke adjusting unit is fixed in an intermediate position, slippage can occur depending on the amount of energy released at the time of an impact. In such cases, the use of the adjusting bolt mounting brackets, available per made-to-order specifications -X416 and -X417, is recommended. (Except ø10)

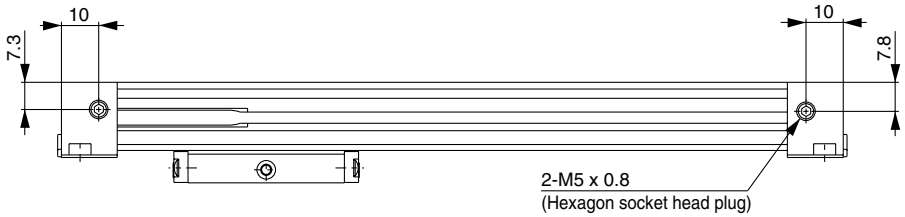
For other lengths, please consult with SMC (Refer to "Tightening Torque for Stroke Adjusting Unit Holding Bolts".)

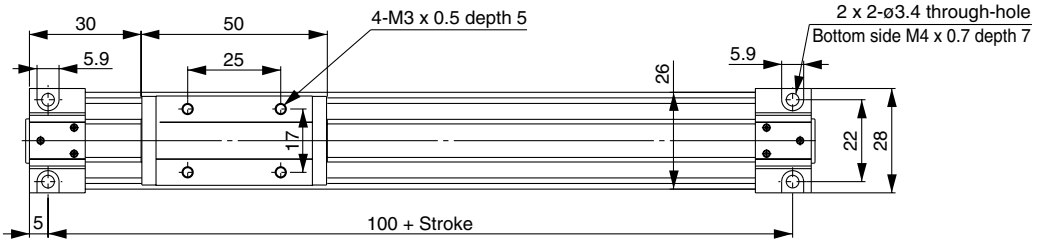
<Stroke adjustment with adjusting bolt>
Loosen the adjusting bolt lock nut, and adjust the stroke from the lock plate side using a hexagon wrench. Retighten the lock nut.

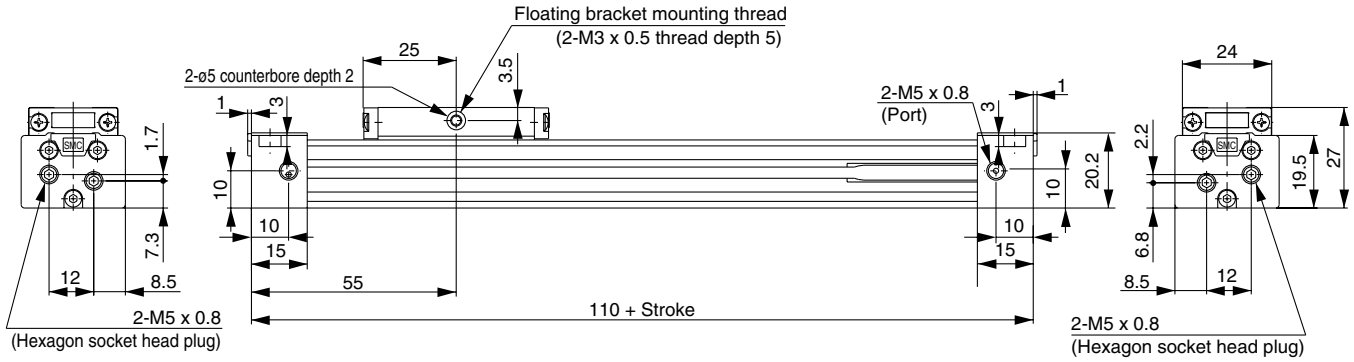
<Stroke adjustment with shock absorber>
Loosen the two lock plate holding bolts, turn the shock absorber and adjust the stroke. Then, uniformly tighten the lock plate holding bolts to secure the shock absorber.
Take care not to over-tighten the holding bolts. (Except ø10 and ø20 L unit.) (Refer to "Tightening Torque for Stroke Adjusting Unit Lock Plate Holding Bolts".)
Note)
Although the lock plate may slightly bend due to tightening of the lock plate holding bolt, this does not a affect the shock absorber and locking function.

Centralized Piping Type ø10

MY1B10G—Stroke

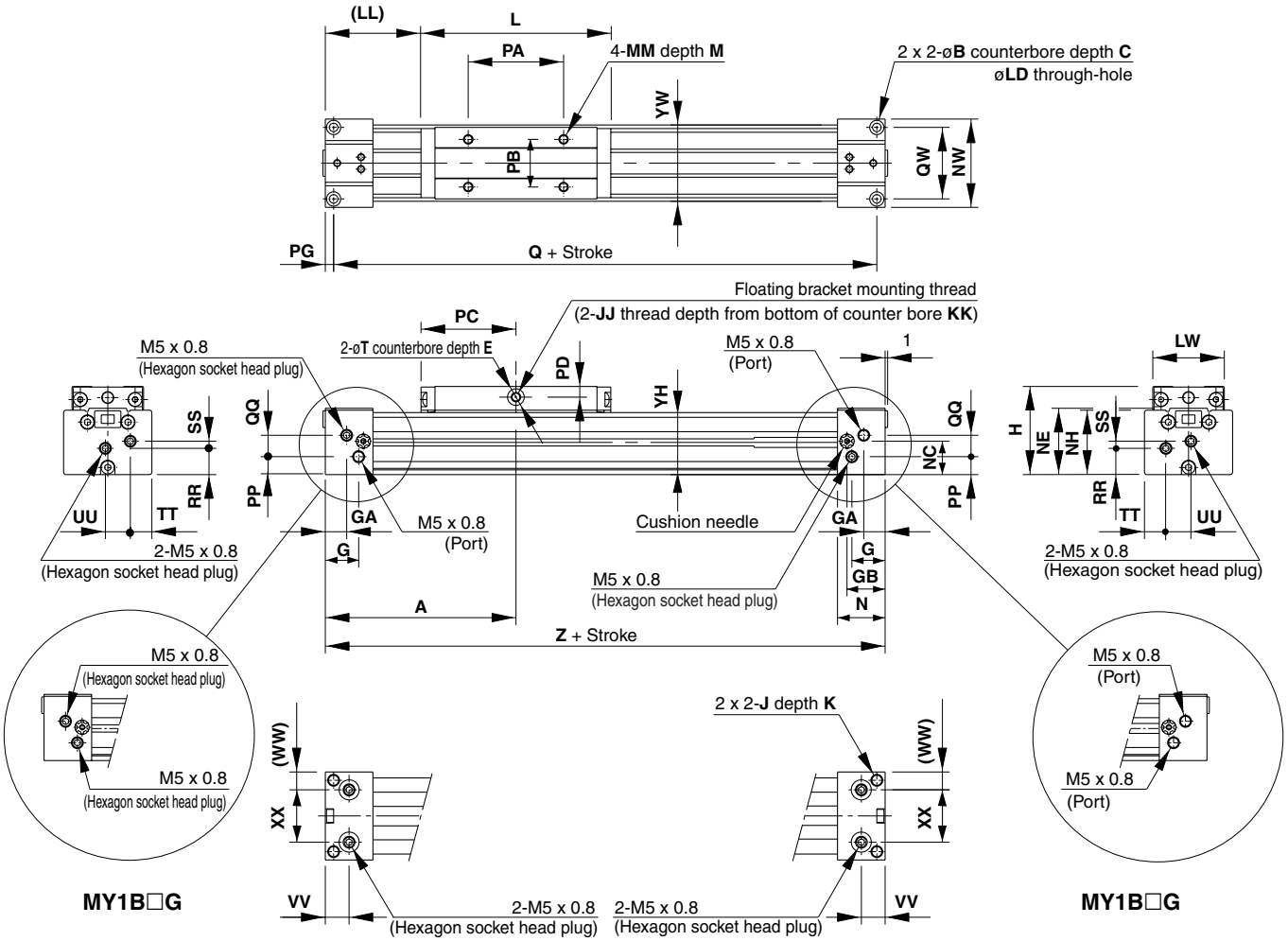






Standard Type/Centralized Piping Type ø16, ø20

MY1B16□/20□ — Stroke

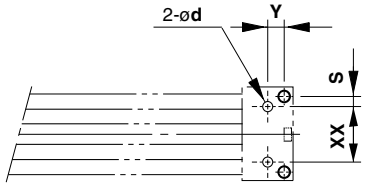


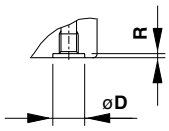
(mm)

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

(mm)

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





Bottom ported (Applicable O-ring)

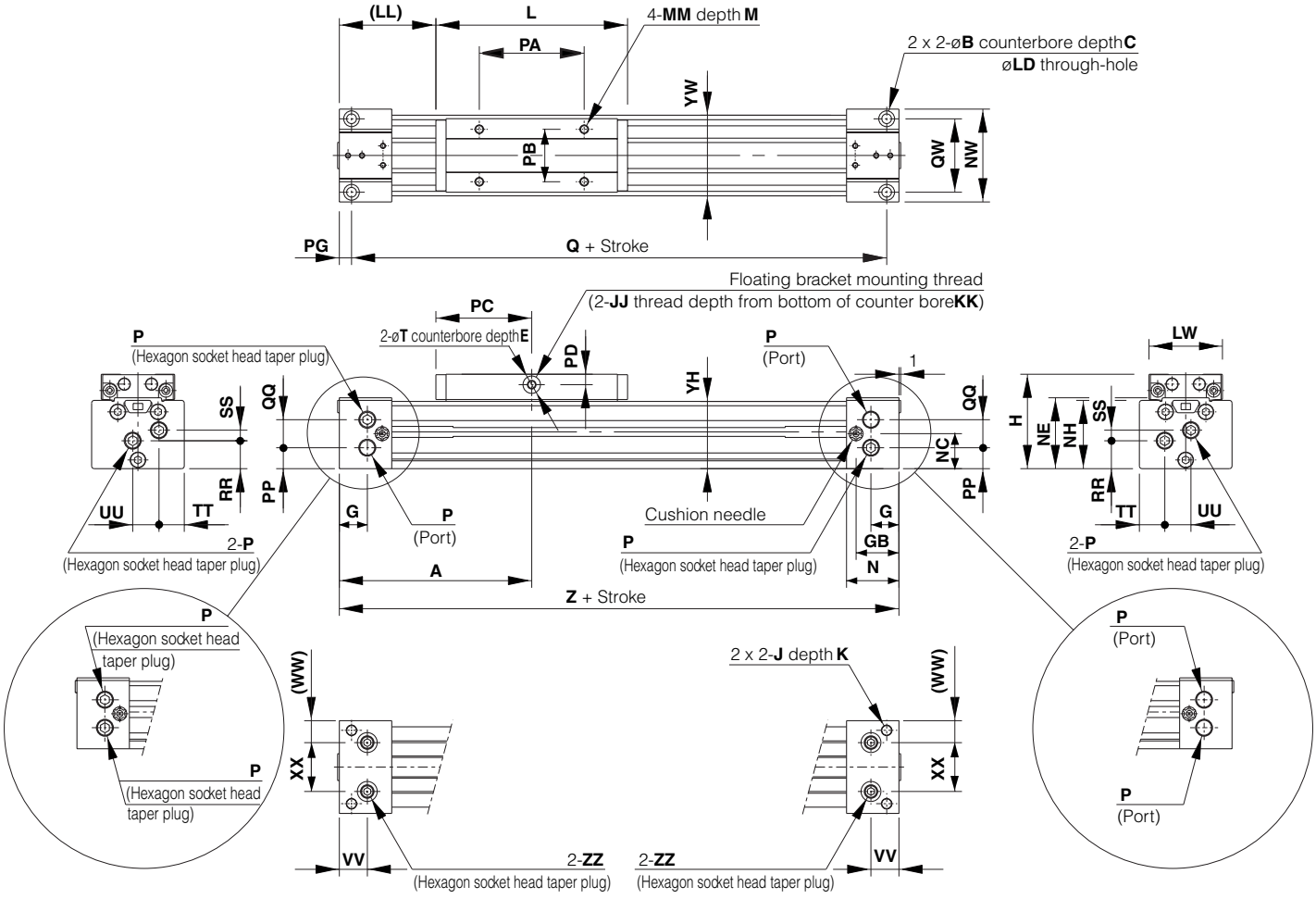
Hole Size for Centralized Piping on the Bottom

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

(Machine the mounting side to the dimensions below.)

Standard Type/Centralized Piping Type ø25, ø32, ø40

MY1B25□/32□/40□ — Stroke



MY1B□G **MY1B□G**

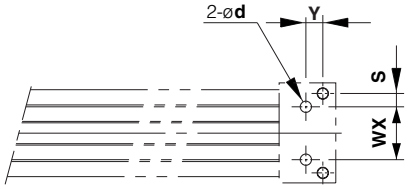
(mm)

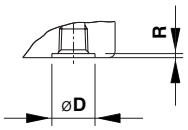
Model	A	B	C	E	G	GB	H	J	JJ	K	KK	L	LD	LL	LW	M	MM	N	NC	NE	NH	NW
MY1B25□	110	9	5.5	2	16	24.5	54	M6 x 1	M5 x 0.8	9.5	9	110	5.6	55	42	9	M5 x 0.8	30	20	40.5	39	53
MY1B32□	140	11	6.6	2	19	30	68	M8 x 1.25	M5 x 0.8	16	10	140	6.8	70	52	12	M6 x 1	37	25	50	49	64
MY1B40□	170	14	8.5	2	23	36.5	84	M10 x 1.5	M6 x 1	15	13	170	8.6	85	64	12	M6 x 1	45	30.5	63	61.5	75

(mm)

Model	P	PA	PB	PC	PD	PP	Q	QQ	QW	RR	SS	T	TT	UU	VV	WW	XX	YH	YW	Z	ZZ
MY1B25□	G 1/8	60	30	55	6	12	206	16	42	16	6	10	14.5	15	16	12.5	28	38.5	46	220	G1/16
MY1B32□	G 1/8	80	35	70	10	17	264	16	51	23	4	10	16	16	19	16	32	48	55	280	G 1/16
MY1B40□	G 1/4	100	40	85	12	18.5	322	24	59	27	10.5	14	20	22	23	19.5	36	60.5	67	340	G 1/8

"P" indicates cylinder supply ports.





Bottom ported (ZZ)
(Applicable O-ring)

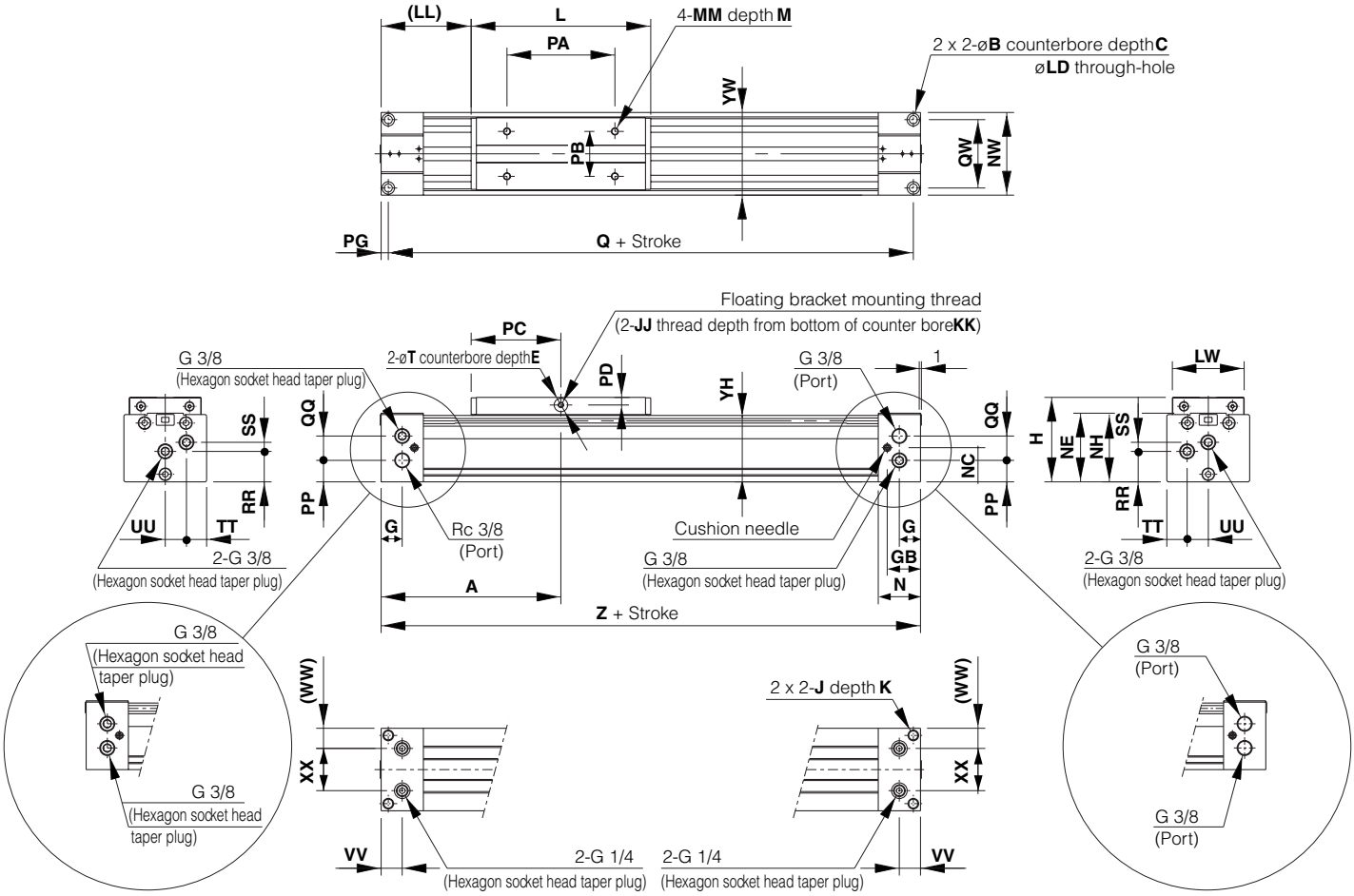
Hole Size for Centralized Piping on the Bottom

Model	WX	Y	S	d	D	R	Applicable O-ring
MY1B25□	28	9	7	6	11.4	1.1	C9
MY1B32□	32	11	9.5	6	11.4	1.1	
MY1B40□	36	14	11.5	8	13.4	1.1	C11.2

(Machine the mounting side to the dimensions below.)

Standard Type/Centralized Piping Type ø50, ø63

MY1B50□/63□ — Stroke



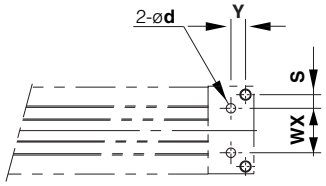
MY1B□G **MY1B□G**

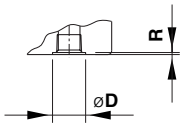
(mm)

Model	A	B	C	E	G	GB	H	J	JJ	K	KK	L	LD	LL	LW	M	MM	N	NC	NE
MY1B50□	200	14	8.5	3	23.5	37	94	M12 x 1.75	M6 x 1	25	17	200	9	100	80	14	M8 x 1.25	47	38	76.5
MY1B63□	230	17	10.5	3	25	39	116	M14 x 2	M8 x 1.25	28	24	230	11	115	96	16	M8 x 1.25	50	51	100

(mm)

Model	NH	NW	PA	PB	PC	PD	PG	PP	Q	QQ	QW	RR	SS	T	TT	UU	VV	WW	XX	YH	YW	Z
MY1B50□	75	92	120	50	100	8.5	8	24	384	27	76	34	10	15	22.5	23.5	23.5	22.5	47	74	92	400
MY1B63□	95	112	140	60	115	9.5	10	37.5	440	29.5	92	44.5	13.5	16	27	29	25	28	56	94	112	460





Bottom ported (Applicable O-ring)

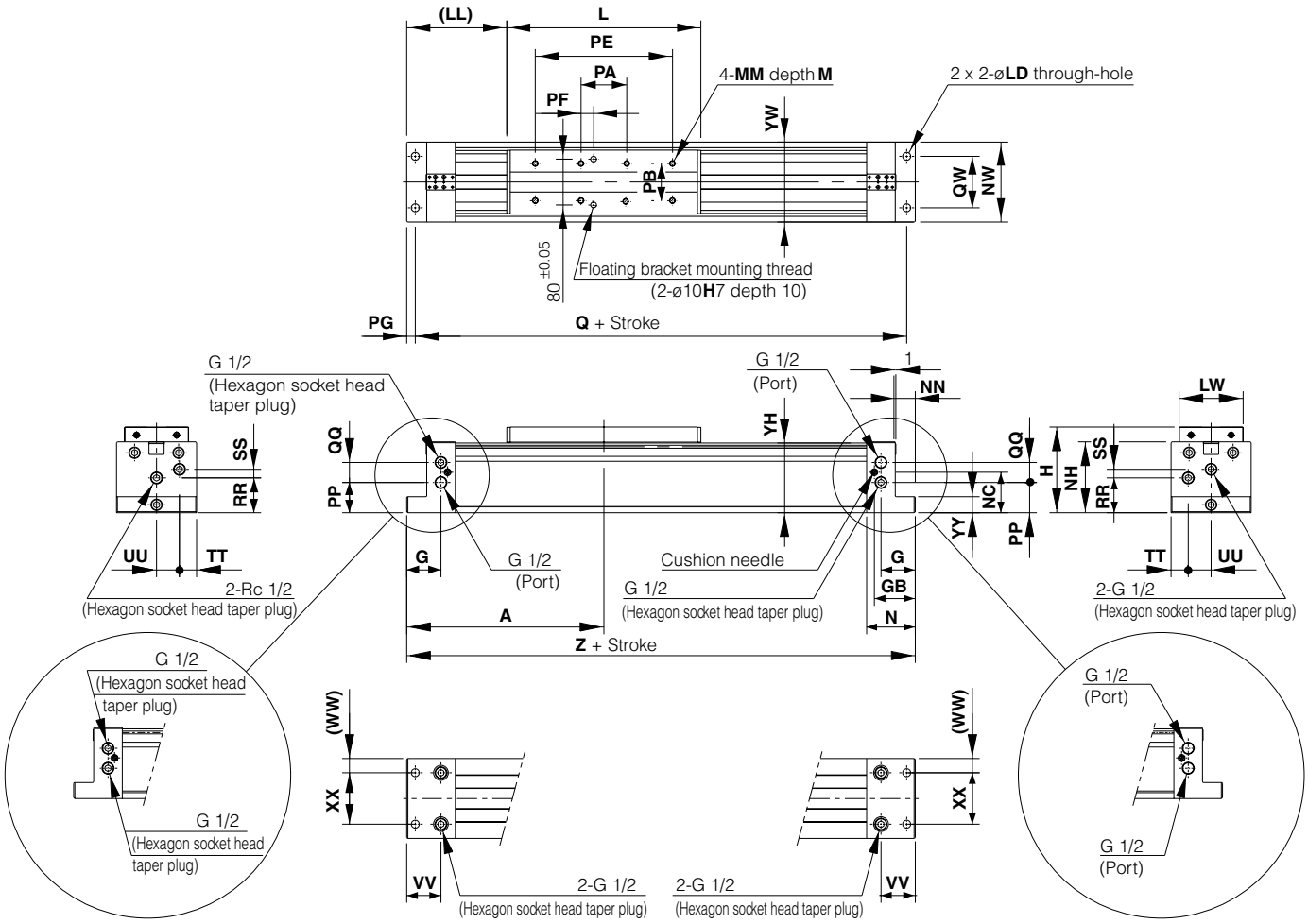
Hole Size for Centralized Piping on the Bottom

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

(Machine the mounting side to the dimensions below.)

