Air Slide Table

MXS Series

ø6, ø8, ø12, ø16, ø20, ø25

RoHS

Work table and air cylinder are compactly integrated. Air slide table is suited for precision assembly.

Improved mounting repeatability of the workpiece and body

Machining of positioning hole

Auto switch mounting grooves designed for safety

An installed auto switch in the groove of the housing body is flush with the surface.

Axial mounting is possible.

Possible to use in an axial mounting position since the cross roller guide in the guiding parts is not properly preloaded and does not use a holding device.

Dual piston rod

The dual piston rod ensures twice the thrust of the current cylinder.

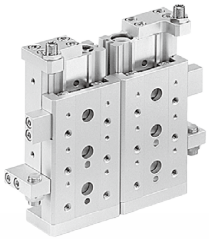
Wide variety of options

Adjuster option and function option can be combined.

Adjuster options	Functional options
With stroke adjuster 	With buffer mechanism 
With shock absorber 	With end lock 
	Axial piping type 

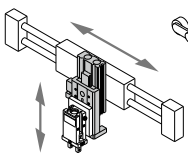
Symmetric Type

Port location and stroke adjuster position are in opposite places from the standard body.

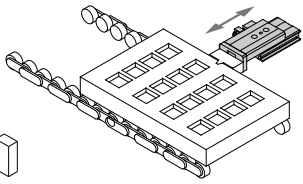


Application examples

As Z-axis for picking and placing



For positioning pallets on a conveyor



Air Slide Table *MXS* Series

Series Variations

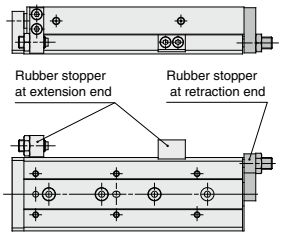
Model	Bore size (mm)	Standard stroke (mm)	Adjuster options: Rubber stopper	Adjuster options: With shock absorber (Except for ø6)	Functional options	Auto switch
MXS 6	6	10 20 30 40 50 75 100 125 150	Extension end	With buffer	Reed auto switch • D-A9□ • D-A9□V Solid state auto switch • D-M9□ • D-M9□V 2-color indicator solid state auto switch • D-M9□W • D-M9□WV
MXS 8	8					
MXS12	12		Retraction end	With end lock (Except for ø6)		
MXS16	16					
MXS20	20		Both ends	Axial piping type		
MXS25	25					

Adjuster Options

With Rubber Stopper

■ Adjustable stroke range: 0 to 5 mm

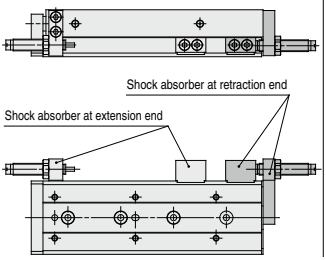
With rubber stopper at extension end (AS)
With rubber stopper at retraction end (AT)
With rubber stopper at both ends (A)



With Shock Absorber

■ Absorbs the collision at stroke end and stops smoothly.
■ Enables adjustment of stroke

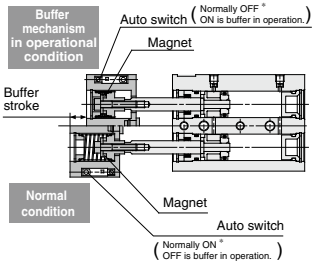
Shock absorber at extension end (BS)
Shock absorber at retraction end (BT)
Shock absorber at both ends (B)



Functional Options

With Buffer Mechanism

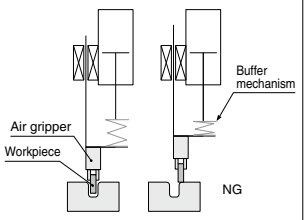
■ Protects workpieces and tools, etc., by eliminating impact at the end of the stroke's extension.
■ Buffer unit is auto switch capable.



*The normally ON/OFF setting is changed by changing the mounting direction of the auto switch.

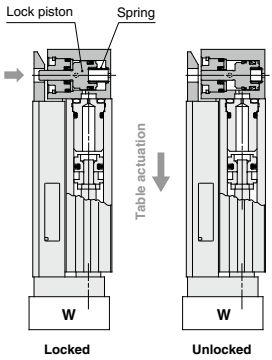
Application Example

Buffer mechanism absorbs shock and prevents damage to the workpiece in the case where the positioning is not accurate when a load is inserted.



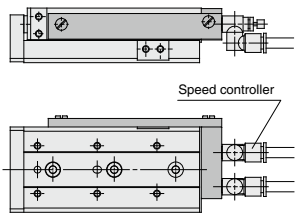
With End Lock

■ Holds the cylinder's home position to prevent the workpiece from dropping even if the air supply is cut off.



Axial Piping Type

■ Centralized piping in axial direction to maintain clear space around the body.



MXS Series
Model Selection

Model Selection Steps	Formula/Data	Selection Examples

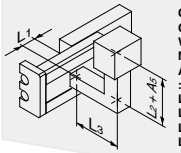
1 Operating Conditions

List the operating conditions considering the mounting position and workpiece configuration.
Check that the load weight does not exceed the maximum allowable load weight and that the average operating speed does not exceed the operating speed range.

Formula/Data

- Model to be used
- Type of cushion
- Workpiece mounting position
- Mounting orientation
- Average operating speed Va (mm/s)
- Load mass W (kg): Fig. (1), Table (2)
- Overhang Ln (mm): Fig. (2)

Selection Examples



Cylinder: MXS16-50
Cushion: Rubber bumper
Workpiece table mounting
Mounting: Horizontal wall mounting
Average operating speed
: Va = 300 [mm/s]
Load mass: W = 1 [kg]
L_1 = 10 mm
L_2 = 30 mm
L_3 = 30 mm

2 Kinetic Energy

Find the kinetic energy E (J) of the load.

Find the allowable kinetic energy Ea (J).
Confirm that the kinetic energy of the load does not exceed the allowable kinetic energy.

Formula/Data

$$E = \frac{1}{2} \cdot W \left(\frac{V}{1000}\right)^2$$

Collision speed V = 1.4· Va

*) Correction factor (Reference values)

Ea = K· Emax
Workpiece mounting coefficient K: Fig. (3)
Max. allowable kinetic energy Emax: Table (1)
Kinetic energy (E) ≤ Allowable kinetic energy (Ea)

Selection Examples

$$E = \frac{1}{2} \cdot 1 \left(\frac{420}{1000}\right)^2 = 0.088$$

V = 1.4 x 300 = 420
Ea = 1 x 0.11 = 0.11
Can be used based on E = 0.088 ≤ Ea = 0.11

3 Load Factor

3-1 Load Factor of Load Mass

Find the allowable load mass Wa (kg).
Note) There is no need to consider this load factor in the case of using perpendicularly in a vertical position.
(Define α_1 =0.)

Find the load factor of the load mass α_1.

Formula/Data

Wa = K·β·Wmax
Workpiece mounting coefficient K: Fig. (3)
Allowable load mass coefficient β: Graph (1)
Max. allowable load mass Wmax: Table (2)

$\alpha_1 = W/Wa$

Selection Examples

Wa = 1 x 1 x 4 = 4
K = 1
β = 1
Wmax = 4

$\alpha_1 = 1/4 = 0.25$

3-2 Load Factor of Static Moment

Find the static moment M (N·m).

Find the allowable static moment Ma (N·m).

Find the load factor α_2 of the static moment.

Formula/Data

M = W x 9.8 (Ln + An)/1000
Correction value of moment center position distance An: Table (3)

Ma = K·γ·Mmax
Workpiece mounting coefficient K: Fig. (3)
Allowable moment coefficient γ: Graph (2)
Maximum allowable moment Mmax: Table (4)

$\alpha_2 = M/Ma$

Selection Examples

Yawing	Rolling
Examine My.	Examine Mr.
My = 1 x 9.8 (10 + 30)/1000 = 0.39	Mr = 1 x 9.8 (30 + 10)/1000 = 0.39
A_3 = 30	A_6 = 10
May = 1 x 1 x 15.9 = 15.9	Mar = 15.9 (Same value as May)
Mymax = 15.9	
K = 1	
γ = 1	
α_2 = 0.39/15.9 = 0.025	α'_2 = 0.39/15.9 = 0.025

3-3 Load Factor of Dynamic Moment

Find the dynamic moment Me (N·m).

Find the allowable dynamic moment Mea (N·m).

Find the load factor α_3 of the dynamic moment.

Formula/Data

$$Me = 1/3 \cdot We \times 9.8 \frac{(Ln + An)}{1000}$$

Collision equivalent to impact We = δ·W·V
δ: Bumper coefficient
With urethane bumper (Standard) = 4/100
With shock absorber = 1/100
Correction value of moment center position distance An: Table (3)

Mea = K·γ·Mmax
Workpiece mounting coefficient K: Fig. (3)
Allowable moment coefficient γ: Graph (2)
Max. allowable moment Mmax: Table (4)

$\alpha_3 = Me/Mea$

Selection Examples

Pitching — Examine Mep.

$$Mep = 1/3 \times 16.8 \times 9.8 \times \frac{(30 + 10)}{1000} = 2.2$$

We = 4/100 x 1 x 420 = 16.8
A_2 = 10
Meap = 1 x 0.7 x 15.9 = 11.1
K = 1
γ = 0.7
Mpmax = 15.9
α_3 = 2.2/11.1 = 0.20

Yawing — Examine Mey.

$$Mey = 1/3 \times 16.8 \times 9.8 \times \frac{(30 + 31)}{1000} = 3.3$$

We = 16.8
A_4 = 31
Meay = 11.1 (Same value as Meap)
α'_3 = 3.3/11.1 = 0.30

3-4 Sum of Load Factors

Possible to use if the sum of the load factors does not exceed 1.

Formula/Data

$\Sigma\alpha n = \alpha_1 + \alpha_2 + \alpha_3 \leq 1$

Selection Examples

$\Sigma\alpha n = \alpha_1 + \alpha_2 + \alpha'_2 + \alpha_3 + \alpha'_3$
= 0.25 + 0.025 + 0.025 + 0.20 + 0.30 = 0.80 ≤ 1
And it is possible to use.

Fig. (1) Load Mass: W (kg)

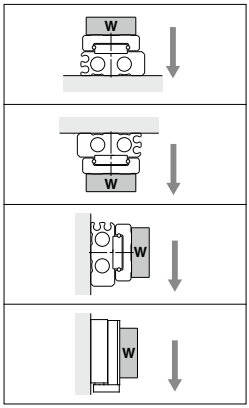
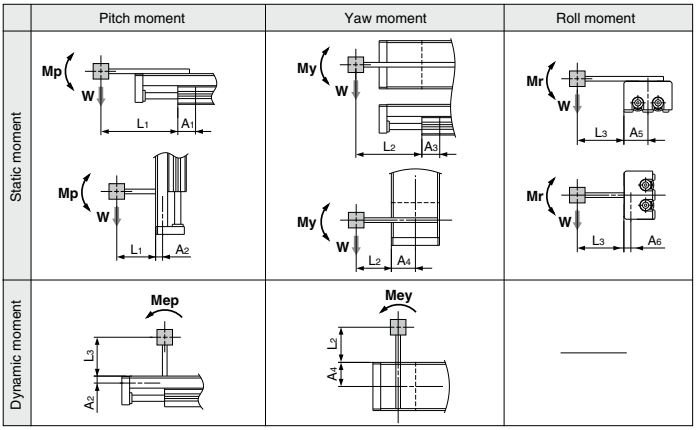


Fig. (2) Overhang: Ln (mm), Correction Value of Moment Center Position Distance: An (mm)



Note) Static moment: Moment generated by gravity
Dynamic moment: Moment generated by impact when colliding with stopper

Fig. (3)
Workpiece Mounting Coefficient: K

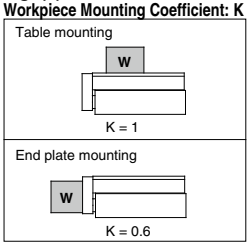


Table (1)
Maximum Allowable Kinetic Energy: Emax (J)

Model	Allowable kinetic energy	
	Rubber bumper	Shock absorber
MXS6	0.018	—
MXS8	0.027	0.054
MXS12	0.055	0.11
MXS16	0.11	0.22
MXS20	0.16	0.32
MXS25	0.24	0.48

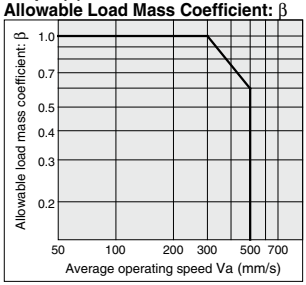
Table (2) Maximum Allowable Load Mass: Wmax (kg)

Model	Maximum allowable load mass
MXS6	0.6
MXS8	1
MXS12	2
MXS16	4
MXS20	6
MXS25	9

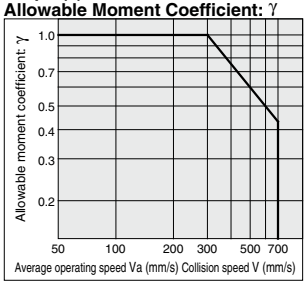
Table (3) Correction Value of Moment Center Position Distance : An (mm)

Model	Correction value of moment center position distance (Refer to Figure 2.)					
	A_1	A_2	A_3	A_4	A_5	A_6
MXS6	11	6	13	16	16	6
MXS8	11	7.5	13	20	20	7.5
MXS12	24	8.5	26	25	25	8.5
MXS16	27	10	30	31	31	10
MXS20	34	14.5	36	38	38	14.5
MXS25	42	19	44	46	46	19

Graph (1)
Allowable Load Mass Coefficient: β



Graph (2)
Allowable Moment Coefficient: γ



Note) Use the average operating speed when calculating static moment.
Use the collision speed when calculating dynamic moment.

