Air Slide Table

MXW Series

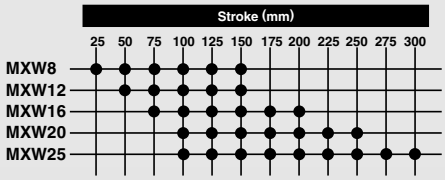
ø8, ø12, ø16, ø20, ø25

RoHS

Linear guide table provides long stroke. Table rigidity is constant throughout entire stroke.

Long stroke (Max. 300 mm)

Linear guide provides long stroke,
and it obtains smooth operation without vibration.



Dual piston rod

• Slim design provides 2 times the force of standard cylinder.

MXW8: ø8 x 2 **MXW20: ø20 x 2**
MXW12: ø12 x 2 **MXW25: ø25 x 2**
MXW16: ø16 x 2

Shock absorber

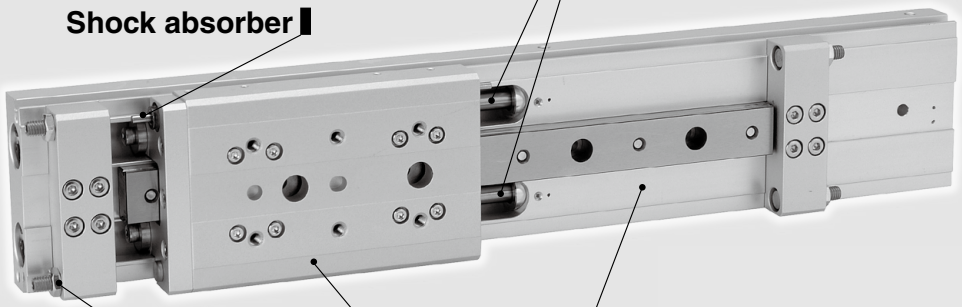


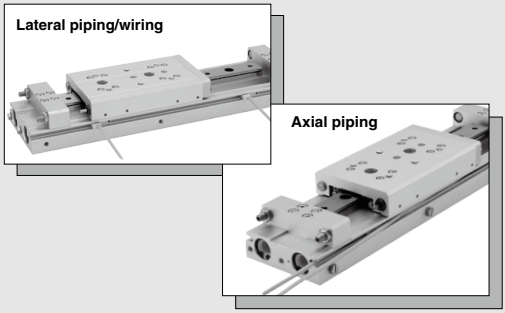
Table for mounting of workpiece

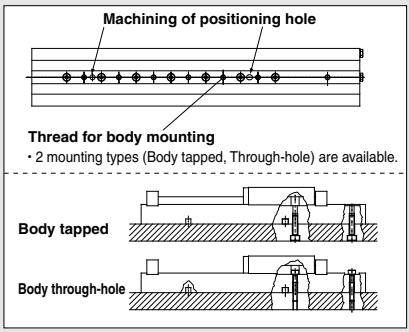
Body mounting

Adjuster

Piping, Wiring

- Piping is possible from 2 directions.
- Can pipe and wire switches from the same surface.
- Auto switch can be attached to either side of body.





MXW Series
Model Selection

Selection

⚠ Caution

① Operate loads within the range of the operating limits.
Select the model from the maximum allowable load and allowable moment. For details, refer to the following selection procedures. When actuator is used outside of operating limit, eccentric loads on the guide in excess, will cause vibration on guide, inaccuracy and shorten its life.

② If intermediate stops by external stopper are done, avoid ejection.
If ejection occurs, it may cause damage.
In the case slide table is stopped at intermediate positions by the external stopper then forwarded to the front, after slide table is returned to the back for just a moment to retract the stopper, supply pressure to the opposite port to operate slide table.

③ Do not use it in such a way that excessive external force or impact force could work on it.
This could result in damage.

Maximum allowable load and allowable moment will vary depending on workpiece mounting methods, mounting orientation and operating speed. In making a determination of usability, the load mass and moment should be within the operating range of the graph with respect to operating conditions and the total ($\Sigma\alpha n$) of the load factors (αn) for load mass and moment should not exceed 1.

$$\Sigma\alpha n = \frac{\text{Load (W)}}{\text{Maximum load mass (Wmax)}} + \frac{\text{Static moment (M)}}{\text{Allowable static moment (Mmax)}} + \frac{\text{Dynamic moment (Me)}}{\text{Allowable dynamic moment (Memax)}} < 1$$

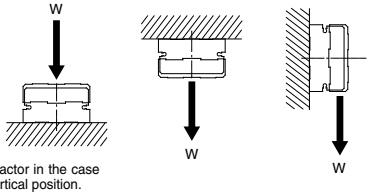
Wmax, Mmax and Memax values are according to graph (1), (2) and (3) below.

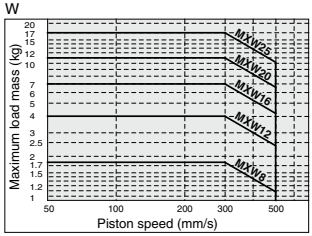
Load Weight

Maximum Load Mass (kg)

Model	W
MXW8	1.8
MXW12	4
MXW16	7
MXW20	11
MXW25	17

Note) No need to consider this load factor in the case of using perpendicularly in a vertical position.





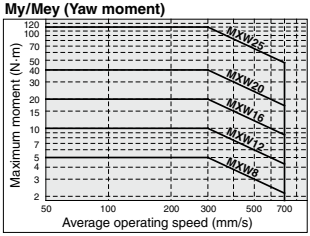
Graph (1)

Moment

Allowable Moment
(Static moment/Dynamic moment) (N·m)

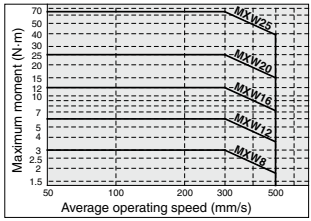
Model	Pitch moment	Yaw moment	Roll moment
	Mp/Mep	My/Mey	Mr
MXW8	5	5	3
MXW12	10	10	6
MXW16	20	20	12
MXW20	40	40	25
MXW25	110	110	65

Mp/Mep (Pitch moment)
My/Mey (Yaw moment)



Graph (2)

Mr (Roll moment)



Graph (3)

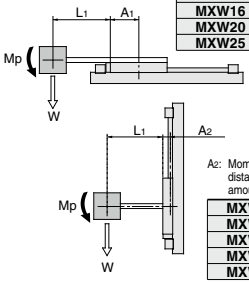
Static Moment

Moment generated by the workpiece weight even when the cylinder is stopped

■Pitch moment
Mp = W x 9.8 (L_1 + A)

A1: Moment center position distance compensation amount (mm)

MXW8	39
MXW12	48
MXW16	58
MXW20	75
MXW25	97



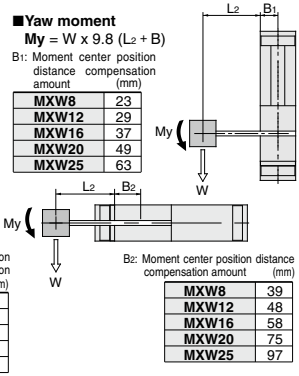
A2: Moment center position distance compensation amount (mm)

MXW8	10
MXW12	10
MXW16	14
MXW20	20
MXW25	28

■Yaw moment
My = W x 9.8 (L_2 + B)

B1: Moment center position distance compensation amount (mm)

MXW8	23
MXW12	29
MXW16	37
MXW20	49
MXW25	63



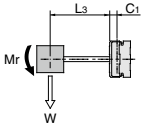
B2: Moment center position distance compensation amount (mm)

MXW8	39
MXW12	48
MXW16	58
MXW20	75
MXW25	97

■Roll moment
Mr = W x 9.8 (L_3 + C)

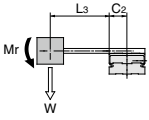
C1: Moment center position distance compensation amount (mm)

MXW8	10
MXW12	10
MXW16	14
MXW20	20
MXW25	28



C2: Moment center position distance compensation amount (mm)

MXW8	23
MXW12	29
MXW16	37
MXW20	49
MXW25	63



Dynamic Moment

Moment due to impact of load at end of stroke.

$We = \delta \cdot W \cdot V$

$V = 1.4^{*} Va$

*) Correction factor (Reference value)

We: Equivalent mass for impact (kg)
δ: Bumper coefficient
With urethane bumper (standard) = 4/100
With shock absorber = 1/100
W: Weight (kg)
V: Collision speed (mm/s)
Va: Average operating speed (mm/s)

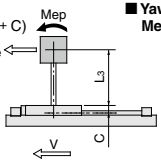
■ Pitch moment

Mep = 1/3* · We x 9.8 (L3 + C)

*** Average load coefficient**

C: Moment center position distance compensation amount (mm)

MXW8	10
MXW12	10
MXW16	14
MXW20	20
MXW25	28

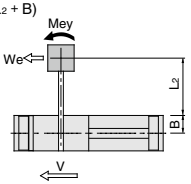


■ Yaw moment

Mey = 1/3* · We x 9.8 (L2 + B)

B: Moment center position distance compensation amount (mm)

MXW8	23
MXW12	29
MXW16	37
MXW20	49
MXW25	63



Selection Calculation

For selection of a proper model, the items shown below should be within the operating range of the graph. Furthermore, find load factors (αn) and make sure that their sum total ($\Sigma\alpha$n) does not exceed 1.

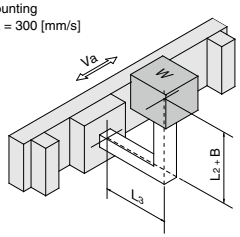
$$\sum \alpha n = \alpha_1 + \alpha_2 + \alpha_3 < 1$$

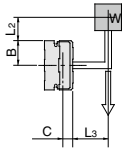
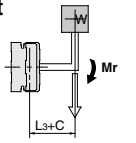
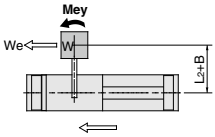
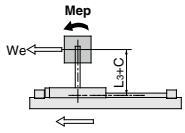
Item	Load factor αn	Note
1 Max. load mass	$\alpha 1$ = W/Wmax	Examine W. Wmax is maximum load mass at Va.
2 Static moment	$\alpha 2$ = M/Mmax	Examine Mp, My, and Mr. Mmax is the allowable moment for Va.
3 Dynamic moment	$\alpha 3$ = Me/Memax	Examine Mep and Mey Memax is the allowable moment for V.

