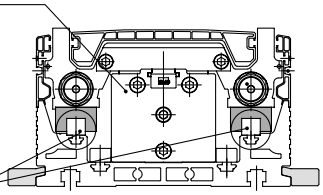
Series MY1HT

High Rigidity/High Precision Guide Type

ø50, ø63

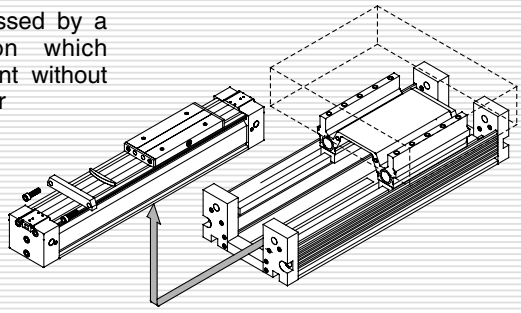
The use of two linear guides allows a maximum load of 320 kg. (ø63)

Rodless cylinder
MY1BH



2 linear guides

Easy maintenance is stressed by a revolutionary construction which allows cylinder replacement without disturbing the guide units or workpiece.



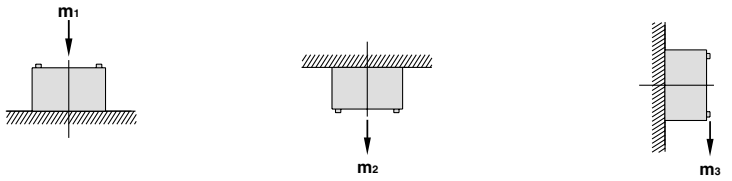
Before Operation

Maximum Allowable Moment/Maximum Load Weight

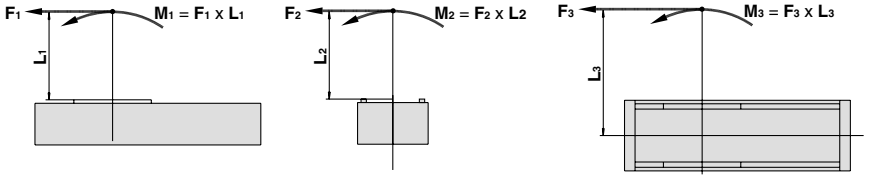
Model	Bore size (mm)	Maximum allowable moment (N·m)			Maximum load weight (kg)		
		M_1	M_2	M_3	m_1	m_2	m_3
MY1HT	50	140	180	140	200	140	200
	63	240	300	240	320	220	320

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

Load weight (kg)



Moment (N·m)



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.

<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
With rubber bumper = 4/100
(MY1B10, MY1H10)
With air cushion = 1/100
With shock absorber = 1/100
g: Gravitational acceleration (9.8 m/s²)

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

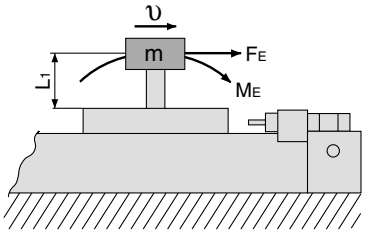
$$\therefore M_E = \frac{1}{3} \cdot F_E \cdot L_1 \overset{\text{Note 5)}}{} = 4.57\upsilon a \delta m L_1 \text{ (N·m)}$$

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.

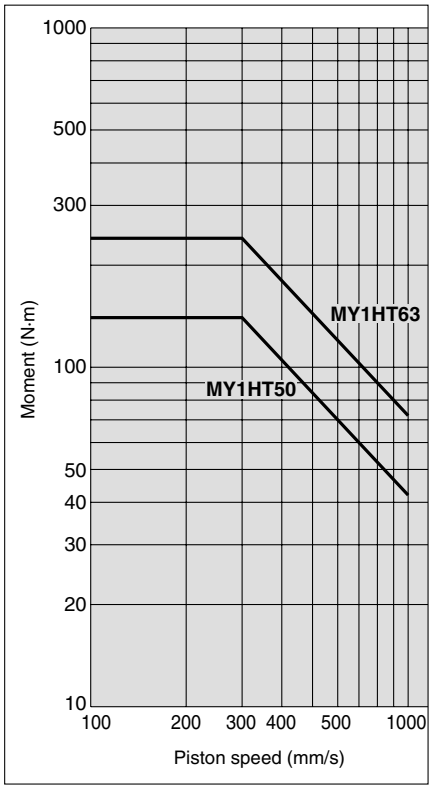
3. For detailed selection procedures, refer to pages 8-11-92 and 8-11-93.

Maximum Load Weight

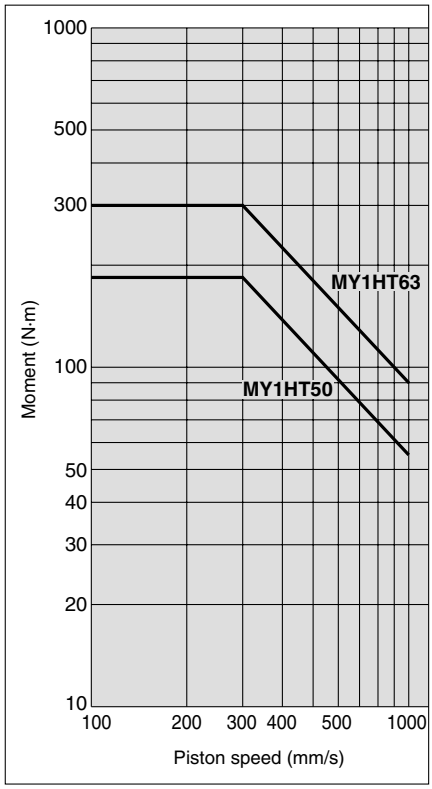
Select the load from within the range of limits shown in the graphs. Note that the maximum allowable moment value may sometimes be exceeded even within the operating limits shown in the graphs. Therefore, also check the allowable moment for the selected conditions.