Table (4) Maximum Allowable Moment: Mmax (N·m)

Model	Stroke (mm)								
	10	20	30	40	50	75	100	125	150
MXS6	0.7	1.0	1.2	1.2	1.2	—	—	—	—
MXS8	2.0	2.0	2.8	3.6	4.2	4.2	—	—	—
MXS12	4.2	4.2	4.2	5.8	7.0	10.0	10.0	—	—
MXS16	11.3	11.3	11.3	11.3	15.9	25.0	34.1	34.1	—
MXS20	19.4	19.4	19.4	19.4	27.2	35.0	50.5	50.5	50.5
MXS25	30.6	30.6	30.6	30.6	42.8	55.1	67.3	67.3	67.3

Symbol

Symbol	Definition	Unit	Symbol	Definition	Unit
An (n = 1 to 6)	Correction value of moment center position distance	mm	**Va**	Average operating speed	mm/s
E	Kinetic energy	J	**W**	Load mass	kg
Ea	Allowable kinetic energy	J	**Wa**	Allowable load mass	kg
Emax	Max. allowable kinetic energy	J	**We**	Mass equivalent to impact	kg
Ln (n = 1 to 3)	Overhang	mm	**Wmax**	Max. allowable load mass	kg
M (Mp, My, Mr)	Static moment (Pitch, Yaw, Roll)	N·m	α	Load factor	—
Ma (Map, May, Mar)	Allowable static moment (Pitch, Yaw, Roll)	N·m	β	Allowable load mass coefficient	—
Me (Mep, Mey)	Dynamic moment (Pitch, Yaw)	N·m	γ	Allowable moment coefficient	—
Mea (Meap, Meay)	Allowable dynamic moment (Pitch, Yaw)	N·m	δ	Damper coefficient	—
Mmax (Mpmax, Mymax, Mrmax)	Max. allowable moment (Pitch, Yaw, Roll)	N·m	**K**	Workpiece mounting coefficient	—
V	Collision speed	mm/s			

Air Slide Table
MXS Series

RoHS

How to Order

Air slide table **MXS 12 □ – 50 AS FR – M9BW □ – □**

Port thread type

Nil	M thread	ø6 to ø16
	Rc	
TN	NPT	ø20, ø25
TF	G	

Bore size (Stroke (mm))

6	10, 20, 30, 40, 50
8	10, 20, 30, 40, 50, 75
12	10, 20, 30, 40, 50, 75, 100
16	10, 20, 30, 40, 50, 75, 100, 125
20	10, 20, 30, 40, 50, 75, 100, 125, 150
25	10, 20, 30, 40, 50, 75, 100, 125, 150

Adjuster option

Nil	Without adjuster
AS	Rubber stopper on extension end
AT	Rubber stopper on retraction end
A	Rubber stopper on both ends
BS (1)	Absorber on extension end
BT (1)	Absorber on retraction end
B (1)	Absorber on both ends
ASBT (1)	Rubber stopper on extension end + Absorber on retraction end
BSAT (1)	Rubber stopper on extension end + Rubber stopper on retraction end

Note 1) Options BS, BT and B are not available with the MXS6 series.

Functional option

Nil	Standard
F	With buffer
R (2)	With end lock
P	Axial piping type
FR (2)	With buffer and end lock
FP	With buffer, Axial piping type

Note 2) Option R is not available with the MXS6 series.

Auto switch

Nil	Without auto switch (Built-in magnet)

∗ For the applicable auto switch models, refer to the table below. For the applicable auto switches for buffer, refer to page 83.

Number of auto switches

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

Made to order
For details refer to page 65.

Option Combinations

Adjuster option \ Functional option	Nil	F	R	P	FR	FP
Nil	○	○	○	○	○	○
AS	○	○ (3)	○	○	○ (3)	○ (3)
AT	○	○	×	×	×	×
A	○	○ (3)	×	×	×	×
BS	○	×	○	○	×	×
BT	○	○	×	×	×	×
B	○	×	×	×	×	×
ASBT	○	○ (3)	×	×	×	×
BSAT	○	×	×	×	×	×

○: Available ×: Not available

Note 3) When the buffer mechanism and the adjuster on extension end are combined, the buffer stroke will be shorter by the length adjusted by the adjuster on the extension end.

Applicable Auto Switches/Refer to pages 1289 to 1383 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)	1 (M)	3 (L)	5 (Z)	Pre-wired connector	Applicable load	
Solid state switch	——	Grommet	Yes	3-wire (NPN)	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 switch	——	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	**A96V**	**A96**	●	—	●	—	—	IC circuit	—
			No	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 are mountable on the above models, but in such case SMC cannot guarantee water resistance.
∗ 2 1 m lead wire is only applicable to the 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.

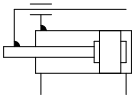
∗ Since there are additional applicable auto switches than are listed, refer to page 92 for details.
∗ For details on auto switches with a pre-wired connector, refer to pages 1358 and 1359.
∗ Auto switches are shipped together (not assembled).

Specifications

Bore size (mm)	6	8	12	16	20	25
Piping port size	M3 x 0.5	M5 x 0.8			Rc 1/8, NPT 1/8, G 1/8	
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	Rubber bumper (Standard, Rubber stopper) Shock absorber (Optional)					
Lubrication	Non-lube					
Auto switch (Optional)	Reed auto switch (2-wire, 3-wire) 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					

Note) 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



Made to Order: Individual Specifications
(For details, refer to pages 93 and 94.)

Symbol	Specifications
-X7	PTFE grease
-X9	Grease for food processing equipment
-X11	Adjusting bolt, long specification (Adjustment range: 15 mm)
-X12	Adjusting bolt, long specification (Adjustment range: 25 mm)
-X33	Without built-in auto switch magnet
-X39	Fluororubber seal
-X42	Anti-corrosive specifications for guide unit

For clean room specifications, refer to the **Web Catalog**.

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**.

Option

Adjuster options	Rubber stopper	Extension end (AS)	Stroke adjustment range 0 to 5 mm
		Retraction end (AT)	
		Adjuster on both ends (A)	
	Shock absorber	Extension end (BS)	With shock absorber is not available with the MXS6 series.
		Retraction end (BT)	
		Absorber on both ends (B)	
Functional options	With buffer (F)		With end lock is not available with the MXS6 series.
	With end lock (R)		
	Axial piping type (P)		

* For details of adjuster and functional option, refer to "Optional Specifications" on pages 80 to 83.

Theoretical Output

The dual rod ensures an output twice that of current cylinders. (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
6	3	OUT	57	11	17	23	29	34	40
		IN	42	8	13	17	21	25	29
8	4	OUT	101	20	30	40	51	61	71
		IN	75	15	23	30	38	45	53
12	6	OUT	226	45	68	90	113	136	158
		IN	170	34	51	68	85	102	119
16	8	OUT	402	80	121	161	201	241	281
		IN	302	60	91	121	151	181	211
20	10	OUT	628	126	188	251	314	377	440
		IN	471	94	141	188	236	283	330
25	12	OUT	982	196	295	393	491	589	687
		IN	756	151	227	302	378	454	529

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

Weight

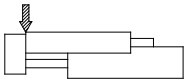
(g)

Model	Standard stroke (mm)									Additional weight of adjuster option				Additional weight of functional option		
	10	20	30	40	50	75	100	125	150	Rubber stopper		Shock absorber		With buffer	With end lock	Axial piping type S: Stroke (mm)
										Extension end	Retraction end	Extension end	Retraction end			
MXS6	80	100	115	155	180	—	—	—	—	10	5	—	—	30	—	13+0.15S
MXS8	150	160	190	235	285	410	—	—	—	15	9	35	45	40	40	26+0.17S
MXS12	325	325	325	385	480	660	890	—	—	30	20	50	60	80	90	43+0.21S
MXS16	570	570	580	640	760	1090	1370	1700	—	50	30	80	105	120	160	55+0.21S
MXS20	960	980	1010	1100	1250	1630	2150	2670	3190	100	71	170	205	140	310	150+0.45S
MXS25	1660	1680	1690	1840	2090	2650	3270	4140	4710	150	125	215	300	240	540	220+0.45S

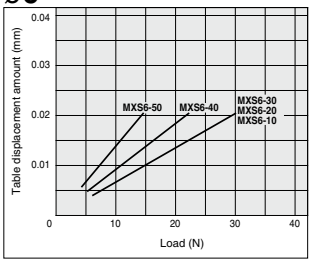
Table Deflection (Reference Values)

Table displacement due to pitch moment load

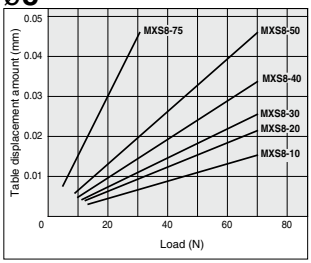
Table displacement when loads are applied to the section marked with the arrow at the full stroke.



ø6



ø8



ø12

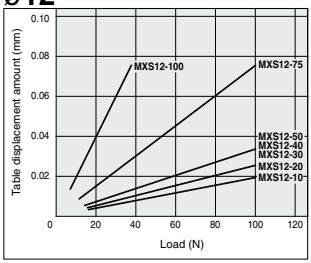
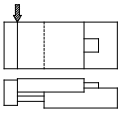
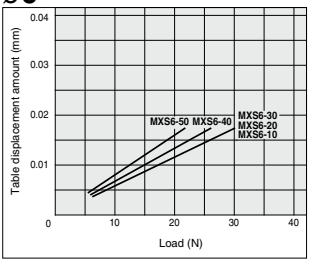


Table displacement due to yaw moment load

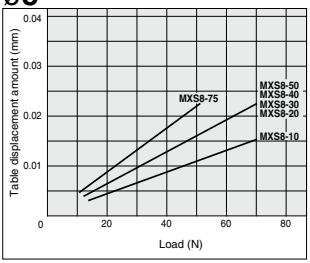
Table displacement when loads are applied to the section marked with the arrow at the full stroke.



