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

How to Order

MY3 A 16 — 300 LS — M9B

Type

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

Cylinder bore size

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

Thread type

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

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

Number of auto switches

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

Auto switch

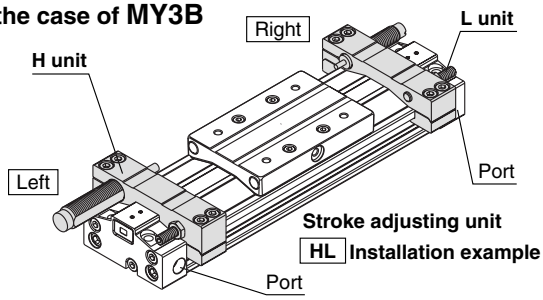
Nil	Without auto switch

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

Stroke adjusting unit (MY3B only)

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

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



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

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

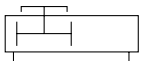
∗ Lead wire length symbols: 0.5 m..... Nil (Example) F9NW
3 m..... L F9NWL
5 m..... Z F9NWZ

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

MY3A

MY3B

JIS Symbol



Specifications

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

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

Stroke Adjusting Unit Specifications

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

Piston Speed

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

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

Standard Stroke

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

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

Theoretical Output

Unit: N

Bore size (mm)	Piston area (mm^2)	Operating pressure (MPa)						
		0.2	0.3	0.4	0.5	0.6	0.7	0.8
16	200	40	60	80	100	120	140	160
25	490	98	147	196	245	294	343	392
40	1256	251	377	502	628	754	879	1005
63	3115	623	934	1246	1557	1869	2180	2492

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

Option

Stroke Adjusting Unit Model

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

Shock Absorber Specifications

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

Weight

Unit: kg

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

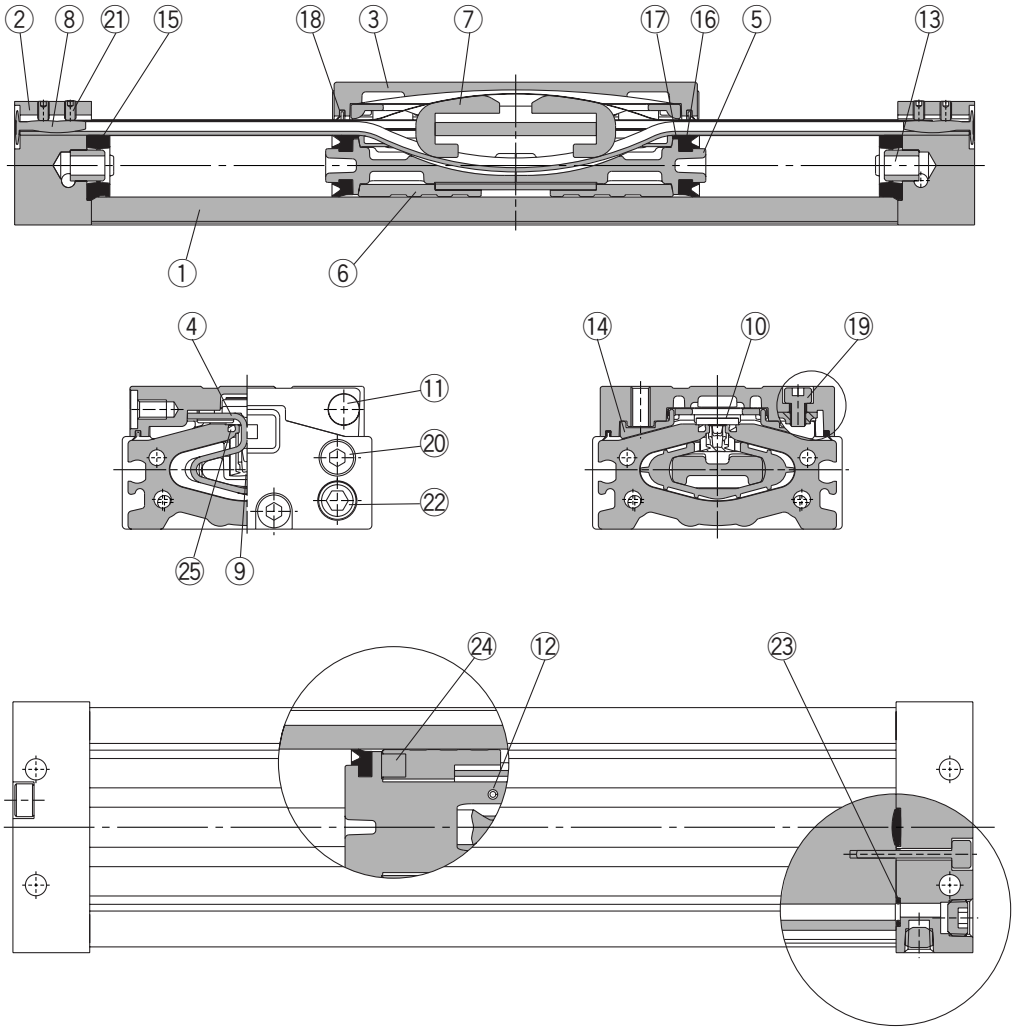
Calculation method
Example: MY3B25-300L
Basic weight ····· 0.75 kg
Additional weight ····· 0.17/50 st
Weight of L unit ····· 0.1 kg
Cylinder stroke ····· 300 st
$0.75 + 0.17 \times 300 \div 50 + 0.1 \times 2 \cong 1.97$ kg