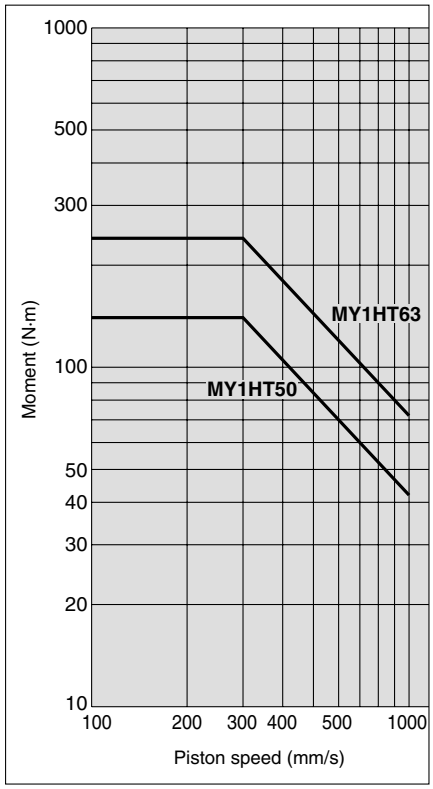
MY1HT/M1



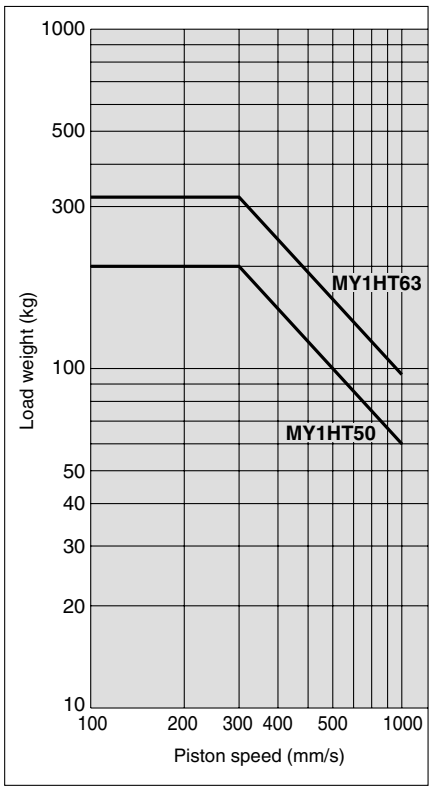
MY1HT/M2



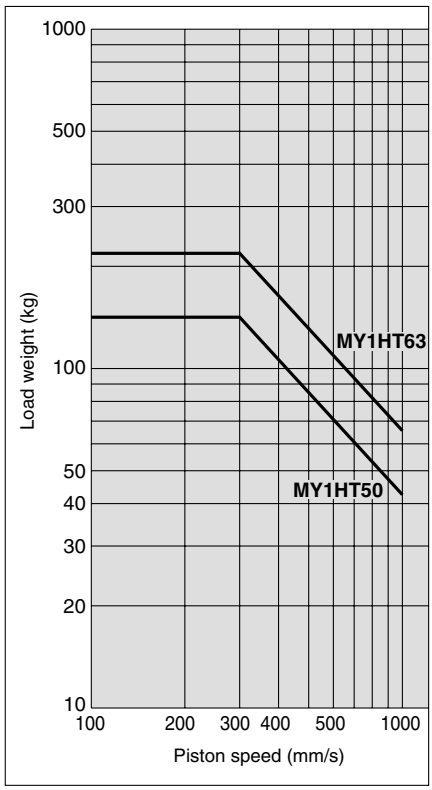
MY1HT/M3



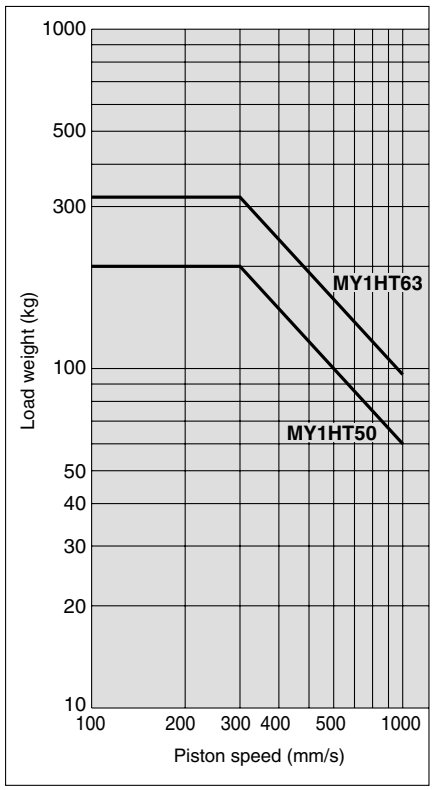
MY1HT/m1



MY1HT/m2



MY1HT/m3



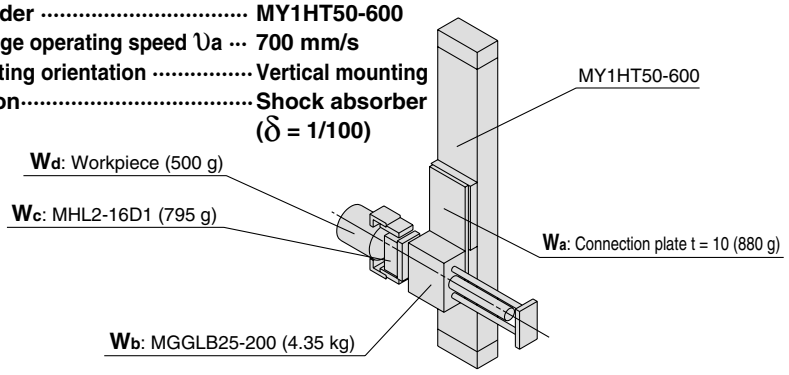
Model Selection

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

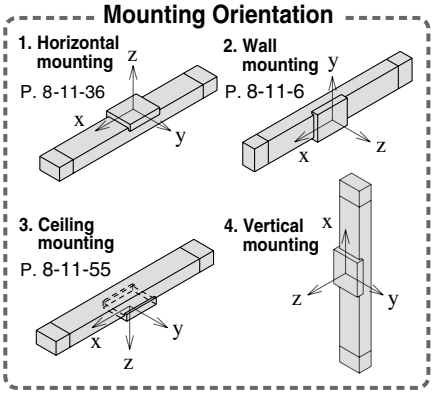
Calculation of Guide Load Factor

1. Operating Conditions

Cylinder ····· **MY1HT50-600**
Average operating speed υ**a** ··· **700 mm/s**
Mounting orientation ····· **Vertical mounting**
Cusion····· **Shock absorber (δ = 1/100)**

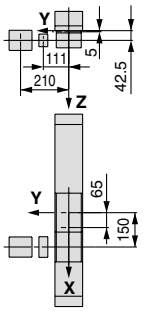


Mounting Orientation



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 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

$\mathbf{m_4} = \Sigma m_n$
$= 0.88 + 4.35 + 0.795 + 0.5 = \mathbf{6.525\ kg}$

$\mathbf{X} = \frac{1}{m_4} \times \Sigma\ (m_n \times x_n)$
$= \frac{1}{6.525}\ (0.88 \times 65 + 4.35 \times 150 + 0.795 \times 150 + 0.5 \times 150) = \mathbf{138.5\ mm}$

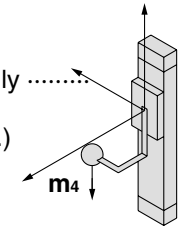
$\mathbf{Y} = \frac{1}{m_4} \times \Sigma\ (m_n \times y_n)$
$= \frac{1}{6.525}\ (0.88 \times 0 + 4.35 \times 0 + 0.795 \times 111 + 0.5 \times 210) = \mathbf{29.6\ mm}$

$\mathbf{Z} = \frac{1}{m_4} \times \Sigma\ (m_n \times z_n)$
$= \frac{1}{6.525}\ (0.88 \times 5 + 4.35 \times 42.5 + 0.795 \times 42.5 + 0.5 \times 42.5) = \mathbf{37.4\ mm}$

4. Calculation of Load Factor for Static Load

m_4: Weight

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

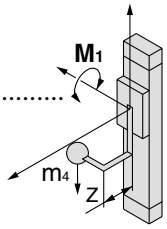


M_1: Moment

M_1 max (from (1) of graph MY1HT/M_1) = 60 (N·m)

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

Load factor $\alpha_1 = M_2/M_2max = 2.39/60 = \mathbf{0.04}$

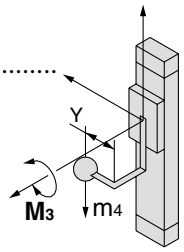


M_3 : Moment

M_3max (from (2) of graph MY1HT/M_3) = 60 (N·m) ·····

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

Load factor $\alpha_2 = M_3/M_3\text{max} = 1.89/60 =$ **0.03**



5. Calculation of Load Factor for Dynamic Moment

Equivalent load F_E at impact

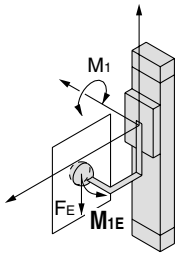
$F_E = 1.4\upsilon a \times \delta \times m \times g = 1.4 \times 700 \times \frac{1}{100} \times 6.525 \times 9.8 = 626.7$ (N)

M_{1E} : Moment

M_{1E}max (from ε of graph MY1HT/M_1 where $1.4\upsilon a$ = 980 mm/s) = 42.9 (N·m) ·····

$M_{1E} = \frac{1}{3} \times F_E \times Z = \frac{1}{3} \times 626.7 \times 37.4 \times 10^{-3} = 7.82$ (N·m)

Load factor $\alpha_3 = M_{1E}/M_{1E}\text{max} = 7.82/42.9 =$ **0.18**

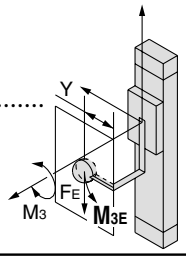


M_{3E} : Moment

M_{3E}max (from (4) of graph MY1HT/M_3 where $1.4\upsilon a$ = 980 mm/s) = 42.9 (N·m)·····