ø6



ø8



ø12

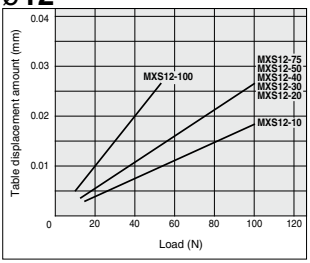
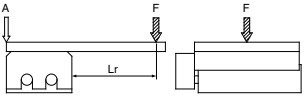
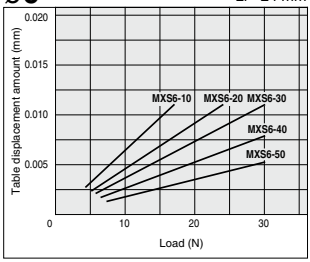


Table displacement due to roll moment load

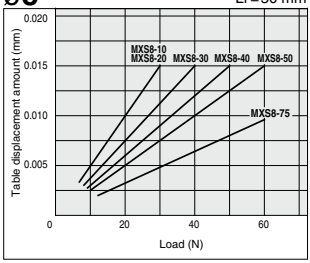
Table displacement of section A when loads are applied to the section F with the slide table retracted.



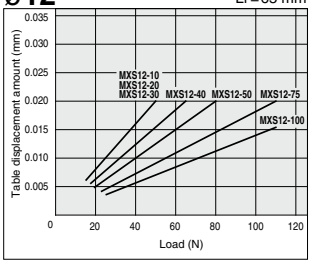
ø6 Lr=24 mm



ø8 Lr=50 mm



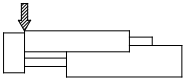
ø12 Lr=65 mm



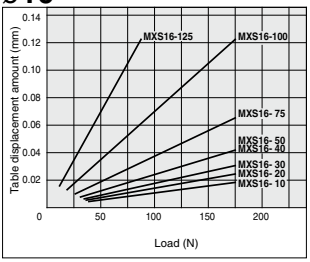
The graphs below show the table displacement when the static moment load is applied to the table. The graphs do not show the loadable mass. Refer to the Model Selection for the loadable mass.

Table displacement due to pitch moment load

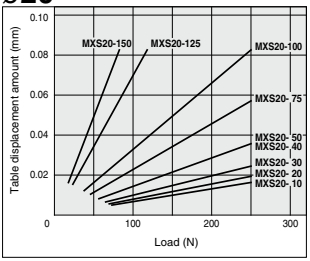
Table displacement when loads are applied to the section marked with the arrow at the full stroke.



ø16



ø20



ø25

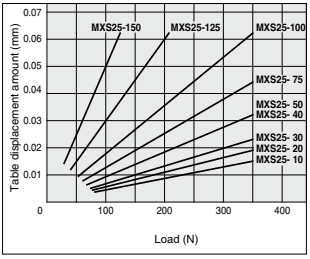
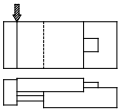
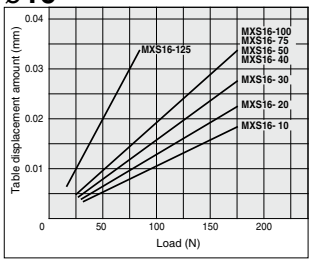


Table displacement due to yaw moment load

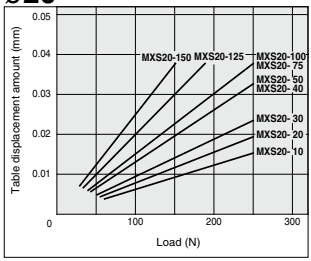
Table displacement when loads are applied to the section marked with the arrow at the full stroke.



ø16



ø20



ø25

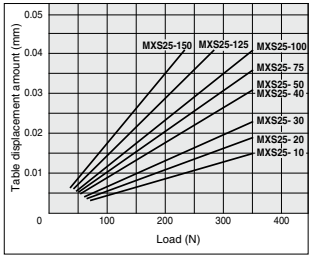
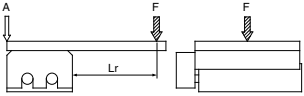


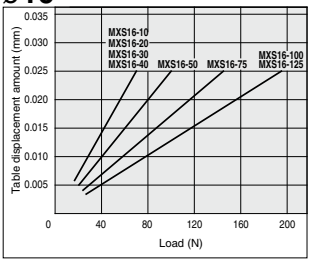
Table displacement due to roll moment load

Table displacement of section A when loads are applied to the section F with the slide table retracted.



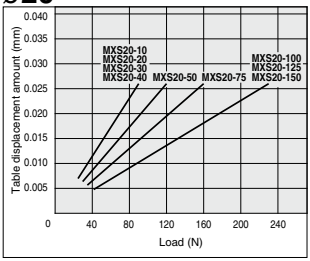
ø16

Lr = 89 mm



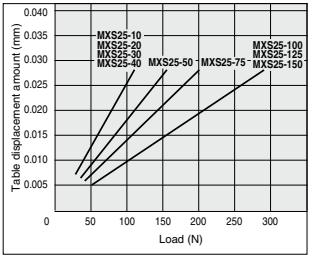
ø20

Lr = 122 mm



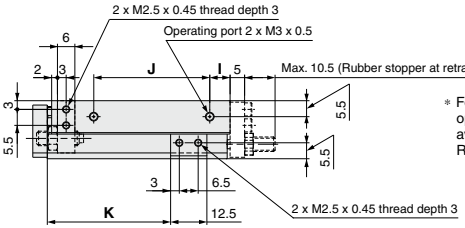
ø25

Lr = 154 mm

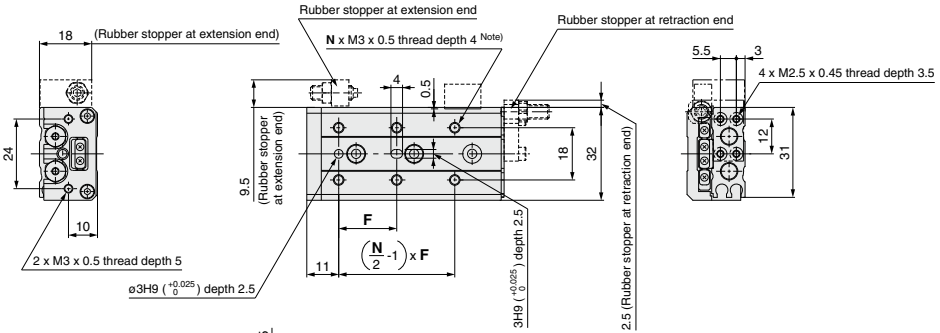


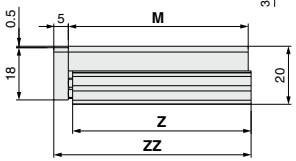
Dimensions: MXS6

Basic type

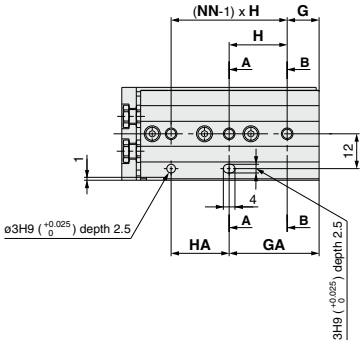


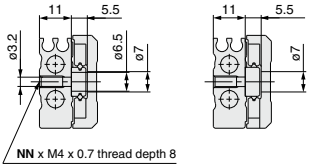
∗ For detailed dimensions on adjuster options, refer to the options available with adjusters. Rubber stopper (Refer to page 80.)





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



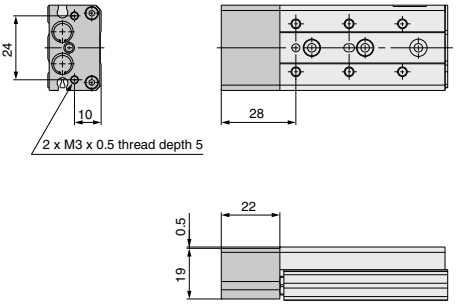


Section AA **Section BB**

(mm)

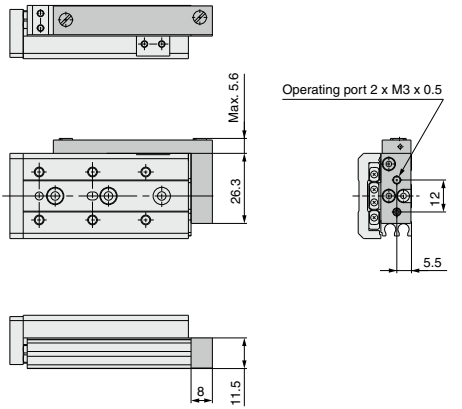
Model	F	N	G	H	NN	GA	HA	I	J	K	M	Z	ZZ
MXS6-10	20	4	6	25	2	11	20	10	17	22.5	42	41.5	48
MXS6-20	30	4	6	35	2	21	20	10	27	32.5	52	51.5	58
MXS6-30	20	6	11	20	3	31	20	7	40	42.5	62	61.5	68
MXS6-40	28	6	13	30	3	43	30	19	50	52.5	84	83.5	90
MXS6-50	38	6	17	24	4	41	48	25	60	62.5	100	99.5	106

With buffer (ø6) MXS6-□□F



∗ Other dimensions are the same as the basic type.

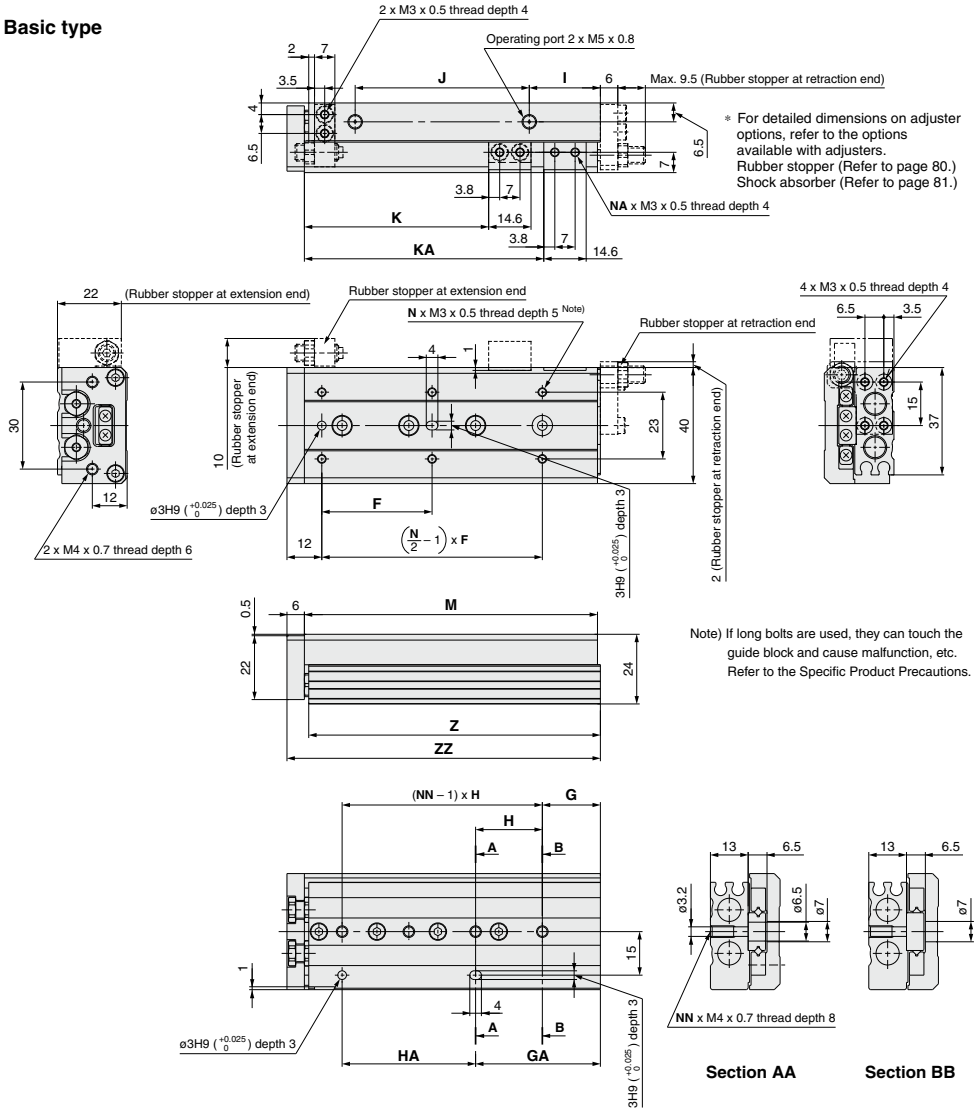
Axial piping type (ø6) MXS6-□□P



∗ Other dimensions are the same as the basic type.