Standard Type/Centralized Piping Type ø80, ø100

MY1B80□/100□ — Stroke

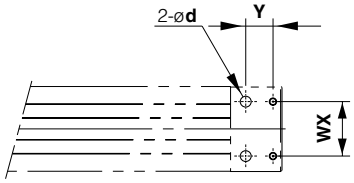


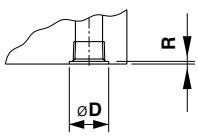
(mm)

Model	A	G	GB	H	L	LD	LL	LW	M	MM	N	NC	NH	NN	NW	PA	PB	PE
MY1B80□	345	60	71.5	150	340	14	175	112	20	M10 x 1.5	85	65	124	35	140	80	65	240
MY1B100□	400	70	79.5	190	400	18	200	140	25	M12 x 1.75	95	85	157	45	176	120	85	280

(mm)

Model	PF	PG	PP	Q	QQ	QW	RR	SS	TT	UU	VV	WW	XX	YH	YW	YY	Z
MY1B80□	22	15	53	660	35	90	61	15	30	40	60	25	90	122	140	28	690
MY1B100□	42	20	69	760	38	120	75	20	40	48	70	28	120	155	176	35	800





Bottom ported
(Applicable O-ring)

Hole Size for Centralized Piping on the Bottom

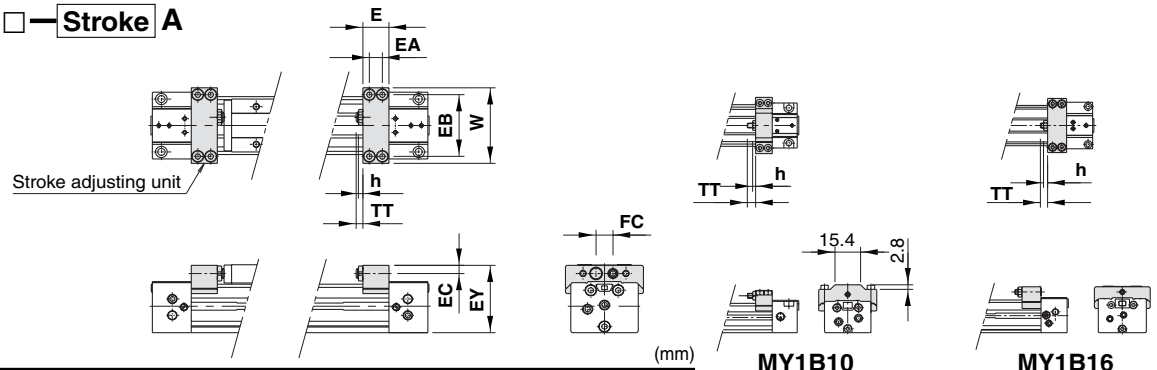
Model	WX	Y	d	D	R	Applicable O-ring
MY1B80□	90	45	18	26	1.8	P22
MY1B100□	120	50	18	26	1.8	

(Machine the mounting side to the dimensions below.)

Stroke Adjusting Unit

With adjusting bolt

MY1B Bore size □—Stroke A

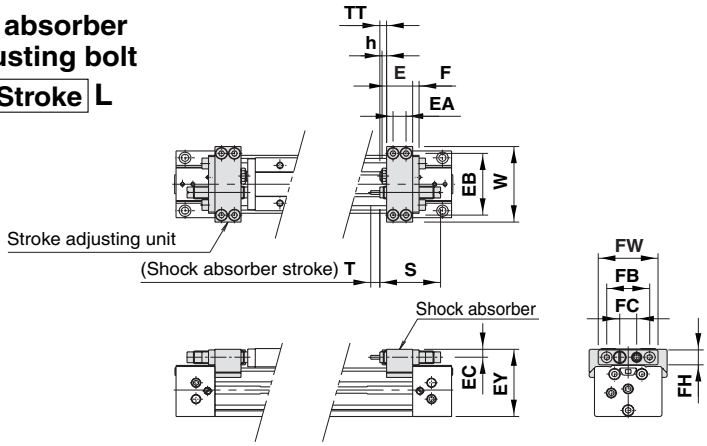


(mm)

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

With low load shock absorber + Adjusting bolt

MY1B Bore size □—Stroke L

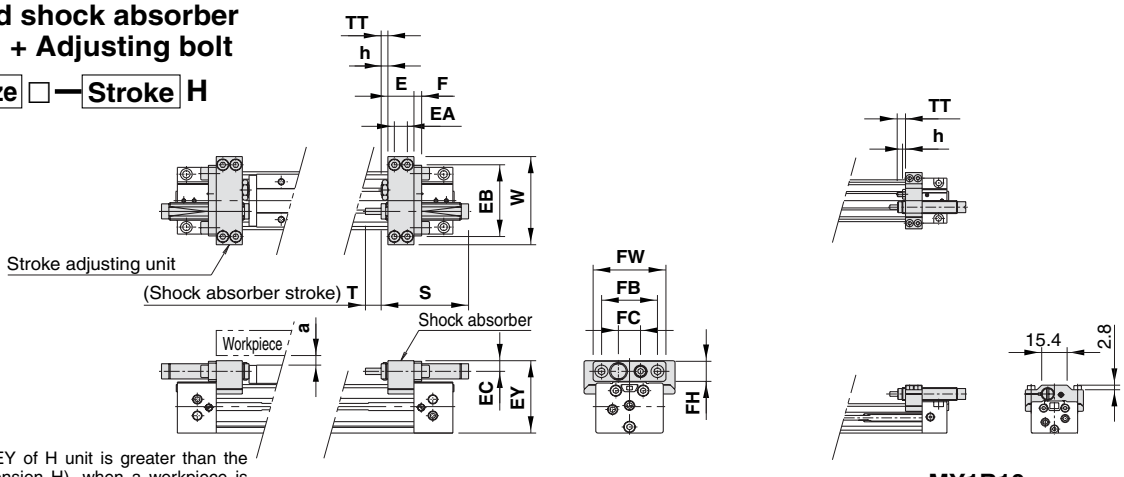


(mm)

Applicable bore size	E	EA	EB	EC	EY	F	FB	FC	FH	FW	h	S	T	TT	W	Shock absorber model
MY1B20	19	9	43	5.8	45.6	4	—	13	—	—	3.2	40.8	6	6 (Max. 12)	53	RB0806
MY1B25	20	10	49	6.5	53.5	6	33	13	12	46	3.5	46.7	7	5 (Max. 16.5)	60	RB1007
MY1B32	25	12	61	8.5	67	6	43	17	16	56	4.5	67.3	12	8 (Max. 20)	74	RB1412
MY1B40	31	15	76	9.5	81.5	6	43	17	16	56	4.5	67.3	12	9 (Max. 25)	94	RB1412

With high load shock absorber + Adjusting bolt

MY1B Bore size □—Stroke H



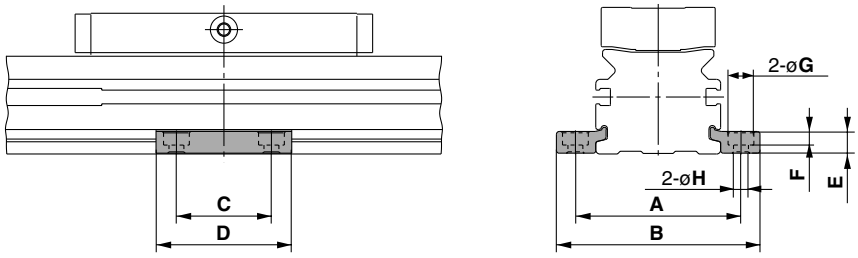
∗ Since the dimension EY of H unit is greater than the table top height (dimension H), when a workpiece is loaded that is larger than the full length (dimension L) of the slide table allow a clearance of size "a" or larger at the workpiece side.

(mm)

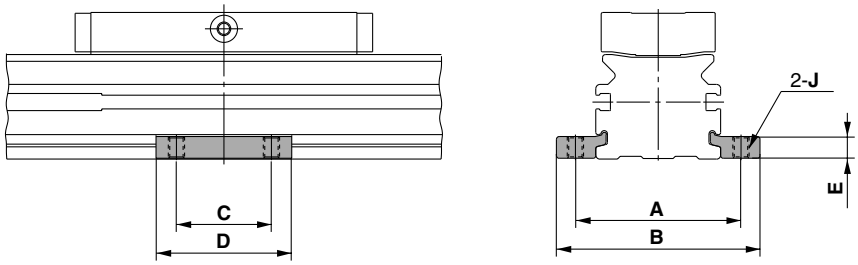
Applicable bore size	E	EA	EB	EC	EY	F	FB	FC	FH	FW	h	S	T	TT	W	Shock absorber model	a
MY1B10	10	5	28	5.5	29.8	—	—	8	—	—	1.8	40.8	5	5 (Max. 10)	35	RB0805	3.5
MY1B20	20	10	49	6.5	47.5	6	33	13	12	46	3.5	46.7	7	5 (Max. 11)	60	RB1007	2.5
MY1B25	20	10	57	8.5	57.5	6	43	17	16	56	4.5	67.3	12	5 (Max. 16.5)	70	RB1412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

Side Support

Side support A
MY-S□A



Side support B
MY-S□B

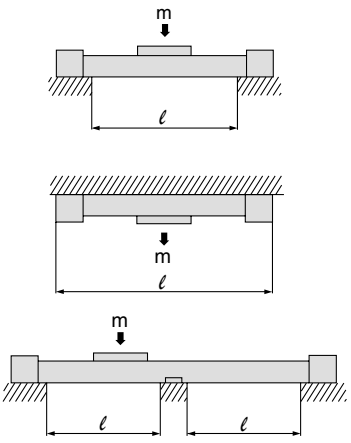


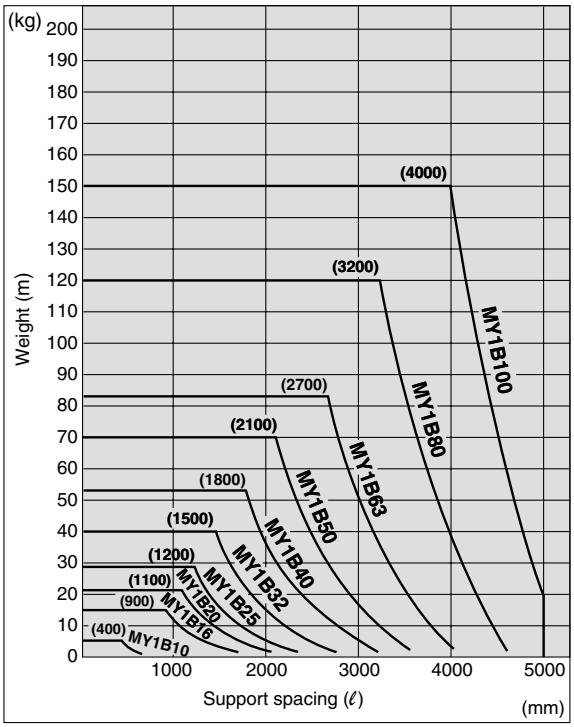
(mm)

Model	Applicable bore size	A	B	C	D	E	F	G	H	J
MY-S10 A/B	MY1B10	35	43.6	12	21	3.6	1.8	6.5	3.4	M4 x 0.7
MY-S16 A/B	MY1B16	43	53.6	15	26	4.9	3	6.5	3.4	M4 x 0.7
MY-S20 A/B	MY1B20	53	65.6	25	38	6.4	4	8	4.5	M5 x 0.8
MY-S25 A/B	MY1B25	61	75	35	50	8	5	9.5	5.5	M6 x 1
	MY1B32	70	84							
MY-S32 A/B	MY1B40	87	105	45	64	11.7	6	11	6.6	M8 x 1.25
	MY1B50	113	131							
MY-S50 A/B	MY1B63	136	158	55	80	14.8	8.5	14	9	M10 x 1.5
MY-S63 A/B	MY1B80	170	200	70	100	18.3	10.5	17.5	11.5	M12 x 1.75
	MY1B100	206	236							

Guide for Side Support Application

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





⚠ Caution

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

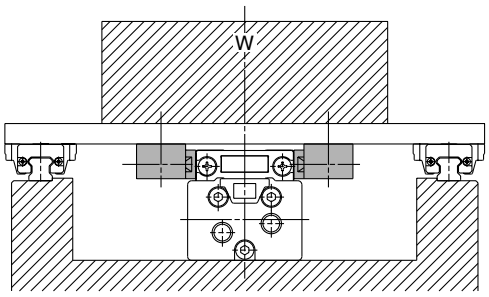
Floating Bracket

Facilitates connection to other guide systems.

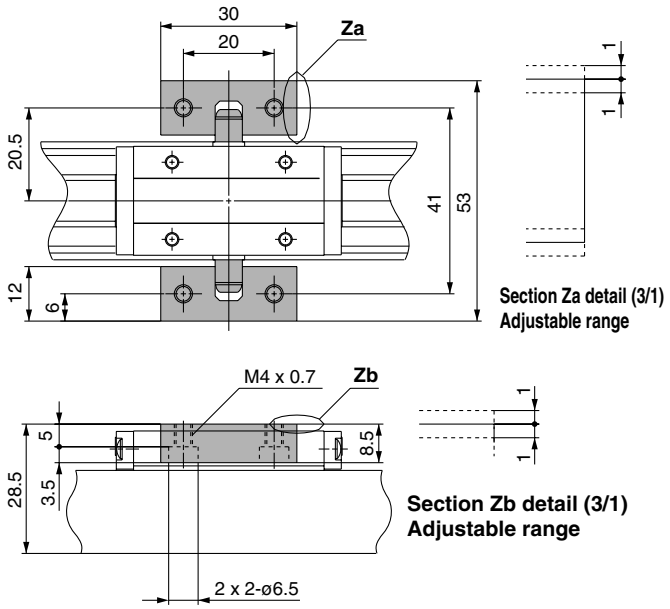
Applicable bore size

■

Application Example



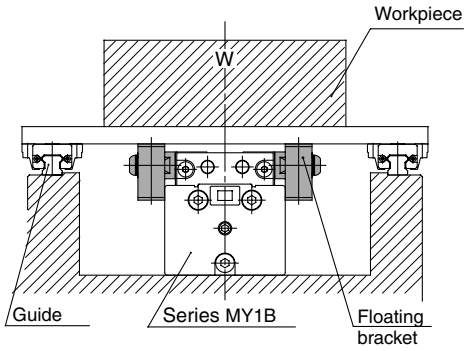
Mounting Example



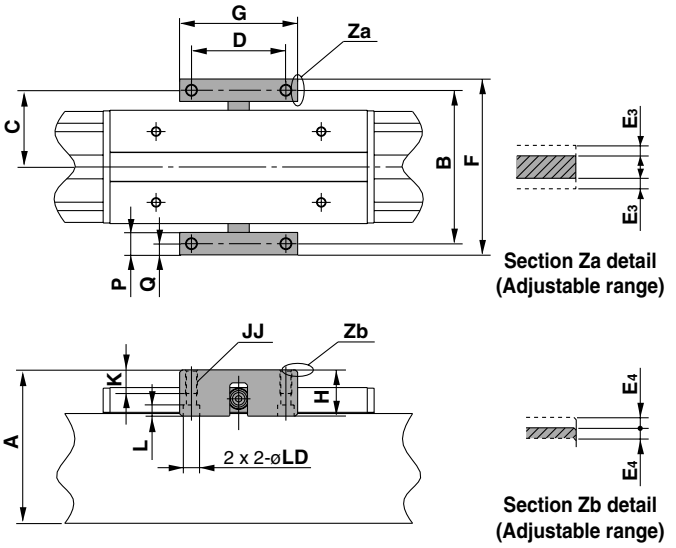
Applicable bore size

ø16, ø20

Application Example



Mounting Example

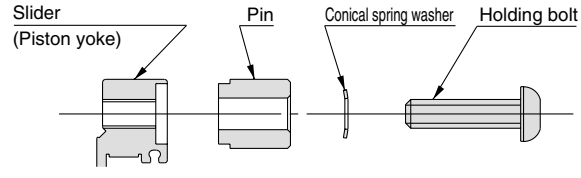


(mm)

Model	Applicable bore size	A	B	C	D	F	G	H
MY-J16	**MY1B16□**	45	45	22.5	30	52	38	18
MY-J20	**MY1B20□**	55	52	26	35	59	50	21

Model	Applicable bore size	JJ	K	L	P	Q	E_3	E_4	LD
MY-J16	**MY1B16□**	M4 x 0.7	10	4	7	3.5	1	1	6
MY-J20	**MY1B20□**	M4 x 0.7	10	4	7	3.5	1	1	6

Installation of Holding Bolts



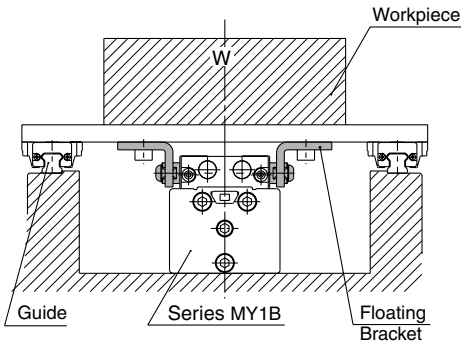
Tightening Torque for Holding Bolts

(N·m)

Model	Tightening torque	Model	Tightening torque	Model	Tightening torque
MY-J10	0.6	**MY-J25**	3	**MY-J50**	5
MY-J16	1.5	**MY-J32**	5	**MY-J63**	13
MY-J20	1.5	**MY-J40**	5		

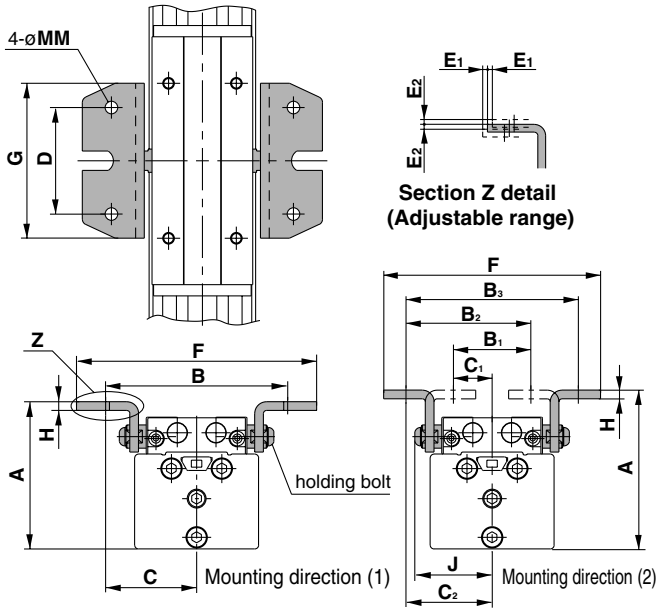
Applicable bore size
ø25, ø32, ø40

Application Example



Mounting Example

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



(mm)

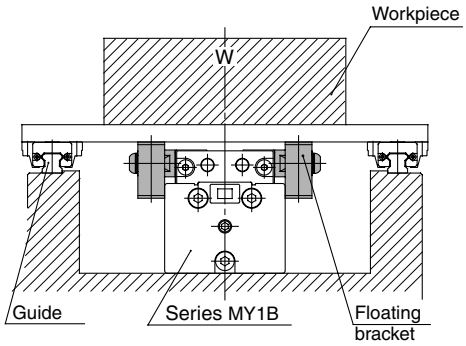
Model	Applicable bore size	Common					Mounting direction (2)			
		D	G	H	J	MM	A	B	C	F
MY-J25	**MY1B25□**	40	60	3.2	35	5.5	63	78	39	100
MY-J32	**MY1B32□**	55	80	4.5	40	6.5	76	94	47	124
MY-J40	**MY1B40□**	74	100	4.5	47	6.5	92	112	56	144

Model	Applicable bore size	Mounting direction (1)							Adjustable range	
		A	B_1	B_2	B_3	C_1	C_2	F	E_1	E_2
MY-J25	**MY1B25□**	65	28	53	78	14	39	96	1	1
MY-J32	**MY1B32□**	82	40	64	88	20	44	111	1	1
MY-J40	**MY1B40□**	98	44	76	108	22	54	131	1	1

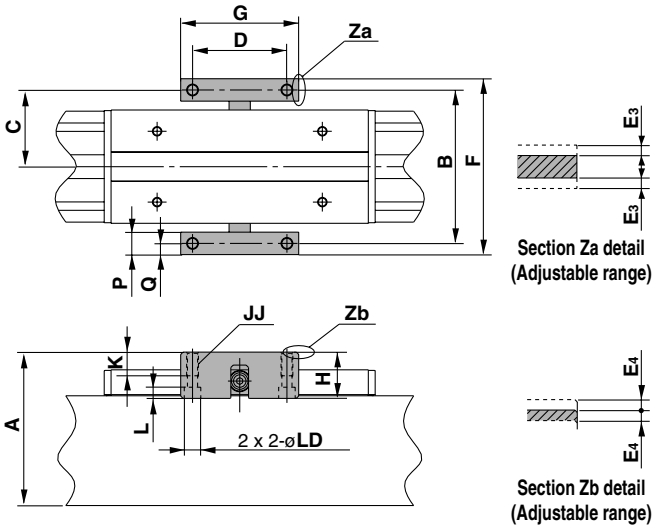
Note) One set of floating brackets consists of one right piece and one left piece.