$M_{3E} = \frac{1}{3} \times F_E \times Y = \frac{1}{3} \times 626.7 \times 29.6 \times 10^{-3} = 6.19$ (N·m)

Load factor $\alpha_4 = M_{3E}/M_{3E}\text{max} = 6.19/42.9 =$ **0.14**



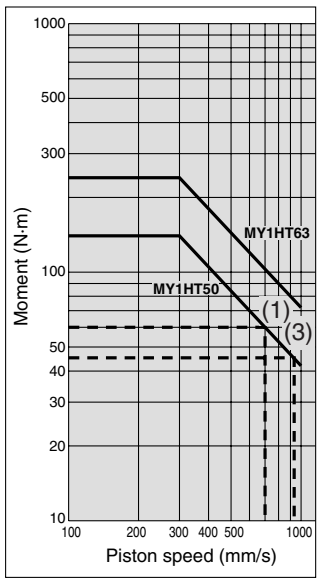
6. Sum and Examination of Guide Load Factors

$\sum\alpha = \alpha_1 + \alpha_2 + \alpha_3 + \alpha_4 =$ **0.39** $\leq$ **1**

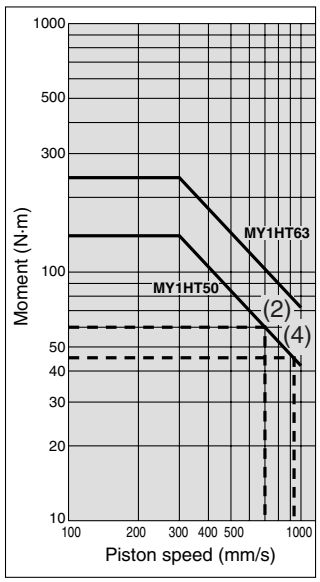
The above calculation is within the allowable value, and therefore the selected model can be used.
Select a shock absorber separately.
In an actual calculation, when the total sum of guide load factors $\sum\alpha$ in the formula above is more than 1, consider either decreasing the speed, increasing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

Allowable Moment

MY1HT/M_1



MY1HT/M_3



Mechanically Jointed Rodless Cylinder
High Rigidity/High Precision Guide Type
Series MY1HT
ø50, ø63

How to Order

MY1HT 50 [ ] – 400 L – Y7BW [ ]

High rigidity/High precision guide type (2 linear guides)

Bore size (mm)

50	50 mm
63	63 mm

Piping

Nil	Standard type
G	Centralized piping type

Stroke

Refer to "Standard Stroke" on page 8-11-85.

Stroke adjusting unit

L	One shock absorber at each stroke end
H	Two shock absorbers at each stroke end
LH	One shock absorber at one end, two shock absorbers at one end

Auto switch

Nil	Without auto switch

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

Number of auto switches

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

Option

Stroke Adjusting Unit Part No.

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

Side Support Part No.

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

For details about dimensions, etc., refer to page 8-11-99.

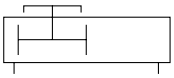
Applicable Auto Switch/Refer to page 8-30-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC		Load voltage AC	Auto switch model: Perpendicular	Auto switch model: In-line	Lead wire length (m)*: 0.5 (Nil)	3 (L)	5 (Z)	Pre-wire connector	Applicable load	
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	—	**Z76**	●	●	—	—	IC circuit	—
				2-wire	24 V	12 V	100 V	—	**Z73**	●	●	●	○	—	Relay, PLC
Solid state Switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	**Y69A**	**Y59A**	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				**Y7PV**	**Y7P**	●	●	○	○		
				2-wire		12 V		**Y69B**	**Y59B**	●	●	○	○	—	
	Diagnostic indication (2-color indication)			3-wire (NPN)		5 V, 12 V		**Y7NWV**	**Y7NW**	●	●	○	○	IC circuit	
				3-wire (PNP)				**Y7PWV**	**Y7PW**	●	●	○	○		
				2-wire		12 V		**Y7BWV**	**Y7BW**	●	●	○	○	—	

* Lead wire length symbols: 0.5 m·····Nil (Example) Y59A
  3 m····· L (Example) Y59AL
  5 m····· Z (Example) Y59AZ
* Solid state switches marked with "○" are produced upon receipt of order.
* Separate switch spacers (BMP1-032) are required for retrofitting of auto switches.

• Since there are other applicable auto switches than listed, refer to page 8-11-101 for details.
• For details about auto switches with pre-wire connector, refer to page 8-30-52.

JIS Symbol



Specifications

Bore size (mm)		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	
Piston speed		100 to 1000 mm/s	
Cushion		Shock absorbers on both ends (Standard)	
Lubrication		Non-lube	
Stroke length tolerance		2700 or less $^{+1.8}_{0}$, 2701 to 5000 $^{+2.8}_{0}$	
Port size	Side port	Rc 3/8	

Note) Use at a speed within the absorption capacity range. Refer to page 8-11-96.

Stroke Adjusting Unit Specifications

Applicable bore size (mm)	50		63	
Unit symbol, contents	L	H	L	H
	RB2015 and adjusting bolt: 1 set each	RB2015 and adjusting bolt: 2 sets each	RB2725 and adjusting bolt: 1 set each	RB2725 and adjusting bolt: 2 sets each
Fine stroke adjustment range (mm)	0 to –20		0 to –25	
Stroke adjustment range	For adjustment method, refer to page 8-11-96.			

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

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

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
50	1962	392	588	784	981	1177	1373	1569
63	3115	623	934	1246	1557	1869	2180	2492

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

Made to Order Specifications (For details, refer to page 8-31-1.)

Symbol	Specifications
-XB10	Intermediate stroke (Using exclusive body)
-XB11	Long stroke
-XC18	NPT finish piping port
-XC67	NBR rubber lining in dust seal band
-X168	Helical insert thread specifications

Standard Stroke

Bore size (mm)	Standard stroke (mm) Note)	Maximum manufacturable stroke (mm)
50, 63	200, 400, 600, 800, 1000, 1500, 2000	5000

Note) Strokes other than standard are produced after receipt of order.

Weight

(kg)

Bore size (mm)	Basic weight	Additional weight per each 25 mm of stroke	Side support weight (per set)	Stroke adjusting unit weight		
			Type A and B	L unit weight	LH unit weight	H unit weight
50	30.62	0.87	0.17	0.62	0.93	1.24
63	41.69	1.13	0.17	1.08	1.62	2.16

Calculation: (Example) MY1HT50-400L
- Basic weight ·····30.62 kg
- Additional weight ····0.87/25 st
- L unit weight ·····0.62 kg
- Cylinder stroke····· 400 st

30.62 + 0.87 x 400 ÷ 25 + 0.62 x 2 ≅ 45.8

Cushion Capacity

Cushion Selection

<Stroke adjusting unit with built-in shock absorber>

L unit

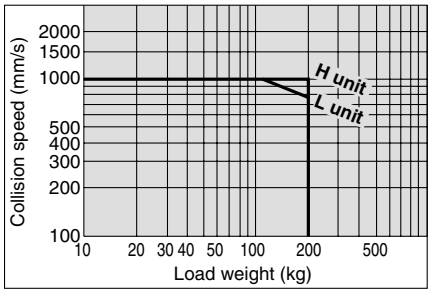
Use this unit when the cylinder stroke is outside of the effective air cushion range even if the load and speed are within the air cushion limit line, or when the cylinder is operated in a load and speed range above the air cushion limit line or below the L unit limit line.

H unit

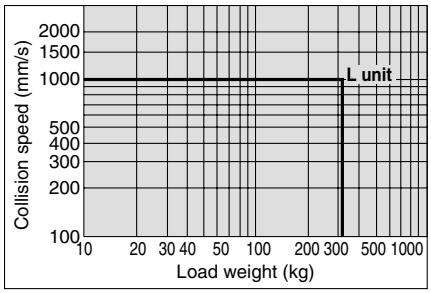
Use this unit when the cylinder is operated in a load and speed range above the L unit limit line and below the H unit limit line.