Dimensions: MXS8

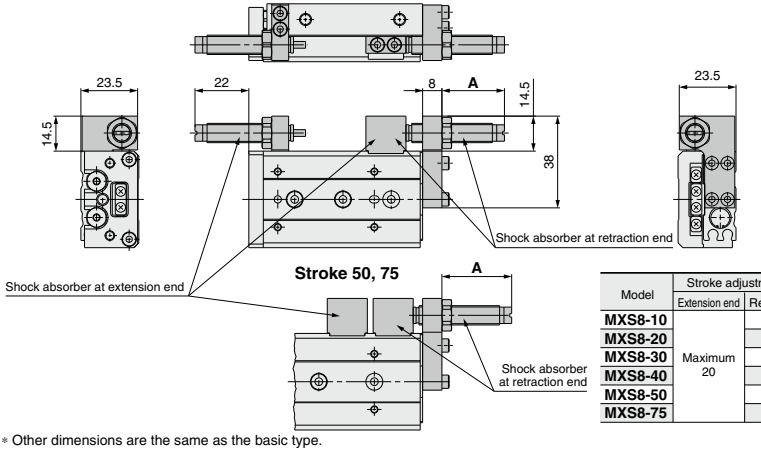
Basic type



(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS8-10	25	4	9	28	2	17	20	13	19.5	23.5	—	2	49	48.5	56
MXS8-20	25	4	12	30	2	12	30	8.5	29	33.5	—	2	54	53.5	61
MXS8-30	40	4	13	20	3	33	20	9.5	39	43.5	—	2	65	64.5	72
MXS8-40	50	4	15	28	3	43	28	10.5	56	53.5	—	2	83	82.5	90
MXS8-50	38	6	20	23	4	43	46	24.5	60	63.5	82.5	4	101	100.5	108
MXS8-75	50	6	27	28	5	83	56	38.5	96	88.5	132.5	4	151	150.5	158

With shock absorber (ø8) MXS8-□□BS/BT/B

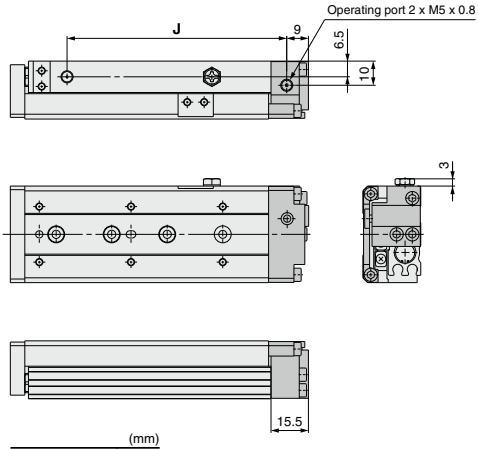


(mm)

Model	Stroke adjustment range		A dimension (Retracted side mounting)
	Extension end	Retraction end	
MXS8-10	Maximum 20	5	22
MXS8-20		15	27
MXS8-30		15	26
MXS8-40		5	18
MXS8-50		20	29
MXS8-75		20	29

∗ Other dimensions are the same as the basic type.

With end lock (ø8) MXS8-□□R

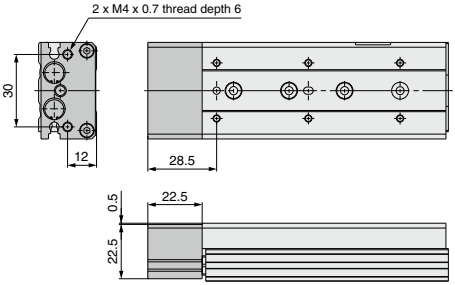


(mm)

Model	J
MXS8-10R	39
MXS8-20R	44
MXS8-30R	55
MXS8-40R	73
MXS8-50R	91
MXS8-75R	141

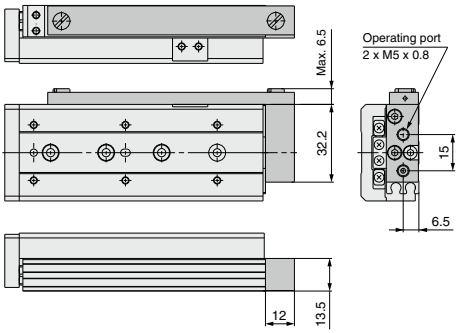
∗ Other dimensions are the same as the basic type.

With buffer (ø8) MXS8-□□F



∗ Other dimensions are the same as the basic type.

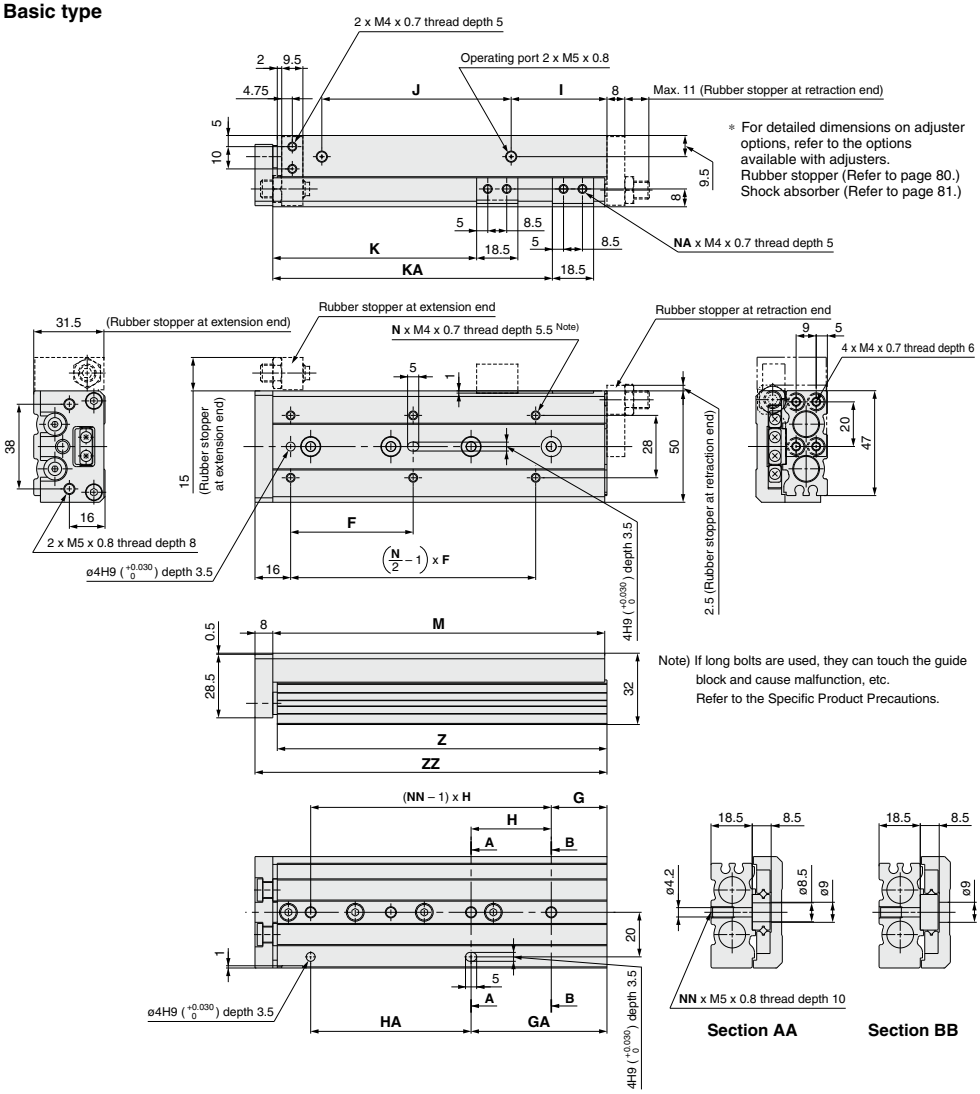
Axial piping type (ø8) MXS8-□□P



∗ Other dimensions are the same as the basic type.

Dimensions: MXS12

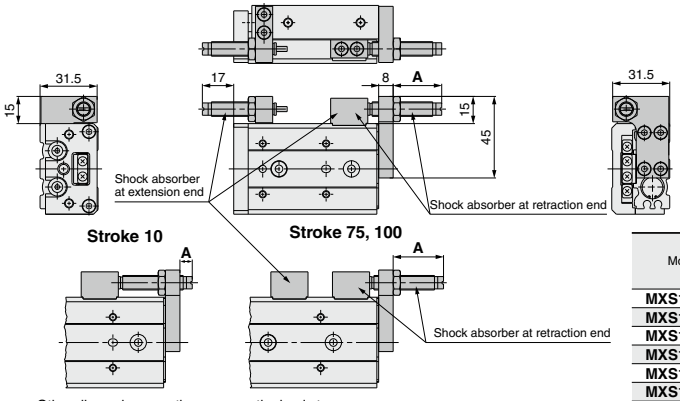
Basic type



(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS12-10	35	4	15	40	2	15	40	10	40	26.5	—	2	71	70	80
MXS12-20	35	4	15	40	2	15	40	10	40	36.5	—	2	71	70	80
MXS12-30	35	4	15	40	2	15	40	10	40	46.5	—	2	71	70	80
MXS12-40	50	4	17	25	3	42	25	10	52	56.5	—	2	83	82	92
MXS12-50	35	6	15	36	3	51	36	22	60	66.5	—	2	103	102	112
MXS12-75	55	6	25	36	4	61	72	43	85	91.5	125.5	4	149	148	158
MXS12-100	65	6	35	38	5	111	76	52	130	116.5	179.5	4	203	202	212

With shock absorber (ø12) MXS12-□□BS/BT/B

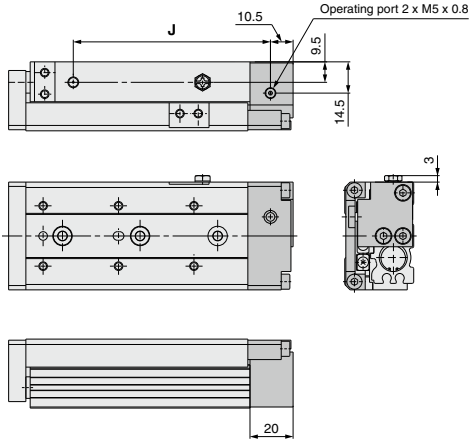


∗ Other dimensions are the same as the basic type.

(mm)

Model	Stroke adjustment range		**A** dimension (Retracted side mounting)
	Extension end	Retraction end	
MXS12-10	Maximum 20	2	7
MXS12-20		5	17
MXS12-30		15	27
MXS12-40		15	25
MXS12-50		5	15
MXS12-75		15	28
MXS12-100		15	28

With end lock (ø12) MXS12-□□R

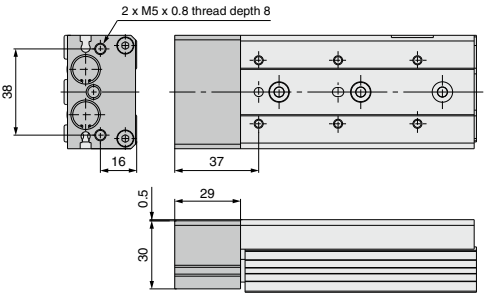


(mm)

Model	**J**
MXS12-10R	59.5
MXS12-20R	59.5
MXS12-30R	59.5
MXS12-40R	71.5
MXS12-50R	91.5
MXS12-75R	137.5
MXS12-100R	191.5

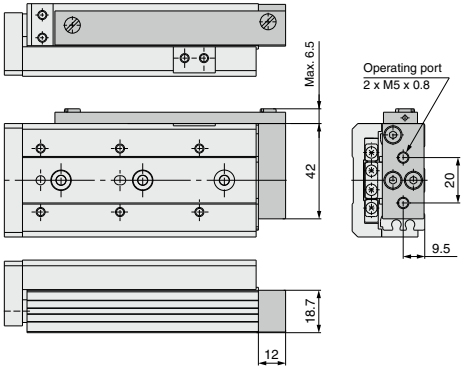
∗ Other dimensions are the same as the basic type.

With buffer (ø12) MXS12-□□F



∗ Other dimensions are the same as the basic type.