Applicable bore size
ø50, ø63

Application Example



Mounting Example



(mm)

Model	Applicable bore size	A	B	C	D	F	G	H
MY-J50	**MY1B50□**	110	110	55	70	126	90	37
MY-J63	**MY1B63□**	131	130	65	80	149	100	37

Model	Applicable bore size	JJ	K	L	P	Q	E_3	E_4	LD
MY-J50	**MY1B50□**	M8 x 1.25	20	7.5	16	8	2.5	2.5	11
MY-J63	**MY1B63□**	M10 x 1.5	20	9.5	19	9.5	2.5	2.5	14

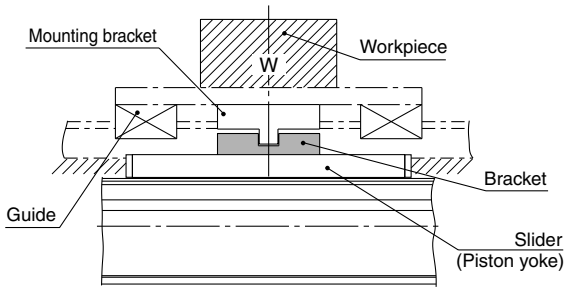
Floating Bracket

Facilitates connection to other guide systems.

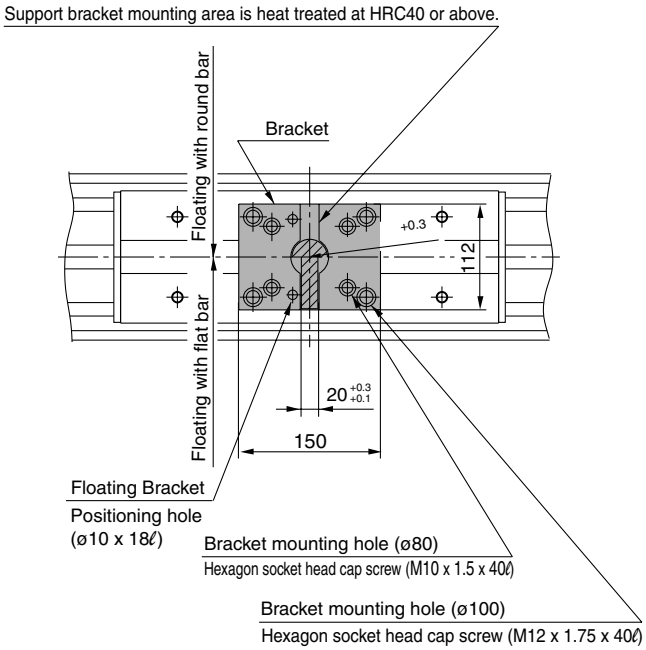
Applicable bore size

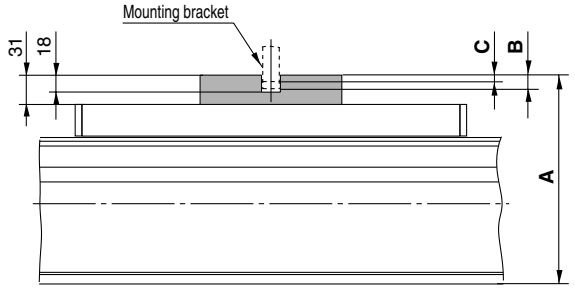
ø80, ø100

Application Example



Mounting Example





Model	Applicable bore size	A	B (max)	C (min)
MY-J 80	MY1B80□	181	15	9
MY-J100	MY1B100□	221	15	9

Hexagon Socket Head Cap Screw TighteningTorque (N·m)

Model	Tightening torque
MY-J80	25
MY-J100	44

Note) • Flat bar or round bar mounting are possible for the support bracket (slanted lines) mounted by the customer.
• The floating bracket is shipped together with (4) hexagon socket head cap screws and (2) parallel pins at the time of shipment.
• "B" and "C" indicate the allowable mounting dimensions for the support bracket (flat bar or round bar).
• Consider support brackets with dimensions that allow the floating mechanism to function properly.

Floating Bracket Operating Precautions

⚠ Caution

Make sure that the amount of divergence from the external guide is within the adjustable range.

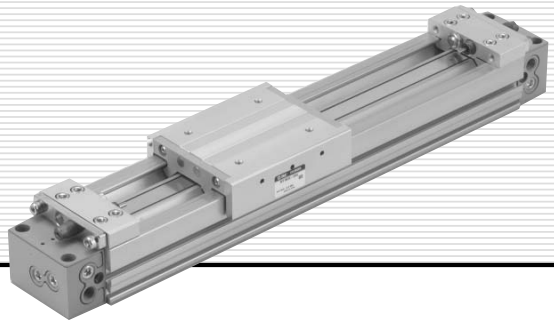
Using the floating bracket facilitates connection to an external guide. However, with a rod type guide, etc., the amount of displacement is large and the floating bracket may not be able to absorb the variation. Check the amount of displacement and mount the floating bracket within the adjustable range.

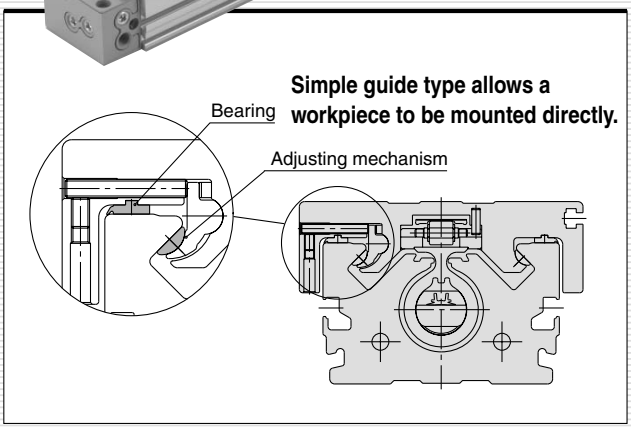
When the displacement amount exceeds the adjustable range, use a separate floating mechanism.

Series MY1M

Slide Bearing Guide Type

ø16, ø20, ø25, ø32, ø40, ø50, ø63





Series MY1M
Before Operation

Maximum Allowable Moment/Maximum Load Weight

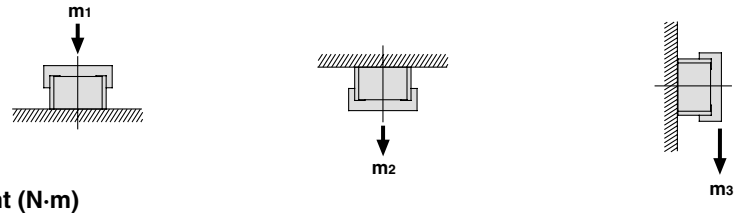
Model	Bore size (mm)	Maximum allowable moment (N·m)			Maximum load weight (kg)		
		M_1	M_2	M_3	m_1	m_2	m_3
MY1M	16	6.0	3.0	1.0	18	7	2.1
	20	10	5.2	1.7	26	10.4	3
	25	15	9.0	2.4	38	15	4.5
	32	30	15	5.0	57	23	6.6
	40	59	24	8.0	84	33	10
	50	115	38	15	120	48	14
	63	140	60	19	180	72	21

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

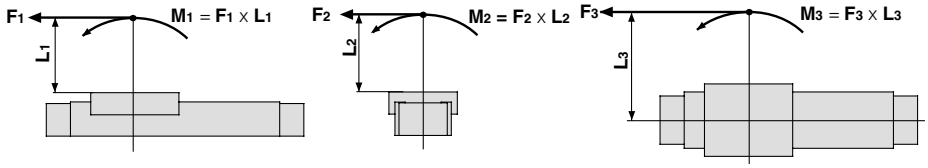
Maximum Allowable Moment

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

Load weight (kg)



Moment (N·m)



<Calculation of guide load factor>

1. Maximum allowable load (1), static moment (2), and dynamic moment (3) (at the time of impact with stopper) must be examined for the selection calculations.

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

Sum of guide load factors

$$\Sigma\alpha = \frac{\text{Load weight [m]}}{\text{Maximum allowable load [mmax]}} + \frac{\text{Static moment [M]}\ ^{(1)}}{\text{Allowable static moment [Mmax]}} + \frac{\text{Dynamic moment [ME]}\ ^{(2)}}{\text{Allowable dynamic moment [MEmax]}} \leq 1$$

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

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

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

υ: Collision speed (mm/s)
L_1: Distance to the load's center of gravity (m)
M_E: Dynamic moment (N·m)
δ: Damper coefficient — At collision: $\upsilon = 1.4\upsilon a$
With rubber bumper = 4/100 (MY1B10, MY1H10)
With air cushion = 1/100
With shock absorber = 1/100
g: Gravitational acceleration (9.8 m/s²)

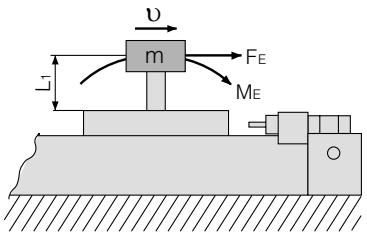
$$\upsilon = 1.4\upsilon a \text{ (mm/s)} \quad F_E = 1.4\upsilon a \cdot \delta \cdot m \cdot g \ ^{\text{Note 4)}}$$

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

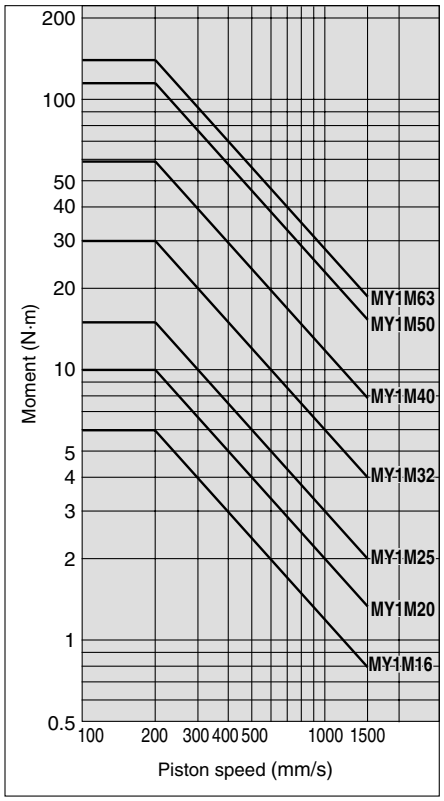
Note 4) $1.4\upsilon a\delta$ is a dimensionless coefficient for calculating impact force.
Note 5) Average load coefficient ($=\frac{1}{3}$): This coefficient is for averaging the maximum load moment at the time of stopper impact according to service life calculations.

Maximum Load Weight

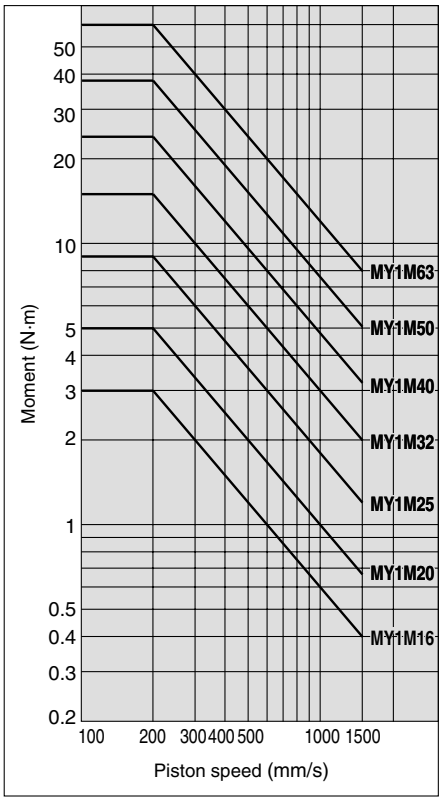
Select the load from within the range of limits shown in the graphs. Note that the maximum allowable moment value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable moment for the selected conditions.



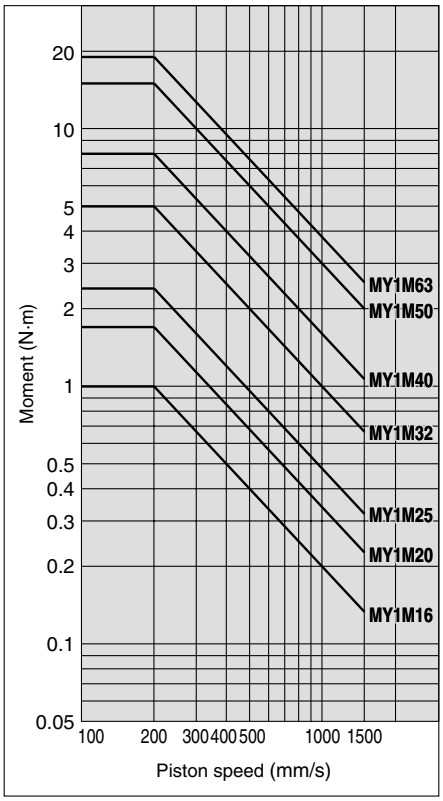
MY1M/M_1



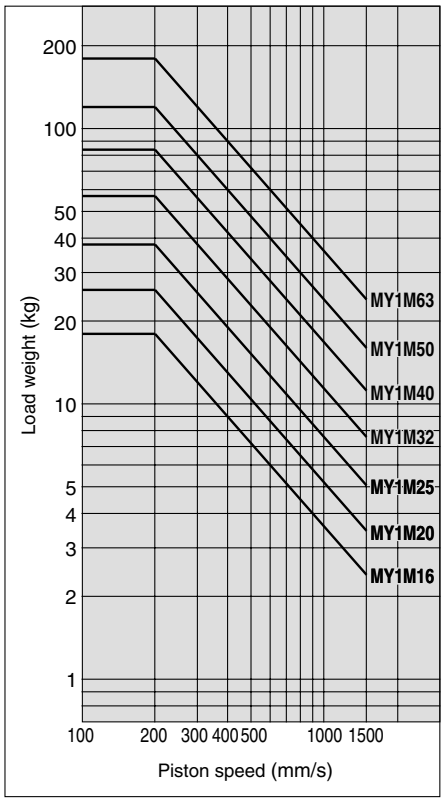
MY1M/M_2



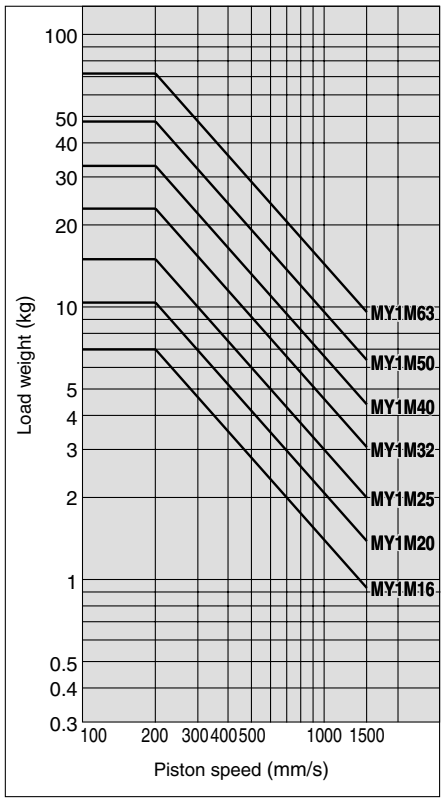
MY1M/M_3



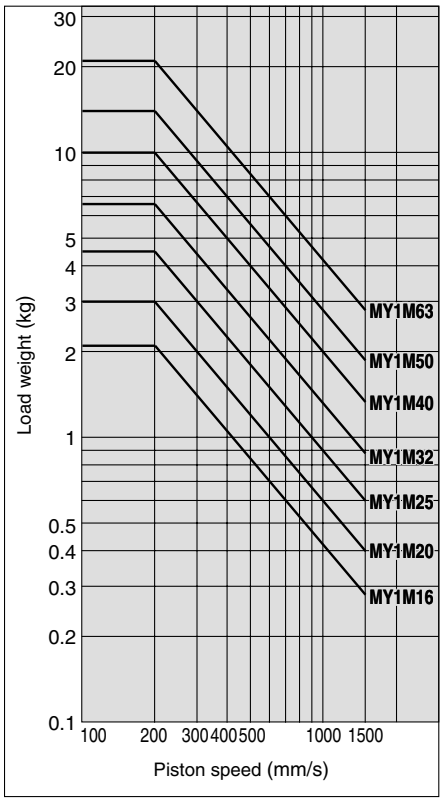
MY1M/m_1



MY1M/m_2



MY1M/m_3



Series ***MY1M***

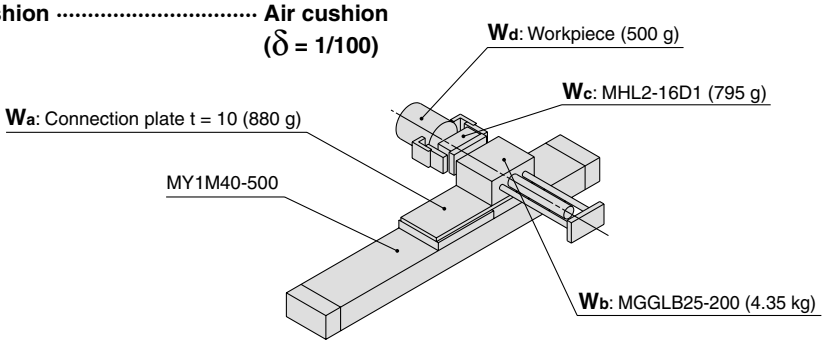
Model Selection

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

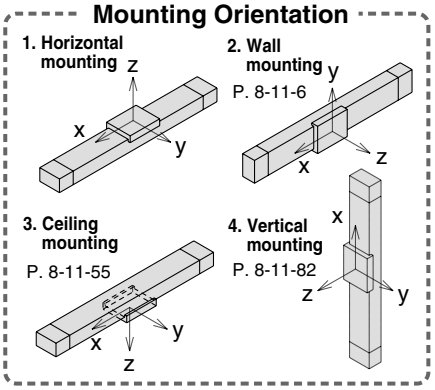
Calculation of Guide Load Factor

1. Operating Conditions

Cylinder ····· MY1M40-500
Average operating speed υa ···200 mm/s
Mounting orientation ····· Horizontal mounting
Cushion ····· Air cushion
(δ = 1/100)

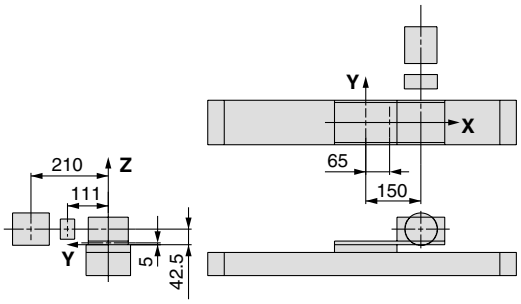


Mounting Orientation



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

2. Load Blocking



Weight and Center of Gravity for Each Workpiece

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

n = a, b, c, d

3. Composite center of Gravity Calculation

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

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

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

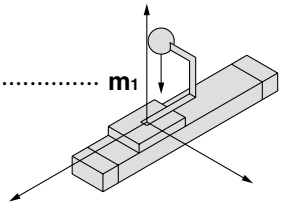
$Z = \frac{1}{m_1} \times \Sigma (m_n \times z_n)$
$= \frac{1}{6.525} (0.88 \times 5 + 4.35 \times 42.5 + 0.795 \times 42.5 + 0.5 \times 42.5) =$ **37.4 mm**