Stroke Adjusting Unit Absorption Capacity

MY1HT50 Horizontal collision: P = 0.5 MPa



MY1HT63 Horizontal collision: P = 0.5 MPa

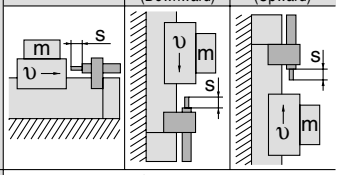


Stopper Bolt Holding Screw Tightening Torque

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

Bore size (mm)	Tightening torque
50	0.6
63	1.5

Calculation of Absorbed Energy for Stroke Adjusting Unit with Built-in 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·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

Be sure to read before handling. Refer to pages 8-34-3 to 8-34-6 for Safety Instructions and Actuator Precautions.

Mounting

⚠ Caution

1. Do not apply strong impact or excessive moment to the slide table (slider).

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

2. Perform careful alignment when connecting to a load which has an external guide mechanism.

Mechanically jointed rodless cylinders can be used with a direct load within the allowable range for each type of guide, but careful alignment is necessary for connection to a load which has an external guide mechanism. Since fluctuation of the center axis increases as the stroke becomes longer, use a method of connection which can absorb the variations (floating mechanism).

3. Do not put hands or fingers inside when the body is suspended.

Since the body is heavy, use eye bolts when suspending it. (The eye bolts are not included with the body.)

Handling

⚠ Caution

1. Do not unnecessarily alter the guide adjustment setting.

The guide is preadjusted at the factory so that readjustment is not required under normal operating conditions. Do not inadvertently move the guide adjusting unit and change the setting.

Handling

⚠ Caution

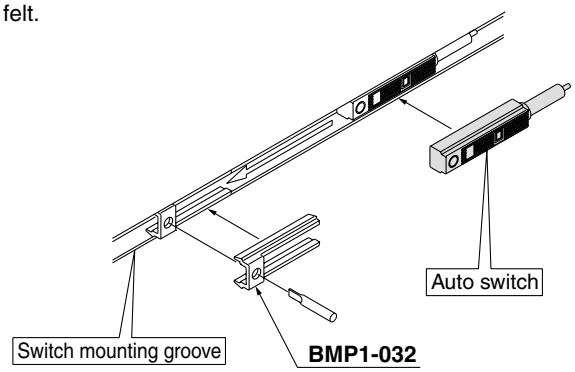
2. Air leakage will result from negative pressure.

Take precautions under operating conditions in which negative pressure is increased inside the cylinder by external forces or inertial forces. Air leakage may occur due to separation of the seal belt.

Mounting of Auto Switch

⚠ Caution

1. Insert the auto switch into the cylinder's switch mounting groove, then slide it sideways in the direction shown below and place it inside the switch spacer (with the spacer positioned over it).
2. Use a flat head watchmakers' screwdriver to fasten the switch, tightening with a torque of 0.05 to 0.1 N·m. As a rule, it should be turned about 90° past the point at which tightening can be felt.



BMP1-032

Stroke Adjustment Method

⚠Caution

1. **As shown in Figure (1), to adjust the stopper bolt within the adjustment range A, insert a hexagon wrench from the top to loosen the hexagon socket head set screw by approximately one turn, and then adjust the stopper bolt with a flat head screwdriver.**
2. **When the adjustment described in 1 above is insufficient, the shock absorber can be adjusted. Remove the covers as shown in Figure (2) and make further adjustment by loosening the hexagon nut.**
3. **Various dimensions are indicated in Table (1). Never make an adjustment that exceeds the dimensions in the table, as it may cause an accident and/or damage.**

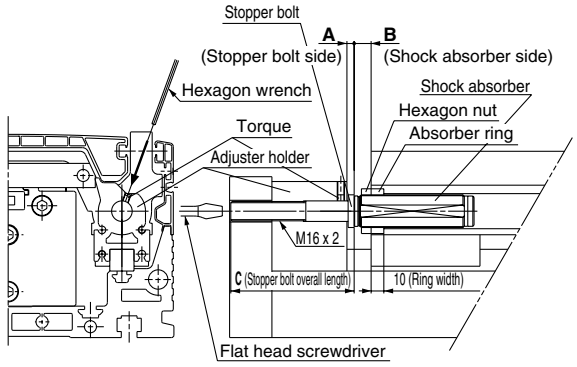


Figure (1) Stroke adjusting section detail

Table (1)

Bore size (mm)	50	63
A to A MAX	6 to 26	6 to 31
B to B MAX	14 to 54	14 to 74
C	87	102
Max. adjustment range	60	85

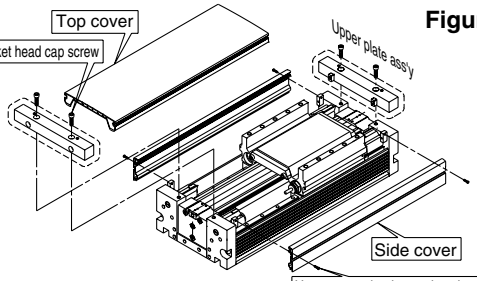


Figure (2) Cover installation and removal

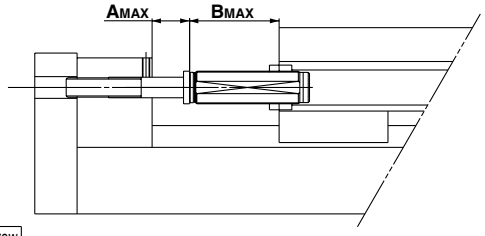


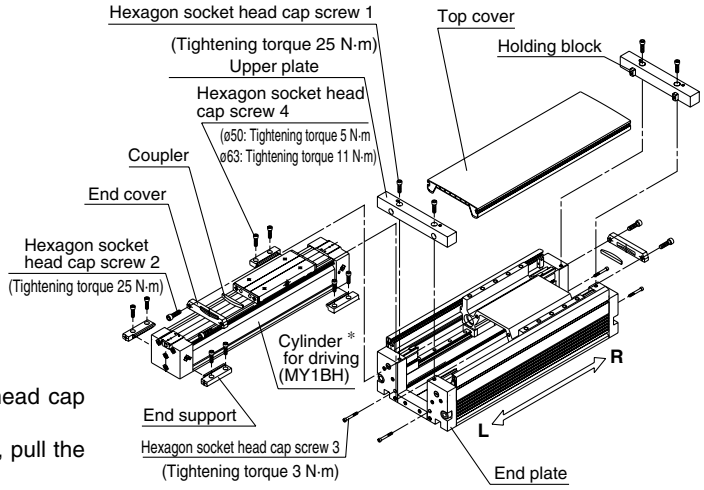
Figure (3) Maximum stroke adjustment detail

Disassembly and Assembly Procedure

⚠Caution

Disassembly step

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



Assembly step

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

* Cylinder For Driving (Series MY1BH)

Since Series MY1BH is a cylinder for driving for Series MY1HT, its construction is different from Series MY1B.
Do not use Series MY1B as a cylinder for driving, since it will lead to damage.