Made to Order Specifications

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

Construction

MY3A



Component Parts

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

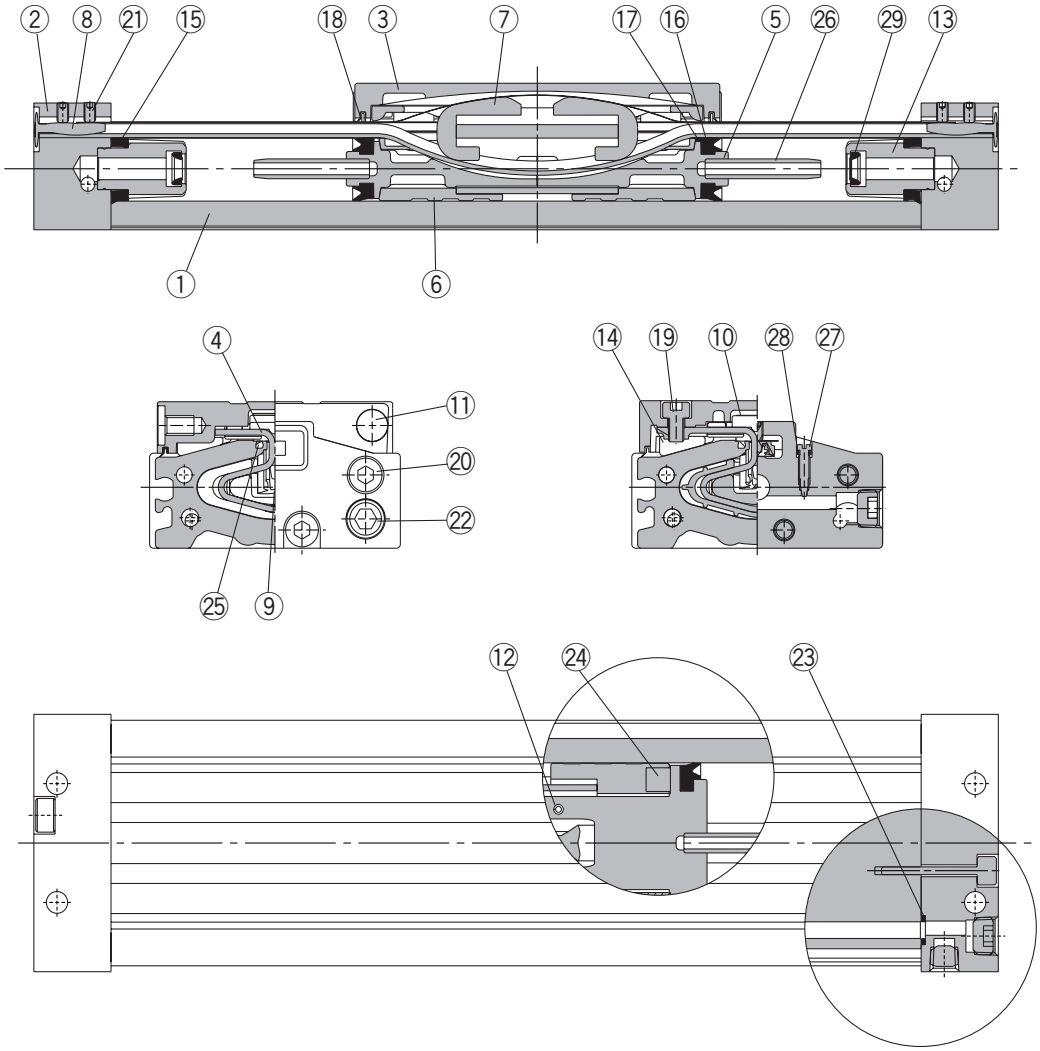
No.	Description	Material	Note
⑫	Spring pin	Carbon tool steel	Black zinc chromated
⑬	Seal ring	Brass	
⑭	Bearing	Special resin	
⑰	Inner wiper	Special resin	
⑲	Hexagon socket head cap screw	Chrome molybdenum steel	Nickel plated
⑳	Hexagon socket head cap screw	Chrome molybdenum steel	Nickel plated
㉑	Hexagon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