V: Collision speed, Va: Average speed

<Operating conditions>

Cylinder: MXW16
Cushion: Standard (Urethane bumper)
Mounting: Horizontal wall mounting
Average operating speed: Va = 300 [mm/s]
Weight: W = 1 [kg]
L3 = 50 [mm]
L2 = 50 [mm]



Item	Load factor αn	Note
1 Max. load mass 	α_1 = W/Wmax = 1/7 **= 0.14**	Examine W. Find the value of Wmax when Va = 300 mm/s from Graph (1). Note) No need to consider this load factor in the case of using perpendicularly in a vertical position. (Define α_1 = 0.)
2 Static moment 	Mr = W x 9.8 (L3 + C) = 1 x 9.8 (0.05 + 0.014) = 0.63 [N·m] α_2 = Mr/Mrmax = 0.63/12 **= 0.053**	Examine Mr. (Mp, My values do not apply to this example.) Mrmax value is from Graph (3) at Va = 300 mm/s.
3 Dynamic moment 	Mey = 1/3·We x 9.8 (L2 + B) V = 1.4 Va We = δ·W·V = 4/100·1·1.4·300 = 16.8 [kg] ∴Mey = 1/3 x 16.8 x 9.8 (0.05 + 0.037) = 4.8 [N·m] α_3 = Mey/Meymax = 4.8/14.3 **= 0.34**	Examine Mey. Find the equivalent mass for impact, We Bumper coefficient δ = 4/100 (With urethane bumper) Meymax value is from Graph (2) at V = 1.4 Va = 420 mm/s.
	Mep = 1/3·We x 9.8 (L3 + C) = 1/3 16.8 x 9.8 (0.05 + 0.014) = 3.5 [N·m] α_3' = Mep/Mepmax = 3.5/14.3 **= 0.24**	Examine Mep. From above formula We = 16.8 Mepmax value is from Graph (2) at V = 1.4 Va = 420 mm/s.

$\sum \alpha n = \alpha_1 + \alpha_2 + \alpha_3 + \alpha_3'$
= 0.14 + 0.053 + 0.34 + 0.24
= 0.773 $\sum \alpha n = 0.773 < 1$, Application is approved.

Air Slide Table
MXW Series

RoHS

How to Order

MXW | **16** | □ | – | **100** | **B** | – | **M9BW** | □ | – | □

Made to Order
Refer to page 371 for details.

Port thread type

Nil	M thread	ø8 to ø16
	Rc	ø20, ø25
TN	NPT	
TF	G	

Number of auto switches

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

Auto switch

Nil	Without auto switch (Built-in magnet)

∗ For the applicable auto switch model, refer to the table below.

Bore size (Stroke (mm))

ø8	25, 50, 75, 100, 125, 150
ø12	50, 75, 100, 125, 150
ø16	75, 100, 125, 150, 175, 200
ø20	100, 125, 150, 175, 200, 225, 250
ø25	100, 125, 150, 175, 200, 225, 250, 275, 300

Option

Nil	Rubber stopper
B	With shock absorber

Applicable Auto Switches/Refer to pages 1289 to 1383 for the detailed specifications of auto switches.

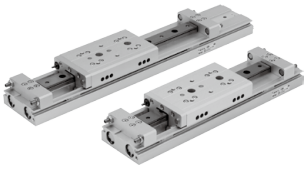
Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC		Load voltage AC	Auto switch model: Perpendicular	Auto switch model: In-line	Lead wire length (m): 0.5 (Nil)	1 (M)	3 (L)	5 (Z)	Pre-wired connector	Applicable load	
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V,12 V	—	**M9NV**	**M9N**	●	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				**M9PV**	**M9P**	●	●	●	○	○		
				2-wire		12 V		**M9BV**	**M9B**	●	●	●	○	○	—	
	Diagnostic indication (2-color indicator)			3-wire (NPN)		5 V,12 V		**M9NWV**	**M9NW**	●	●	●	○	○	IC circuit	
				3-wire (PNP)				**M9PWV**	**M9PW**	●	●	●	○	○		
				2-wire		12 V		**M9BWV**	**M9BW**	●	●	●	○	○	—	
	Water resistant (2-color indicator)			3-wire (NPN)		5 V,12 V		**M9NAV**∗1	**M9NA**∗1	○	○	●	○	○	IC circuit	
				3-wire (PNP)				**M9PAV**∗1	**M9PA**∗1	○	○	●	○	○		
				2-wire		12 V		**M9BAV**∗1	**M9BA**∗1	○	○	●	○	○	—	
Reed auto switch	—	Grommet	Yes	3-wire (Equiv. to NPN)	—	5 V	—	**A96V**	**A96**	●	—	●	—	—	IC circuit	—
			None	2-wire	24 V	12 V	100 V	**A93V**∗2	**A93**	●	●	●	●	—	—	Relay, PLC
							100 V or less	**A90V**	**A90**	●	—	●	—	—	IC circuit	

∗1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance.
∗2 1 m type lead wire is only applicable to D-A93.

∗ Lead wire length symbols: 0.5 m····· Nil (Example) M9NW
1 m····· M (Example) M9NWM
3 m····· L (Example) M9NWL
5 m····· Z (Example) M9NWZ

∗ Solid state auto switches marked with "○" are produced upon receipt of order.

∗ Since there are other applicable auto switches than listed, refer to page 387 for details.
∗ For details about auto switches with pre-wired connector, refer to pages 1358 and 1359.
∗ Auto switches are shipped together (not assembled).

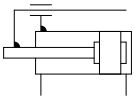


Specifications

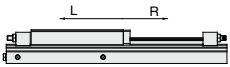
Model	MXW8	MXW12	MXW16	MXW20	MXW25
Bore size (mm)	ø8 x 2 (ø11 or its equivalent)	ø12 x 2 (ø17 or its equivalent)	ø16 x 2 (ø23 or its equivalent)	ø20 x 2 (ø28 or its equivalent)	ø25 x 2 (ø35 or its equivalent)
Piping port size	M5 x 0.8			Rc1/8, NPT1/8, G1/8	
Fluid	Air				
Action	Double acting				
Operating pressure	0.15 to 0.7 MPa				
Proof pressure	1.05 MPa				
Ambient and fluid temperature	–10 to +60°C				
Operating speed range (Average operating speed) Note)	50 to 500 mm/s				
Cushion	Both ends rubber bumper (Standard) Shock absorber at both ends (Option)				
Lubrication	Non-lube				
Auto switch (Option)	Reed auto switch Solid state auto switch (2-wire, 3-wire) 2-color indicator solid state auto switch (2-wire, 3-wire)				
Stroke length tolerance	$^{+1}_{0}$ mm				
Stroke adjustment range	One side: 5 mm (Both sides: 10 mm)				

None) Average operating speed: Speed that the stroke is divided by a period of time from starting the operation to reaching the end.

Symbol
Rubber bumper



<Operating direction>
When viewed from side with lateral ports.
R: Right (OUT side)
L: Left (IN side)



Made to Order:
Individual Specifications
(For details, refer to pages 388 and 389.)

Symbol	Specifications
-X7	PTFE grease
-X9	Grease for food processing machines
-X11	Adjusting bolt, long specification (Adjustment range: 15 mm)
-X33	Without built-in auto switch magnet
-X39	Fluororubber seal
-X42	Anti-corrosive specifications for guide unit

Theoretical Output

Dual rod cylinder produces double the thrust of standard cylinder. (N)

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm²)	Operating pressure (MPa) 0.2	0.3	0.4	0.5	0.6	0.7
8	4	R	101	20	30	40	51	61	71
		L	75	15	23	30	38	45	53
12	6	R	226	45	68	90	113	136	158
		L	170	34	51	68	85	102	119
16	8	R	402	80	121	161	201	241	281
		L	302	60	91	121	151	181	211
20	10	R	628	126	188	251	314	377	440
		L	471	94	141	188	236	283	330
25	12	R	982	196	295	393	491	589	687
		L	756	151	227	302	378	454	529

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

Standard Stroke (mm)/Weight (g)

Model	Standard stroke (mm) 25	50	75	100	125	150	175	200	225	250	275	300	Additional weight of option Shock absorber
MXW8	550	610	700	790	880	980	—	—	—	—	—	—	15
MXW12	—	930	1010	1140	1270	1400	—	—	—	—	—	—	15
MXW16	—	—	1850	1970	2150	2350	2540	2740	—	—	—	—	20
MXW20	—	—	—	4440	4640	5000	5360	5710	6070	6430	—	—	65
MXW25	—	—	—	8310	8620	8960	9470	10050	10620	11190	11780	12340	140

Moisture Control Tube IDK Series

When operating an actuator with a small diameter and a short stroke at a high frequency, the dew condensation (water droplet) may occur inside the piping depending on the conditions.
Simply connecting the moisture control tube to the actuator will prevent dew condensation from occurring.
For details, refer to the **Web Catalog**.

Table Deflection (Reference Values)

The graphs below show the table displacement when the static moment load isapplied to the table.
The graphs do not show the loadable mass Refer to the Model Selection for the loadable mass.

Table displacement due to pitch moment load

Amount of displacement on A when the load is applied at F.

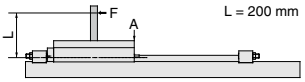


Table displacement due to yaw moment load

Amount of displacement on A when the load is applied at F.

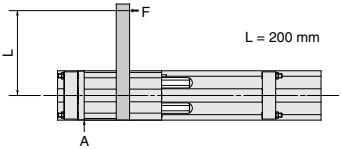
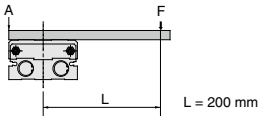
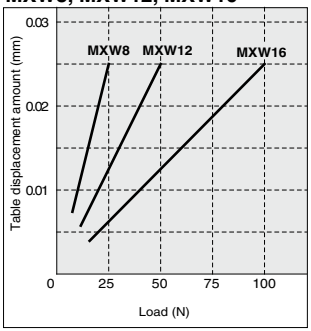


Table displacement due to roll moment load

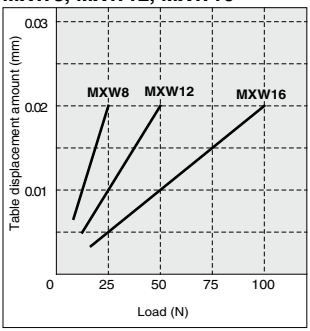
Amount of displacement on A when the load is applied at F.