How to Order

High rigidity/High precision guide type **MY1HT** [50] [ ] — [300] [L] — [Z73] [ ]

Cylinder for driving **MY1BH** [50] [ ] — [300]

Stroke (mm)

Bore size (mm)

50	50 mm
63	63 mm

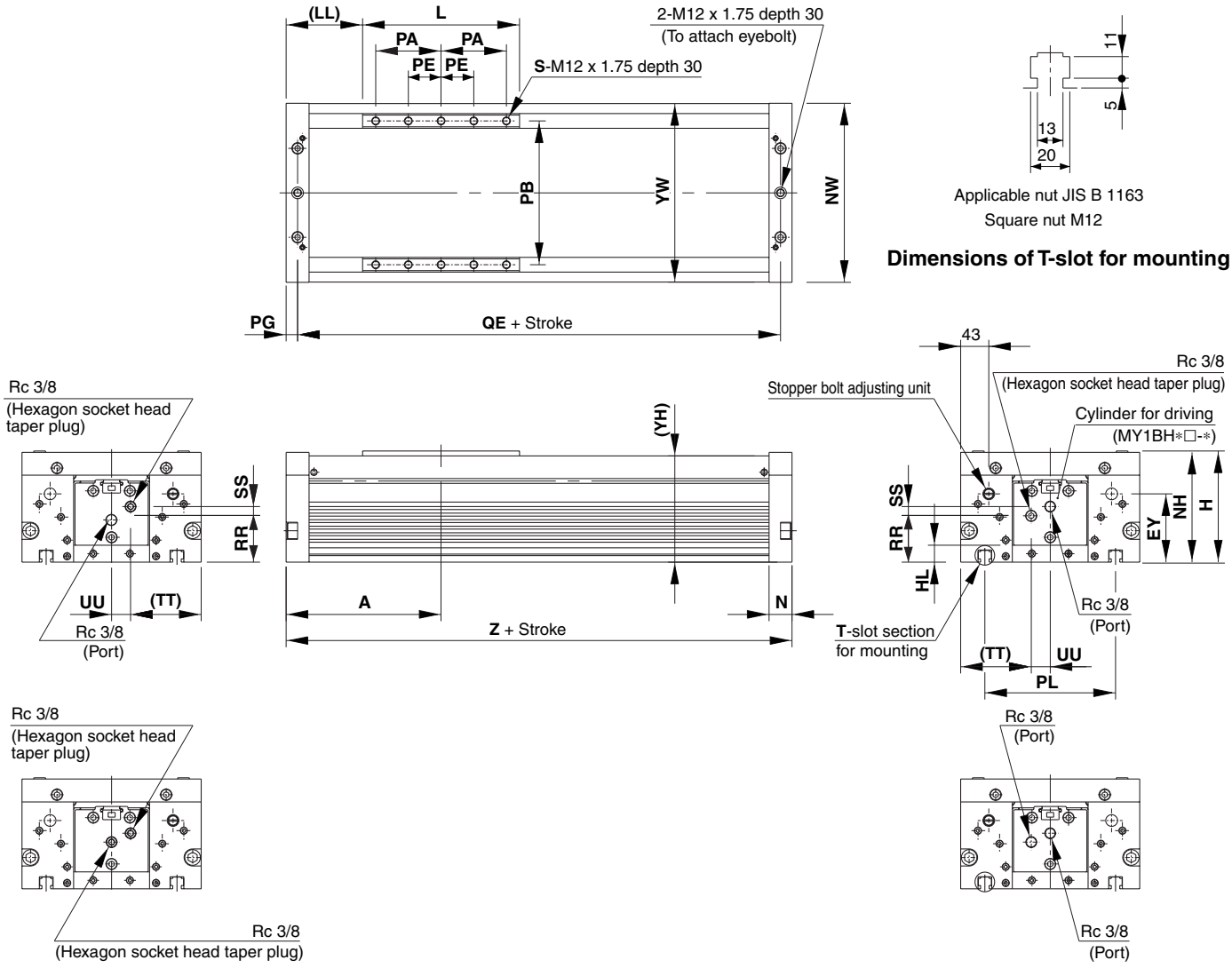
Piping

Nil	Standard type
G	Centralized piping type

Standard Type/Centralized Piping Type ø50, ø63

Refer to page 8-11-9 regarding centralized piping port variations.

MY1HT50□/63□ — Stroke



MY1HT□G **MY1HT□G**

(mm)

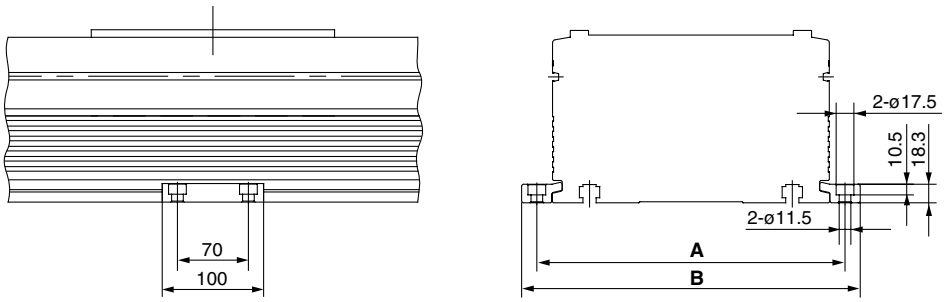
Model	A	EY	H	HL	L	LL	N	NH	NW	PA	PB	PE	PG
MY1HT50□	207	97.5	145	23	210	102	30	143	254	90	200	—	15
MY1HT63□	237	104.5	170	26	240	117	35	168	274	100	220	50	17.5

(mm)

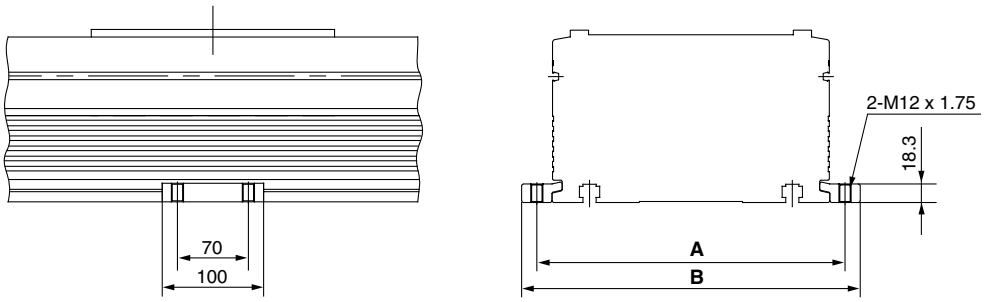
Model	PL	QE	RR	S	SS	TT	UU	YH	YW	Z
MY1HT50□	180	384	57	6	10	103.5	23.5	136.4	252	414
MY1HT63□	200	439	71.5	10	13.5	108	29	162.6	273	474

Side Support

Side support A
MY-S63A



Side support B
MY-S63B



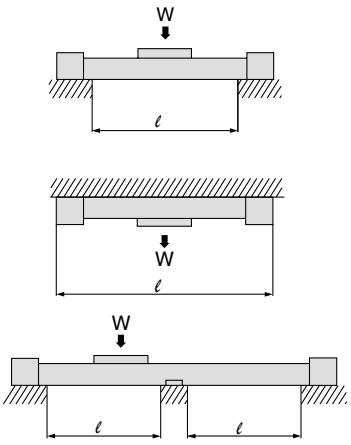
Dimensions

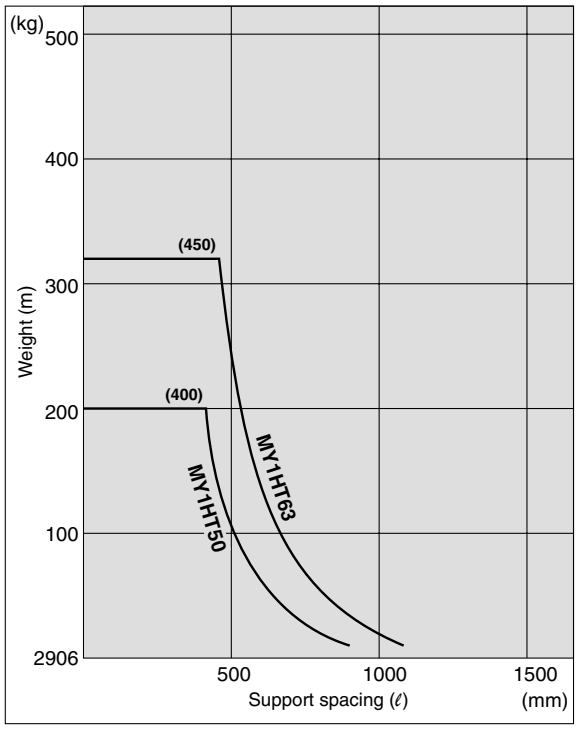
(mm)

Model	Applicable bore size	A	B
MY-S63$^{A}_{B}$	**MY1HT50**	284	314
	MY1HT63	304	334

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.