4. Calculation of load factor for static load

m_1: Weight

$m_1$max (from (1) of graph MY1M/m_1) = 84 (kg)····· **m_1**

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

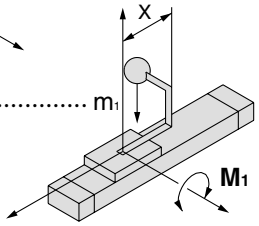


M_1: Moment

M_1max (from (2) of graph MY1M/M_1) = 59 (N·m)····· m_1

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

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

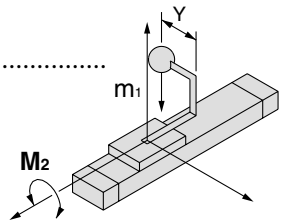


M_2 : Moment

M_2max (from (3) of graph MY1M/M_2) = 24 (N·m)·····

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

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



5. Calculation of Load Factor for Dynamic Moment

Equivalent load F_E at impact

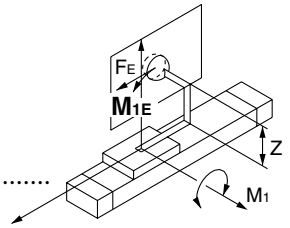
$F_E = 1.4\upsilon a \times \delta \times m \times g = 1.4 \times 200 \times \frac{1}{100} \times 6.525 \times 9.8 = 179.1$ (N)

M_{1E} : Moment

M_{1E}max (from (4) of graph MY1M/M_1 where $1.4\upsilon a$ = 280 mm/s) = 42.1 (N·m)·····

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

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

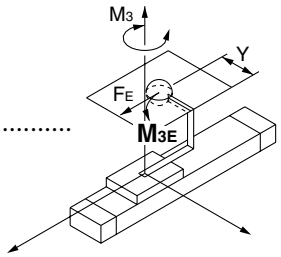


M_{3E} : Moment

M_{3E}max (from (5) of graph MY1M/M_3 where $1.4\upsilon a$ = 280 mm/s) = 5.7 (N·m)·····

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

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



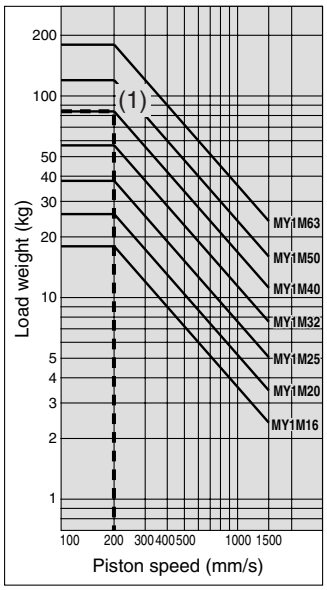
6. Sum and Examination of Guide Load Factors

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

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

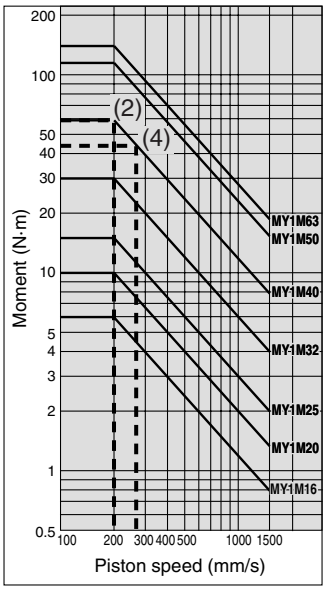
Load Weight

MY1M/m_1

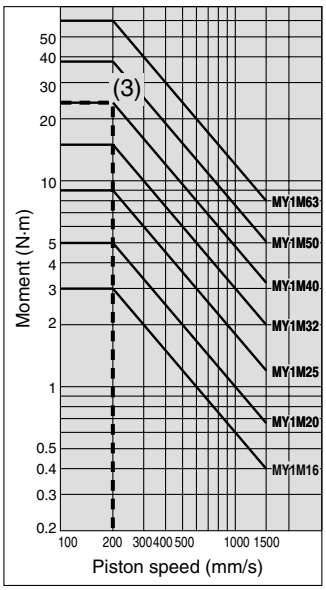


Allowable Moment

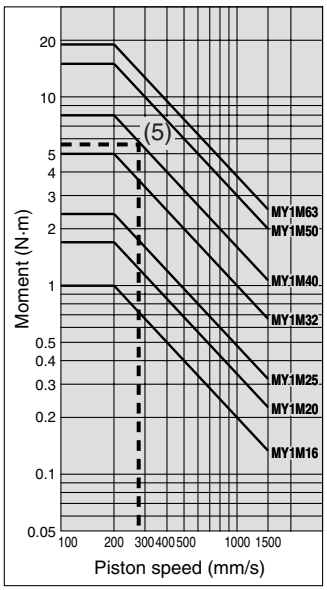
MY1M/M_1



MY1M/M_2



MY1M/M_3



Mechanically Jointed Rodless Cylinder
Slide Bearing Guide Type
Series MY1M
ø16, ø20, ø25, ø32, ø40, ø50, ø63

How to Order

MY1M 25 G — 300 L S - XG For 25mm bore and above

Slide bearing guide type

Bore size (mm)

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

Piping

Nil	Standard type
G	Centralized piping type

Stroke

Stroke adjusting unit

Nil	Without adjusting unit
A	With adjusting bolt
L *	With low load shock absorber + Adjusting bolt
H *	With high load shock absorber + Adjusting bolt
AL	With one A unit and one L unit
AH	With one A unit and one H unit each
LH	With one L unit and one H unit each

Note) MY1M16 is not available with H unit.

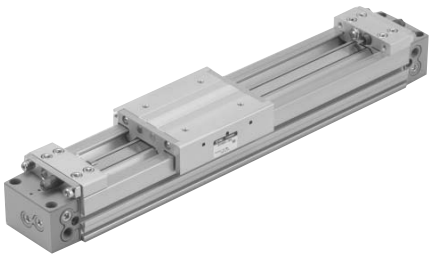
Suffix for stroke adjusting unit Note)

Nil	Both ends
S	One end

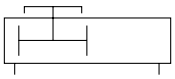
Note) "S" is applicable for stroke adjusting units A, L and H.

Shock Absorbers for L and H Units

Unit no. \ Bore size (mm)	16	20	25	32	40	50	63
L unit	RB0806		RB1007	RB1412		RB2015	
H unit	—	RB1007	RB1412	RB2015		RB2725	



Symbol



Specifications

Bore size (mm)		16	20	25	32	40	50	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		Air cushion						
Lubrication		Non-lube						
Stroke length tolerance		1000 or less $^{+1.8}_{0}$ 1001 to 3000 $^{+2.8}_{0}$		2700 or less $^{+1.8}_{0}$, 2701 to 5000 $^{+2.8}_{0}$				
Piping port size	Front/Side port	M5 x 0.8		1/8		1/4	3/8	
	Bottom port	ø4		ø5	ø6	ø8	ø10	ø11

Stroke Adjusting Unit Specifications

Bore size (mm)	16		20			25			32			40			50			63		
Unit symbol	A	L	A	L	H	A	L	H	A	L	H	A	L	H	A	L	H	A	L	H
Configuration Shock absorber model	With adjusting bolt	RB 0806 with adjusting bolt	With adjusting bolt	RB 0806 with adjusting bolt	RB 1007 with adjusting bolt	With adjusting bolt	RB 1007 with adjusting bolt	RB 1412 with adjusting bolt	With adjusting bolt	RB 1412 with adjusting bolt	RB 2015 with adjusting bolt	With adjusting bolt	RB 1412 with adjusting bolt	RB 2015 with adjusting bolt	With adjusting bolt	RB 2015 with adjusting bolt	RB 2725 with adjusting bolt	With adjusting bolt	RB 2015 with adjusting bolt	RB 2725 with adjusting bolt
Fine stroke adjustment range (mm)	0 to –5.6		0 to –6			0 to –11.5			0 to –12			0 to –16			0 to –20			0 to –25		
Stroke adjustment range	When exceeding the stroke fine adjustment range: Utilize a made-to-order specifications"-X416" and "-X417".																			

Shock Absorber Specifications

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

Piston Speed

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

Note 1) Be aware that when the stroke adjusting range is increased by manipulating the adjusting bolt, the air cushion capacity decreases.
Note 2) The piston speed is 100 to 1000 mm/s for centralized piping.
Note 3) Use at a speed within the absorption capacity range.

Made to Order Specifications

Symbol	Specifications
-XB11	Long stroke
-XC67	NBR rubber lining in dust seal band
-X168	Helical insert thread specifications
-X416	Holder mounting bracket I
-X417	Holder mounting bracket II

Standard Stroke

Bore size (mm)	Standard stroke (mm) *	Maximum manufacturable stroke (mm)
16	100, 200, 300, 400, 500, 600, 700 800, 900, 1000, 1200, 1400, 1600 1800, 2000	3000
20, 25, 32, 40 50, 63		5000

* Strokes are manufacturable in 1 mm increments, up to the maximum stroke. However, when exceeding a 2000 mm stroke, specify "-XB11" at the end of the model number.

Theoretical Output

(N)

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

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

Weight

(kg)

Bore size (mm)	Basic weight	Additional weight per each 50mm of stroke	Side support weight (per set)	Stroke adjusting unit weight (per unit)		
			Type A and B	A unit weight	L unit weight	H unit weight
16	0.67	0.12	0.01	0.03	0.04	—
20	1.11	0.16	0.02	0.04	0.05	0.08
25	1.64	0.24	0.02	0.07	0.11	0.18
32	3.27	0.38	0.04	0.14	0.23	0.39
40	5.88	0.56	0.08	0.25	0.34	0.48
50	10.06	0.77	0.08	0.36	0.51	0.81
63	16.57	1.11	0.17	0.68	0.83	1.08

Calculation: (Example) MY1M25-300A

- Basic weight ·····1.64 kg
- Additional weight ·····0.24/50 st
- Weight of A unit ·····0.07 kg
- Cylinder stroke····300 st

1.64 + 0.24 x 300 ÷ 50 + 0.07 x 2 ≅ 3.22 kg

Option

Stroke Adjusting Unit Part No.

Bore (mm) / Unit no.	16	20	25	32
A unit	MYM-A16A	MYM-A20A	MYM-A25A	MYM-A32A
L unit	MYM-A16L	MYM-A20L	MYM-A25L	MYM-A32L
H unit	—	MYM-A20H	MYM-A25H	MYM-A32H

Bore (mm) / Unit no.	40	50	63
A unit	MYM-A40A	MYM-A50A	MYM-A63A
L unit	MYM-A40L	MYM-A50L	MYM-A63L
H unit	MYM-A40H	MYM-A50H	MYM-A63H

Side Support Part No.

Bore (mm) / Type	16	20	25	32
Side support A	MY-S16A	MY-S20A	MY-S25A	MY-S32A
Side support B	MY-S16B	MY-S20B	MY-S25B	MY-S32B

Bore (mm) / Type	40	50	63
Side support A	MY-S40A		MY-S63A
Side support B	MY-S40B		MY-S63B

Cushion Capacity

Cushion Selection

<Air cushion>
Air cushions are a standard feature on mechanically jointed rodless cylinders. The air cushion mechanism is incorporated to prevent excessive impact of the piston at the stroke end during high speed operation. The purpose of air cushion, thus, is not to decelerate the piston near the stroke end. The ranges of load and speed that air cushions can absorb are within the air cushion limit lines shown in the graphs.

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

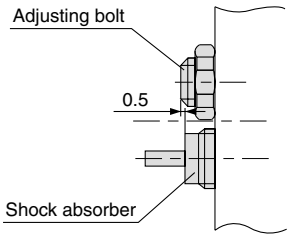
<L unit>
Use this unit when the cylinder stroke is outside of the effective air cushion range even if the load and speed are within the air cushion limit line, or when the cylinder is operated in a load and speed range above the air cushion limit line or below the L unit limit line.

<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 figure below when using the adjusting bolt to perform stroke adjustment.

When the effective stroke of the shock absorber decreases as a result of stroke adjustment, the absorption capacity decreases dramatically. Secure the adjusting bolt at the position where it protrudes approximately 0.5 mm from the shock absorber.



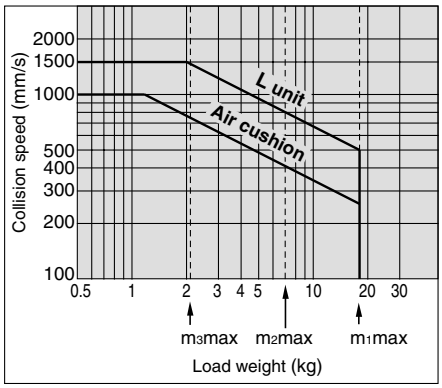
2. Do not use a shock absorber together with air cushion.

Air Cushion Stroke

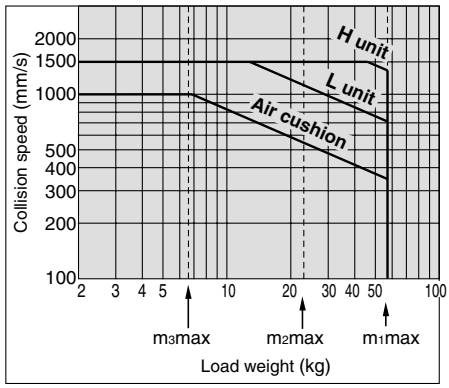
Bore size (mm)	Cushion stroke
16	12
20	15
25	15
32	19
40	24
50	30
63	37

Absorption Capacity of Air Cushion and Stroke Adjusting Units

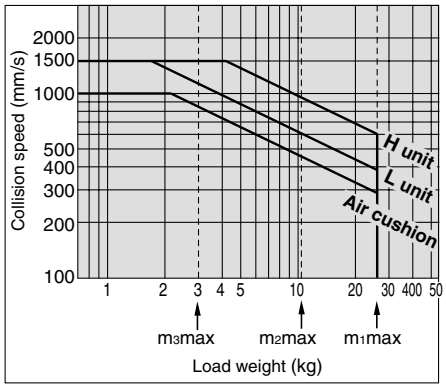
MY1M16 Horizontal collision: P = 0.5 MPa



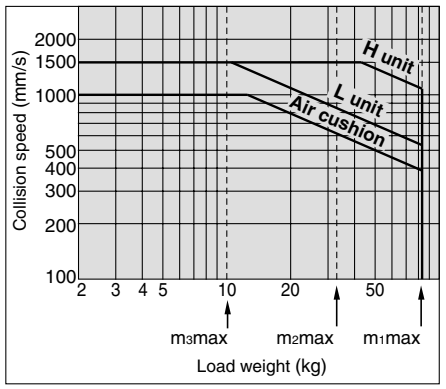
MY1M32 Horizontal collision: P = 0.5 MPa



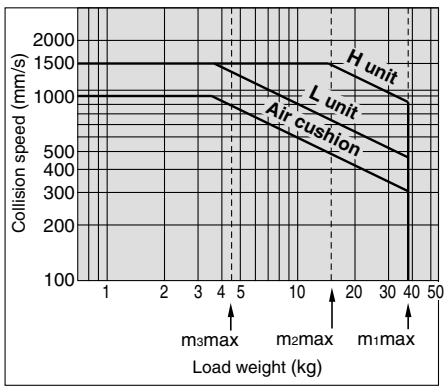
MY1M20 Horizontal collision: P = 0.5 MPa



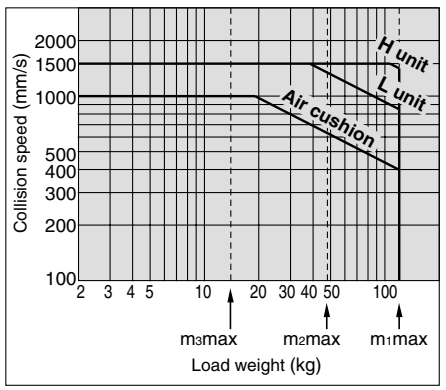
MY1M40 Horizontal collision: P = 0.5 MPa



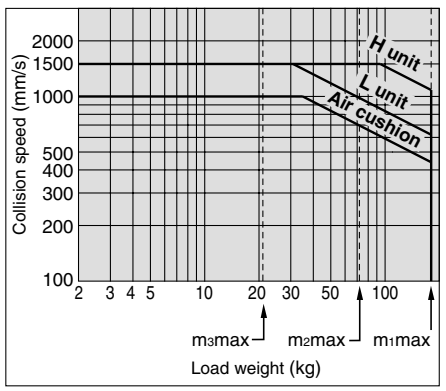
MY1M25 Horizontal collision: P = 0.5 MPa



MY1M50 Horizontal collision: P = 0.5 MPa



MY1M63 Horizontal collision: P = 0.5 MPa



Cushion Capacity

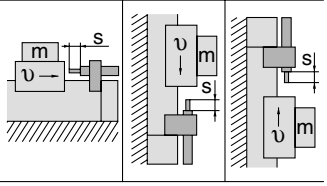
Tightening Torque for Stroke Adjusting Unit Holding Bolts (N·m)

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

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

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

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

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

Symbol
υ: 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)

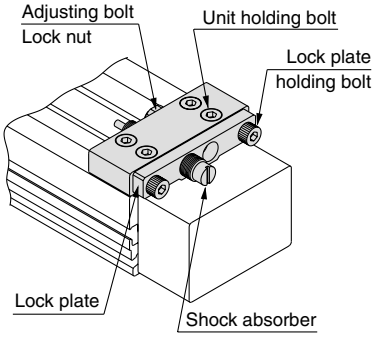
Note) The speed of the impact object is measured at the time of impact with the shock absorber.

⚠ Precautions

⚠ Caution

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

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



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

⚠ Caution

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

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

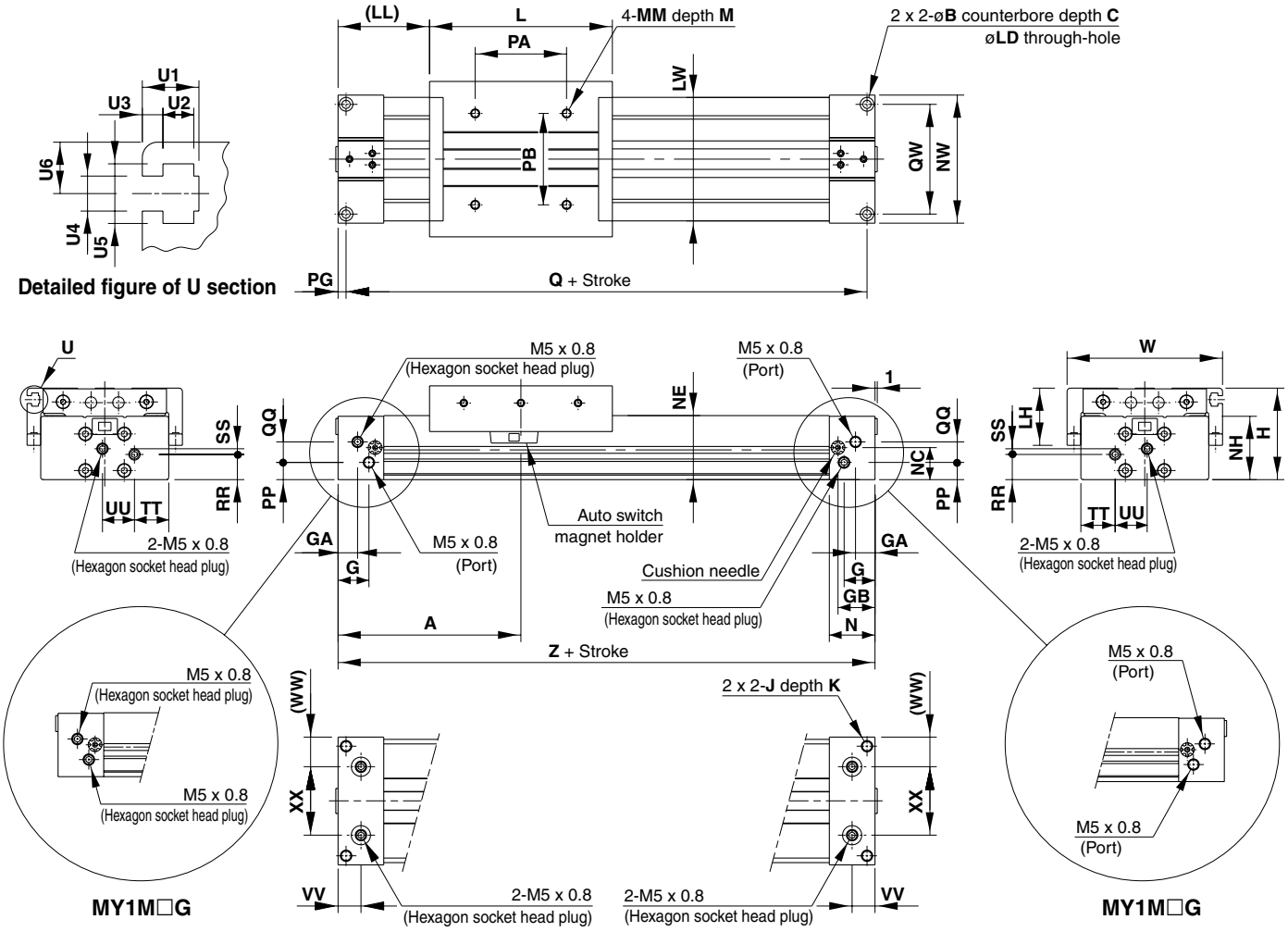
<Stroke adjustment with adjusting bolt>
Loosen the adjusting bolt lock nut, and adjust the stroke from the lock plate side using a hexagon wrench. Retighten the lock nut.

<Stroke adjustment with shock absorber>
Loosen the two lock plate holding bolts, turn the shock absorber and adjust the stroke. Then, uniformly tighten the lock plate holding bolts to secure the shock absorber.
Take care not to over-tighten the holding bolts. (Except ø16, ø20, ø50, ø63)
(Refer to "Tightening Torgue for Stroke Adjusting Unit Lock Plate Holding Bolts".)