Replacement Parts: Seal Kit

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

Construction

MY3B



Component Parts

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

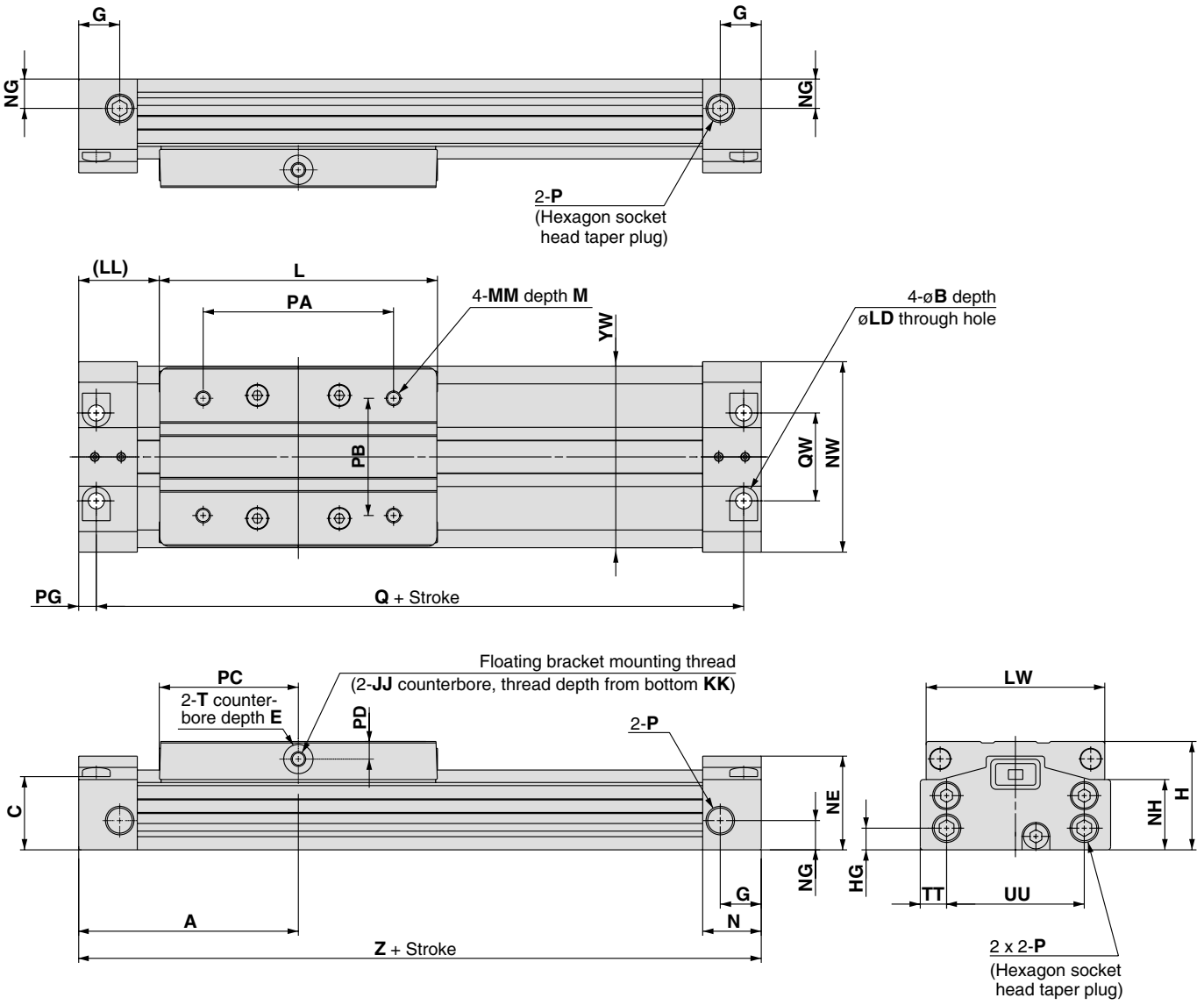
No.	Description	Material	Note
⑬	Cushion boss	Aluminum alloy	Chromated
⑭	Bearing	Special resin	
⑰	Inner wiper	Special resin	
⑲	Hexagon socket head cap screw	Chrome molybdenum steel	Nickel plated
⑳	Hexagon socket head cap screw	Chrome molybdenum steel	Nickel plated
㉑	Hexagon socket head set screw	Chrome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