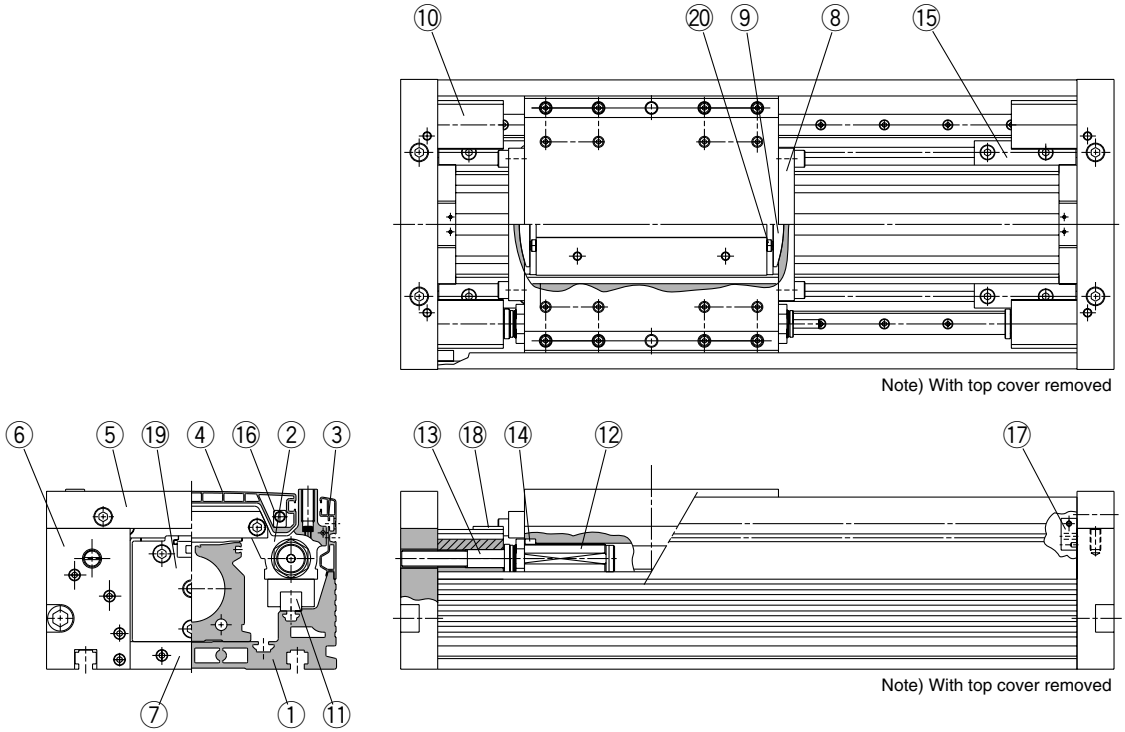


⚠ Caution

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.

Construction

Standard type



Component Parts

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

Series MY1
Auto Switch

D-A90(V), D-A93(V), D-A96(V)

Applicable cylinder series

- **MY1B** (Basic type)
- **MY1M** (Slide bearing type)
- **MY1C** (Cam follower guide type)
- **MY1H** (High precision guide type)

Bore size (mm): 10 16 20 25 32 40 50 63 80 100

D-Z73, D-Z76, D-Z80

Applicable cylinder series

- **MY1B** (Basic type)
- **MY1M** (Slide bearing type)
- **MY1C** (Cam follower guide type)
- **MY1H** (High precision guide type)
- **MY1HT** (High rigidity/High precision guide type)

Bore size (mm): 16 20 25 32 40 50 63 80 100

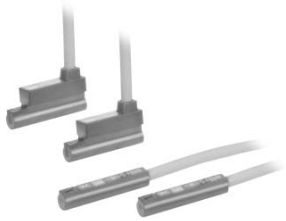
D-M9N(V), D-M9P(V), D-M9B(V)

Applicable cylinder series

- **MY1B** (Basic type)
- **MY1M** (Slide bearing type)
- **MY1C** (Cam follower guide type)
- **MY1H** (High precision guide type)

Bore size (mm): 10 16 20 25 32 40 50 63 80 100

D-F9NW(V), D-F9PW(V), D-F9BW(V)



Applicable cylinder series

- **MY1B** (Basic type)
- **MY1M** (Slide bearing type)
- **MY1C** (Cam follower guide type)
- **MY1H** (High precision guide type)

Bore size (mm): 10 16 20 25 32 40 50 63 80 100

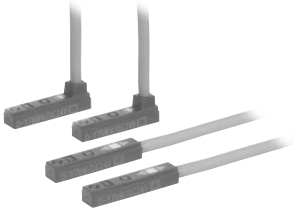
D-Y59$^{A}_{B}$, D-Y69$^{A}_{B}$, D-Y7P(V)

Applicable cylinder series

- **MY1B** (Basic type)
- **MY1M** (Slide bearing type)
- **MY1C** (Cam follower guide type)
- **MY1H** (High precision guide type)
- **MY1HT** (High rigidity/High precision guide type)

Bore size (mm): 16 20 25 32 40 50 63 80 100

D-Y7NW(V), D-Y7PW(V), D-Y7BW(V)



Applicable cylinder series

- **MY1B** (Basic type)
- **MY1M** (Slide bearing type)
- **MY1C** (Cam follower guide type)
- **MY1H** (High precision guide type)
- **MY1HT** (High rigidity/High precision guide type)

Bore size (mm): 16 20 25 32 40 50 63 80 100

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

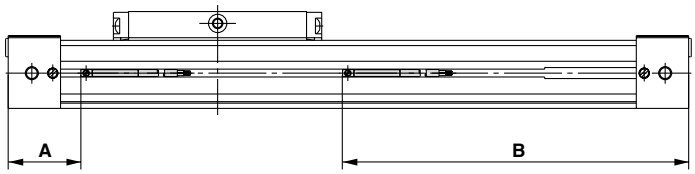
Type	Model	Electrical entry (Fetching direction)	Features
Reed switch	D-A90	Grommet (In-line)	Without indicator light
	D-Z80	Grommet (In-line)	

- Normally closed (NC = b contact), solid state switch (D-F9G/F9H/Y7G/Y7H type) are also available. For details, refer to page 8-30-31- to 8-30-32.
- D-A90 cannot be mounted on Series MY1HT.

Proper Auto Switch Mounting Position (Detection at stroke end) D-A9□(V)

Note) The operating range is a guide including hysteresis, but is not guaranteed. (Assuming approximately 30% dispersion.) There may be varied substantially depending on the surrounding environment.