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

Standard Type/Centralized Piping Type ø16, ø20

MY1M16□/20□ — Stroke



(mm)

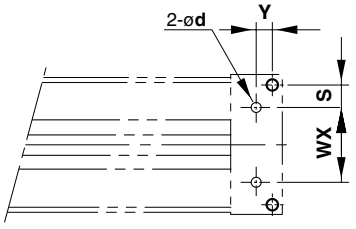
Model	A	B	C	G	GA	GB	H	J	K	L	LD	LH	LL	LW	M	MM	N	NC	NE	NH	NW	PA
MY1M16□	80	6	3.5	13.5	8.5	16.2	40	M5 x 0.8	10	80	3.6	22.5	40	54	6	M4 x 0.7	20	14	28	27.7	56	40
MY1M20□	100	7.5	4.5	12.5	12.5	20	46	M6 x 1	12	100	4.8	23	50	58	7.5	M5 x 0.8	25	17	34	33.7	60	50

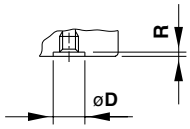
(mm)

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

Detailed Dimensions of U Section

Model	U1	U2	U3	U4	U5	U6
MY1M16□	5.5	3	2	3.4	5.8	5
MY1M20□	5.5	3	2	3.4	5.8	5.5





Bottom ported
(Applicable O-ring)

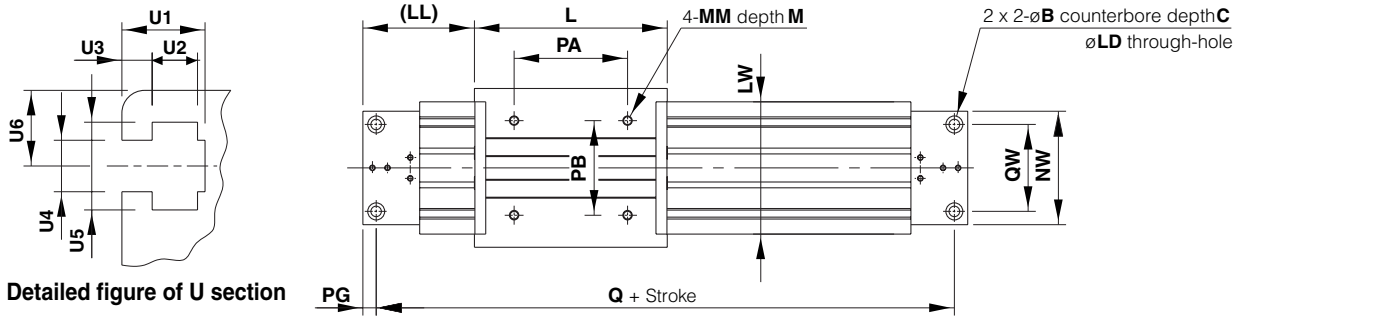
Hole Size for Centralized Piping on the Bottom

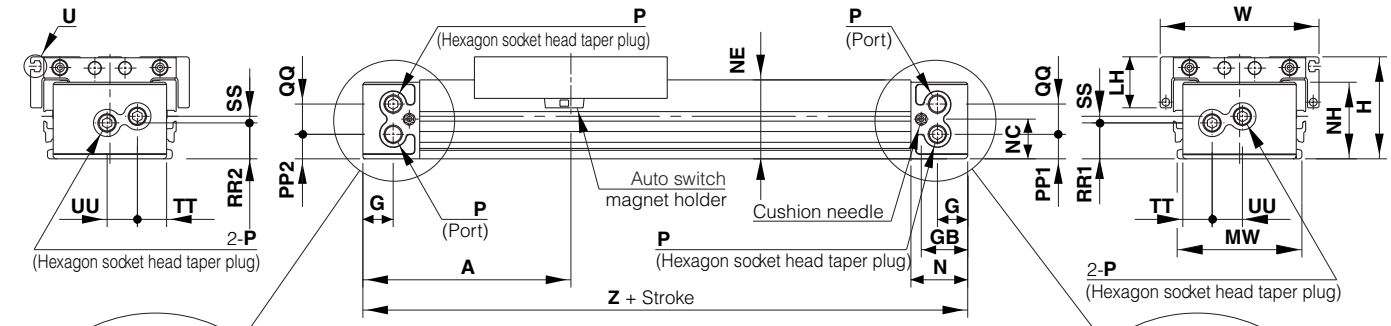
Model	WX	Y	S	d	D	R	Applicable O-ring
MY1M16□	30	6.5	9	4	8.4	1.1	C6
MY1M20□	32	8	6.5	4	8.4	1.1	

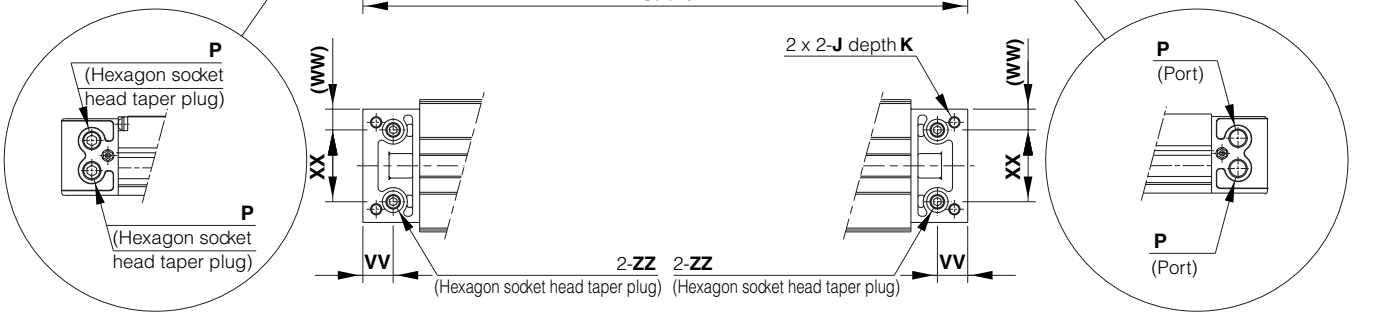
(Machine the mounting side to the dimensions below.)

Standard Type/Centralized Piping Type ø25, ø32, ø40

MY1M25□/32□/40□ — Stroke







(mm)

Model	A	B	C	G	GB	H	J	K	L	LD	LH	LL	LW	M	MM	MW	N	NC	NE	NH	NW	P	PA
MY1M25□	110	9	5.5	17	24.5	54	M6 x 1	9.5	102	5.6	27	59	70	10	M5 x 0.8	66	30	21	41.8	40.5	60	G 1/8	60
MY1M32□	140	11	6.5	19	30	68	M8 x 1.25	16	132	6.8	35	74	88	13	M6 x 1	80	37	26	52.3	50	74	G 1/8	80
MY1M40□	170	14	8.5	23	36.5	84	M10 x 1.5	15	162	8.6	38	89	104	13	M6 x 1	96	45	32	65.3	63.5	94	G1/4	100

"P" indicates cylinder supply ports.

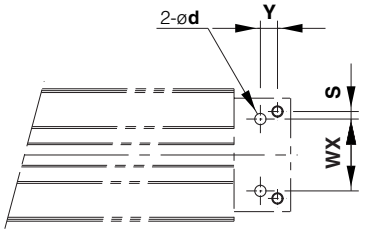
(mm)

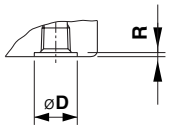
Model	PB	PG	PP1	PP2	Q	QQ	QW	RR1	RR2	SS	TT	UU	VV	W	WW	XX	Z	ZZ
MY1M25□	50	7	12.7	12.7	206	16	46	18.9	17.9	4.1	15.5	16	16	84	11	38	220	G 1/16
MY1M32□	60	8	15.5	18.5	264	16	60	22	24	4	21	16	19	102	13	48	280	G 1/16
MY1M40□	80	9	17.5	20	322	26	72	25.5	29	9	26	21	23	118	20	54	340	G 1/8

Detailed Dimensions of U Section

(mm)

Model	U1	U2	U3	U4	U5	U6
MY1M25□	5.5	3	2	3.4	5.8	5
MY1M32□	5.5	3	2	3.4	5.8	7
MY1M40□	6.5	3.8	2	4.5	7.3	8





Bottom ported (ZZ)
(Applicable O-ring)

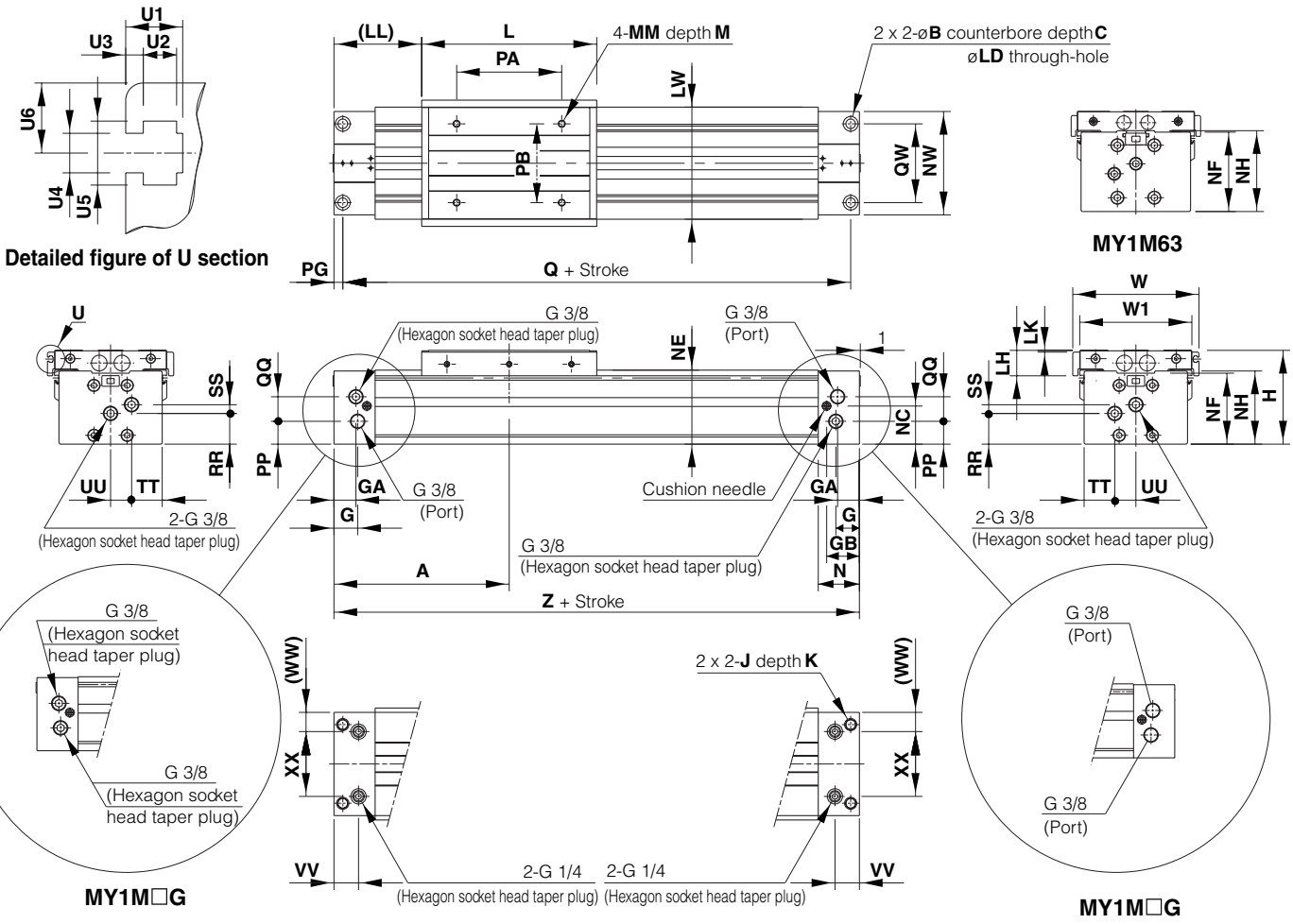
Hole Size for Centralized Piping on the Bottom

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

(Machine the mounting side to the dimensions below.)

Standard Type/Centralized Piping Type ø50, ø63

MY1M50□/60□ — Stroke



(mm)

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

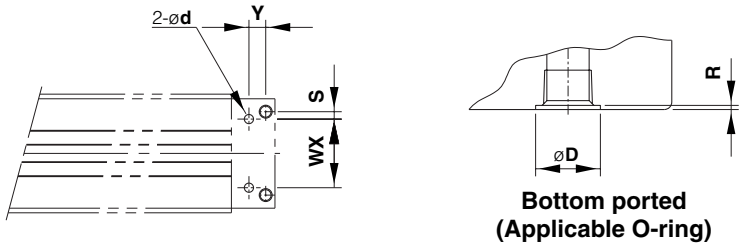
(mm)

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

Detailed Dimensions of U Section

(mm)

Model	U1	U2	U3	U4	U5	U6
MY1M50□	6.5	3.8	2	4.5	7.3	8
MY1M63□	8.5	5	2.5	5.5	8.4	8



Hole Size for Centralized Piping on the Bottom

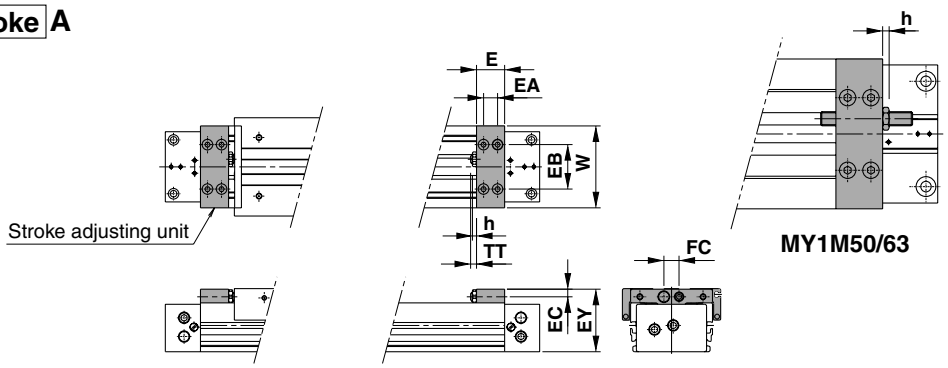
Model	WX	Y	S	d	D	R	Applicable O-ring
MY1M50□	74	18	8	10	17.5	1.1	C15
MY1M63□	92	18	9	10	17.5	1.1	

(Machine the mounting side to the dimensions below.)

Stroke Adjusting Unit

With adjusting bolt

MY1M Bore size □ — Stroke A

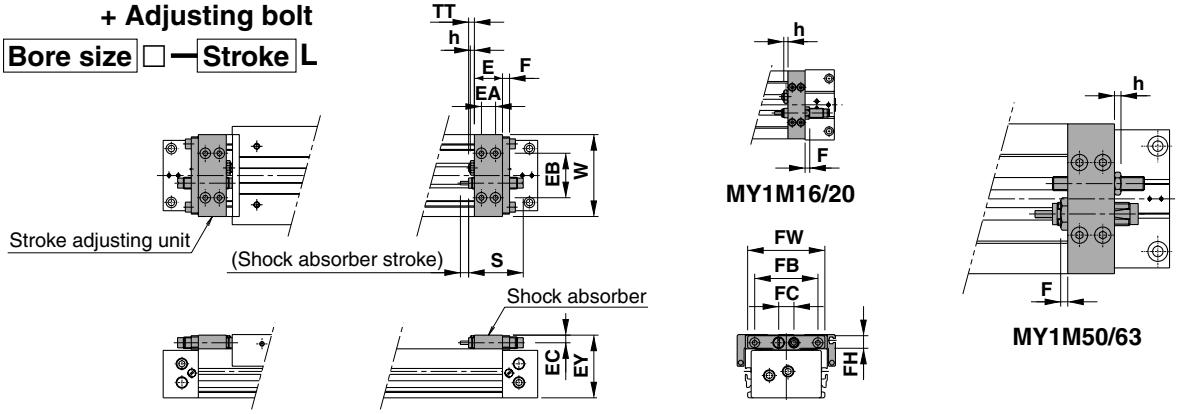


(mm)

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

With low load shock absorber + Adjusting bolt

MY1M Bore size □ — Stroke L

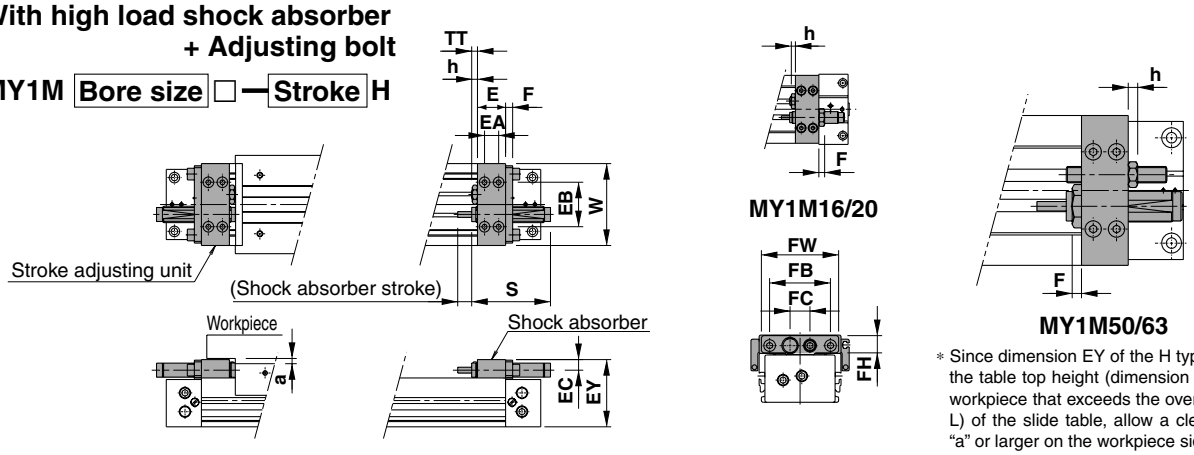


(mm)

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

With high load shock absorber + Adjusting bolt

MY1M Bore size □ — Stroke H

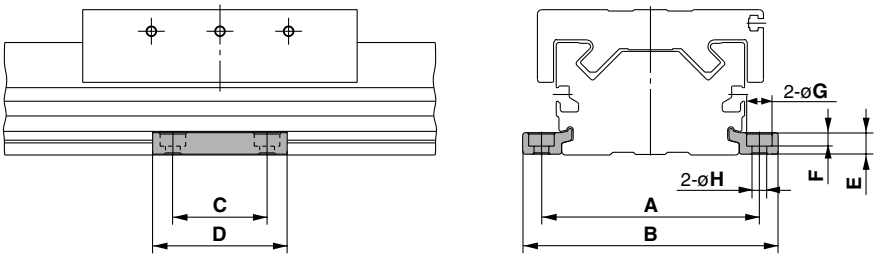


∗ Since dimension EY of the H type unit is greater than the table top height (dimension H), when mounting a workpiece that exceeds the overall length (dimension L) of the slide table, allow a clearance of dimension "a" or larger on the workpiece side.