Replacement Parts: Seal Kit

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

Short Type: ø16, ø25, ø40, ø63

MY3A Bore size — Stroke



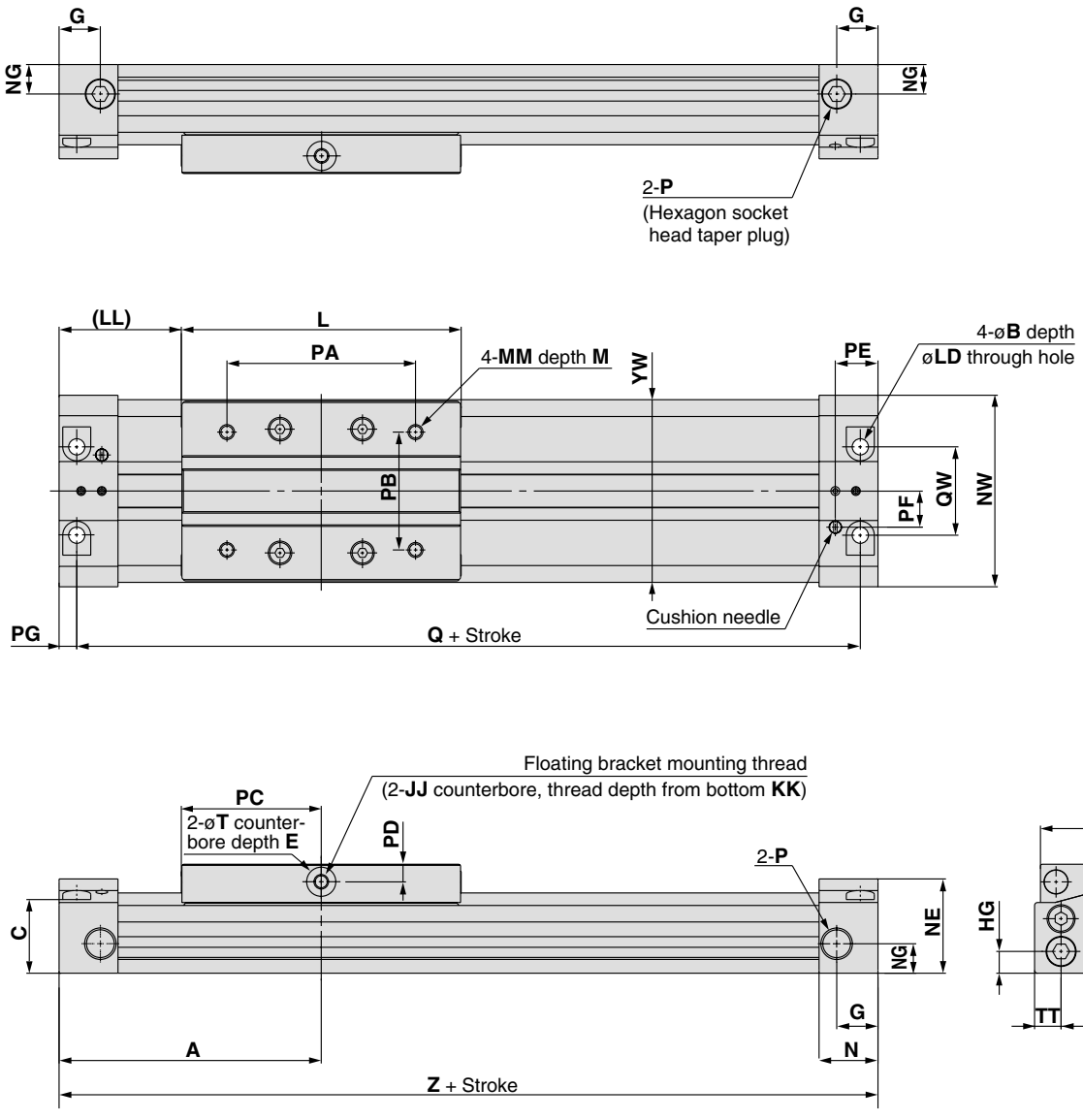
(mm)