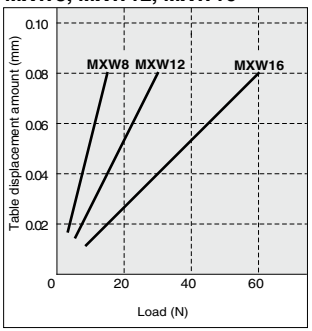
MXW8, MXW12, MXW16



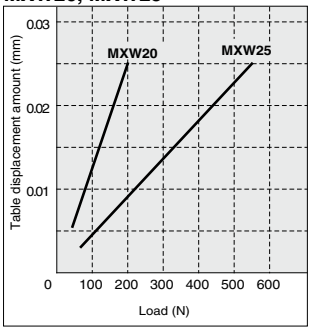
MXW8, MXW12, MXW16



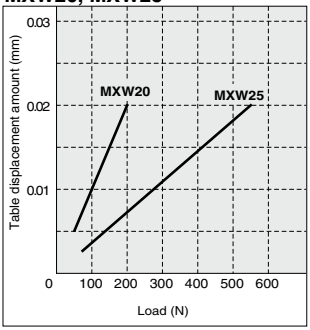
MXW8, MXW12, MXW16



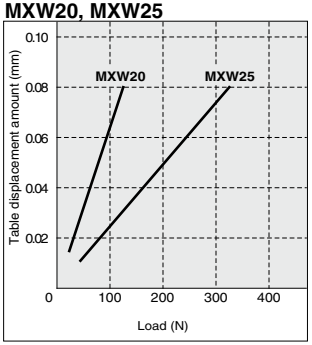
MXW20, MXW25



MXW20, MXW25



MXW20, MXW25



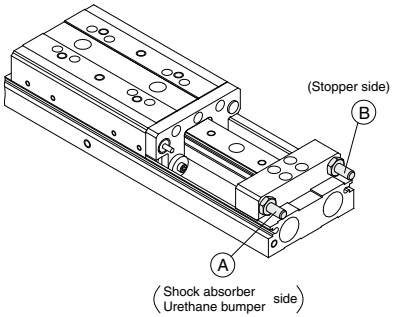
Option Specifications

Stopper Bolt Assembly

Stopper bolt assembly can be ready for the following manner.

Change of adjuster assembly		Qty. needed for stopper bolt assembly		Parts to be Changed (Refer to the figure below.)
		Standard	Semi-standard (-X11)	
Changing the stroke adjustment range from 5 mm to 15 mm for one side	W/o shock absorber	—	2	Replace Ⓐ
	With shock absorber	—	4	Replace ⒶⒷ
Changing to the one with shock absorber		2	—	Add Ⓑ
Changing to the one with shock absorber and stroke adjustment range of 15 mm		—	4	Replace Ⓐ Add Ⓑ

Note 1) When only one side of stroke is changed, the quantity needed is the half of the above.
Note 2) Shock absorber must be ordered separately.
For the shock absorber model numbers, refer to page 374.



How to Order Stopper Bolt Assembly

MXW −A 16 12− X11

Applicable bore size

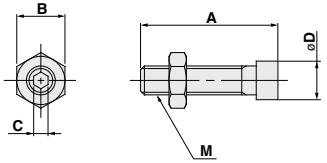
8	ø8
12	ø12
16	ø16
20	ø20
25	ø25

Adjustment range

Nil	5 mm	Standard
X11	15 mm	Option

Note 1) The above model number is one adjuster bolt assembly only.

Dimensions



Applicable size	Model	Stroke adjustable range (mm)	A	B	C	D	M
MXW8	MXW-A812	5	21	8	2.5	6	M5 x 0.5
	MXW-A812-X11	15	31				
MXW12	MXW-A1212	5	23.5	8	2.5	6	M5 x 0.8
	MXW-A1212-X11	15	33.5				
MXW16	MXW-A1612	5	28.5	10	3	8	M6 x 1
	MXW-A1612-X11	15	38.5				
MXW20	MXW-A2012	5	34.5	13	4	10	M8 x 1.25
	MXW-A2012-X11	15	44.5				
MXW25	MXW-A2512	5	40	17	5	14	M10 x 1.5
	MXW-A2512-X11	15	50				

⚠Precautions

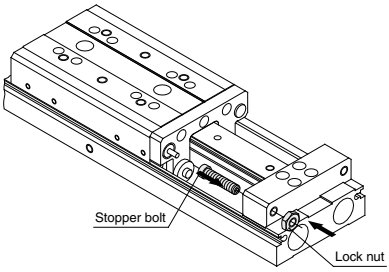
Mounting/Adjustment

⚠Caution

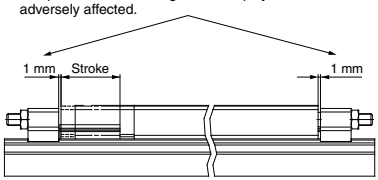
① Do not operate within 1 mm.
The effectiveness of the shock absorber and urethane bumper will not be brought into full play, and could be adversely affected.

How to mount

1. Thread in the adjuster bolt from the direction of the arrow.
2. Fasten the lock nut from the direction of the arrow.



Avoid operating within 1 mm.
The effectiveness of the shock absorber and urethane damper will not be brought into full play, and could be adversely affected.



Option Specifications

Shock Absorber

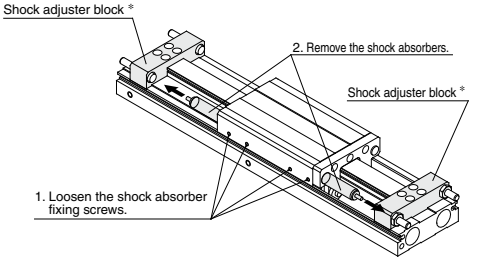
Specifications

Shock absorber model		RB0805 -X552	RB0806 -X552	RB1007 -X552	RB1412 -X552	RB2015 -X552
Applicable slide table		MXW8	MXW12	MXW16	MXW20	MXW25
Max. absorbing energy (J)		0.98	2.94	5.88	19.6	58.8
Stroke absorption (mm)		5	6	7	12	15
Max. collision speed (m/sec)		0.05 to 5				
Max. operating frequency (cycle/min)		80	80	70	45	25
Max. allowable thrust (N)		245	245	422	814	1961
Ambient temperature range (°C)		−10 to 80				
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
Weight (g)		15	15	25	65	150

Note) The shock absorber service life is different from that of the MXW cylinder depending on operating conditions. Refer to the Specific Product Precautions for the replacement period.

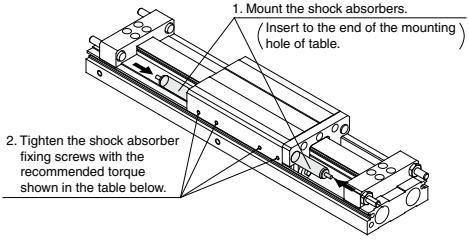
How to Replace

① **How to Remove**



* In the case of MXW8-25, first take out the adjuster block, and then the shock absorber.
Tighten the mounting bolt with the torque 0.3 N·m when assembling the adjuster block.

② **How to Mount**



Recommended Tightening Torque

Model	Shock absorber fixing thread size	Recommended tightening torque (N·m)	Hexagon wrench width across flats (mm)
MXW8	M3 x 4	0.6	1.5
MXW12	M3 x 4	0.6	1.5
MXW16	M3 x 4	0.6	1.5
MXW20	M4 x 5	0.8	2
MXW25	M5 x 6	1	2.5

⚠Precautions

Adjustment

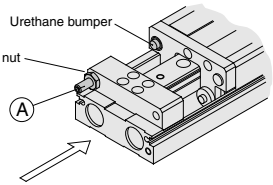
⚠Caution

① **Do not operate in such a state that the stopper blocks and stopper bolts on both sides are removed.**

Doing so could create shocks, which could loosen and cause damage.

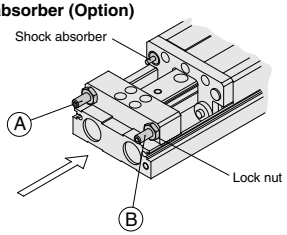
Stroke adjustment

1. Standard



Loosen the stopper bolt lock nut on side Ⓐ, insert a wrench in the direction of the arrow to adjust the stroke, and then tighten the lock nut.

2. With shock absorber (Option)



Stroke adjustment

- Loosen the stopper bolt lock nut on side Ⓑ, insert a wrench in the direction of the arrow to adjust the stroke, and then tighten the lock nut.

Stroke absorption adjustment for shock absorber

- Loosen the stopper bolt lock nut on side Ⓐ, insert a wrench in the direction of the arrow to adjust the stroke, and then tighten the lock nut.

Service Life and Replacement Period of Shock Absorber

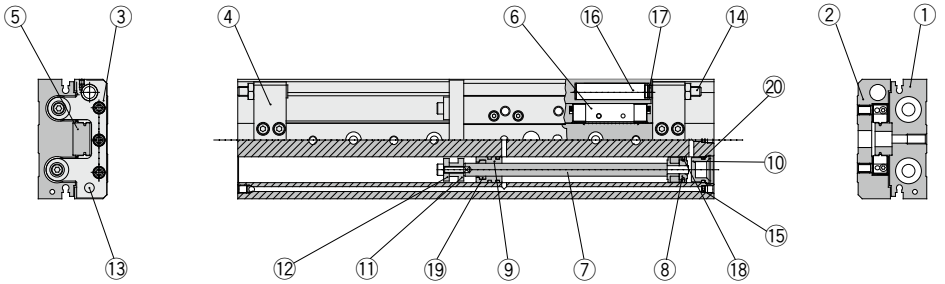
⚠Caution

1. Allowable operating cycle under the specifications set in this catalog is shown below.

1.2 million cycles RB08□□
2 million cycles RB1007 to RB2015

Note) Specified service life (suitable replacement period) is the value at room temperature (20 to 25°C). The period may vary depending on the temperature and other conditions. In some cases the absorber may need to be replaced before the allowable operating cycle above.