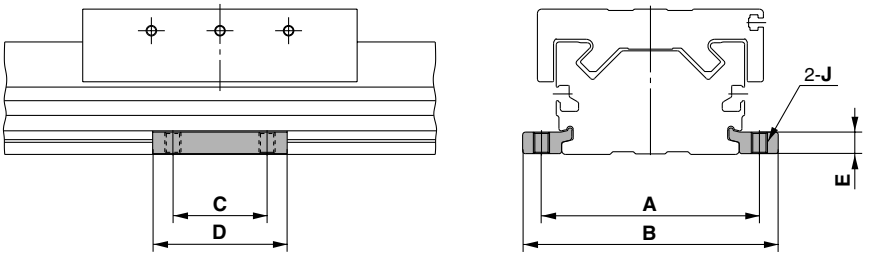
Applicable bore size	E	EA	EB	EC	EY	F	FB	FC	FH	FW	h	S	T	TT	W	Shock absorber model	a
MY1M20	20	10	32	7.7	50	5	—	14	—	—	3.5	46.7	7	5 (Max. 11)	58	RB1007	5
MY1M25	24	12	38	9	57.5	6	52	17	16	66	4.5	67.3	12	5 (Max. 16.5)	70	RB1412	4.5
MY1M32	29	14	50	11.5	73	8	67	22	22	82	5.5	73.2	15	8 (Max. 20)	88	RB2015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

Side Support

Side support A
MY-S□A



Side support B
MY-S□B

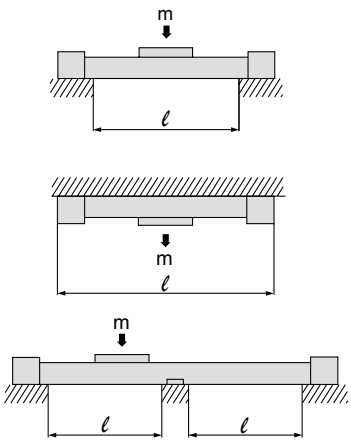


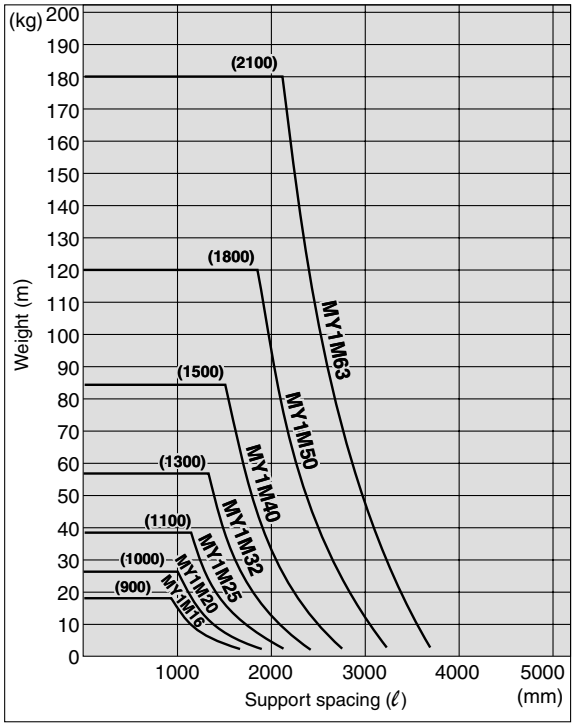
(mm)

Model	Applicable bore size	A	B	C	D	E	F	G	H	J
MY-S16 A/B	MY1M16	61	71.6	15	26	4.9	3	6.5	3.4	M4 x 0.7
MY-S20 A/B	MY1M20	67	79.6	25	38	6.4	4	8	4.5	M5 x 0.8
MY-S25 A/B	MY1M25	81	95	35	50	8	5	9.5	5.5	M6 x 1
MY-S32 A/B	MY1M32	100	118	45	64	11.7	6	11	6.6	M8 x 1.25
MY-S40 A/B	MY1M40	120	142	55	80	14.8	8.5	14	9	M10 x 1.5
	MY1M50	142	164							
MY-S63 A/B	MY1M63	172	202	70	100	18.3	10.5	17.5	11.5	M12 x 1.75

Guide for Side Support Application

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





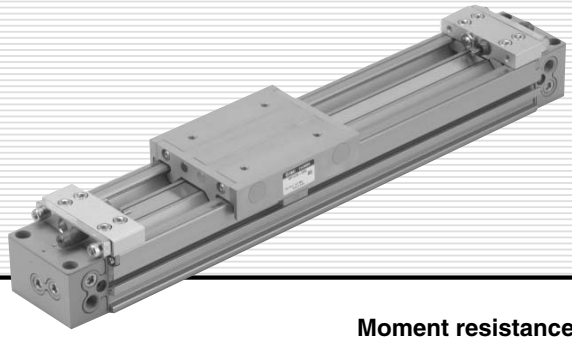
⚠ Caution

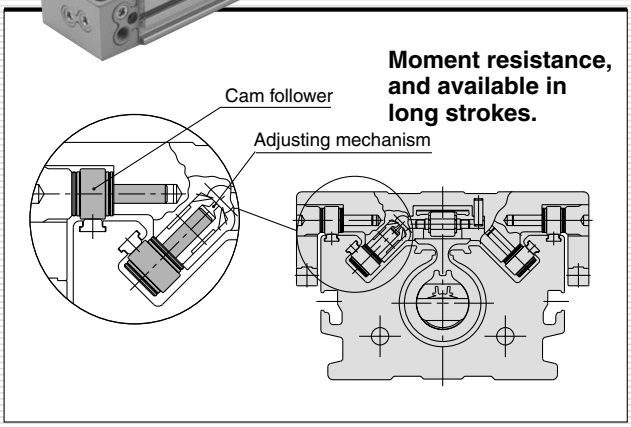
1. If the cylinder mounting surfaces are not measured accurately, using a side support may cause poor operation. Therefore, be sure to level the cylinder tube when mounting. Also, for long stroke operation involving vibration and impact, use of a side support is recommended even if the spacing value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

Series MY1C

Cam Follower Guide Type

ø16, ø20, ø25, ø32, ø40, ø50, ø63





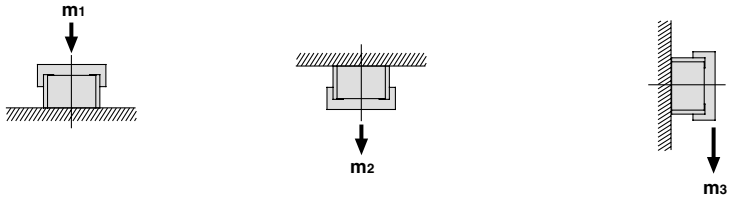
Series MY1C
Before Operation

Maximum Allowable Moment/Maximum Load Weight

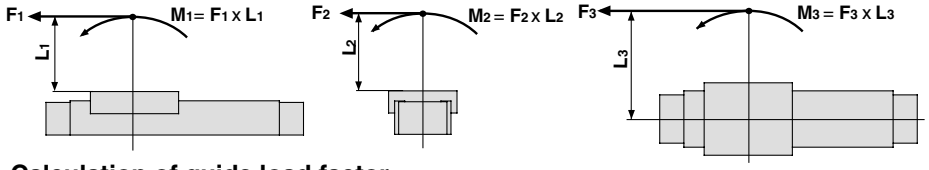
Model	Bore size (mm)	Maximum allowable moment (N·m)			Maximum load weight (kg)		
		M_1	M_2	M_3	m_1	m_2	m_3
MY1C	16	6.0	3.0	2.0	18	7	2.1
	20	10	5.0	3.0	25	10	3
	25	15	8.5	5.0	35	14	4.2
	32	30	14	10	49	21	6
	40	60	23	20	68	30	8.2
	50	115	35	35	93	42	11.5
	63	150	50	50	130	60	16

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

Load weight (kg)



Moment (N·m)



<Calculation of guide load factor>

1. Maximum allowable load (1), static moment (2), and dynamic moment (3) (at the time of impact with stopper) must be examined for the selection calculations.

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

Sum of guide load factors

$$\Sigma\alpha = \frac{\text{Load weight [m]}}{\text{Maximum allowable load [mmax]}} + \frac{\text{Static moment [M]}^{(1)}}{\text{Allowable static moment [Mmax]}} + \frac{\text{Dynamic moment [ME]}^{(2)}}{\text{Allowable dynamic moment [MEmax]}} \leq 1$$

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

2. Reference formula [Dynamic moment at impact]

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

m: Load weight (kg)
F: Load (N)
F_E: Load equivalent to impact (at impact with stopper) (N)
υa: Average speed (mm/s)
M: Static moment (N·m)
υ: Collision speed (mm/s)
L_1: Distance to the load's center of gravity (m)
M_E: Dynamic moment (N·m)
δ: Damper coefficient — At collision: $\upsilon = 1.4\upsilon a$
With rubber bumper = 4/100 (MY1B10, MY1H10)
With air cushion = 1/100
With shock absorber = 1/100
g: Gravitational acceleration (9.8 m/s²)

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

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

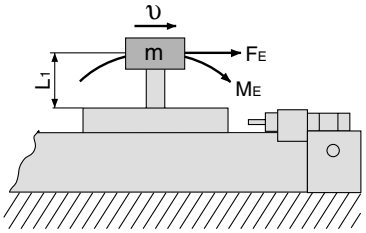
Note 4) $1.4\upsilon a\delta$ is a dimensionless coefficient for calculating impact force.
Note 5) Average load coefficient ($= \frac{1}{3}$): This coefficient is for averaging the maximum load moment at the time of stopper impact according to service life calculations.

Maximum Allowable Moment

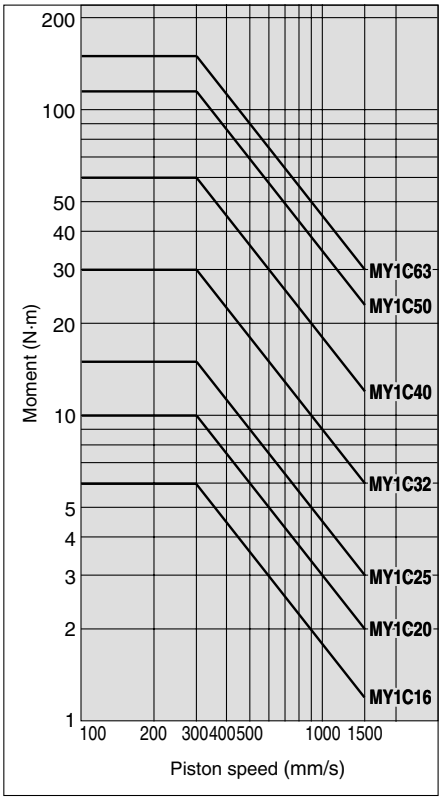
Select the moment from within the range of operating limits shown in the graphs. Note that the maximum allowable load value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable load for the selected conditions.

Maximum Load Weight

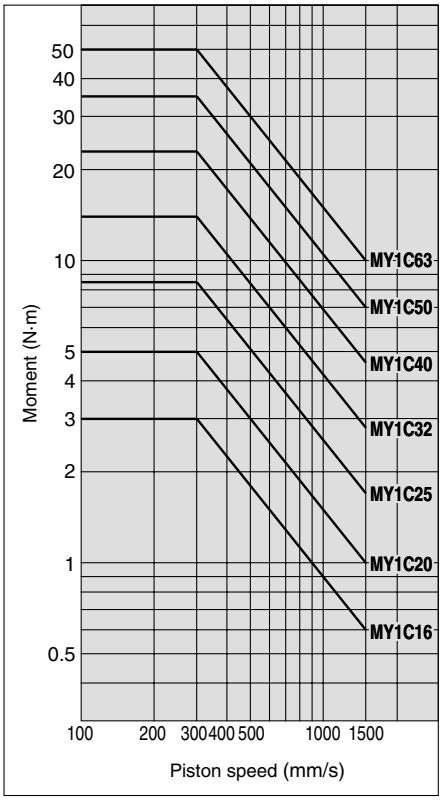
Select the load from within the range of limits shown in the graphs. Note that the maximum allowable moment value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable moment for the selected conditions.



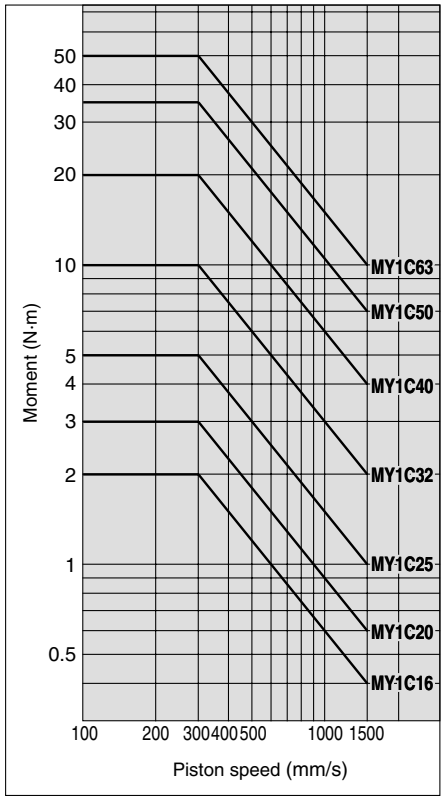
MY1C/M1



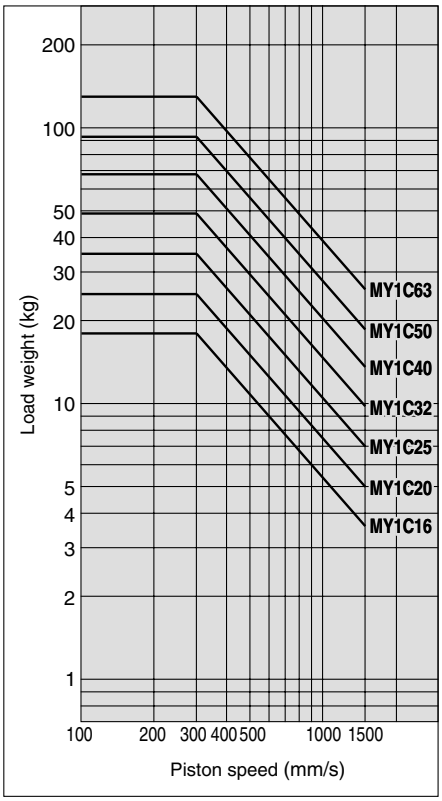
MY1C/M2



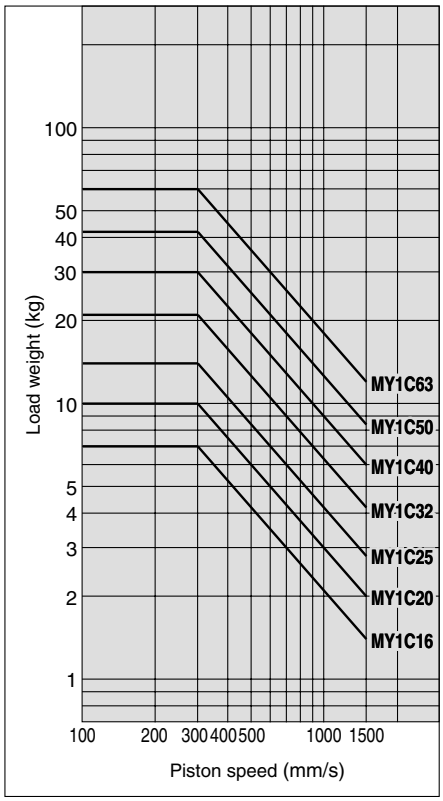
MY1C/M3



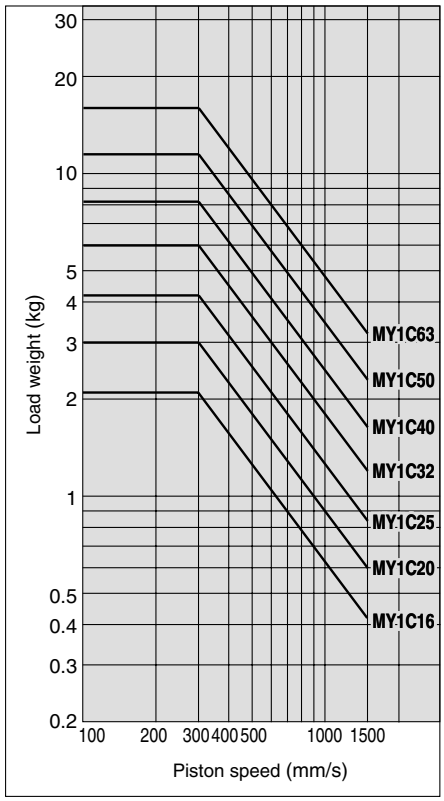
MY1C/m1



MY1C/m2



MY1C/m3



Series MY1C

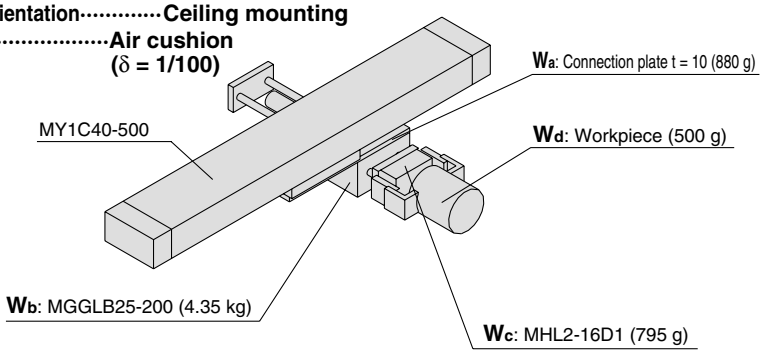
Model Selection

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

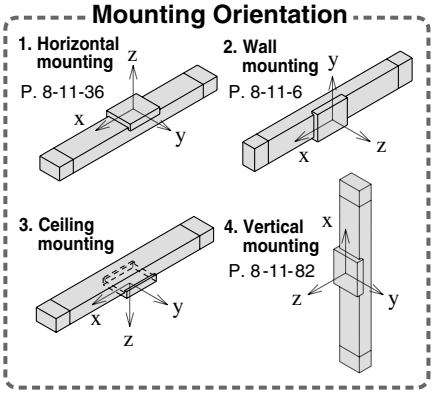
Calculation of Guide Load Factor

1. Operating Conditions

Cylinder····· MY1C40-500
Average operating speed υa ··· 300 mm/s
Mounting orientation·····Ceiling mounting
Cushion·····Air cushion
(δ = 1/100)

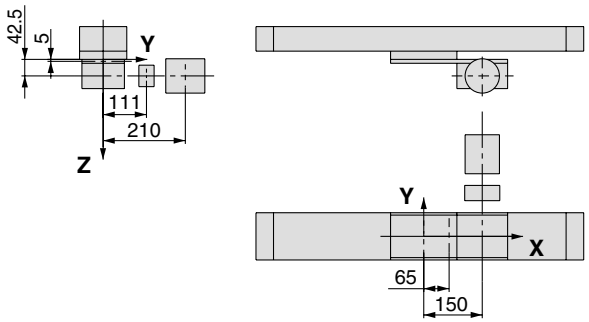


Mounting Orientation



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

2. Load Blocking



Weight and Center of Gravity for Each Workpiece

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

n = a, b, c, d

3. Composite Center of Gravity Calculation

$m_2 = \Sigma m_n$
$= 0.88 + 4.35 + 0.795 + 0.5 =$ **6.525 kg**

$X = \frac{1}{m_2} \times \Sigma (m_n \times x_n)$
$= \frac{1}{6.525}(0.88 \times 65 + 4.35 \times 150 + 0.795 \times 150 + 0.5 \times 150) =$ **138.5 mm**

$Y = \frac{1}{m_2} \times \Sigma (m_n \times y_n)$
$= \frac{1}{6.525}(0.88 \times 0 + 4.35 \times 0 + 0.795 \times 111 + 0.5 \times 210) =$ **29.6 mm**

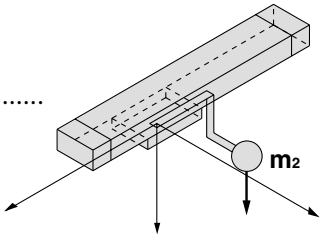
$Z = \frac{1}{m_2} \times \Sigma (m_n \times z_n)$
$= \frac{1}{6.525}(0.88 \times 5 + 4.35 \times 42.5 + 0.795 \times 42.5 + 0.5 \times 42.5) =$ **37.4 mm**

4. Calculation of Load Factor for Static Load

m_2: Weight

$m_2$max (from (1) of graph MY1C/m_2) = 30 (kg)·····

Load factor $\alpha_1 = m_2/m_2\text{max} = 6.525/30 =$ **0.22**

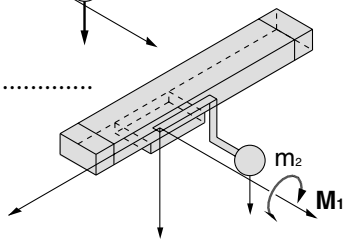


M_1: Moment

M_1max (from (2) of graph MY1C/M_1) = 60 (N·m)·····

$M_1 = m_2 \times g \times X = 6.525 \times 9.8 \times 138.5 \times 10^{-3} = 8.86$ (N·m)

Load factor $\alpha_2 = M_1/M_1\text{max} = 8.86/60 =$ **0.15**

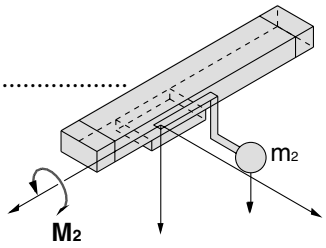


M_2: Moment

M_2max (from (3) of graph MY1C/M_2) = 23.0 (N·m)·····

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

Load factor $\alpha_3 = M_2/M_2\text{max} = 1.89/23.0 =$ **0.08**



5. Calculation of Load Factor for Dynamic Moment

Equivalent load F_E at impact

$F_E = 1.4\upsilon a \times \delta \times m \times g = 1.4 \times 300 \times \frac{1}{100} \times 6.525 \times 9.8 = 268.6$ (N)

M_{1E}: Moment

M_{1E}max (from (4) of graph MY1C/M_1 where $1.4\upsilon a$ = 420 mm/s) = 42.9 (N·m)·····

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

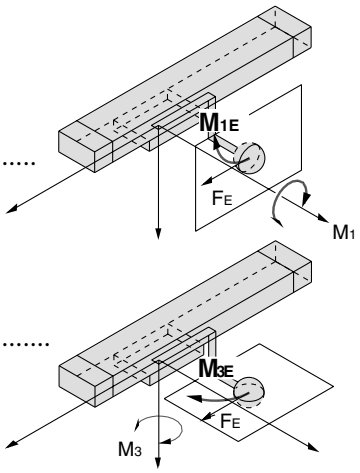
Load factor $\alpha_4 = M_{1E}/M_{1E}\text{max} = 3.35/42.9 =$ **0.08**

M_{3E}: Moment

M_{3E}max (from (5) of graph MY1C/M_3 where $1.4\upsilon a$ = 420 mm/s) = 14.3 (N·m)·····

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

Load factor $\alpha_5 = M_{3E}/M_{3E}\text{max} = 2.65/14.3 =$ **0.19**



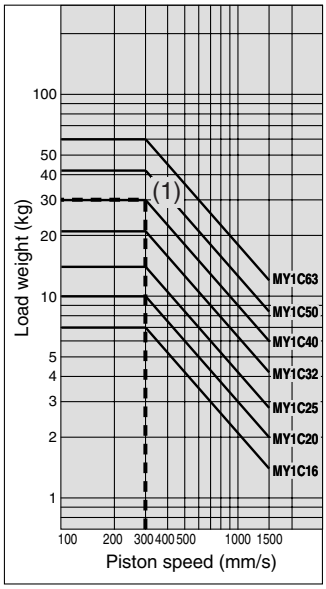
6. Sum and Examination of Guide Load Factors

$\sum\alpha = \alpha_1 + \alpha_2 + \alpha_3 + \alpha_4 + \alpha_5 =$ **0.72** $\leq$ **1**

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

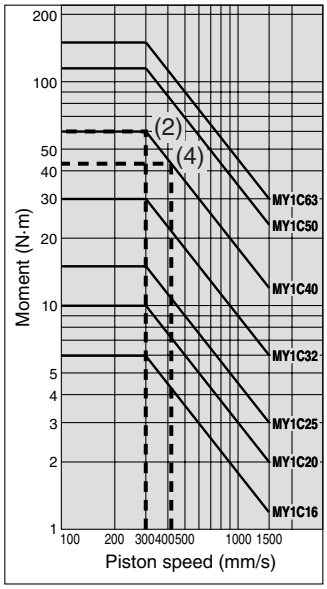
Load Weight

MY1C/m_2

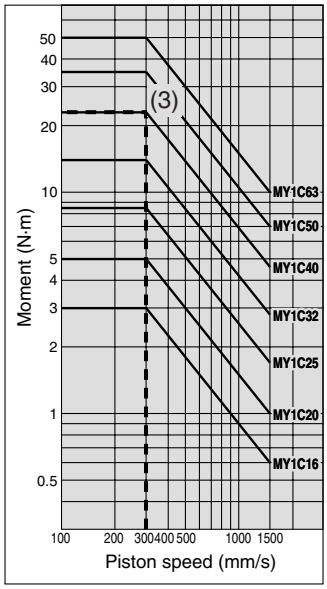


Allowable Moment

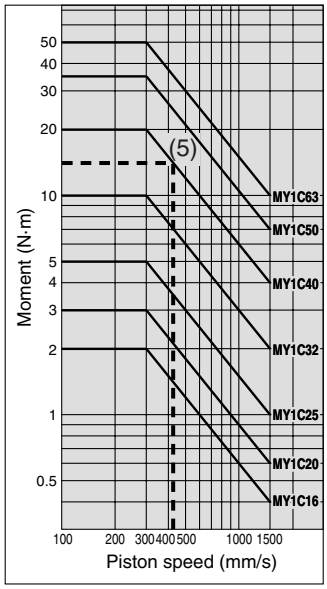
MY1C/M_1



MY1C/M_2



MY1C/M_3



Mechanically Jointed Rodless Cylinder
Cam Follower Guide Type
Series MY1C
ø16, ø20, ø25, ø32, ø40, ø50, ø63

How to Order

MY1C **25** □ — **300** □ □ - XG For 25mm bore and above

Cam follower guide type

Bore size (mm)

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

Piping

Nil	Standard type
G	Centralized piping type

Stroke
Refer to "Standard Stroke"

Stroke adjusting unit

Nil	Without adjusting unit
A	With adjusting bolt
L	With low load shock absorber + Adjusting bolt
H	With high load shock absorber + Adjusting bolt
AL	With one A unit and one L unit
AH	With one A unit and one H unit each
LH	With one L unit and one H unit each

Note) MY1C16 is not available with H unit.