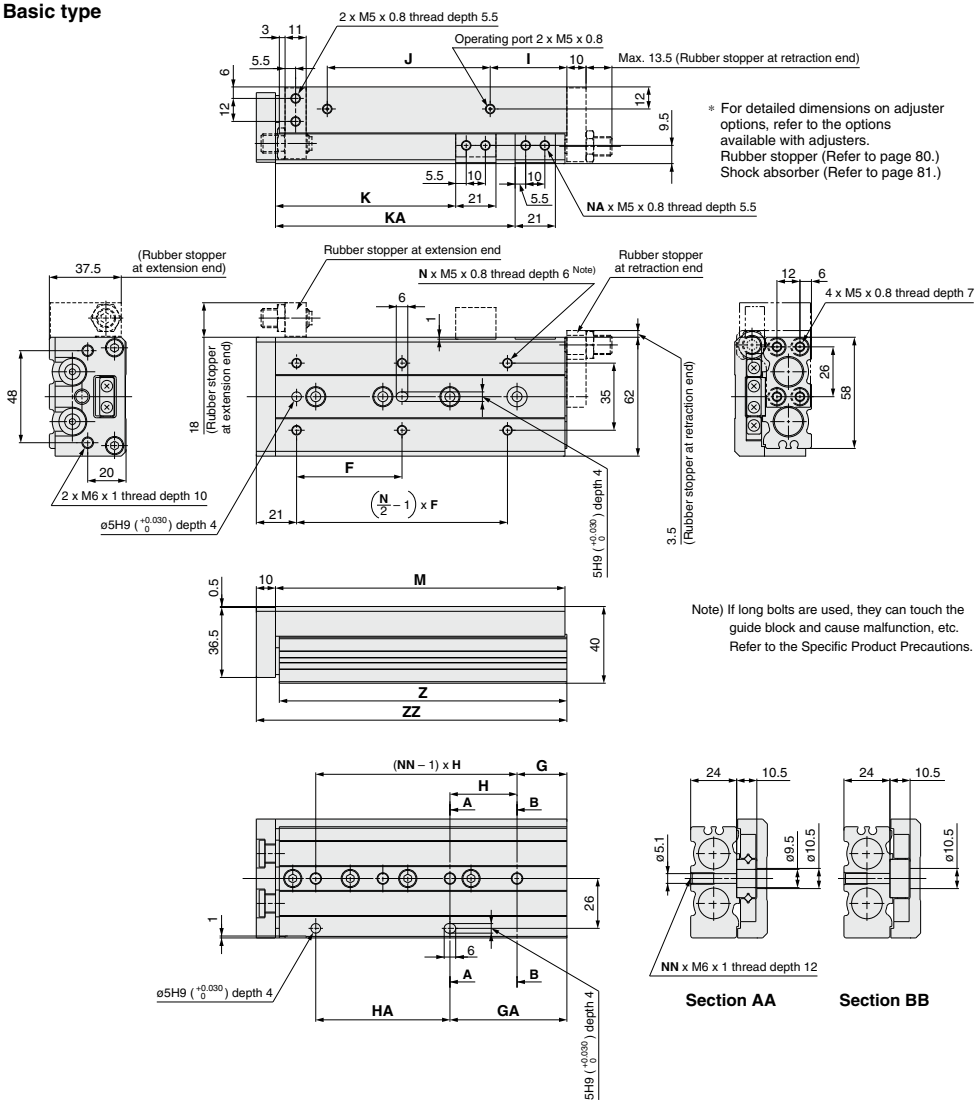
Axial piping type (ø12) MXS12-□□P



∗ Other dimensions are the same as the basic type.

Dimensions: MXS16

Basic type



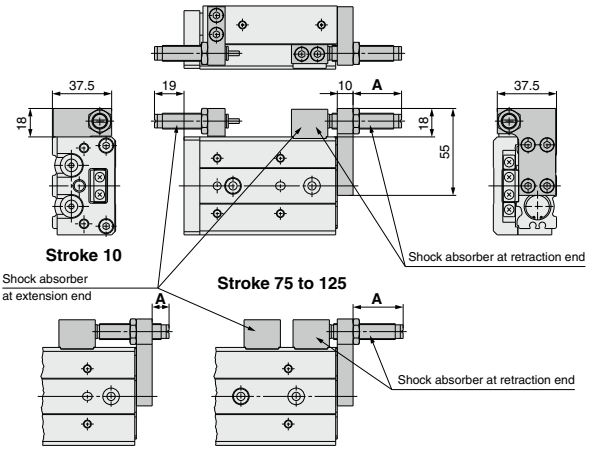
* For detailed dimensions on adjuster options, refer to the options available with adjusters.
Rubber stopper (Refer to page 80.)
Shock absorber (Refer to page 81.)

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

(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS16-10	35	4	16	40	2	16	40	10	40	29	—	2	76	75	87
MXS16-20	35	4	16	40	2	16	40	10	40	39	—	2	76	75	87
MXS16-30	35	4	16	40	2	16	40	10	40	49	—	2	76	75	87
MXS16-40	40	4	16	50	2	16	50	10	50	59	—	2	86	85	97
MXS16-50	30	6	21	30	3	51	30	15	60	69	—	2	101	100	112
MXS16-75	55	6	26	35	4	61	70	40	85	94	125	4	151	150	162
MXS16-100	65	6	39	35	5	109	70	55	118	119	173	4	199	198	210
MXS16-125	70	8	19	35	7	159	70	68	155	144	223	4	249	248	260

With shock absorber (ø16) MXS16-□□BS/BT/B

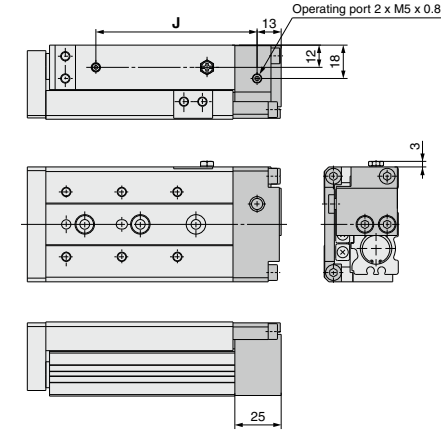


(mm)

Model	Stroke adjustment range		**A** dimension (Retracted side mounting)
	Extension end	Retraction end	
MXS16-10	Maximum 25	5	11
MXS16-20		10	21
MXS16-30		20	31
MXS16-40		20	31
MXS16-50		15	26
MXS16-75		20	32
MXS16-100		20	32
MXS16-125		20	32

∗ Other dimensions are the same as the basic type.

With end lock (ø16) MXS16-□□R

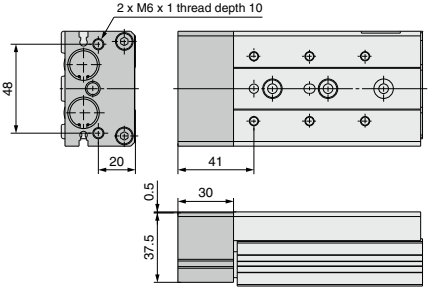


(mm)

Model	**J**
MXS16-10R	62
MXS16-20R	62
MXS16-30R	62
MXS16-40R	72
MXS16-50R	87
MXS16-75R	137
MXS16-100R	185
MXS16-125R	235

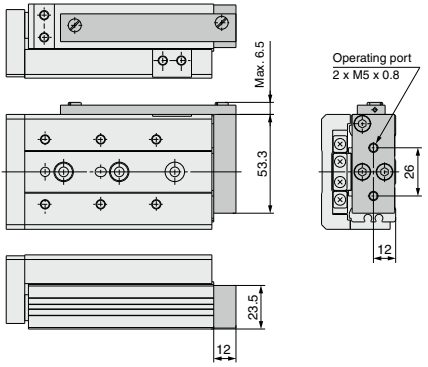
∗ Other dimensions are the same as the basic type.

With buffer (ø16) MXS16-□□F



∗ Other dimensions are the same as the basic type.

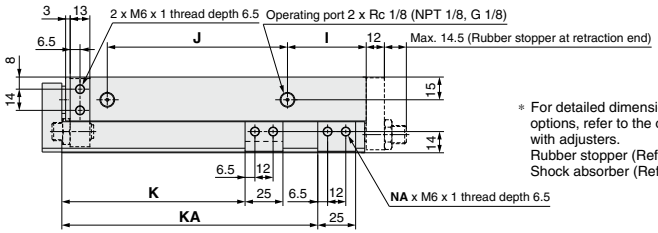
Axial piping type (ø16) MXS16-□□P



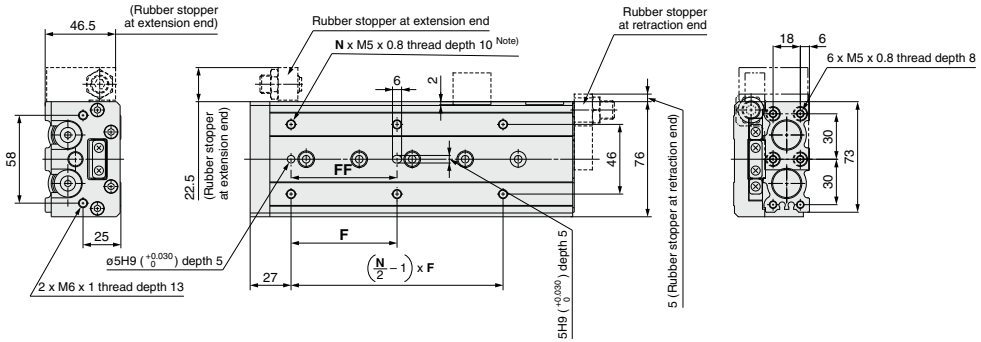
∗ Other dimensions are the same as the basic type.

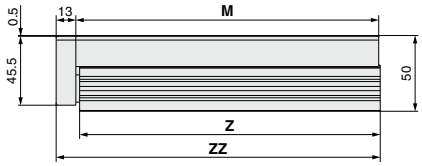
Dimensions: MXS20

Basic type

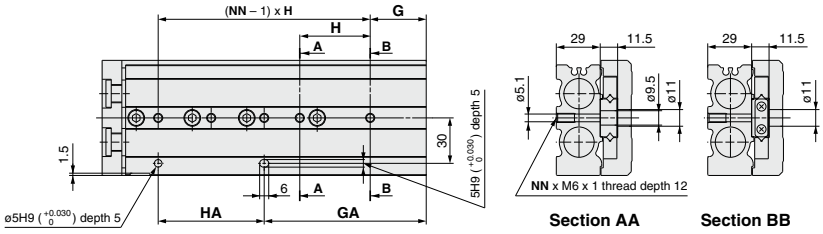


* For detailed dimensions on adjuster options, refer to the options available with adjusters.
Rubber stopper (Refer to page 80.)
Shock absorber (Refer to page 81.)





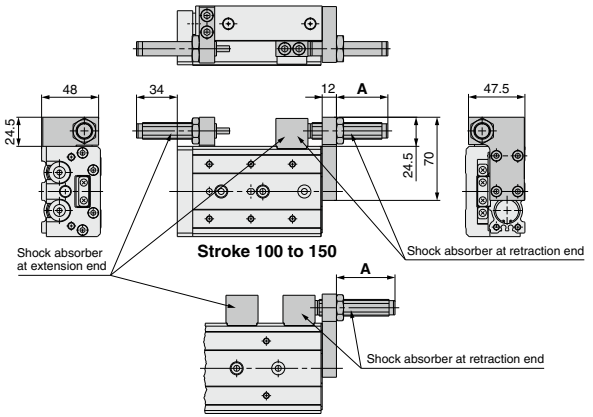
Note) If long bolts are used, they can touch the guide block and cause malfunction, etc. Refer to the Specific Product Precautions.