Construction



Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum alloy	Hard anodized
2	**Table**	Aluminum alloy	Hard anodized
3	**End plate**	Aluminum alloy	Hard anodized
4	**Stopper block**	Aluminum alloy	Hard anodized
5	**Rail**	Hardening steel	Heat treated
6	**Guide block**	Hardening steel	Heat treated
7	**Rod**	Stainless steel	
8	**Piston assembly**	—	With magnet
9	**Rod cover**	Aluminum alloy	
10	**Head cap**	Resin	
11	**Floating bushing A**	Stainless steel	
12	**Floating bushing B**	Stainless steel	
13	**Stopper**	Stainless steel	Heat treated
14	**Stopper bolt**	Carbon steel	Heat treated, Electroless nickel plated
15	**Orifice**	Brass	Electroless nickel plated
16	**Absorber shaft**	Aluminum alloy	Chromate treated
17	**Adjusting bumper**	Polyurethane	
18	**Piston seal**	NBR	
19	**Rod seal**	NBR	
20	**O-ring**	NBR	

Replacement Parts: Seal Kit

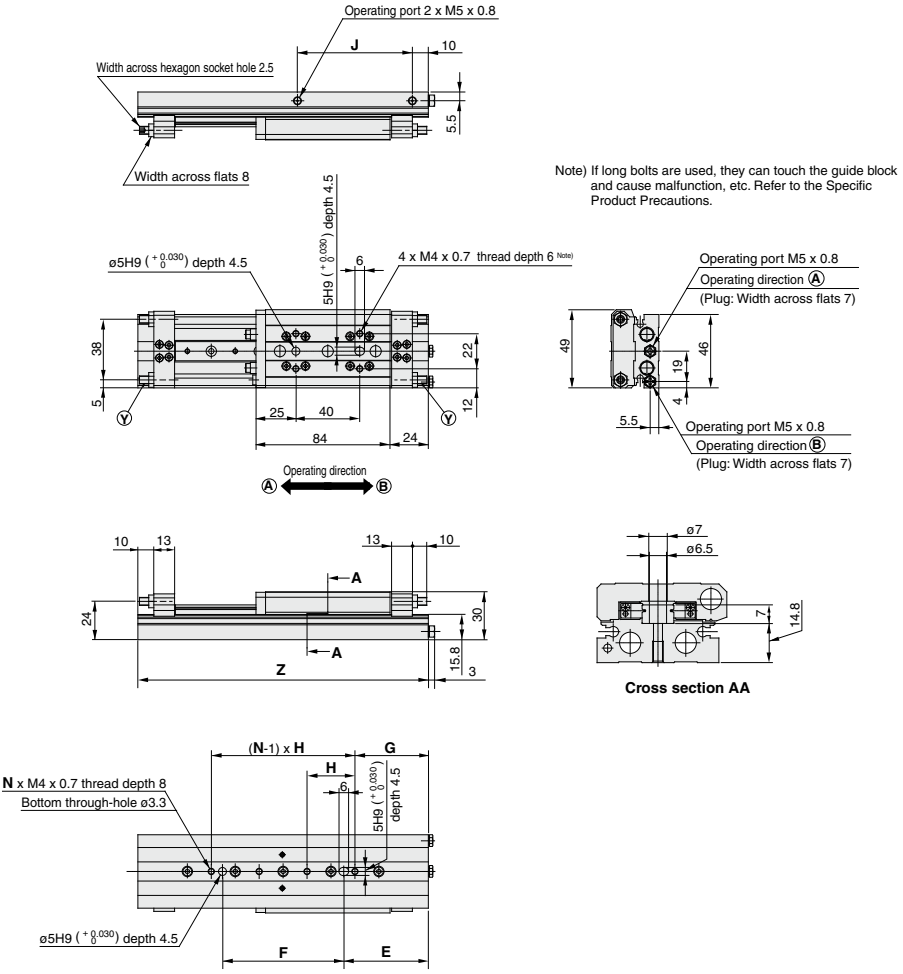
Bore size (mm)	Kit no.	Contents
8	MXW8-PS	Set of nos. above ⑱, ⑲, ⑳
12	MXW12-PS	
16	MXW16-PS	
20	MXW20-PS	
25	MXW25-PS	

∗ Seal kit includes ⑱, ⑲, ⑳, Order the seal kit, based on each bore size.

Replacement Part: Grease Pack

Applied part	Grease pack part no.
Guide	GR-S-010 (10 g) GR-S-020 (20 g)
Cylinder	GR-L-005 (5 g) GR-L-010 (10 g)

MXW8/Stroke: 25, 50 mm

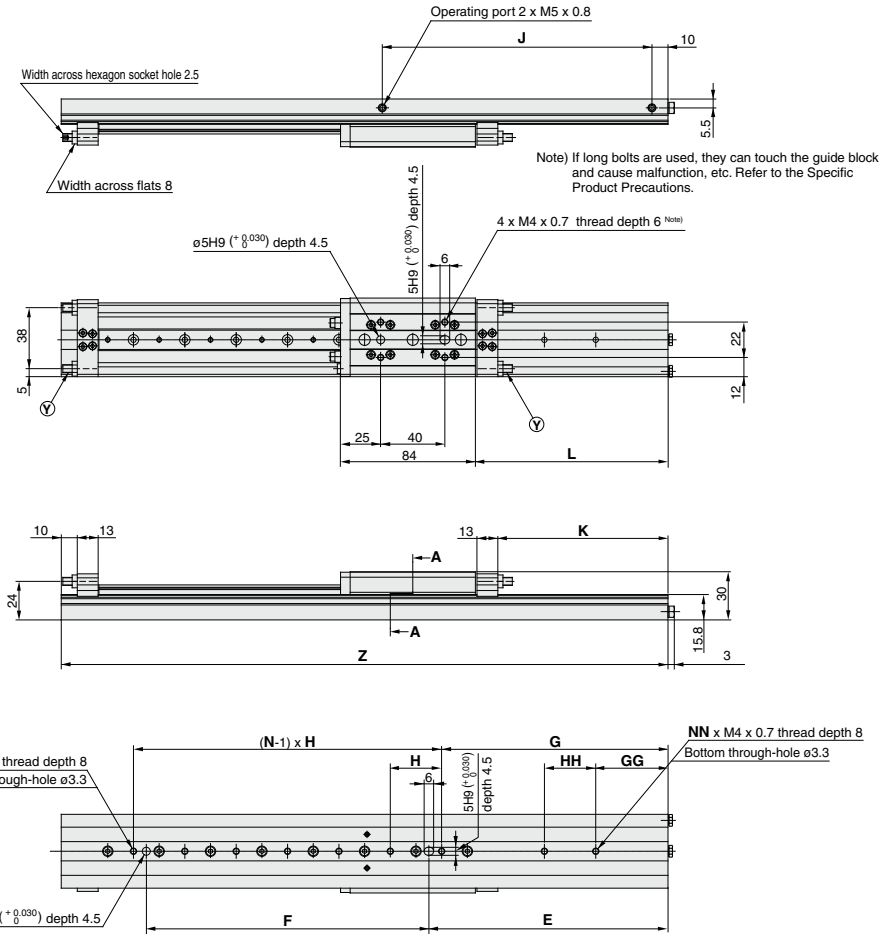


(mm)

Model	E	F	G	H	J	N	Z
MXW8-25	55	48	47	32	64	3	157
MXW8-50	53	76	46	30	71	4	182

Note) Stopper bolt Ⓨ shown in the section above is attached only on B type (with shock absorber).

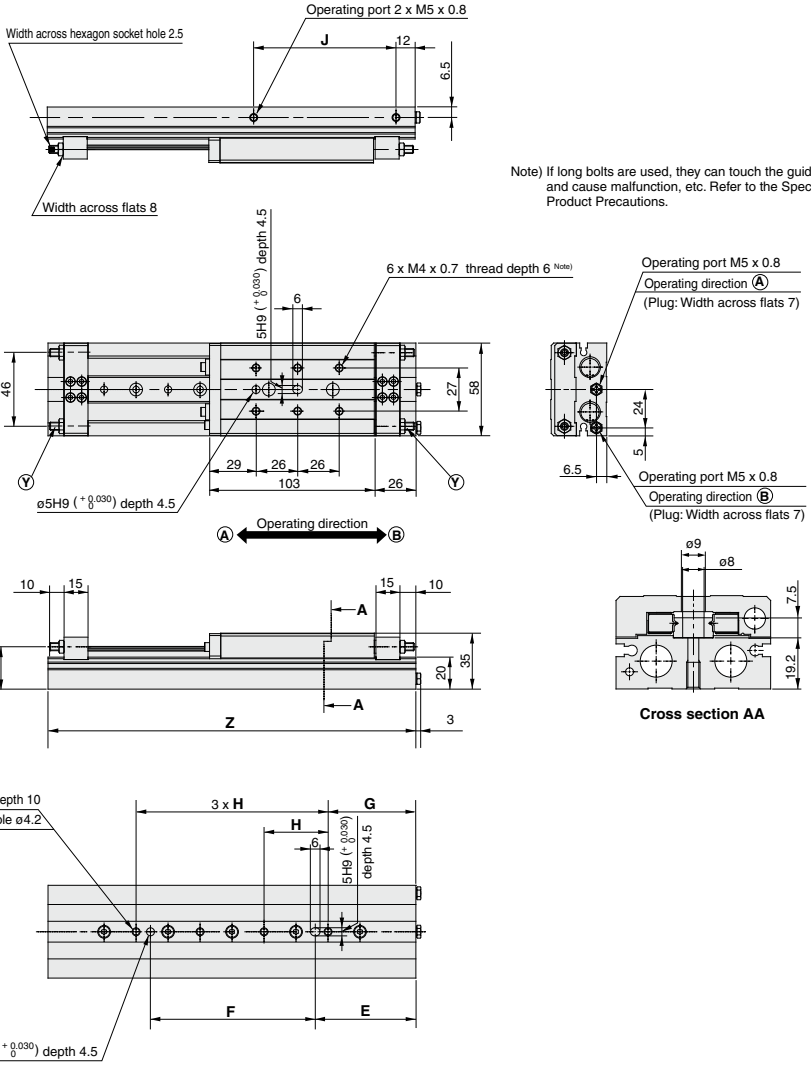
MXW8/Stroke: 75, 100, 125, 150 mm



(mm)

Model	E	F	G	GG	H	HH	J	K	L	N	NN	Z
MXW8-75	71	106	64	19	30	—	92	31	45	5	1	228
MXW8-100	106	112	98	34	32	—	115	56	70	5	1	278
MXW8-125	129	144	121	25	32	32	138	81	95	6	2	328
MXW8-150	149	176	141	45	32	32	168	106	120	7	2	378

MXW12/Stroke: 50, 75 mm

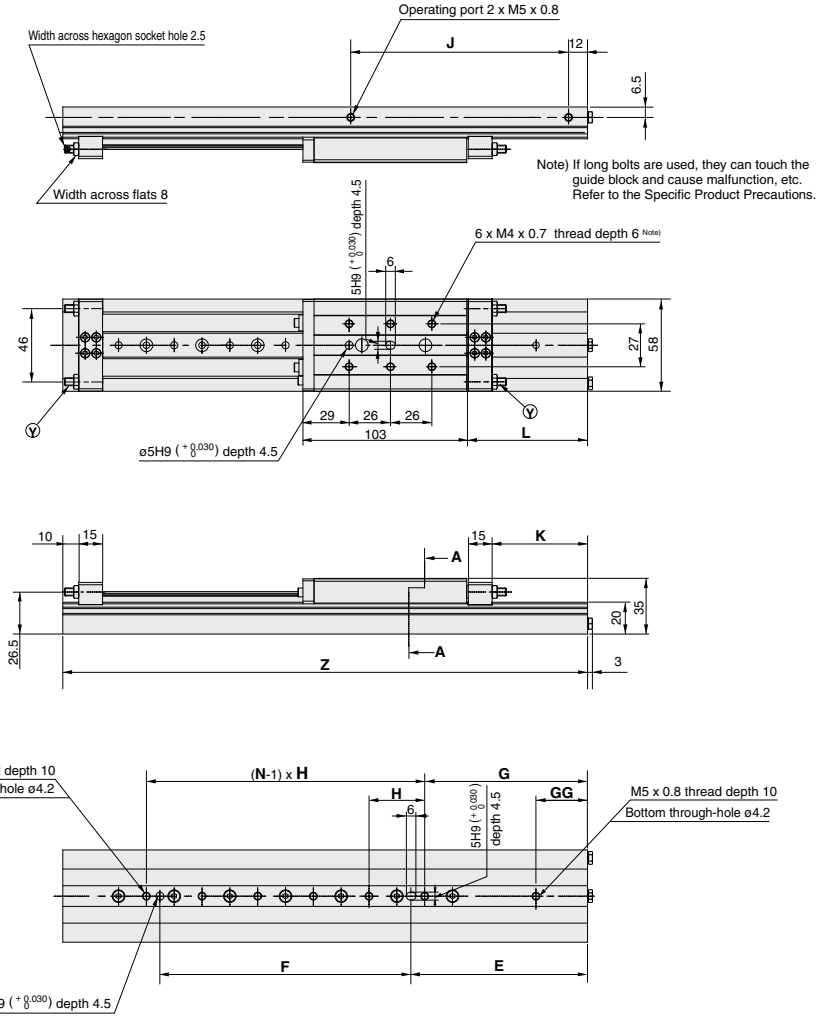


(mm)

Model	E	F	G	H	J	Z
MXW12-50	58	88	50	35	84	205
MXW12-75	63	103	55	40	89	230

Note) Stopper bolt Ⓨ shown in the section above is attached only on B type (with shock absorber).