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

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

Basic Type: ø16, ø25, ø40, ø63

MY3B Bore size — Stroke



(mm)

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

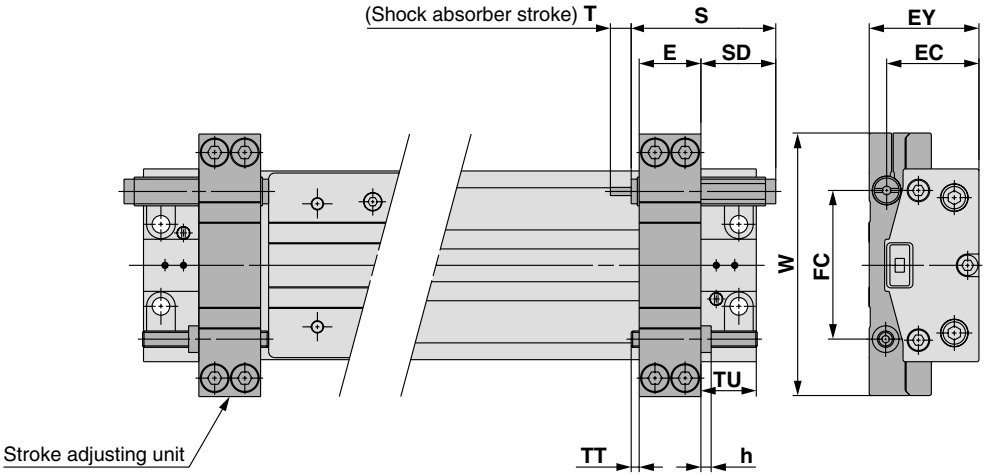
Model	NE	NG	NH	NW	P	PA	PB	PC	PD	PE	PF	PG	Q	QW	T	TT	UU	YW	Z
MY3B16	22.5	8	17.2	43	M5 × 0.8	44	26	32.5	4	9.7	8.5	4	114	19	7	6.5	30	42	122
MY3B25	32	10	24	65	Rc, NPT, $G^{1}/_{8}$	64	40	47.5	6	14.5	12.2	6	166	30	10	9	47	62	178
MY3B40	46	15	37	94	Rc, NPT, $G^{1}/_{4}$	112	60	80	7.5	19.5	16.5	8.5	259	40	14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

Basic Type: ø16, ø25, ø40, ø63

Stroke Adjusting Unit

Shock absorber for low load + Adjusting bolt

MY3B Bore size — Stroke L

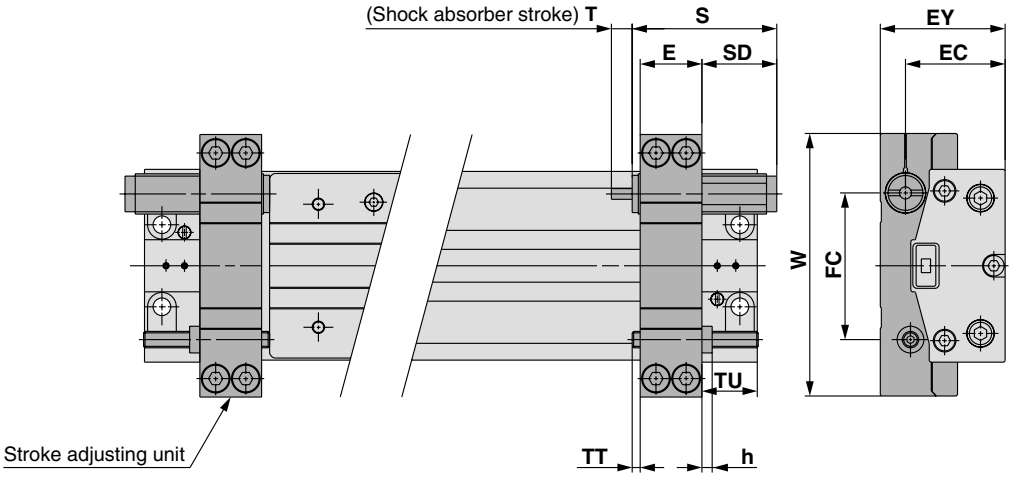


(mm)