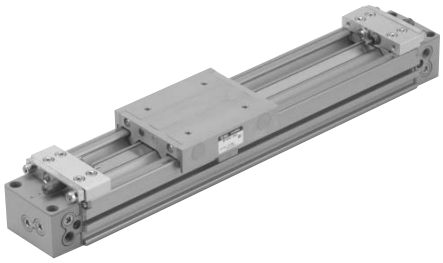
Suffix for stroke adjusting unit Note)

Nil	Both ends
S	One end

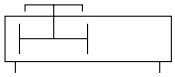
Note) "S" is applicable for stroke adjusting units A, L and H.

Shock Absorbers for L and H Units

Unit type \ Bore size (mm)	16	20	25	32	40	50	63
L unit	RB0806		RB1007	RB1412		RB2015	
H unit	—	RB1007	RB1412	RB2015		RB2725	



JIS Symbol



Specifications

Bore size (mm)		16	20	25	32	40	50	63
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		1000 or less $^{+1.8}_{0}$ 1001 to 3000 $^{+2.8}_{0}$	2700 or less $^{+1.8}_{0}$, 2701 to 5000 $^{+2.8}_{0}$					
Piping port size	Front/Side port	M5 x 0.8		1/8		1/4	3/8	
	Bottom port	ø4		ø5	ø6	ø8	ø10	ø11

Stroke Adjusting Unit Specifications

Bore size (mm)	16		20			25			32			40			50			63		
Unit symbol	A	L	A	L	H	A	L	H	A	L	H	A	L	H	A	L	H	A	L	H
Configuration Shock absorber model	With adjusting bolt	RB 0806 with adjusting bolt	With adjusting bolt	RB 0806 with adjusting bolt	RB 1007 with adjusting bolt	With adjusting bolt	RB 1007 with adjusting bolt	RB 1412 with adjusting bolt	With adjusting bolt	RB 1412 with adjusting bolt	RB 2015 with adjusting bolt	With adjusting bolt	RB 1412 with adjusting bolt	RB 2015 with adjusting bolt	With adjusting bolt	RB 2015 with adjusting bolt	RB 2725 with adjusting bolt	With adjusting bolt	RB 2015 with adjusting bolt	RB 2725 with adjusting bolt
Fine stroke adjustment range (mm)	0 to –5.6		0 to –6			0 to –11.5			0 to –12			0 to –16			0 to –20			0 to –25		
Stroke adjustment range	When exceeding the stroke fine adjustment range: Utilize a made-to-order specifications “-X416” and “-X417”.																			

Shock Absorber Specifications

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

Piston Speed

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

Note 1) Be aware that when the stroke adjusting range is increased by manipulating the adjusting bolt, the air cushion capacity decreases. Also, when exceeding the air cushion stroke ranges .
, the piston speed should be 100 to 200 mm per second.
Note 2) The piston speed is 100 to 1000 mm/s for centralized piping.
Note 3) Use at a speed within the absorption capacity range.

Standard Stroke

Bore size (mm)	Standard stroke (mm) *	Maximum manufacturable stroke (mm)
16	100, 200, 300, 400, 500, 600, 700 800, 900, 1000, 1200, 1400, 1600 1800, 2000	3000
20, 25, 32, 40 50, 63		5000

* Strokes are manufacturable in 1 mm increments, up to the maximum stroke. However, when exceeding a 2000 mm stroke, specify “-XB11” at the end of the model number.

Theoretical Output

(N)

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

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

Weight

(kg)

Bore size (mm)	Basic weight	Additional weight per each 50mm of stroke	Side support weight (per set)	Stroke adjusting unit weight (per unit)		
			Type A and B	A unit weight	L unit weight	H unit weight
16	0.67	0.12	0.01	0.03	0.04	—
20	1.06	0.15	0.02	0.04	0.05	0.08
25	1.58	0.24	0.02	0.07	0.11	0.18
32	3.14	0.37	0.04	0.14	0.23	0.39
40	5.60	0.52	0.08	0.25	0.34	0.48
50	10.14	0.76	0.08	0.36	0.51	0.81
63	16.67	1.10	0.17	0.68	0.83	1.08

Calculation: (Example) MY1C25-300A

- Basic weight ····· 1.58 kg
- Additional weight ····· 0.24/50 st
- Weight of A unit ····· 0.07 kg
- Cylinder stroke·····300 st

1.58 + 0.24 x 300 ÷ 50 + 0.07 x 2 ≅ 3.16 kg

Option

Stroke Adjusting Unit Part No.

Unit type \ Bore size (mm)	16	20	25	32
A unit	MYM-A16A	MYM-A20A	MYM-A25A	MYM-A32A
L unit	MYM-A16L	MYM-A20L	MYM-A25L	MYM-A32L
H unit	—	MYM-A20H	MYM-A25H	MYM-A32H

Unit type \ Bore size (mm)	40	50	63
A unit	MYM-A40A	MYM-A50A	MYM-A63A
L unit	MYM-A40L	MYM-A50L	MYM-A63L
H unit	MYM-A40H	MYM-A50H	MYM-A63H

Side Support Part No.

Type \ Bore size (mm)	16	20	25	32
Side support A	MY-S16A	MY-S20A	MY-S25A	MY-S32A
Side support B	MY-S16B	MY-S20B	MY-S25B	MY-S32B

Type \ Bore size (mm)	40	50	63
Side support A	MY-S40A		MY-S63A
Side support B	MY-S40B		MY-S63B

Cushion Capacity

Cushion Selection

<Air cushion>
Air cushions are a standard feature on mechanically jointed rodless cylinders.
The air cushion mechanism is incorporated to prevent excessive impact of the piston at the stroke end during high speed operation. The purpose of air cushion, thus, is not to decelerate the piston near the stroke end.
The ranges of load and speed that air cushions can absorb are within the air cushion limit lines shown in the graphs.

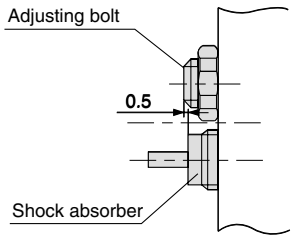
<Stroke adjusting unit with shock absorber>
Use this unit when operating with a load or speed exceeding the air cushion limit line, or when cushioning is necessary because the cylinder stroke is outside of the effective air cushion stroke range due to stroke adjustment.

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

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

⚠ Caution

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



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

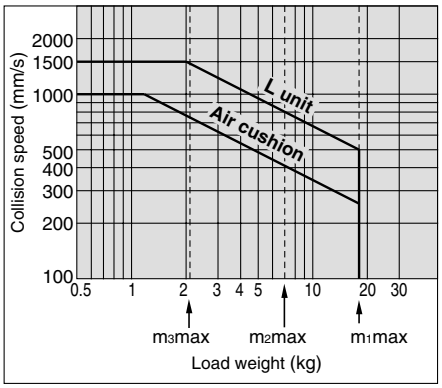
Air Cushion Stroke

(mm)

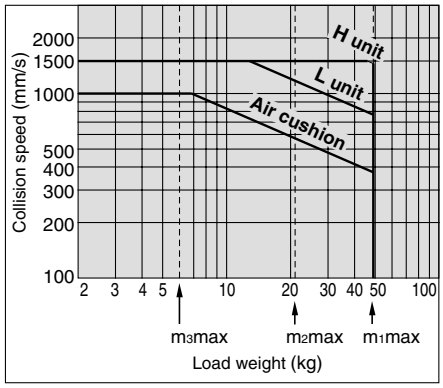
Bore size (mm)	Cushion stroke
16	12
20	15
25	15
32	19
40	24
50	30
63	37

Absorption Capacity of Air Cushion and Stroke Adjusting Units

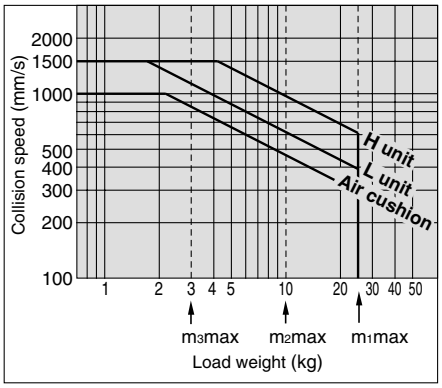
MY1C16 Horizontal collision: P = 0.5 MPa



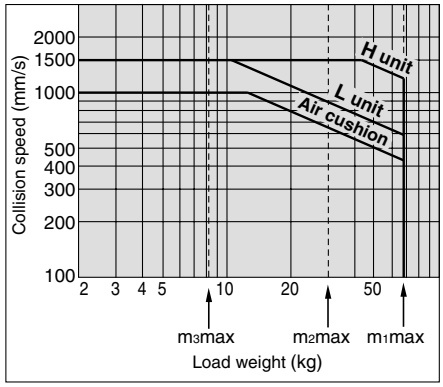
MY1C32 Horizontal collision: P = 0.5 MPa



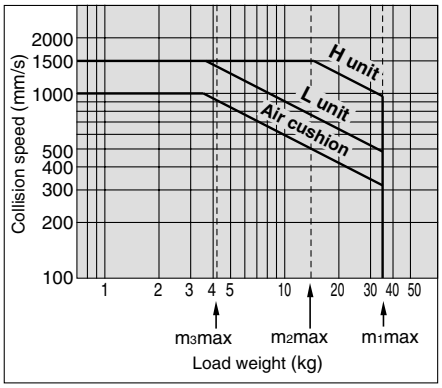
MY1C20 Horizontal collision: P = 0.5 MPa



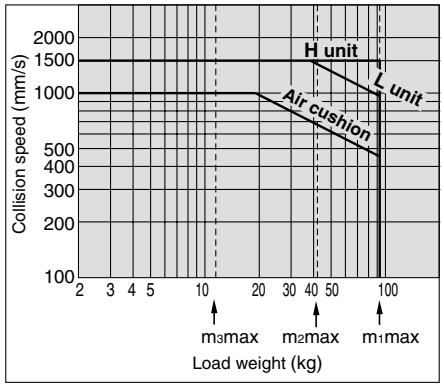
MY1C40 Horizontal collision: P = 0.5 MPa



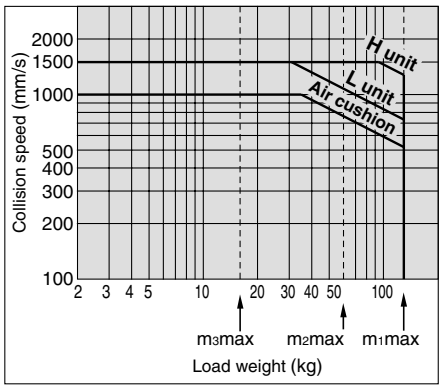
MY1C25 Horizontal collision: P = 0.5 MPa



MY1C50 Horizontal collision: P = 0.5 MPa



MY1C63 Horizontal collision: P = 0.5 MPa



Cushion Capacity

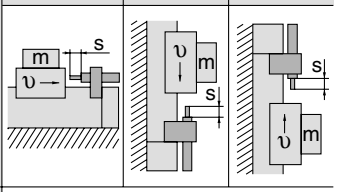
Tightening Torque for Stroke Adjusting Unit Holding Bolts (N·m)

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

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

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

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

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

Symbol
- υ: 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/s^2)

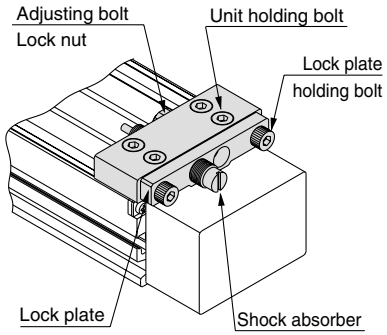
Note) The speed of the impact object is measured at the time of impact with the shock absorber.

⚠ Precautions

⚠ Caution

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

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



<Fastening of unit>

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

⚠ Caution

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

When the stroke adjusting unit is fixed in an intermediate position, slippage can occur depending on the amount of energy released at the time of an impact. In such cases, the use of the adjusting bolt mounting brackets, available per made-to-order specifications -X416 and -X417, is recommended.

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

<Stroke adjustment with adjusting bolt>

Loosen the adjusting bolt lock nut, and adjust the stroke from the lock plate side using a hexagon wrench. Retighten the lock nut.

<Stroke adjustment with shock absorber>

Loosen the two lock plate holding bolts, turn the shock absorber and adjust the stroke. Then, uniformly tighten the lock plate holding bolts to secure the shock absorber.

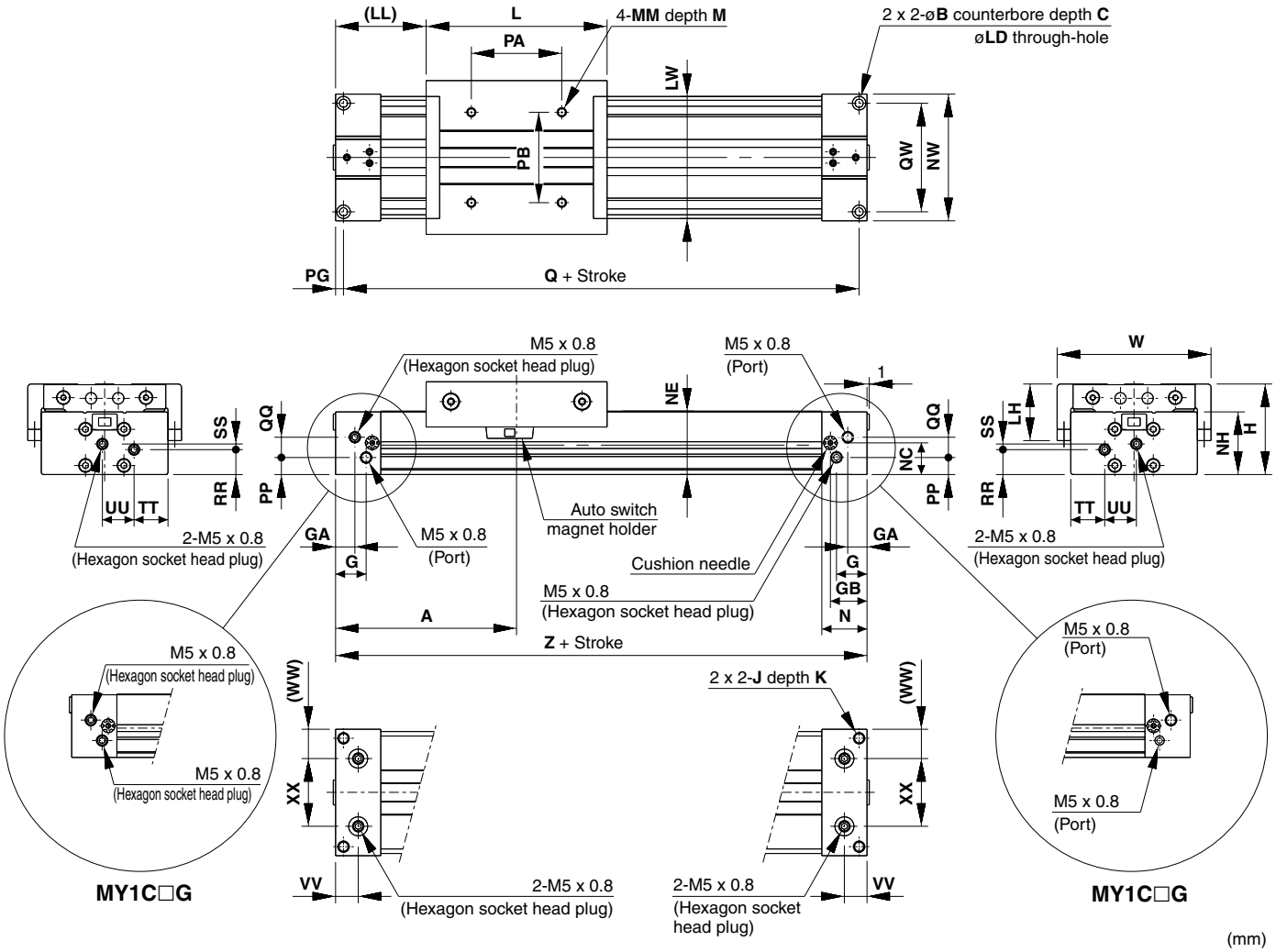
Take care not to over-tighten the holding bolts. (Except ø16, ø20, ø50, ø63)

(Refer to “Tightening Torgue for Stroke Adjusting Unit Lock Plate Holding Bolts”.)