(mm)

Model	F	FF	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS20-10	50	40	4	15	45	2	25	35	10	44	31	—	2	83	81.5	97
MXS20-20	50	40	4	15	45	2	25	35	10	44	41	—	2	83	81.5	97
MXS20-30	50	40	4	15	45	2	25	35	10	44	51	—	2	83	81.5	97
MXS20-40	60	50	4	15	55	2	35	35	10	54	61	—	2	93	91.5	107
MXS20-50	35	35	6	15	35	3	50	35	10	69	71	—	2	108	106.5	122
MXS20-75	60	60	6	19	35	4	54	70	10	108	96	—	2	147	145.5	161
MXS20-100	70	70	6	37	35	5	107	70	58	113	121	169	4	200	198.5	214
MXS20-125	70	70	8	41	38	6	155	76	70	155	146	223	4	254	252.5	268
MXS20-150	80	80	8	19	44	7	195	88	87	190	171	275	4	306	304.5	320

With shock absorber (ø20) MXS20-□□BS/BT/B

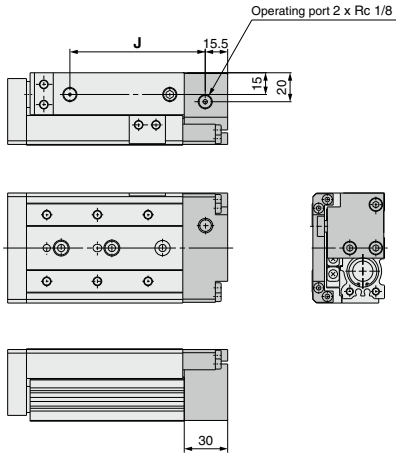


(mm)

Model	Stroke adjustment range		**A** dimension (Retracted side mounting)
	Extension end	Retraction end	
MXS20-10	Maximum 40	5	28
MXS20-20		15	38
MXS20-30		25	48
MXS20-40		35	48
MXS20-50		30	43
MXS20-75		15	29
MXS20-100		35	49
MXS20-125		35	49
MXS20-150		35	49

∗ Other dimensions are the same as the basic type.

With end lock (ø20) MXS20-□□R

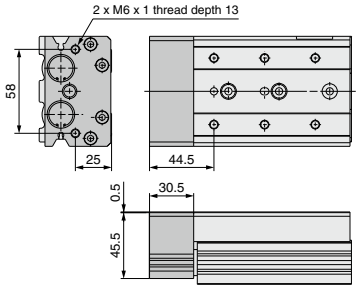


(mm)

Model	**J**
MXS20-10R	68.5
MXS20-20R	68.5
MXS20-30R	68.5
MXS20-40R	78.5
MXS20-50R	93.5
MXS20-75R	132.5
MXS20-100R	185.5
MXS20-125R	239.5
MXS20-150R	291.5

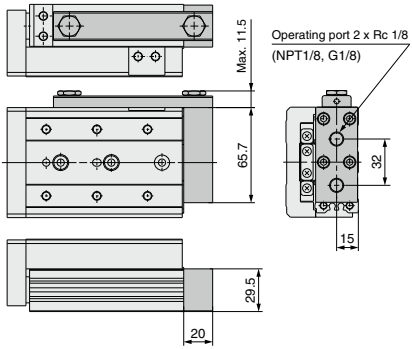
∗ Other dimensions are the same as the basic type.

With buffer (ø20) MXS20-□□F



∗ Other dimensions are the same as the basic type.

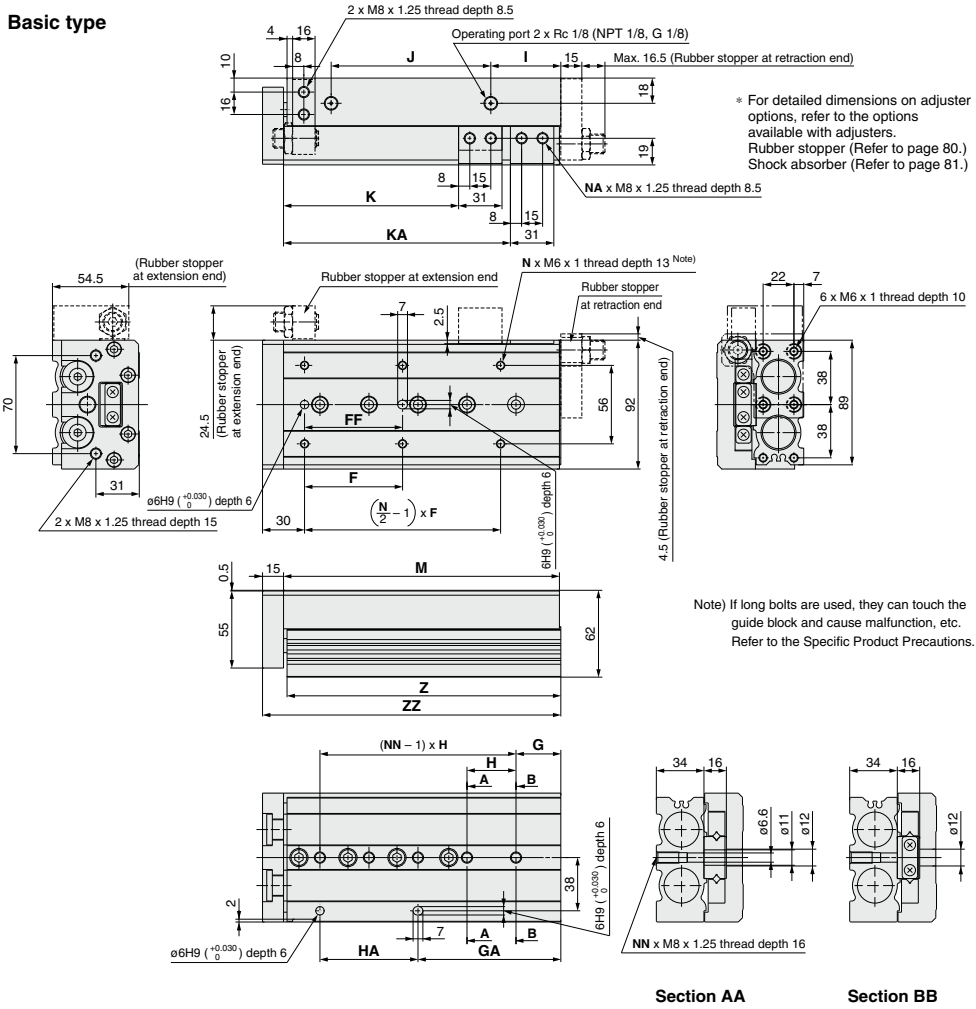
Axial piping type (ø20) MXS20-□□P



∗ Other dimensions are the same as the basic type.

Dimensions: MXS25

Basic type

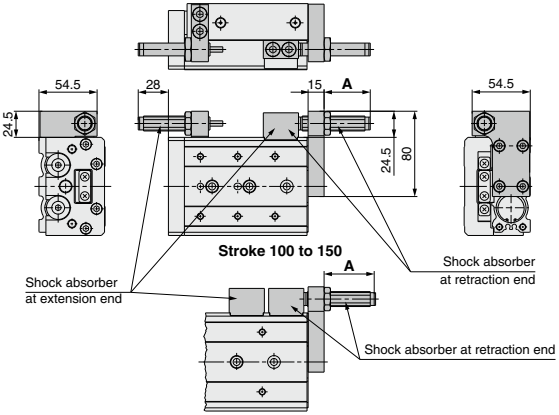


* For detailed dimensions on adjuster options, refer to the options available with adjusters.
Rubber stopper (Refer to page 80.)
Shock absorber (Refer to page 81.)

(mm)

Model	F	FF	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS25-10	50	40	4	22	45	2	22	45	12	47	35	—	2	92	90.5	108
MXS25-20	50	40	4	22	45	2	22	45	12	47	45	—	2	92	90.5	108
MXS25-30	50	40	4	22	45	2	22	45	12	47	55	—	2	92	90.5	108
MXS25-40	60	50	4	22	55	2	22	55	12	57	65	—	2	102	100.5	118
MXS25-50	35	35	6	20	35	3	55	35	12	70	75	—	2	115	113.5	131
MXS25-75	60	60	6	26	35	4	61	70	33	90	100	—	2	156	154.5	172
MXS25-100	70	70	6	32	35	5	102	70	50	114	125	162	4	197	195.5	213
MXS25-125	75	75	8	40	38	6	154	76	67	155	150	218	4	255	253.5	271
MXS25-150	80	80	8	30	40	7	190	80	82	180	175	258	4	295	293.5	311

With shock absorber (ø25) MXS25-□□BS/BT/B

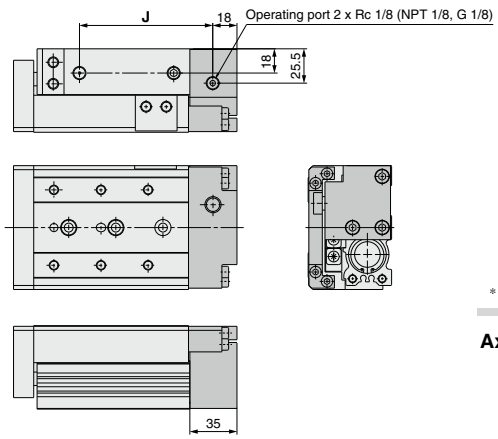


∗ Other dimensions are the same as the basic type.

(mm)

Model	Stroke adjustment range		**A** dimension (Retracted side mounting)
	Extension end	Retraction end	
MXS25-10	Maximum 35	5	26
MXS25-20		15	36
MXS25-30		25	46
MXS25-40		35	46
MXS25-50		30	43
MXS25-75		15	27
MXS25-100		35	48
MXS25-125		35	46
MXS25-150		35	46

With end lock (ø25) MXS25-□□R

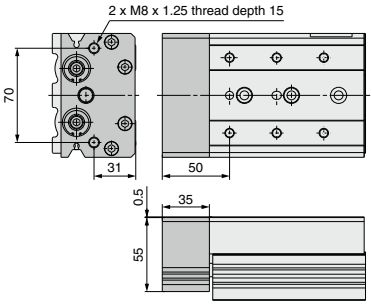


(mm)

Model	**J**
MXS25-10R	76
MXS25-20R	76
MXS25-30R	76
MXS25-40R	86
MXS25-50R	99
MXS25-75R	140
MXS25-100R	181
MXS25-125R	239
MXS25-150R	279

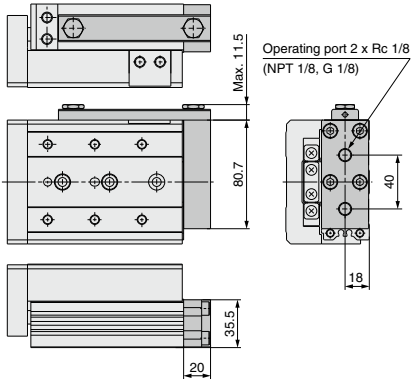
∗ Other dimensions are the same as the basic type.

With buffer (ø25) MXS25-□□F



∗ Other dimensions are the same as the basic type.

Axial piping type (ø25) MXS25-□□P



∗ Other dimensions are the same as the basic type.

MXS Series
Optional Specifications

Dimensions of Adjuster Option/Rubber Stopper (AS/AT) Extension End

Body mounting section

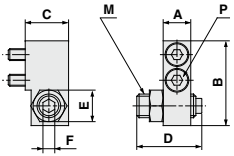
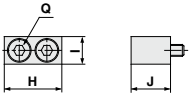


Table mounting section

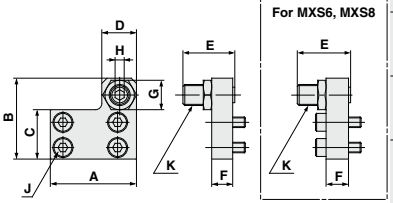


Applicable size	Model	Stroke adjustment range (mm)	Body mounting section								Table mounting section			
			A	B	C	D	E	F	M	P*	H	I	J	Q*
MXS6 (L)	MXS-AS6 (L)	5	6	17.8	10.5	16.5	7	2.5	M5 x 0.8	M2.5 x 10	12.5	6	8.5	M2.5 x 8
	MXS-AS6 (L)-X11	15				26.5								
MXS8 (L)	MXS-AS8 (L)	5	7	21.5	11	16.5	8	3	M6 x 1	M3 x 12	14.6	7	10	M3 x 10
	MXS-AS8 (L)-X11	15				26.5								
	MXS-AS8 (L)-X12	25				36.5								
MXS12 (L)	MXS-AS12 (L)	5	9.5	31	16	20	12	4	M8 x 1	M4 x 15	18.5	10	13	M4 x 12
	MXS-AS12 (L)-X11	15				30								
	MXS-AS12 (L)-X12	25				40								
MXS16 (L)	MXS-AS16 (L)	5	11	37	19	24.5	14	5	M10 x 1	M5 x 18	21	12	16.5	M5 x 18
	MXS-AS16 (L)-X11	15				34.5								
	MXS-AS16 (L)-X12	25				44.5								
MXS20 (L)	MXS-AS20 (L)	5	13	45.5	24	27.5	17	6	M12 x 1.25	M6 x 20	25	13	21	M6 x 20
	MXS-AS20 (L)-X11	15				37.5								
	MXS-AS20 (L)-X12	25				47.5								
MXS25 (L)	MXS-AS25 (L)	5	16	53.5	26.5	32.5	19	6	M14 x 1.5	M8 x 25	31	17	25.5	M8 x 25
	MXS-AS25 (L)-X11	15				42.5								
	MXS-AS25 (L)-X12	25				52.5								

* Size of hexagon socket head cap screw

It is also available with the symmetric type. For ordering part numbers, refer to "How to Order Adjuster" below. Dimensions are identical with the standard type.