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

Shock absorber for high load + Adjusting bolt

MY3B Bore size — Stroke H

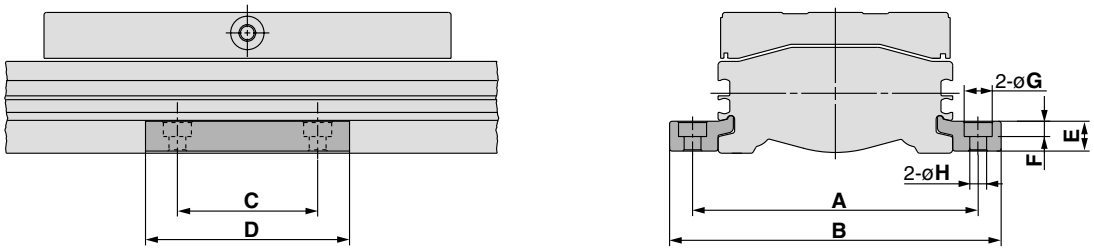


(mm)

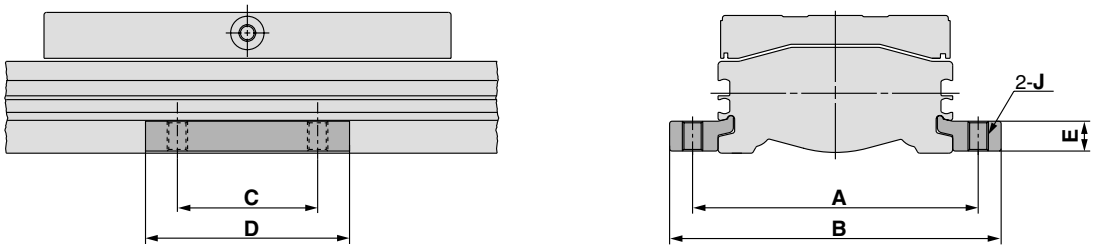
Applicable cylinder	E	EC	EY	FC	h	S	SD	T	TT	TU	W	Shock absorber model
MY3B16	14.1	23	29.5	34.5	2.4	46.7	31.7	7	0.9	25	62	RB1007
MY3B25	20.1	31.8	41	52.2	3.6	67.3	45.8	12	1.4	28.5	90	RB1412
MY3B40	30.1	48	60.5	73.5	5	73.2	42.2	15	0.9	39	128	RB2015
MY3B63	36.1	74.5	91	108	6	99	62	25	0.9	43	178	RB2725

Side Support

Side support A
MY-S□A



Side support B
MY-S□B

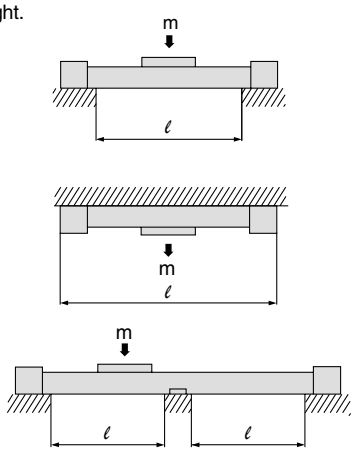


(mm)

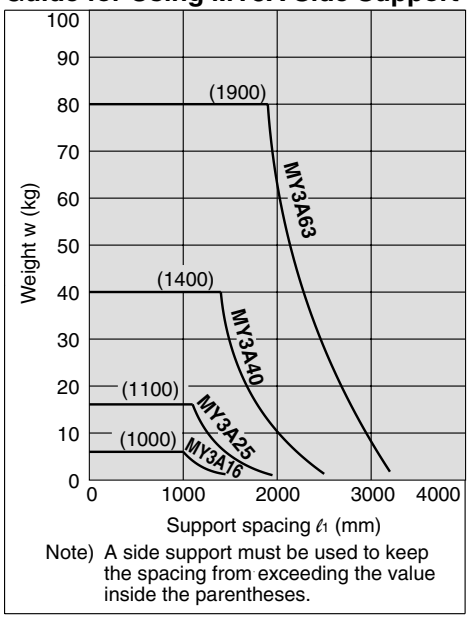
Model	Applicable cylinder	A	B	C	D	E	F	G	H	J
MY-S16 A/B	**MY3A16, MY3B16**	53	63.6	15	26	4.9	3	6.5	3.4	M4 x 0.7
MY-S25 A/B	**MY3A25, MY3B25**	77	91	35	50	8	5	9.5	5.5	M6 x 1
MY-S32 A/B	**MY3A40, MY3B40**	112	130	45	64	11.7	6	11	6.6	M8 x 1.25
MY-S40 A/B	**MY3A63, MY3B63**	160	182	55	80	14.8	8.5	14	9	M10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