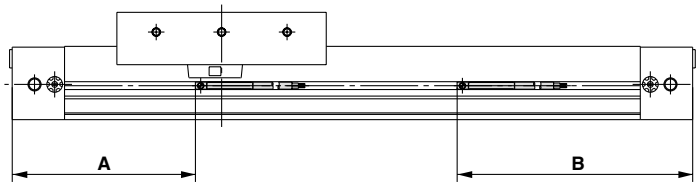
MY1B (Basic type)



(mm)

Mounting position	ø10	ø16	ø20
A	20	27	35
B	90	133	165
Operating range ℓ Note)	6	6.5	8.5

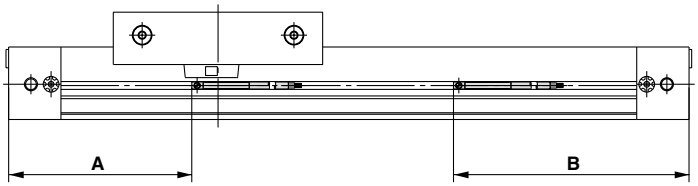
MY1M (Slide bearing guide type)



(mm)

Mounting position	ø16	ø20
A	70	90
B	90	110
Operating range ℓ Note)	11	7.5

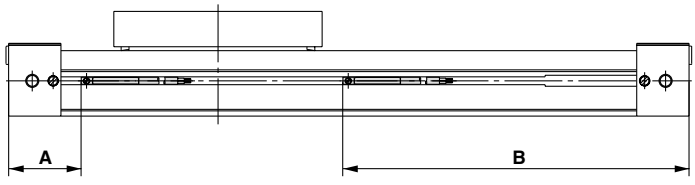
MY1C (Cam follower guide type)



(mm)

Mounting position	ø16	ø20
A	70	90
B	90	110
Operating range ℓ Note)	11	7.5

MY1H (High precision guide type)



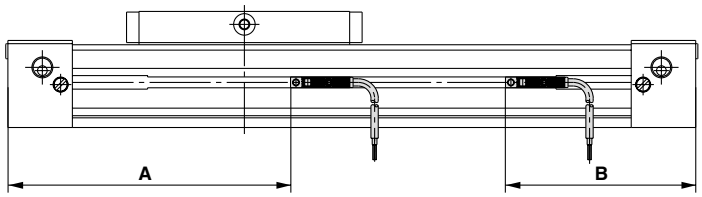
(mm)

Mounting position	ø10	ø16	ø20
A	20	27	35
B	90	133	165
Operating range ℓ Note)	11	6.5	8.5

Proper Auto Switch Mounting Position (Detection at stroke end) D-Z7□, D-Z80

Note) The operating range is a guide including hysteresis, but is not guaranteed. (Assuming approximately 30% dispersion). There may be varied substantially depending on the surrounding environment.

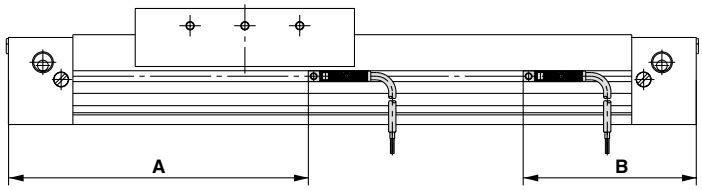
MY1B (Basic type)



(mm)

Mounting position	ø25	ø32	ø40	ø50	ø63	ø80	ø100
A	131.5	180	216	272.5	317.5	484.5	569.5
B	88.5	100	124	127.5	142.5	205.5	230.5
Operating range ℓ Note)	8.5	11.5	11.5	11.5	11.5	11.5	11.5

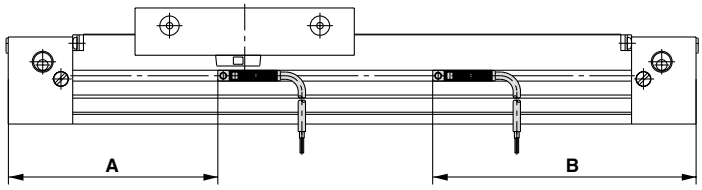
MY1M (Slide bearing guide type)



(mm)

Mounting position	ø25	ø32	ø40	ø50	ø63
A	139.5	184.5	229.5	278.5	323.5
B	80.5	95.5	110.5	121.5	136.5
Operating range ℓ Note)	12	12	12	11.5	11.5

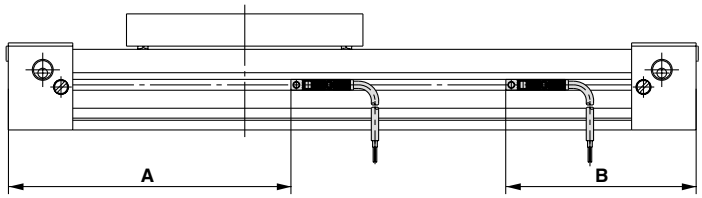
MY1C (Cam follower guide type)



(mm)

Mounting position	ø25	ø32	ø40	ø50	ø63
A	97.5	127.5	157.5	278.5	323.5
B	122.5	152.5	182.5	121.5	136.5
Operating range ℓ Note)	12	12	12	11.5	11.5

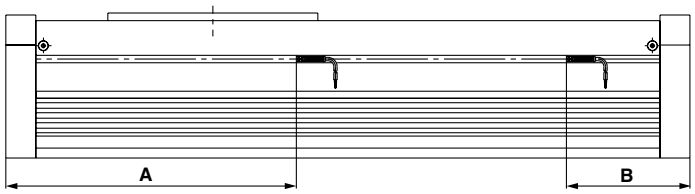
MY1H (High precision guide type)



(mm)

Mounting position	ø25	ø32	ø40
A	131.5	180	216
B	88.5	100	124
Operating range ℓ Note)	8.5	11.5	11.5

MY1HT (High rigidity/High precision guide type)



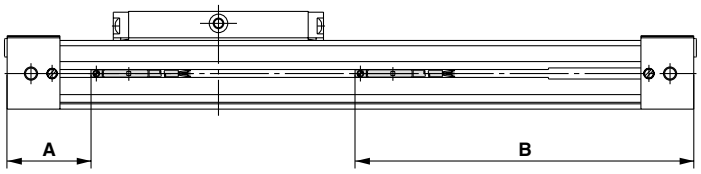
(mm)

Mounting position	ø50	ø63
A	290.5	335.5
B	123.5	138.5
Operating range ℓ Note)	11	11

Proper Auto Switch Mounting Position (Detection at stroke end) D-M9□, D-M9□V, D-F9□W, D-F9□WV

Note) The operating range is a guide including hysteresis, but is not guaranteed. (assuming approximately 30% dispersion.) There may be varied substantially depending on the surrounding environment.

MY1B (Basic type)

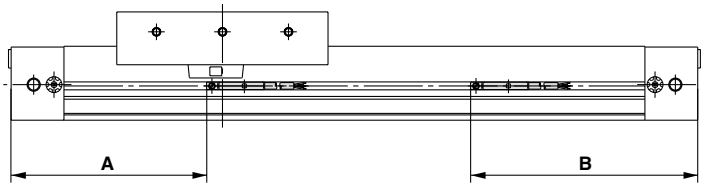


(mm)

Mounting position	ø10	ø16	ø20
A	24	31	39
B	86	129	161
Operating range ℓ Note)	3 (2.5)	4 (3)	5 (3.5)

Note) Figures in parentheses are the cases for D-M9□, D-M9□V switch types.

MY1M (Slide bearing guide type)

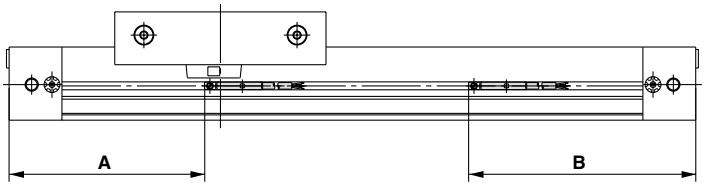


(mm)

Mounting position	ø16	ø20
A	74	94
B	86	106
Operating range ℓ Note)	8.5 (6.5)	6.5 (7)

Note) Figures in parentheses are the cases for D-M9□, D-M9□V switch types.

MY1C (Cam follower guide type)

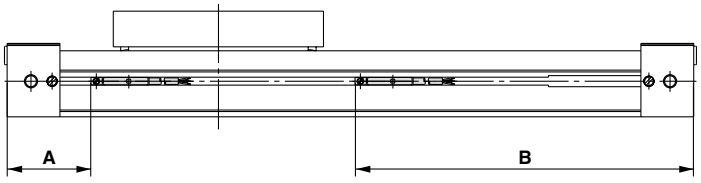


(mm)

Mounting position	ø16	ø20
A	74	94
B	86	106
Operating range ℓ Note)	8.5 (6.5)	6.5 (7)

Note) Figures in parentheses are the cases for D-M9□, D-M9□V switch types.