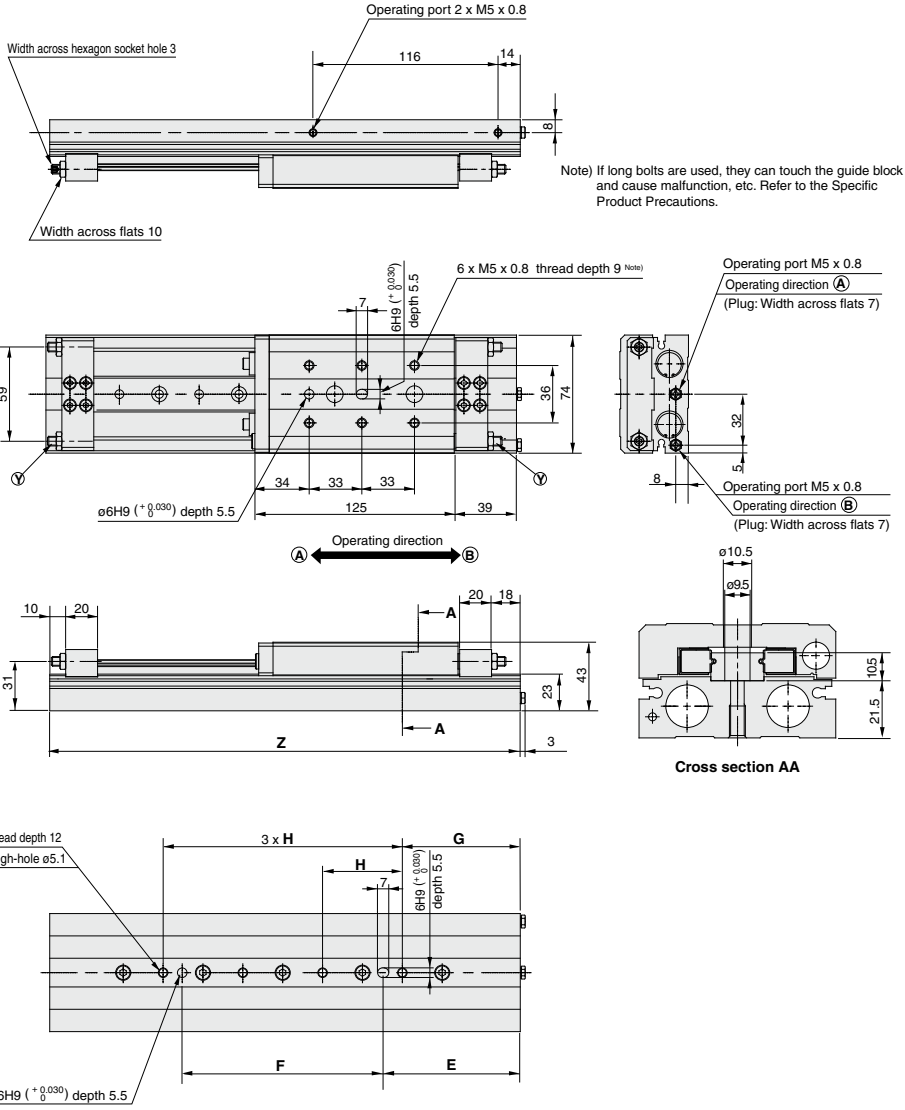
MXW12/Stroke: 100, 125, 150 mm



(mm)

Model	E	F	G	GG	H	J	K	L	N	Z
MXW12-100	91	123	82.5	30	35	114	35	51	5	280
MXW12-125	111	158	102.5	32.5	35	137	60	76	6	330
MXW12-150	136	182	127.5	47.5	40	164	85	101	6	380

MXW16/Stroke: 75, 100 mm

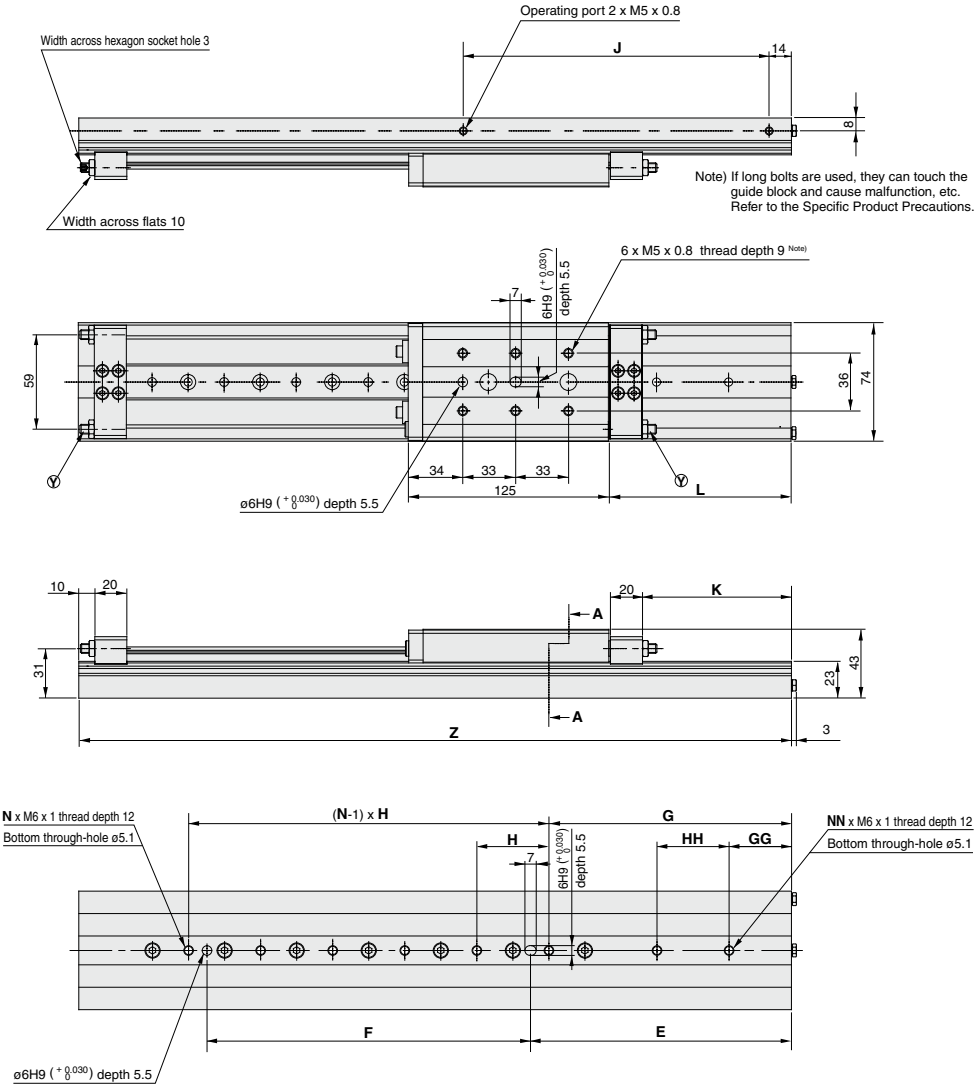


(mm)

Model	E	F	G	H	Z
MXW16-75	83	112	71.5	45	270
MXW16-100	86	126	74	50	295

Note) Stopper bolt Ⓨ shown in the section above is attached only on B type (with shock absorber).

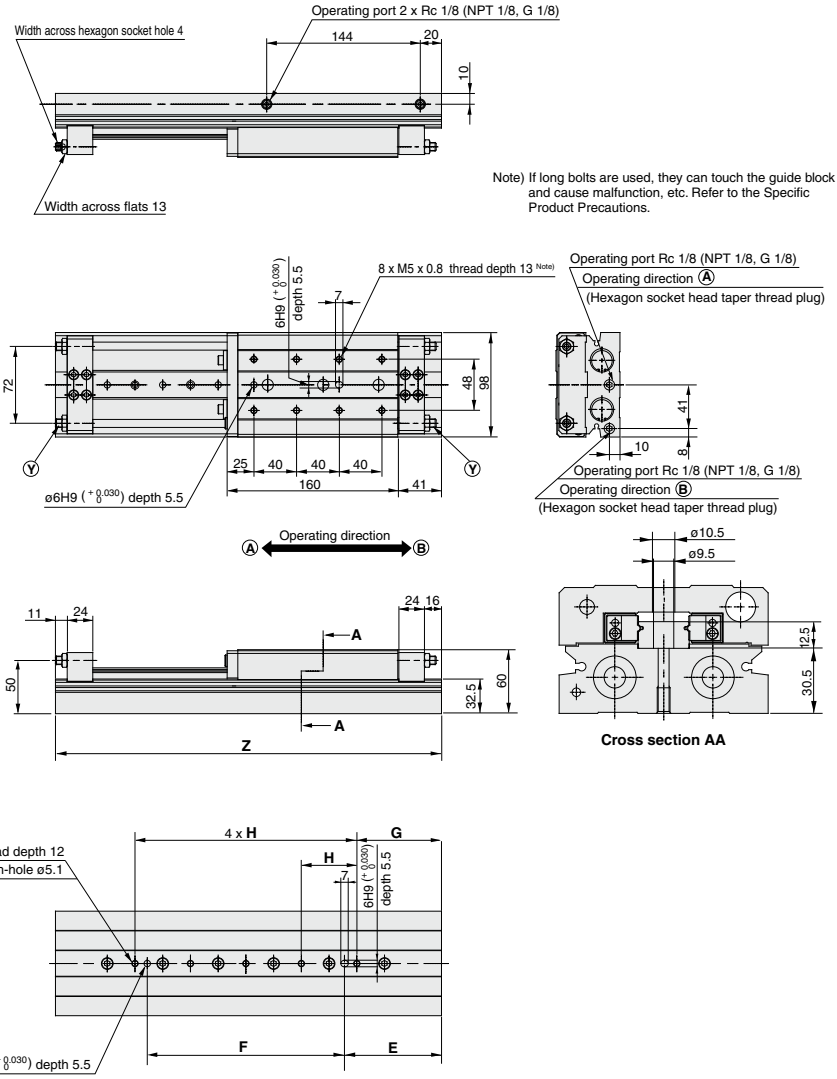
MXW16/Stroke: 125, 150, 175, 200 mm



(mm)