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

Standard Type/Centralized Piping Type ø16, ø20

MY1C16□/20□ — Stroke

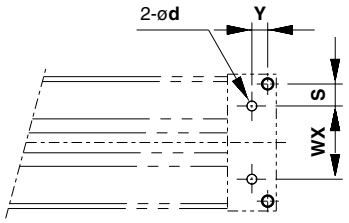


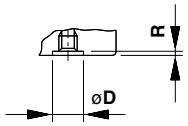
(mm)

Model	A	B	C	G	GA	GB	H	J	K	L	LD	LH	LL	LW	M	MM	N	NC
MY1C16□	80	6	3.5	13.5	8.5	16.2	40	M5 x 0.8	10	80	3.6	22.5	40	54	6	M4 x 0.7	20	14
MY1C20□	100	7.5	4.5	12.5	12.5	20	46	M6 x 1	12	100	4.8	23	50	58	7.5	M5 x 0.8	25	17

(mm)

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





Bottom ported
(Applicable O-ring)

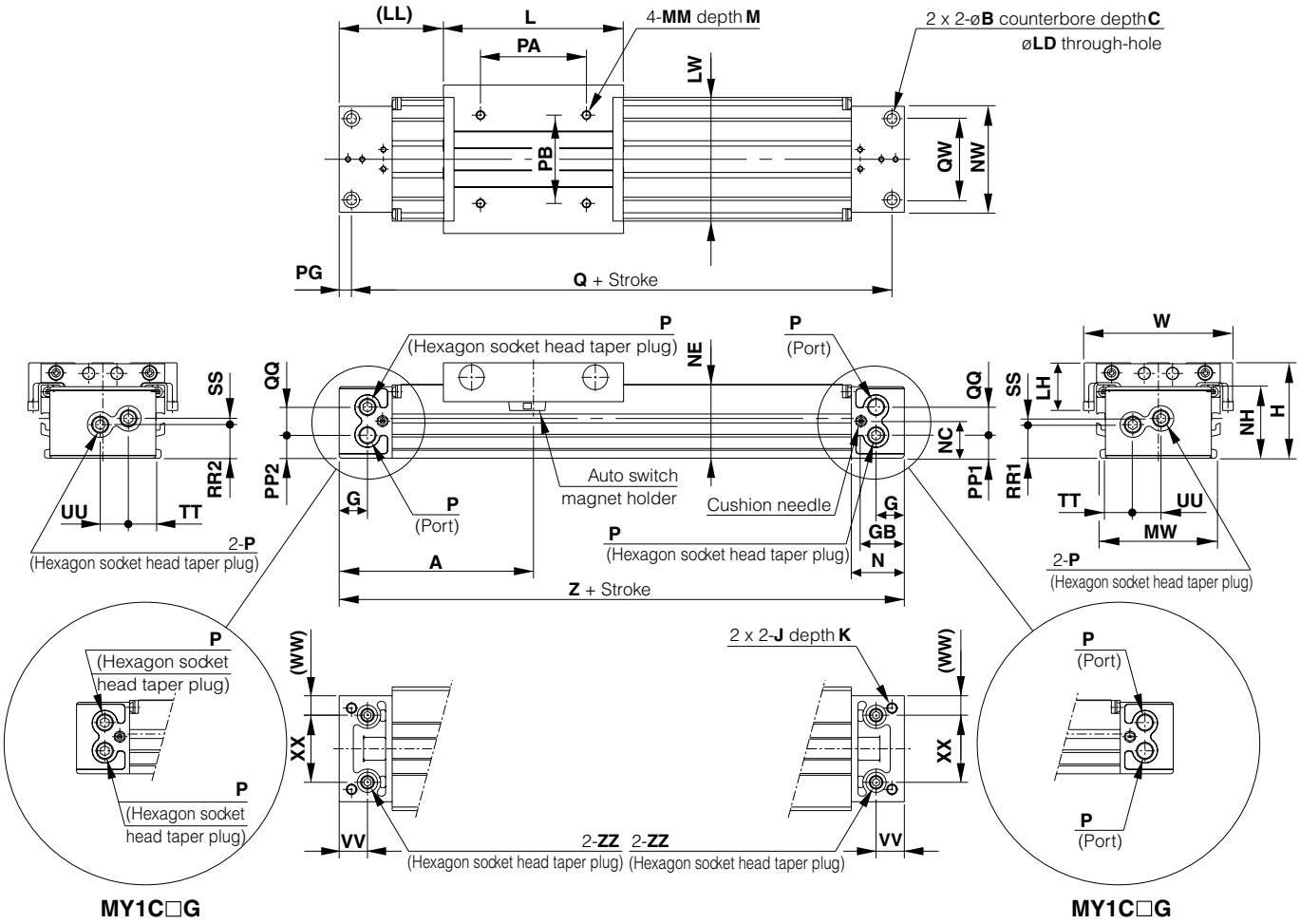
Hole Sizes for Centralized Piping on the Bottom

Model	WX	Y	S	d	D	R	Applicable O-ring
MY1C16□	30	6.5	9	4	8.4	1.1	C6
MY1C20□	32	8	6.5	4	8.4	1.1	

(Machine the mounting side to the dimensions below.)

Standard Type/Centralized Piping Type ø25, ø32, ø40

MY1C25□/32□/40□ — Stroke



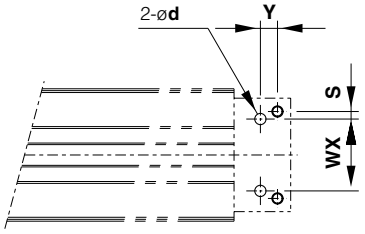
(mm)

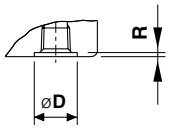
Model	A	B	C	G	GB	H	J	K	L	LD	LH	LL	LW	M	MM	MW	N	NC	NE	NH	NW	P	PA
MY1C25□	110	9	5.5	17	24.5	54	M6 x 1	9.5	102	5.6	27	59	70	10	M5 x 0.8	66	30	21	41.8	40.5	60	G 1/8	60
MY1C32□	140	11	6.5	19	30	68	M8 x 1.25	16	132	6.8	35	74	88	13	M6 x 1	80	37	26	52.3	50	74	G 1/8	80
MY1C40□	170	14	8.5	23	36.5	84	M10 x 1.5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

"P" indicates cylinder supply ports.

(mm)

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





Bottom ported (ZZ)
(Applicable O-ring)

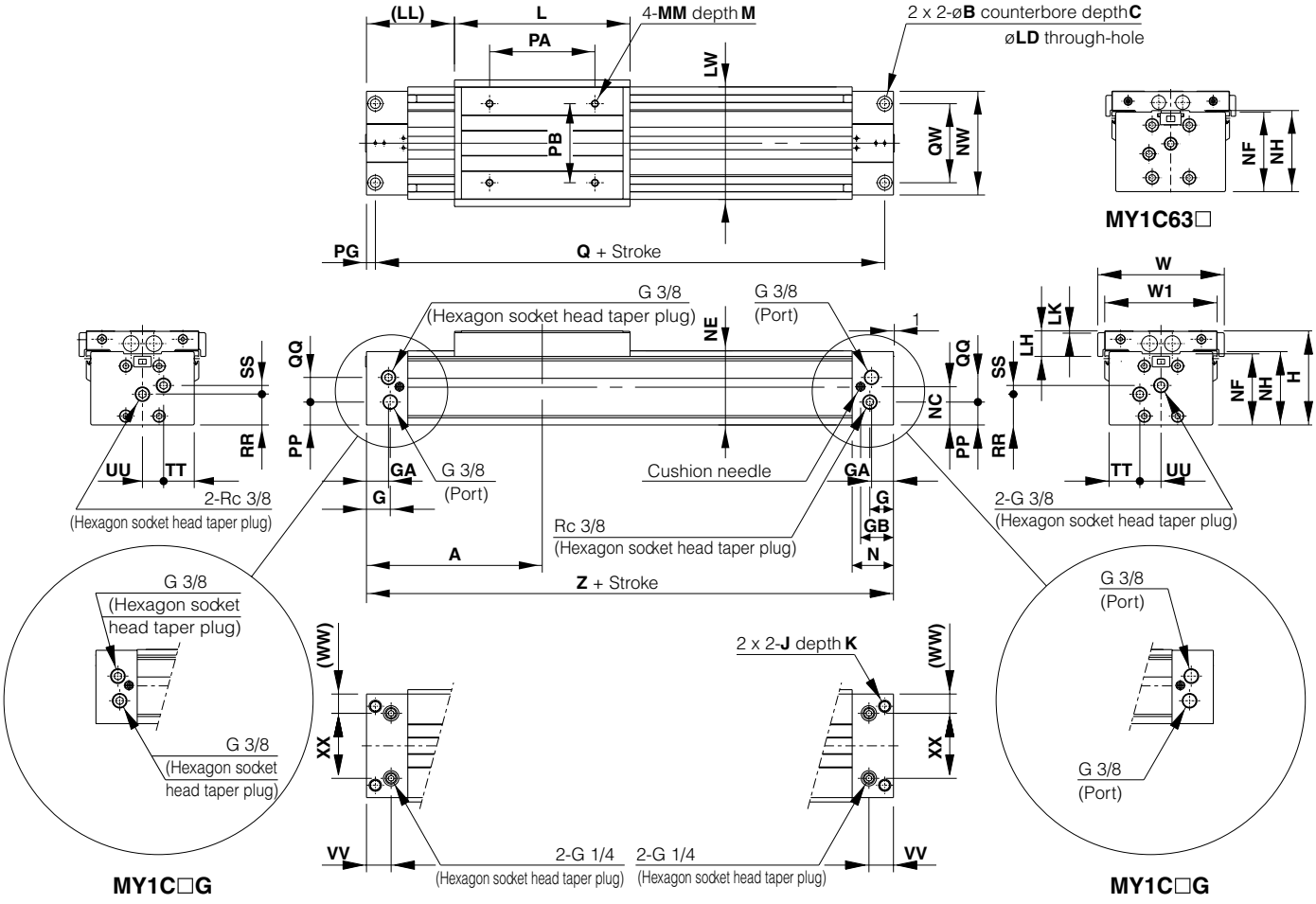
Hole Size for Centralized Piping on the Bottom

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

(Machine the mounting side to the dimensions below.)

Standard Type/Centralized Piping Type ø50, ø63

MY1C50□/63□ — Stroke

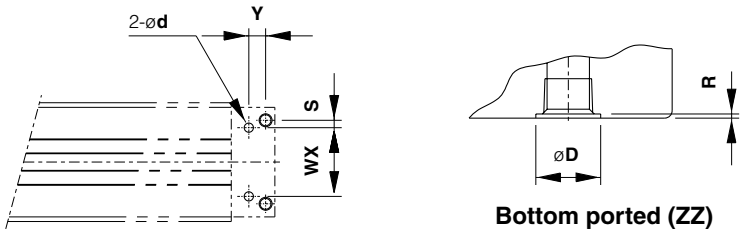


(mm)

Model	A	B	C	G	GA	GB	H	J	K	L	LD	LH	LK	LL	LW	M	MM	N	NC	NE
MY1C50□	200	17	10.5	27	25	37.5	107	M14 x 2	28	200	11	29	2	100	128	15	M8 x 1.25	47	43.5	84.5
MY1C63□	230	19	12.5	29.5	27.5	39.5	130	M16 x 2	32	230	13.5	32.5	5.5	115	152	16	M10 x 1.5	50	56	104

(mm)

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



Bottom ported (ZZ)
(Applicable O-ring)

Hole Size for Centralized Piping on the Bottom

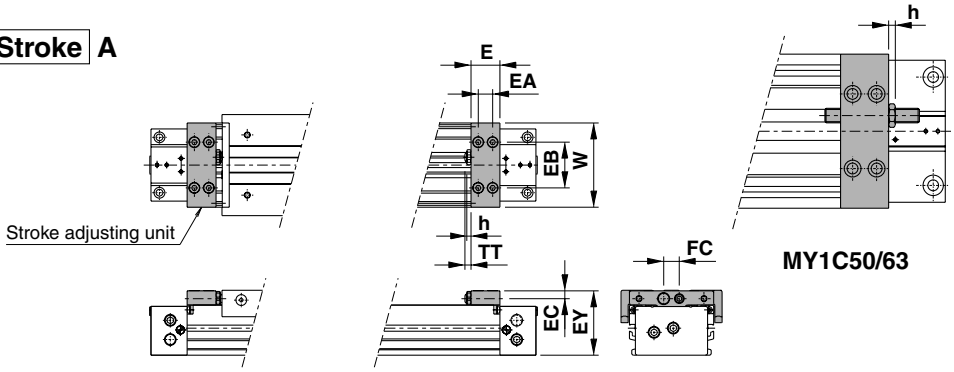
Model	WX	Y	S	d	D	R	Applicable O-ring
MY1C50□	74	18	8	10	17.5	1.1	C15
MY1C63□	92	18	9	10	17.5	1.1	

(Machine the mounting side to the dimensions below.)

Stroke Adjusting Unit

With adjusting bolt

MY1C Bore size □ — Stroke A

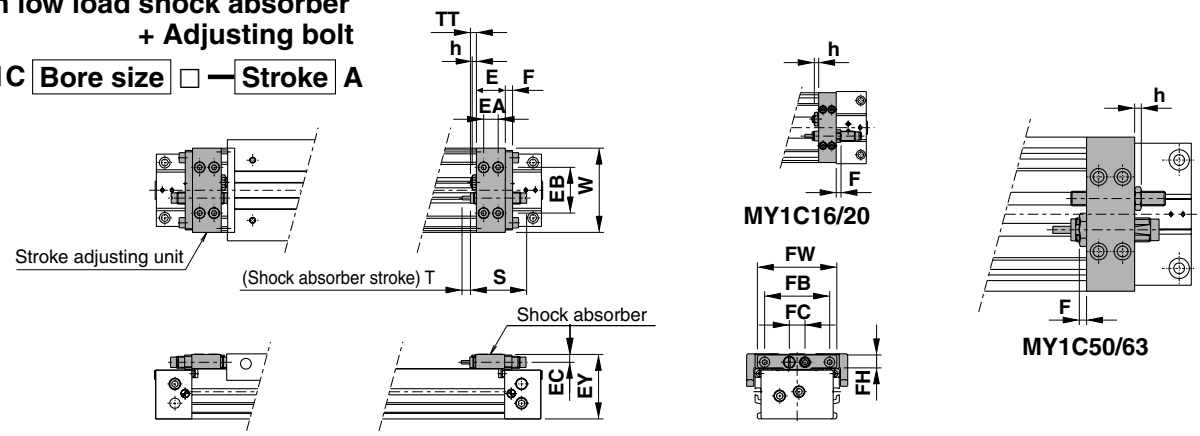


(mm)

Applicable bore size	E	EA	EB	EC	EY	FC	h	TT	W
MY1C16	14.6	7	30	5.8	39.5	14	3.6	5.4 (Max. 11)	58
MY1C20	20	10	32	5.8	45.5	14	3.6	5 (Max. 11)	58
MY1C25	24	12	38	6.5	53.5	13	3.5	5 (Max. 16.5)	70
MY1C32	29	14	50	8.5	67	17	4.5	8 (Max. 20)	88
MY1C40	35	17	57	10	83	17	4.5	9 (Max. 25)	104
MY1C50	40	20	66	14	106	26	5.5	13 (Max. 33)	128
MY1C63	52	26	77	14	129	31	5.5	13 (Max. 38)	152

With low load shock absorber + Adjusting bolt

MY1C Bore size □ — Stroke A

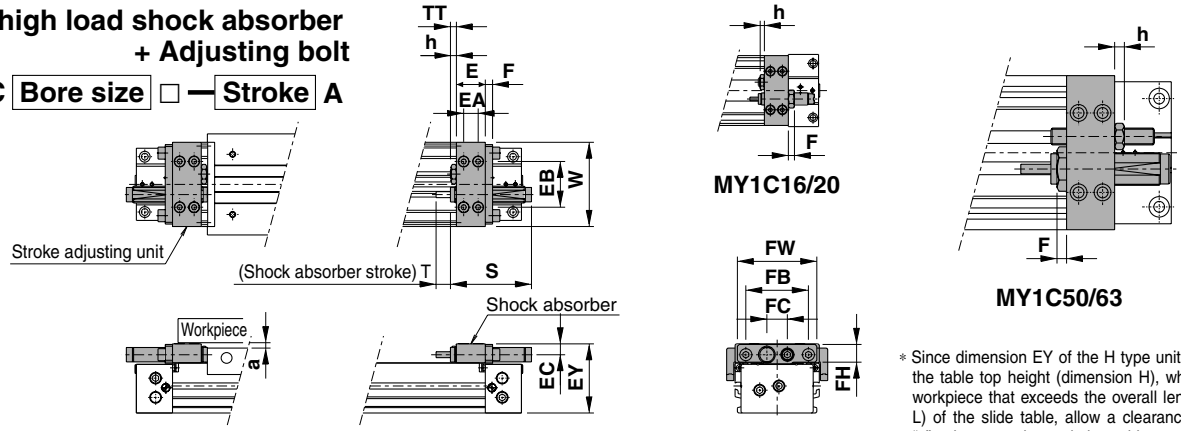


(mm)

Applicable bore size	E	EA	EB	EC	EY	F	FB	FC	FH	FW	h	S	T	TT	W	Shock absorber model
MY1C16	14.6	7	30	5.8	39.5	4	—	14	—	—	3.6	40.8	6	5.4 (Max. 11)	58	RB0806
MY1C20	20	10	32	5.8	45.5	4	—	14	—	—	3.6	40.8	6	5 (Max. 11)	58	RB0806
MY1C25	24	12	38	6.5	53.5	6	54	13	13	66	3.5	46.7	7	5 (Max. 16.5)	70	RB1007
MY1C32	29	14	50	8.5	67	6	67	17	16	80	4.5	67.3	12	8 (Max. 20)	88	RB1412
MY1C40	35	17	57	10	83	6	78	17	17.5	91	4.5	67.3	12	9 (Max. 25)	104	RB1412
MY1C50	40	20	66	14	106	6	—	26	—	—	5.5	73.2	15	13 (Max. 33)	128	RB2015
MY1C63	52	26	77	14	129	6	—	31	—	—	5.5	73.2	15	13 (Max. 38)	152	RB2015

With high load shock absorber + Adjusting bolt

MY1C Bore size □ — Stroke A

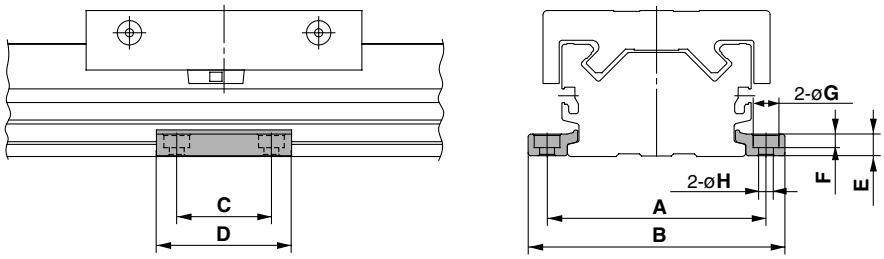


∗ Since dimension EY of the H type unit is greater than the table top height (dimension H), when mounting a workpiece that exceeds the overall length (dimension L) of the slide table, allow a clearance of dimension "a" or larger on the workpiece side.

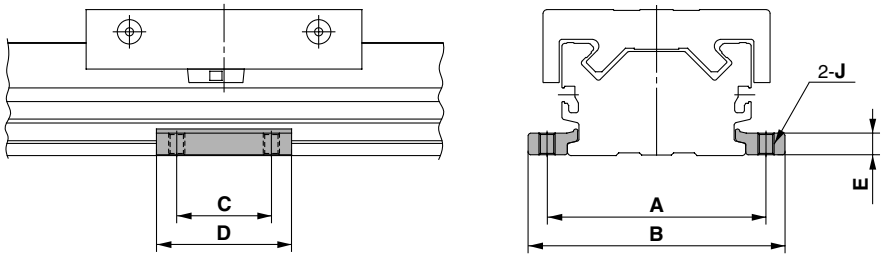
Applicable bore size	E	EA	EB	EC	EY	F	FB	FC	FH	FW	h	S	T	TT	W	Shock absorber model	a
MY1C20	20	10	32	7.7	50	5	—	14	—	—	3.5	46.7	7	5 (Max. 11)	58	RB1007	5
MY1C25	24	12	38	9	57.5	6	52	17	16	66	4.5	67.3	12	5 (Max. 16.5)	70	RB1412	4.5
MY1C32	29	14	50	11.5	73	8	67	22	22	82	5.5	73.2	15	8 (Max. 20)	88	RB2015	6
MY1C40	35	17	57	12	87	8	78	22	22	95	5.5	73.2	15	9 (Max. 25)	104	RB2015	4
MY1C50	40	20	66	18.5	115	8	—	30	—	—	11	99	25	13 (Max. 33)	128	RB2725	9
MY1C63	52	26	77	19	138.5	8	—	35	—	—	11	99	25	13 (Max. 38)	152	RB2725	9.5

Side Support

Side support A
MY-S□□A



Side support B
MY-S□□B

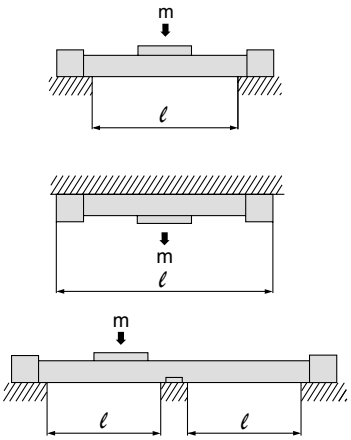


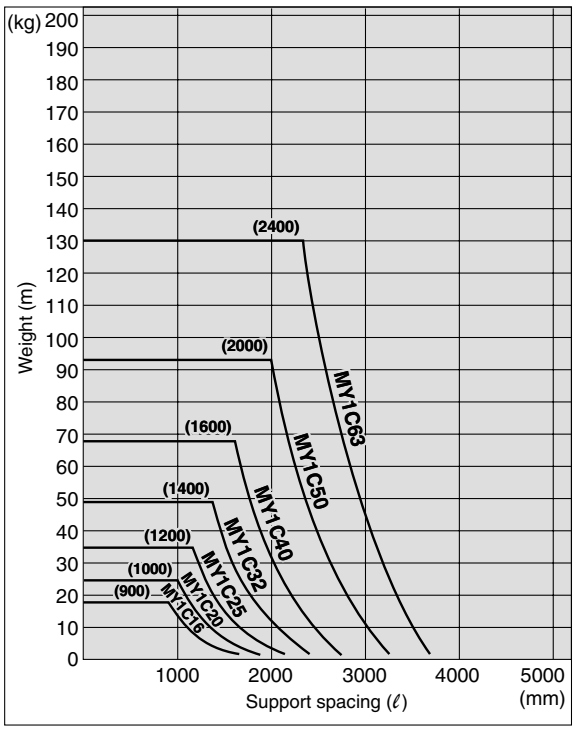
(mm)

Model	Applicable bore size	A	B	C	D	E	F	G	H	J
MY-S16 A/B	MY1C16	61	71.6	15	26	4.9	3	6.5	3.4	M4 x 0.7
MY-S20 A/B	MY1C20	67	79.6	25	38	6.4	4	8	4.5	M5 x 0.8
MY-S25 A/B	MY1C25	81	95	35	50	8	5	9.5	5.5	M6 x 1
MY-S32 A/B	MY1C32	100	118	45	64	11.7	6	11	6.6	M8 x 1.25
MY-S40 A/B	MY1C40	120	142	55	80	14.8	8.5	14	9	M10 x 1.5
	MY1C50	142	164							
MY-S63 A/B	MY1C63	172	202	70	100	18.3	10.5	17.5	11.5	M12 x 1.75

Guide for Side Support Application

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





⚠Caution

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