Retraction End



Applicable size	Model	Stroke adjustment range (mm)	A	B	C	D	E	F	G	H	J*	K
MXS6 (L)	MXS-AT6 (L)	5	21	19	10.5	8	16.5	5	7	2.5	M2.5 x 8	M5 x 0.8
	MXS-AT6 (L)-X11	15					26.5					
MXS8 (L)	MXS-AT8 (L)	5	25	22.5	12.5	9	16.5	6	8	3	M3 x 10	M6 x 1
	MXS-AT8 (L)-X11	15					26.5					
	MXS-AT8 (L)-X12	25					36.5					
MXS12 (L)	MXS-AT12 (L)	5	32	31	18.5	13	20	8	12	4	M4 x 8	M8 x 1
	MXS-AT12 (L)-X11	15					30					
	MXS-AT12 (L)-X12	25					40					
MXS16 (L)	MXS-AT16 (L)	5	40	38.5	23	15	24.5	10	14	5	M5 x 10	M10 x 1
	MXS-AT16 (L)-X11	15					34.5					
	MXS-AT16 (L)-X12	25					44.5					
MXS20 (L)	MXS-AT20 (L)	5	50	48	29	21	27.5	12	17	6	M5 x 12	M12 x 1.25
	MXS-AT20 (L)-X11	15					37.5					
	MXS-AT20 (L)-X12	25					47.5					
MXS25 (L)	MXS-AT25 (L)	5	60	58	35	23	32.5	15	19	6	M6 x 16	M14 x 1.5
	MXS-AT25 (L)-X11	15					42.5					
	MXS-AT25 (L)-X12	25					52.5					

* Size of hexagon socket head cap screw

It is also available with the symmetric type. For ordering part numbers, refer to "How to Order Adjuster" below. Dimensions are identical with the standard type.

How to Order Adjuster (Accessory)

MXS — AS 12 L — X11

Adjuster option

AS	Rubber stopper	Extension end
AT		Retraction end
BS	Shock absorber	Extension end
BT		Retraction end
B		Both ends

Applicable bore size

6	ø6
8	ø8
12	ø12
16	ø16
20	ø20
25	ø25

Symmetric type

Nil	Standard type
L	Symmetric type

Adjustable range (Rubber stopper only)

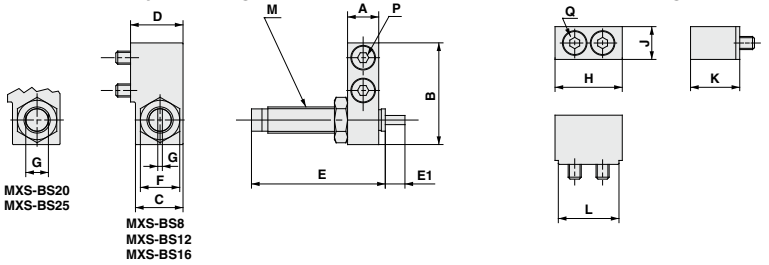
Nil	5 mm	Standard
-X11	15 mm	Semi-standard
-X12	25 mm	

* -X12 (adjustable range: 25 mm) is not available with the MXS6 series.
* -X11 and -X12 are not available with shock absorber type.
* With shock absorber is not available with the MXS6 series.
* For dimensions, refer to the figure above. As for symmetric type, view the external dimensions symmetrically. (Adjusting bolt in symmetric type is equipped in reverse direction.)

Dimensions of Adjuster Option/Shock Absorber (BS/BT)

Extension End

Body mounting section **Table mounting section**



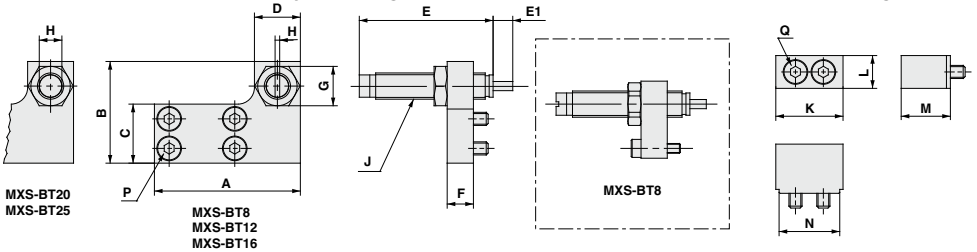
Applicable size	Model	Body mounting section										Table mounting section				
		A	B	C	D	E	E1	F	G	M	P *	H	J	K	L	Q *
MXS8 (L)	MXS-BS8 (L)	7	23	14	15.5	40.8	5	12	1.4	M8 x 1	M3 x 16	16.6	7	15.5	14.6	M3 x 16
MXS12 (L)	MXS-BS12 (L)	9.5	31	14.5	16	40.8	6	12	1.4	M8 x 1	M4 x 15	20.5	10	15	18.5	M4 x 15
MXS16 (L)	MXS-BS16 (L)	11	37	17.5	19	46.7	7	14	1.4	M10 x 1	M5 x 18	23	12	18.5	21	M5 x 18
MXS20 (L)	MXS-BS20 (L)	13	47	23.5	26	67.3	11	19	12	M14 x 1.5	M6 x 25	27	13	25.5	25	M6 x 25
MXS25 (L)	MXS-BS25 (L)	16	53.5	23.5	26.5	67.3	12	19	12	M14 x 1.5	M8 x 25	33	17	25.5	31	M8 x 25

∗ Size of hexagon socket head cap screw

It is also available with the symmetric type. For ordering part numbers, refer to "How to Order Stroke Adjuster" on page 80. Dimensions are identical with the standard type.

Retraction End

Body mounting section **Table mounting section**



Applicable size	Model	Body mounting section											Table mounting section				
		A	B	C	D	E	E1	F	G	H	J	P *	K	L	M	N	Q *
MXS8 (L)	MXS-BT8 (L)	38	23	12.5	14	40.8	5	8	12	1.4	M8 x 1	M3 x 12	16.6	7	15.5	14.6	M3 x 16
MXS12 (L)	MXS-BT12 (L)	45	31	18	14	40.8	6	8	12	1.4	M8 x 1	M4 x 8	20.5	10	15	18.5	M4 x 15
MXS16 (L)	MXS-BT16 (L)	55	37	23.5	16	46.7	7	10	14	1.4	M10 x 1	M5 x 10	23	12	18.5	21	M5 x 18
MXS20 (L)	MXS-BT20 (L)	70	47	29	23	67.3	11	12	19	12	M14 x 1.5	M5 x 12	27	13	25.5	25	M6 x 25
MXS25 (L)	MXS-BT25 (L)	80	54	35	23	67.3	12	15	19	12	M14 x 1.5	M6 x 16	33	17	25.5	31	M8 x 25

∗ Size of hexagon socket head cap screw

It is also available with the symmetric type. For ordering part numbers, refer to "How to Order Stroke Adjuster" on page 80. Dimensions are identical with the standard type.

Both Ends

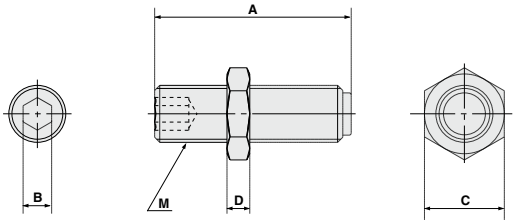
Includes extension end shock absorbers (body mounting section and table mounting section) and a retraction end shock absorber (body mounting section)

* There is 1 shock absorber on the table mounting section.

Use with a stroke that uses 1 shock absorber on the table mounting section.

Applicable size	Model
MXS8 (L)-10～40	MXS-B8 (L)
MXS12 (L)-10～50	MXS-B12 (L)
MXS16 (L)-10～50	MXS-B16 (L)
MXS20 (L)-10～75	MXS-B20 (L)
MXS25 (L)-10～75	MXS-B25 (L)

Dimensions of Adjusting Bolt Assembly



Applicable size	Model	Stroke adjustment range (mm)	A	B	C	D	M
MXS6 (L)	MXS-A627	5	16.5	2.5	7	3	M5 x 0.8
	MXS-A627-X11	15	26.5				
MXS8 (L)	MXS-A827	5	16.5	3	8	3.5	M6 x 1
	MXS-A827-X11	15	26.5				
	MXS-A827-X12	25	36.5				
MXS12 (L)	MXS-A1227	5	20	4	12	4	M8 x 1
	MXS-A1227-X11	15	30				
	MXS-A1227-X12	25	40				
MXS16 (L)	MXS-A1627	5	24.5	5	14	4	M10 x 1
	MXS-A1627-X11	15	34.5				
	MXS-A1627-X12	25	44.5				
MXS20 (L)	MXS-A2027	5	27.5	6	17	5	M12 x 1.25
	MXS-A2027-X11	15	37.5				
	MXS-A2027-X12	25	47.5				
MXS25 (L)	MXS-A2527	5	32.5	6	19	6	M14 x 1.5
	MXS-A2527-X11	15	42.5				
	MXS-A2527-X12	25	52.5				

How to Order Adjusting Bolt Assembly

MXS — A [12] 27 — [X11]

Applicable bore size

6	ø6
8	ø8
12	ø12
16	ø16
20	ø20
25	ø25

Adjustment range

Nil	5 mm
X11	15 mm
X12	25 mm

* -X12 (adjustable range: 25 mm) is not available with the MXS6 series.
* For dimensions, refer to the figure above.
* Symmetric type is also the same.

Shock Absorber Specifications

Shock absorber model		RB0805	RB0806	RB1007	RB1411	RB1412
Applicable slide table		**MXS8**	**MXS12**	**MXS16**	**MXS20**	**MXS25**
Maximum energy absorption (J)		0.98	2.94	5.88	14.7	19.6
Stroke absorption (mm)		5	6	7	11	12
Maximum collision speed (mm/s)		50 to 500				
Maximum operating frequency (cycle/min)		80	80	70	45	45
Maximum allowable thrust (N)		245	245	422	814	814
Ambient temperature range (°C)		–10 to 60				
Spring force (N)	**When extended**	1.96	1.96	4.22	6.86	6.86
	When retracted	3.83	4.22	6.86	15.30	15.98
Weight (g)		15	15	25	65	65

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

With End Lock Specifications

Model	MXS8	MXS12	MXS16	MXS20	MXS25
Bore size (mm)	8	12	16	20	25
Piston speed	50 to 500 mm/s				
Holding force (N)	25	60	110	160	250

Note) For caution on end lock, refer to page 98.