Model	E	F	G	GG	H	HH	J	K	L	N	NN	Z
MXW16-125	110	157	99	31.5	45	—	141	43	64	5	1	345
MXW16-150	136	176	124	24	50	—	166	68	89	5	1	395
MXW16-175	163	202	151.5	39	45	45	191	93	114	6	2	445
MXW16-200	186	226	174	24	50	50	216	118	139	6	2	495

MXW20/Stroke: 100, 125 mm

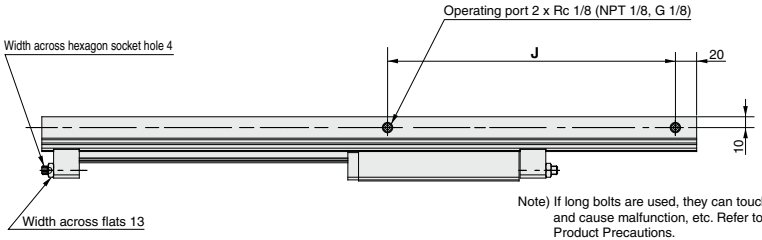


(mm)

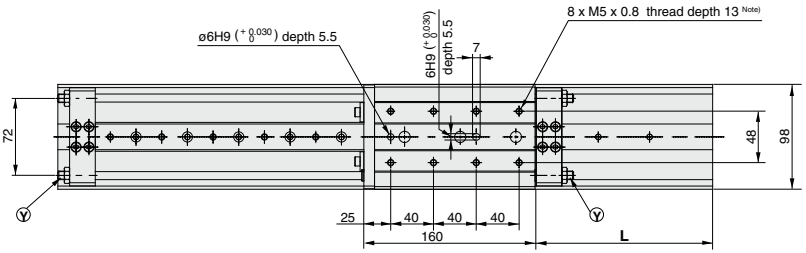
Model	E	F	G	H	Z
MXW20-100	87	168	75	48	337
MXW20-125	91	185	79.5	52	362

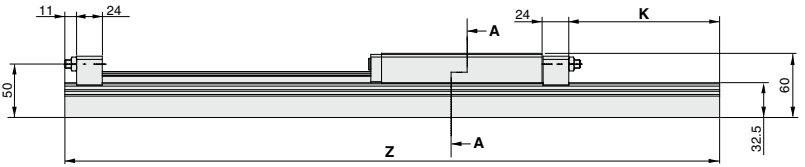
Note) Stopper bolt Ⓨ shown in the section above is attached only on B type (with shock absorber).

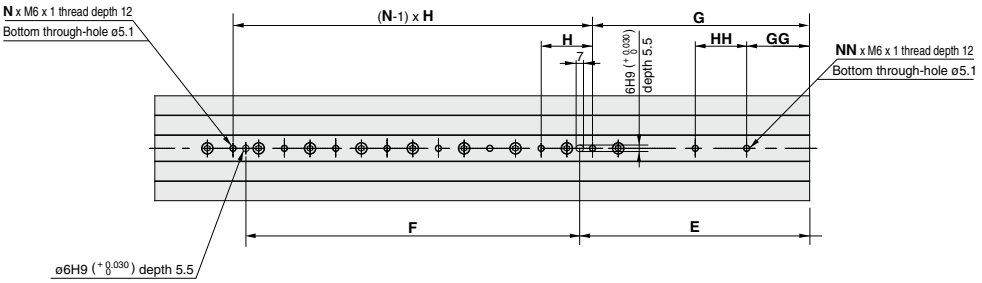
MXW20/Stroke: 150, 175, 200, 225, 250 mm



Note) If long bolts are used, they can touch the guide block and cause malfunction, etc. Refer to the Specific Product Precautions.



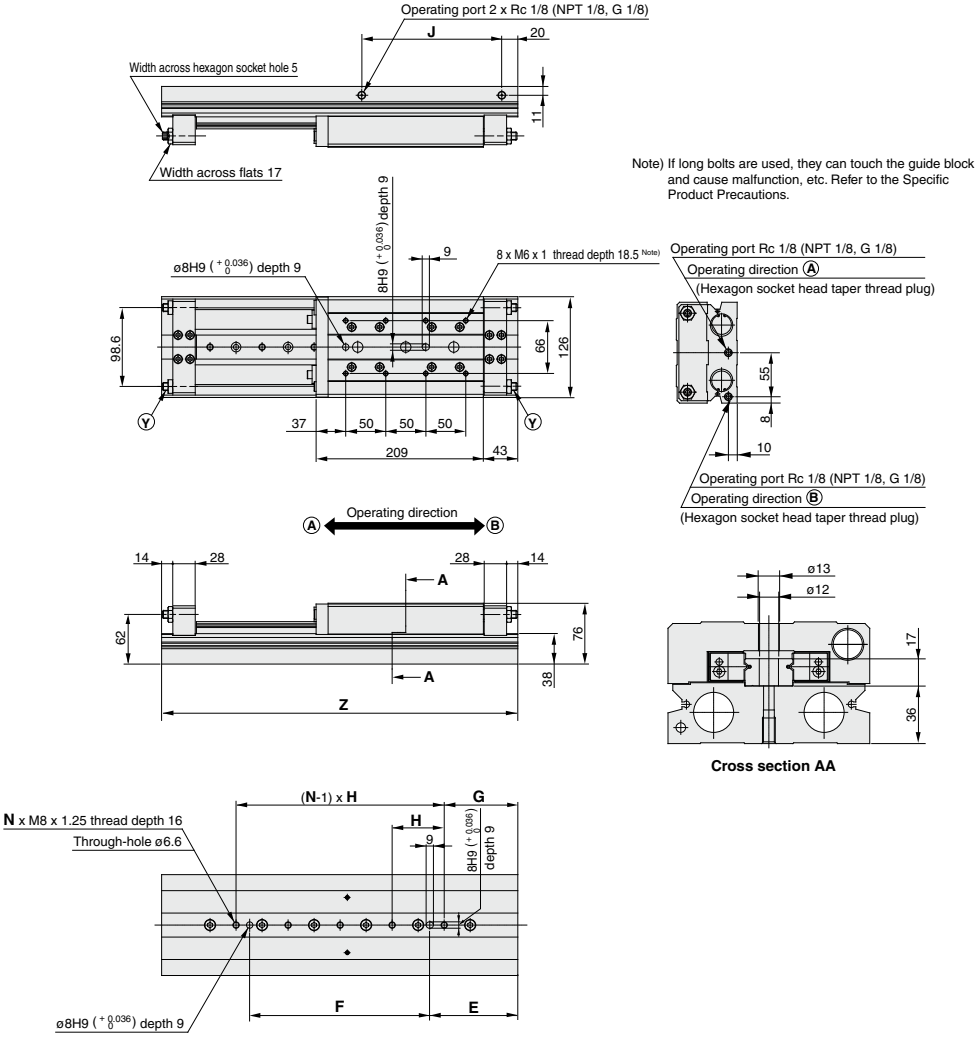




(mm)

Model	E	F	G	GG	H	HH	J	K	L	N	NN	Z
MXW20-150	113	216	101	29	48	—	169	41	66	6	1	412
MXW20-175	140	237	128.5	50.5	52	—	194	66	91	6	1	462
MXW20-200	164	264	152	56	48	—	219	91	116	7	1	512
MXW20-225	189	288	177.5	73.5	52	—	244	116	141	7	1	562
MXW20-250	215	312	203	59	48	48	269	141	166	8	2	612

MXW25/Stroke: 100, 125, 150 mm

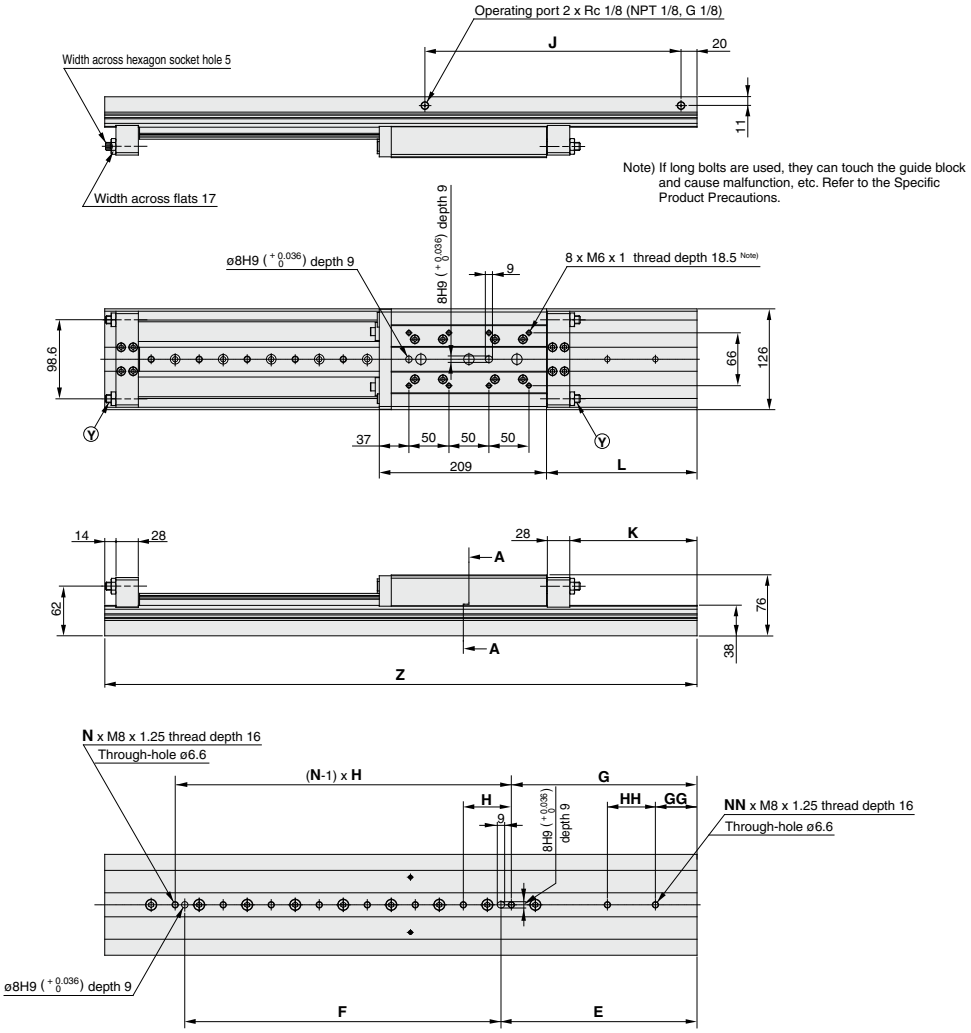


(mm)

Model	E	F	G	H	J	N	Z
MXW25-100	115	165	100	65	165	4	395
MXW25-125	105	210	90	60	180	5	420
MXW25-150	110	225	92	65	180	5	445

Note) Stopper bolt Ⓨ shown in the section above is attached only on B type (with shock absorber).