Guide for Using Side Support

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

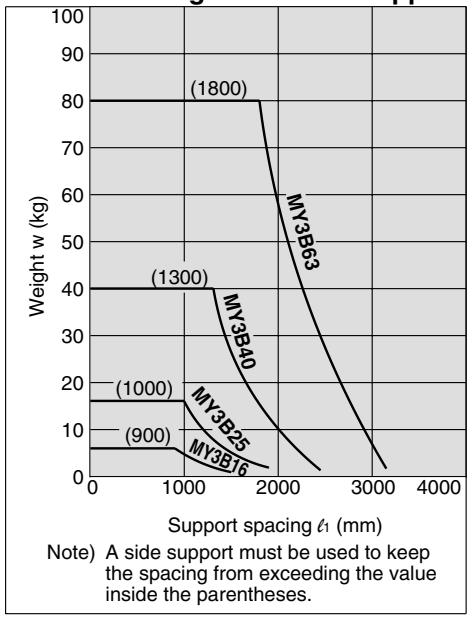


Guide for Using MY3A Side Support



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

Guide for Using MY3B Side Support



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

⚠ Caution

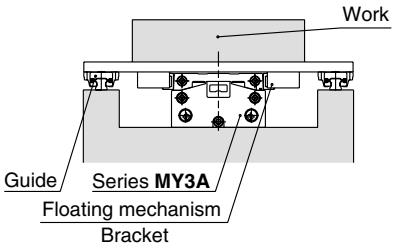
1. If the cylinder mounting surfaces are not measured accurately, using a side support may cause poor operation. Therefore, be sure to level the cylinder tube when mounting. Also, for long stroke operation involving vibration and impact, use of a side support is recommended even if the spacing value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

Floating Bracket

Facilitates connection to other guide systems.

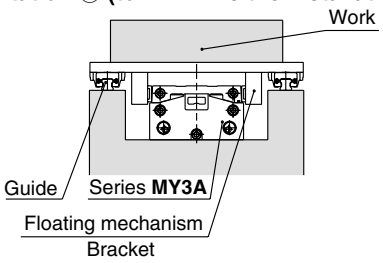
Application

Mounting orientation ① (to minimize the installation width)

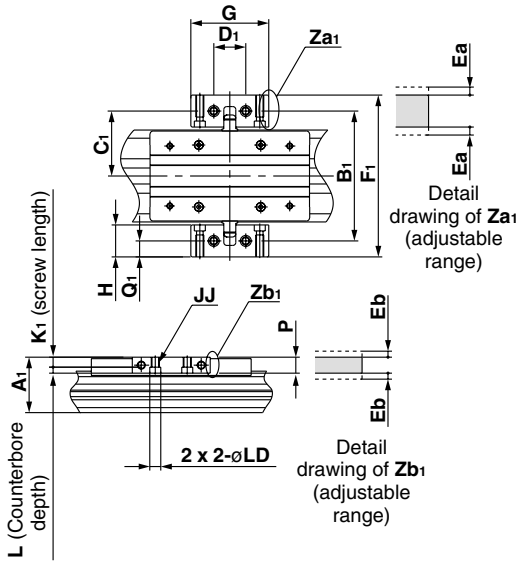


Application

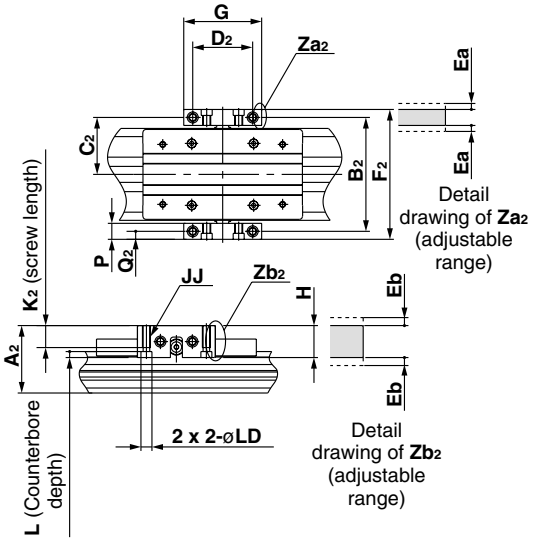
Mounting orientation ② (to minimize the installation height)