MY1H (High precision guide type)



(mm)

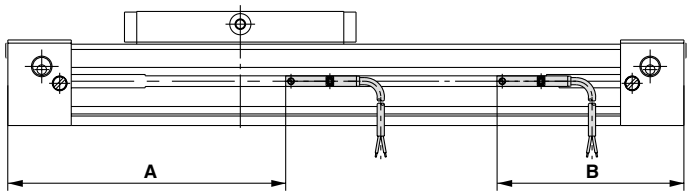
Mounting position	ø10	ø16	ø20
A	24	31	39
B	86	129	161
Operating range ℓ Note)	3 (2)	4 (3)	5 (3.5)

Note) Figures in parentheses are the cases for D-M9□, D-M9□V switch types.

Proper Auto Switch Mounting Position (Detection at stroke end) D-Y59□, D-Y69□, D-Y7P, D-Y7PV

Note) The operating range is a guide including hysteresis, but is not guaranteed. (Assuming approximately 30% dispersion.) There may be varied substantially depending on the surrounding environment.

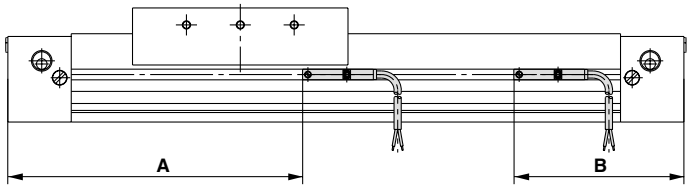
MY1B (Basic type)



(mm)

Mounting position	ø25	ø32	ø40	ø50	ø63	ø80	ø100
A	131.5	180	216	272.5	317.5	484.5	569.5
B	88.5	100	124	127.5	142.5	205.5	230.5
Operating range ℓ Note)	6	9	10	3.5	3.5	3.5	3.5

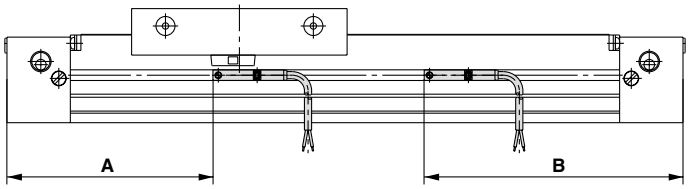
MY1M (Slide bearing guide type)



(mm)

Mounting position	ø25	ø32	ø40	ø50	ø63
A	139.5	184.5	229.5	278.5	323.5
B	80.5	95.5	110.5	121.5	136.5
Operating range ℓ Note)	5	5	5	5.5	5.5

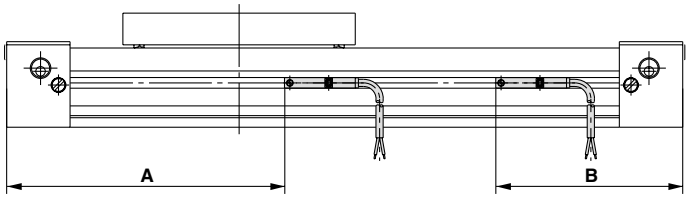
MY1C (Cam follower guide type)



(mm)

Mounting position	ø25	ø32	ø40	ø50	ø63
A	97.5	127.5	157.5	278.5	323.5
B	122.5	152.5	182.5	121.5	136.5
Operating range ℓ Note)	5	5	5	5.5	5.5

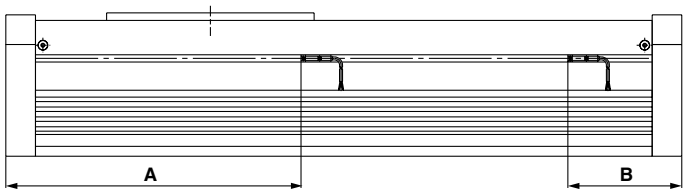
MY1H (High precision guide type)



(mm)

Mounting position	ø25	ø32	ø40
A	131.5	180	216
B	88.5	100	124
Operating range ℓ Note)	6	9	10

MY1HT (High rigidity/High precision guide type)



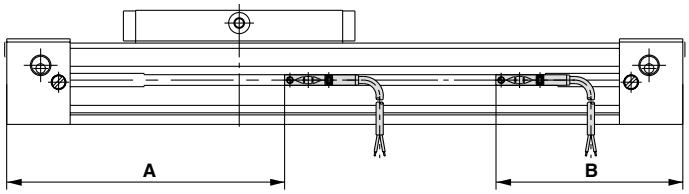
(mm)

Mounting position	ø50	ø63
A	290.5	335.5
B	123.5	138.5
Operating range ℓ Note)	5	5

Proper Auto Switch Mounting Position (Detection at stroke end) D-Y7□W, D-Y7□WV

Note) The operating range is a guide including hysteresis, but is not guaranteed. (Assuming approximately 30% dispersion.) There may be varied substantially depending on the surrounding environment.

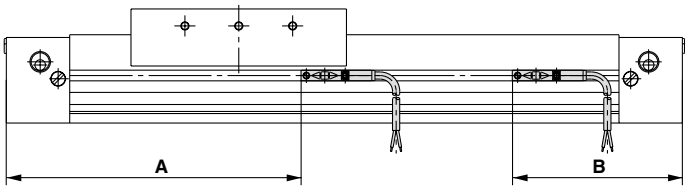
MY1B (Basic type)



(mm)

Mounting position	ø25	ø32	ø40	ø50	ø63	ø80	ø100
A	131.5	180	216	272.5	317.5	484.5	569.5
B	88.5	100	124	127.5	142.5	205.5	230.5
Operating range ℓ Note)	6	9	10	3.5	3.5	3.5	3.5

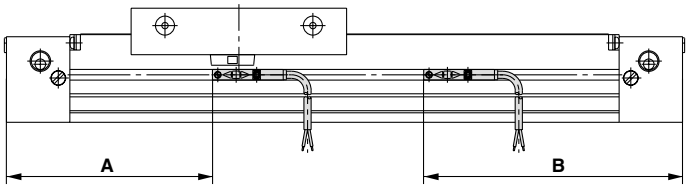
MY1M (Slide bearing guide type)



(mm)

Mounting position	ø25	ø32	ø40	ø50	ø63
A	139.5	184.5	229.5	278.5	323.5
B	80.5	95.5	110.5	121.5	136.5
Operating range ℓ Note)	5	5	5	5.5	5.5

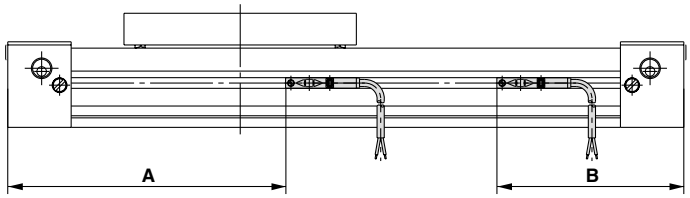
MY1C (Cam follower guide type)



(mm)

Mounting position	ø25	ø32	ø40	ø50	ø63
A	97.5	127.5	157.5	278.5	323.5
B	122.5	152.5	182.5	121.5	136.5
Operating range ℓ Note)	5	5	5	5.5	5.5

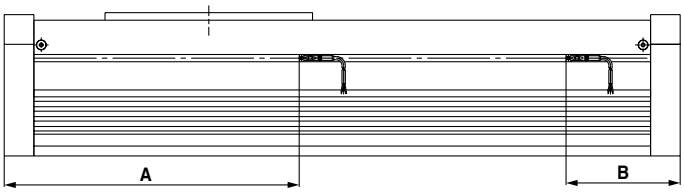
MY1H (High precision guide type)



(mm)

Mounting position	ø25	ø32	ø40
A	131.5	180	216
B	88.5	100	124
Operating range ℓ Note)	6	9	10

MY1HT (High rigidity/High precision guide type)



(mm)

Mounting position	ø50	ø63
A	290.5	335.5
B	123.5	138.5
Operating range ℓ Note)	5	5