MXW25/Stroke: 175, 200, 225, 250, 275, 300 mm

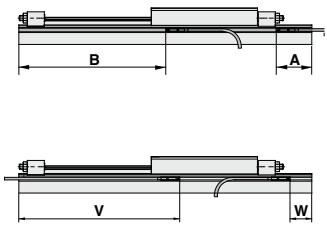


(mm)

Model	E	F	G	GG	H	HH	J	K	L	N	NN	Z
MXW25-175	120	270	105	—	60	—	195	34	63	6	—	490
MXW25-200	155	275	142	—	60	—	225	59	88	6	—	540
MXW25-225	175	305	165	55	55	—	245	84	113	7	1	590
MXW25-250	200	335	187	67	60	—	275	109	138	7	1	640
MXW25-275	225	360	210	80	65	—	300	134	163	7	1	690
MXW25-300	245	395	232	52	60	60	320	159	188	8	2	740

Auto Switch Mounting

Auto Switch Proper Mounting Position (Detection at Stroke End)



Reed Auto Switch: D-A90 (V), D-A93 (V), D-A96 (V)

Model		Stroke (mm)											
		25	50	75	100	125	150	175	200	225	250	275	300
MXW8	A	52.5	31.5	27.5	27.5	27.5	27.5	—	—	—	—	—	—
	B	79.5	100.5	125.5	150.5	175.5	200.5	—	—	—	—	—	—
	W	32.5	11.5	7.5	7.5	7.5	7.5	—	—	—	—	—	—
	V	99.5	120.5	145.5	170.5	195.5	220.5	—	—	—	—	—	—
MXW12	A	—	51	31	31	31	31	—	—	—	—	—	—
	B	—	104	124	149	174	199	—	—	—	—	—	—
	W	—	31	11	11	11	11	—	—	—	—	—	—
	V	—	124	144	169	194	219	—	—	—	—	—	—
MXW16	A	—	—	59.5	34.5	34.5	34.5	34.5	34.5	—	—	—	—
	B	—	—	135.5	160.5	185.5	210.5	235.5	260.5	—	—	—	—
	W	—	—	39.5	14.5	14.5	14.5	14.5	14.5	—	—	—	—
	V	—	—	155.5	180.5	205.5	230.5	225.5	280.5	—	—	—	—
MXW20	A	—	—	—	68.5	43.5	43.5	43.5	43.5	43.5	43.5	—	—
	B	—	—	—	168.5	193.5	218.5	243.5	268.5	293.5	318.5	—	—
	W	—	—	—	48.5	23.5	23.5	23.5	23.5	23.5	23.5	—	—
	V	—	—	—	188.5	213.5	238.5	263.5	288.5	313.5	338.5	—	—
MXW25	A	—	—	—	86.5	74.5	44.5	44.5	44.5	44.5	44.5	44.5	44.5
	B	—	—	—	208.5	220.5	250.5	270.5	295.5	320.5	345.5	370.5	395.5
	W	—	—	—	66.5	54.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5
	V	—	—	—	228.5	240.5	270.5	290.5	315.5	340.5	365.5	390.5	415.5

Solid State Auto Switch: D-M9B (V), D-M9N (V), D-M9P (V)

2-Color Indicator Solid State Auto Switch: D-M9BW (V), D-M9NW (V), D-M9PW (V), D-M9□A (V)

Model		Stroke (mm)											
		25	50	75	100	125	150	175	200	225	250	275	300
MXW8	A	48.5	27.5	23.5	23.5	23.5	23.5	—	—	—	—	—	—
	B	83.5	104.5	129.5	154.5	179.5	204.5	—	—	—	—	—	—
	W	36.5	15.5	11.5	11.5	11.5	11.5	—	—	—	—	—	—
	V	95.5	116.5	141.5	166.5	191.5	216.5	—	—	—	—	—	—
MXW12	A	—	47	27	27	27	27	—	—	—	—	—	—
	B	—	108	128	153	178	203	—	—	—	—	—	—
	W	—	35	15	15	15	15	—	—	—	—	—	—
	V	—	120	140	165	190	215	—	—	—	—	—	—
MXW16	A	—	—	55.5	30.5	30.5	30.5	30.5	30.5	—	—	—	—
	B	—	—	140	165	190	215	240	265	—	—	—	—
	W	—	—	43.5	18.5	18.5	18.5	18.5	18.5	—	—	—	—
	V	—	—	152	177	202	227	252	277	—	—	—	—
MXW20	A	—	—	—	64.5	39.5	39.5	39.5	39.5	39.5	39.5	—	—
	B	—	—	—	172.5	197.5	222.5	247.5	272.5	297.5	322.5	—	—
	W	—	—	—	52.5	27.5	27.5	27.5	27.5	27.5	27.5	—	—
	V	—	—	—	184.5	209.5	234.5	259.5	284.5	309.5	334.5	—	—
MXW25	A	—	—	—	82.5	70.5	40.5	40.5	40.5	40.5	40.5	40.5	40.5
	B	—	—	—	212.5	224.5	254.5	274.5	299.5	324.5	349.5	374.5	399.5
	W	—	—	—	70.5	58.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5
	V	—	—	—	224.5	236.5	266.5	286.5	311.5	336.5	361.5	386.5	411.5

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

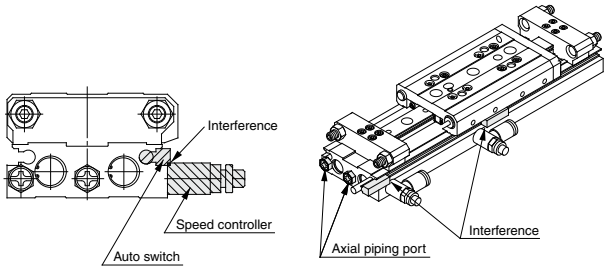
Operating Range

Auto switch model	Applicable bore size (mm)				
	8	12	16	20	25
D-A9□ **D-A9□V**	6	6	8.5	10	10
D-M9□ **D-M9□V** **D-M9□W** **D-M9□WV** **D-M9□A** **D-M9□AV**	3.5	3.5	5	6	5.5

∗ Since the operating range is provided as a guideline including hysteresis, it cannot be guaranteed (assuming approximately ±30% dispersion). It may vary substantially depending on an ambient environment.

⚠ Caution

Caution on Handling Auto Switches/For MXW8 only



When an auto switch is installed on the port side of MXW8, some switches could interfere with the speed controller or a fitting. Therefore, use one of the methods described below for installing the auto switch.

1. Use the port for piping in the axial direction.
2. Install an auto switch on the opposite side of the port.
3. Use a pipe fitting with 7 mm width across flats or ø8 external diameter or less.

- **M-5J** (Extension fittings) + **AS1201F-M5-04** (Speed controller with One-touch fittings, Elbow type)
- **KJL04-M5** (One-touch fitting) + **AS1001F-04** (Speed controller with One-touch fittings, In-line type)

Table for Auto Switch Interference with Speed Controller and Fittings

Auto switch model	Electrical entry direction	Wiring type	Auto switch model
Solid state auto switch **D-M9□V**	Perpendicular	3-wire	**D-M9NV, D-M9PV**
		2-wire	**D-M9BV**
2-color indicator solid state auto switch **D-M9□WV**	Perpendicular	3-wire	**D-M9NWV, D-M9PWV**
		2-wire	**D-M9BWV**
Water resistant 2-color indicator solid state auto switch **D-M9□AV**	Perpendicular	3-wire	**D-M9NAV, D-M9PAV**
		2-wire	**D-M9BAV**

Auto Switch Mounting

⚠ Caution

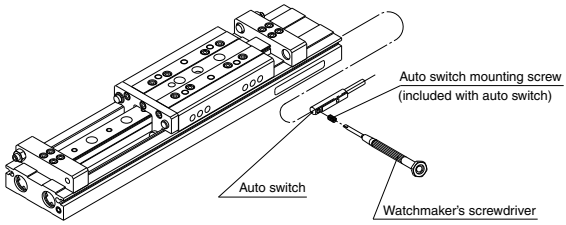
Auto Switch Mounting Tool

- When adjusting the auto switch mounting screw (included with auto switch), use a watchmaker's screwdriver with a handle about 5 to 6 mm in diameter.

Tightening torque

Tightening Torque of Auto Switch Mounting Screw (N·m)

Auto switch model	Tightening torque
D-A9□ (V)	0.10 to 0.20
D-M9□ (V) **D-M9□W (V)**	0.05 to 0.15
D-M9□A (V)	0.05 to 0.10



Other than the models listed in "How to Order", the following auto switches are applicable.

∗ Normally closed (NC = b contact) solid state auto switches (D-M9□E(V)) and solid state auto switch D-F8 are also available. For details, refer to pages 1307 and 1308.

Made to Order: Individual Specifications 1

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

Made to Order

1 PTFE Grease

Symbol **-X7**

MXW | Standard model no. | — X7

X7: PTFE grease

PTFE grease is used for all parts that grease is applied.
For the type with a shock absorber, standard grease is used on the shock absorber part.

Specifications

Type	PTFE grease
Bore size (mm)	8, 12, 16, 20, 25

∗ Dimensions other than the above is the same as the standard type.

⚠ Warning

Precautions

Be aware that smoking cigarettes, etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

2 Grease for Food Processing Machines

Symbol **-X9**

MXW | Standard model no. | — X9

X9: Grease for food processing machines

Grease for food processing machines is used for all parts that grease is applied.
For the type with a shock absorber, standard grease is used on the shock absorber part.