Mounting Example



Mounting Example



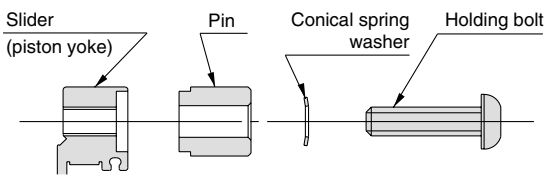
MY3□ Floating Bracket Mounting Dimensions (mm)

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

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

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

Installation of holding bolt



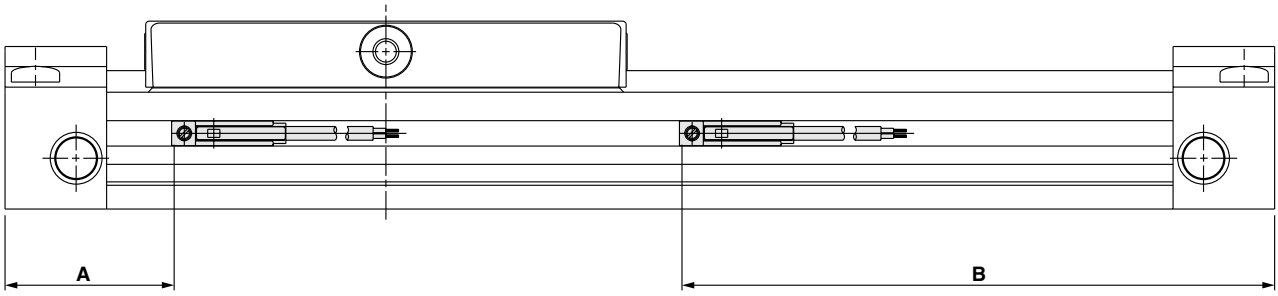
Tighting Torque for Holding Bolt

Unit: N·m

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

Proper Auto Switch Mounting Position (Detection at stroke end)

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



MY3A

D-A9, D-A9□V (mm)

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

D-F9□W, D-F9□(W)V (mm)

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

D-M9□, D-M9□V (mm)

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

MY3B

D-A9, D-A9□V (mm)

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

D-F9□W, D-F9□(W)V (mm)

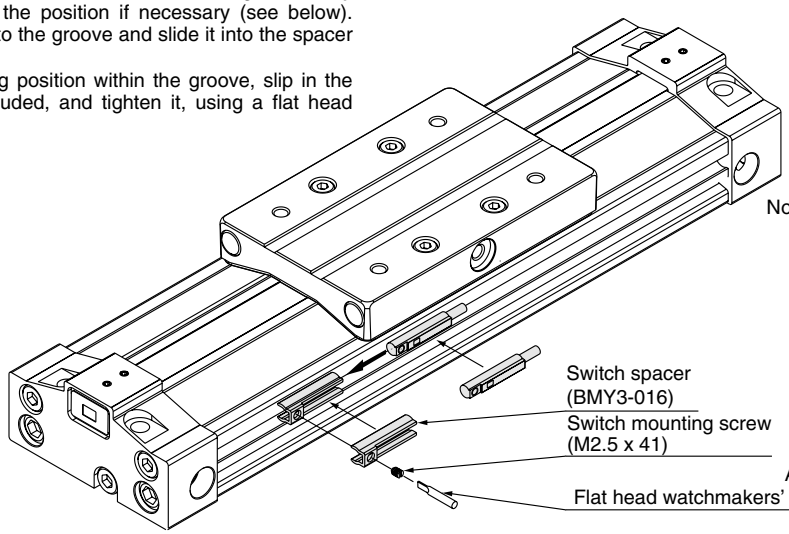
Bore size	A	B	Operating range
16	32	90	3.0
25	47	131	4.5
40	64.5	211.5	6.3
63	75.5	280.5	6.6

D-M9□, D-M9□V (mm)

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

Mounting of Auto Switch

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



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

Switch Spacer (mm)

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

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

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

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