Specifications

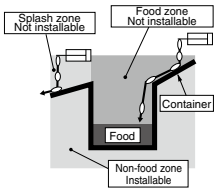
Type	Grease for Food Processing Machines (NSF-H1 certified)/ Aluminum Complex Soap Base Grease
Bore size (mm)	8, 12, 16, 20, 25

∗ Dimensions other than the above is the same as the standard type.

⚠ Caution

1. Do not use in a food contact environment.
2. Do not use in a liquid splash environment, e.g. water, detergent, liquid chemicals.

<Not installable>
Food zone
An environment where food which will be sold as merchandise directly touches the cylinder's components
Splash zone
An environment where food which will not be sold as merchandise directly touches the cylinder's components
<Installable>
Non-food zone
An environment where there is no contact with food



3 Without Built-in Auto Switch Magnet

Symbol **-X33**

MXW | Standard model no. | — X33

X33: Without built-in auto switch magnet

Auto switch magnet is not built in.

Specifications

Type	Without built-in auto switch magnet
Bore size (mm)	8, 12, 16, 20, 25
Auto switch	Not mountable

∗ Dimensions other than the above is the same as the standard type.

4 Fluororubber Seal

Symbol **-X39**

MXW | Standard model no. | — X39

X39: Fluororubber seal

Change the materials for the piston seal, rod seal, O-rings and scrapers (rubber lined parts) to fluororubber.

Specifications

Type	Fluororubber seal
Bore size (mm)	8, 12, 16, 20, 25
Seal material	Fluororubber

∗ Dimensions other than the above is the same as the standard type.

5 Anti-corrosive Specifications for Guide Unit

Symbol **-X42**

MXW | Standard model no. | — X42

X42: Anti-corrosive Specifications for Guide Unit

Rail and guide are given anti-corrosive treatment.

Specifications

Type	Anti-corrosive guide unit
Bore size (mm)	8, 12, 16, 20, 25
Surface treatment	Special anti-corrosive treatment (2)

∗ 1 Dimensions other than the above is the same as the standard type.
∗ 2 Special anti-corrosive treatment makes the rail and the guide black.

Made to Order: Individual Specifications 2

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

Made to Order

Symbol

6 Adjusting Bolt, Long Specification (Adjustment range: 15 mm) -X11

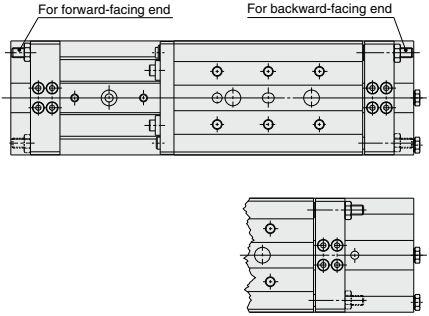
MXW | Standard model no. | — X11

Adjusting bolt, long specification
(Adjustment range: 15 mm)

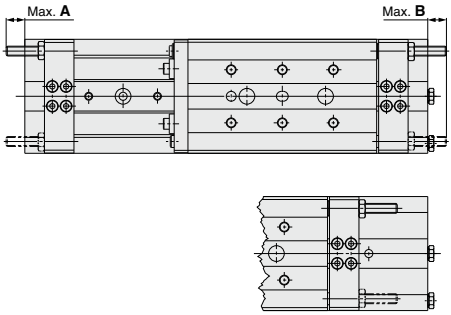
The average adjusting stroke range was extended from 5 mm to 15 mm with a long adjusting bolt.

Dimensions

Standard product



-X11



(mm)

Model	Storoke	A	B
MXW8	25, 50	9	9
	75 to 150	9	—
MXW12	50, 75	9.5	9.5
	100 to 150	9.5	—
MXW16	75, 100	9.5	1.5
	125 to 200	9.5	—
MXW20	100, 125	10	10
	150 to 250	10	—
MXW25	100 to 150	9	9
	175 to 300	9	—

MXW Series
Specific Product Precautions 1

Be sure to read this before handling the products.
Refer to page 8 for safety instructions and pages 9 to 18 for actuator and auto switch precautions.

Selection

⚠ Caution

1. Operate loads within the range of the operating limits.
Select the model considering maximum load mass and allowable moment. For details, refer to "Model Selection" on pages 368 to 369. When actuator is used outside of operating limits, eccentric loads on guide will be in excess of this causing vibration on guide, inaccuracy, and shortened life.

2. If an intermediate stop is performed by an external stopper, be careful of ejection.
If lurching occurs, damage can result. If a slide table is stopped at an intermediate position by an external stopper and then moved forwards, after the slide table is returned to the back to retract the stopper, supply pressure to the opposite port to operate the slide table.

3. Do not use the product in such a way that excessive external force or impact force is applied to it.
This could result in damage.

Mounting

⚠ Caution

1. Do not apply scratches and dents on mounting side of body and table (guide table).
The damage will decrease parallelism, increase vibration of guide and increase moving part resistance.

2. Do not scratch or dent on the forward side of the rail.
This could result in looseness and increased operating resistance, etc.

3. Keep away from objects which are influenced by magnets.
As the piston part has magnets built-in, do not allow close contact with a magnetic disk, magnetic card, or magnetic tape. Data might be erased.

4. When mounting the body, use screws with appropriate length and do not exceed the maximum tightening torque.
Tightening with a torque above the limit could malfunction. Whereas tightening insufficiently could result in misalignment or come to a drop.

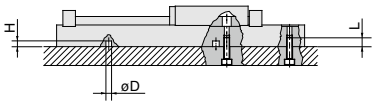
Mounting

⚠ Caution

Mounting of Body

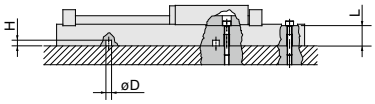
The slide table can be mounted from 2 directions.
Select the best direction according to application requirement.

1. Body tapped



Model	Bolt	Max. tightening torque (N·m)	Max. screw-in depth L (mm)	Positioning hole øD x H (mm)
MXW8	M4 x 0.7	2.1	8	ø5H9 $^{+0.030}_{0}$ depth 4.5
MXW12	M5 x 0.8	4.4	10	ø5H9 $^{+0.030}_{0}$ depth 4.5
MXW16	M6 x 1	7.4	12	ø6H9 $^{+0.030}_{0}$ depth 5.5
MXW20	M6 x 1	7.4	12	ø6H9 $^{+0.030}_{0}$ depth 5.5
MXW25	M8 x 1.25	18	16	ø8H9 $^{+0.036}_{0}$ depth 9

2. Through-hole



Model	Bolt	Max. tightening torque (N·m)	Depth L (mm)	Positioning hole øD x H (mm)
MXW8	M3 x 0.5	1.2	14.8	ø5H9 $^{+0.030}_{0}$ depth 4.5
MXW12	M4 x 0.7	2.1	19.2	ø5H9 $^{+0.030}_{0}$ depth 4.5
MXW16	M5 x 0.8	4.4	21.5	ø6H9 $^{+0.030}_{0}$ depth 5.5
MXW20	M5 x 0.8	4.4	30.5	ø6H9 $^{+0.030}_{0}$ depth 5.5
MXW25	M6 x 1	7.4	36	ø8H9 $^{+0.036}_{0}$ depth 9

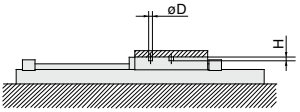
MXW Series
Specific Product Precautions 2

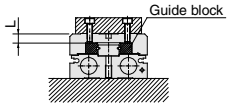
Be sure to read this before handling the products.
Refer to page 8 for safety instructions and pages 9 to 18 for actuator and auto switch precautions.

Mounting

⚠ Caution

Mounting of Workpiece





⚠ Caution

1. To prevent the workpiece holding bolts from touching the guide block, use bolts that are 0.5 mm or more shorter than the maximum screw-in depth.
If the bolts are too long, they come in contact with the guide block, which could lead to a malfunction.

Model	Bolt	Max. tightening torque (N·m)	Max. screw-in depth L (mm)	Positioning hole øD x H (mm)
MXW8	M4 x 0.7	2.1	6	ø5H9 $^{+0.030}_{0}$ depth 4.5
MXW12	M4 x 0.7	2.1	6	ø5H9 $^{+0.030}_{0}$ depth 4.5
MXW16	M5 x 0.8	4.4	9	ø6H9 $^{+0.030}_{0}$ depth 5.5
MXW20	M5 x 0.8	4.4	13	ø6H9 $^{+0.030}_{0}$ depth 5.5
MXW25	M6 x 1	7.4	18.5	ø8H9 $^{+0.036}_{0}$ depth 9

2. 0.02 mm or less of flatness is recommended for the body mounting surface.
Insufficient flatness of workpiece or base to which Air Slide Table is mounted can generate play in guide section or increase of sliding resistance.

3. The positioning hole on the table and on the bottom of the body does not have the same center.
Use these holes during reinstallation after the table has been removed for the maintenance of an identical product.

4. Do not apply excessive power and load when work is mounted.
If the external force more than the allowable moment were applied, looseness of the guide unit or increased operating resistance could take place.

5. Select the proper connection with the load which has external support and/or guide mechanism on the outside, and align it properly.

6. Avoid contact with the body during operation.
Hands, etc., may get caught in the adjuster. Install a cover as a safety measure if there are instances to be near the slide table during operation.

Operating Environment

⚠ Caution

1. Do not use in the environment, where the product could be exposed to the liquid such as cutting oil, etc.
Using in the environment where the product could be exposed to cutting oil, coolant or oil, etc. could result in looseness, increased operating resistance, or air leakage, etc.

2. Do not use in the environment, where the product could be exposed directly to the foreign matters such as powder dust, blown dust, cutting chip, spatter etc.
This could result in looseness and increased operating resistance, and air leakage, etc.
Please consult with SMC regarding use in this kind of environment.

3. Do not use in direct sunlight.

4. When there are heat sources in the surrounding area, block them off.
When there are heat sources in the surrounding area, radiated heat may cause the product's temperature to rise and exceed the operating temperature range. Block off the heat with a cover, etc.

5. Do not subject it to excessive vibration and/or impact.
Please consult with SMC regarding use in this kind of environment, as this can cause damage and malfunction.

Other

⚠ Warning

1. Do not put hands or fingers between the table and stopper block.
Never put hands or fingers in the gap between the table and stopper block when retracted. Doing so will result in injury to the hands, or fingers.

2. Be aware that smoking cigarettes, etc., after your hands have come into contact with the grease used in the cylinder section of this product can create a gas that is hazardous to humans.

⚠ Caution

1. Do not disassemble or modify the product.

2. Performance stability
The piston speed in the specification table shows the average speed. The actual speed of this product may vary slightly during the stroke depending on the operating conditions, such as the change of load resistance and pressure.