With Buffer Mechanism Specifications

Model		MXS6	MXS8	MXS12	MXS16	MXS20	MXS25
Bore size (mm)		6	8	12	16	20	25
Piston speed		50 to 500 mm/s (Horizontal mounting 50 to 300 mm/s)					
Buffer stroke (mm)		5		10			
Buffer stroke load (N)	**Stroke at 0 mm**	3	5	10	13	17	21
	Maximum stroke	6	8	13	17	25	29

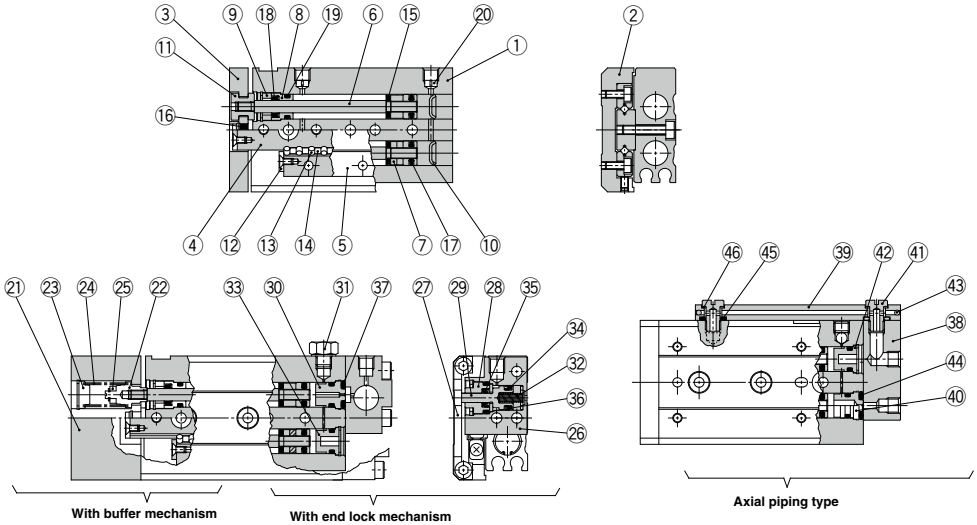
Note) For cautions on handling the buffer, refer to page 98.
Note) If stroke is adjusted with the stroke adjuster at extension end, the buffer stroke is shortened by the adjusted length.

Applicable Auto Switch for Buffer

Type	Model	Specifications	Electrical entry direction
Solid state switch	**D-M9BV**	With indicator light, 2-wire	Vertical
	D-M9NV	With indicator light, 3-wire, Output: NPN	
	D-M9PV	With indicator light, 3-wire, Output: PNP	

∗ The auto switch for the buffer must be ordered separately.

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	**Rail**		Hardening steel	Heat treated
5	**Guide**		Hardening steel	Heat treated
6	**Rod**		Stainless steel	
7	**Piston assembly**		—	With magnet on one side
8	**Rod cover**		Aluminum alloy	Anodized
9	**Seal support**		Brass	Electroless nickel plated
10	**Head cap**		Aluminum alloy	Hard anodized
11	**Floating bushing**		Stainless steel	
12	**Roller stopper**		Stainless steel	
13	**Cylindrical roller**		High carbon chrome bearing steel	
14	**Roller spacer**		Synthetic resin	
15	**Rod bumper**		Polyurethane	
16	**End bumper**		Polyurethane	
17	**Piston seal**		NBR	
18	**Rod seal**		NBR	
19	**O-ring**		NBR	
20	**Orifice**	ø6 (Basic type only)	Brass	Electroless nickel plated
		ø8 to 16 (Basic type only)	Synthetic resin	

Component Parts: With Buffer

No.	Description	Material	Note
21	**End plate**	Aluminum alloy	Hard anodized
22	**Spring collar**	Stainless steel	
23	**Head cap**	Stainless steel	
24	**Spring**	Stainless steel	
25	**Magnet**	—	

Component Parts: With End Lock

No.	Description	Material	Note
26	**Locking body**	Aluminum alloy	Hard anodized
27	**Table support**	Carbon steel	Anti-corrosive treated
28	**Rod cover**	Aluminum alloy	
29	**Piston rod**	Stainless steel	
30	**Bushing**	Aluminum alloy	Chromated
31	**Plug**	Carbon steel	Nickel plated
32	**Return spring**	Stainless steel	
33	**Head cap**	Synthetic resin	
34	**Piston seal**	NBR	
35	**Rod seal**	NBR	
36	**O-ring**	NBR	
37	**O-ring**	NBR	

Component Parts: Axial Piping Type

No.	Description	Material	Note
38	**Axial piping plate**	Aluminum alloy	Hard anodized
39	**Pipe**	Aluminum alloy	Hard anodized
40	**Bushing**	Aluminum alloy	Chromated
41	**Stud**	Brass	Electroless nickel plated
42	**Head cap**	Synthetic resin	
43	**Steel balls**	Stainless steel	
44	**O-ring**	NBR	
45	**O-ring**	NBR	
46	**Gasket**	NBR, Stainless steel	

∗ Seal kit includes 1 set of numbered seals in the table below.
Order the appropriate seal kit depending on the cylinder bore size.

Replacement Parts/ Seal Kit

Bore size (mm)	Kit no.	Contents
6	MXS6-PS	Set of nos. above ⑰ to ⑲.
8	MXS8-PS	
12	MXS12-PS	
16	MXS16-PS	
20	MXS20-PS	
25	MXS25-PS	

Replacement Parts/ Seal Kit for With End Lock

Bore size (mm)	Kit no.	Contents
8	MXS8R-PS	Set of nos. above ⑰ to ⑲ ㉞ to ㊲.
12	MXS12R-PS	
16	MXS16R-PS	
20	MXS20R-PS	
25	MXS25R-PS	

Replacement Parts/ Seal Kit for Axial Piping Type

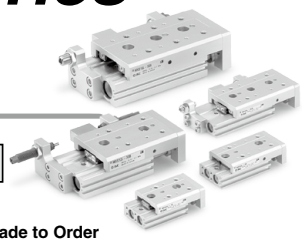
Bore size (mm)	Kit no.	Contents
6	MXS6P-PS	Set of nos. above ⑰ to ⑲ ㊹ to ㊻.
8	MXS8P-PS	
12	MXS12P-PS	
16	MXS16P-PS	
20	MXS20P-PS	
25	MXS25P-PS	

Replacement Parts/ Grease Pack

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

RoHS

Air Slide Table (Symmetric Type)
MXS□L Series



How to Order

Air slide table **MXS 12 □ L – 50 AS – M9BW □ – □**

Made to Order
(For details, refer to the table)

Port thread type

Nil	M thread	ø6 to ø16
	Rc	
TN	NPT	ø20, ø25
TF	G	

Symmetric type

Bore size (Stroke (mm))

6	10, 20, 30, 40, 50
8	10, 20, 30, 40, 50, 75
12	10, 20, 30, 40, 50, 75, 100
16	10, 20, 30, 40, 50, 75, 100, 125
20	10, 20, 30, 40, 50, 75, 100, 125, 150
25	10, 20, 30, 40, 50, 75, 100, 125, 150

Adjuster option

Nil	Without adjuster
AS	Rubber stopper on extension end
AT	Rubber stopper on retraction end
A	Rubber stopper on both ends
BS (1)	Absorber on extension end
BT (1)	Absorber on retraction end
B (1)	Absorber on both ends
ASBT (1)	Rubber stopper on extension end + Absorber on retraction end
BSAT (1)	Absorber on extension end + Rubber stopper on retraction end

Note 1) Options BS, BT and B are not available with the MXS6L series.
Note 2) Functional option is not available with the MXS□□L series.

Auto switch

Nil	Without auto switch (Built-in magnet)

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

Number of auto switches

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

Made to Order: Individual Specifications
(For details, refer to pages 67 and 68.)

Symbol	Specifications
-X7	PTFE grease
-X9	Grease for food processing equipment
-X11	Adjusting bolt, long specification (Adjustment range: 15 mm)
-X12	Adjusting bolt, long specification (Adjustment range: 25 mm)
-X33	Without built-in auto switch magnet
-X39	Fluororubber seal
-X42	Anti-corrosive specifications for guide unit
-X45	EPDM seal

For clean room specifications, refer to the **Web Catalog**.

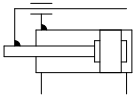
Moisture Control Tube IDK Series

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**.

Specifications

Specifications, adjuster options, and weights are the same as those of the standard type. Refer to page 65.

Symbol
Rubber bumper



Applicable Auto Switches/Refer to pages 1289 to 1383 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)	1 (M)	3 (L)	5 (Z)	Pre-wired connector	Applicable load	
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 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 switch	——	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	**A96V**	**A96**	●	—	●	—	—	IC circuit	—
			No	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 are mountable on the above models, but in such case SMC cannot guarantee water resistance.
∗ 2 1 m lead wire is only applicable to the D-A93.

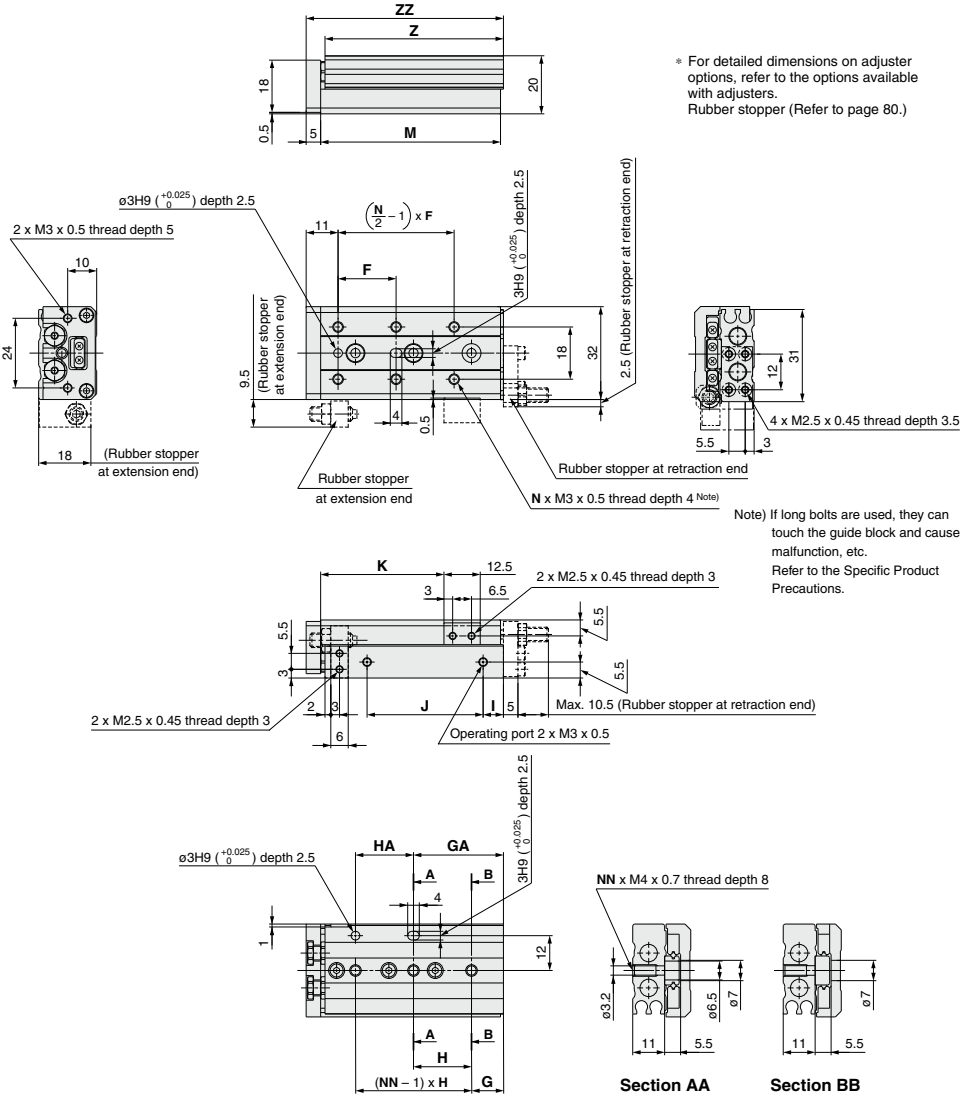
∗ Lead wire length symbols: 0.5 m ····· Nil (Example) M9NW
1 m ····· M (Example) M9NWM
3 m ····· L (Example) M9NWL
5 m ····· Z (Example) M9NWZ

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

∗ Since there are additional applicable auto switches than are listed, refer to page 92 for details.
∗ For details on auto switches with a pre-wired connector, refer to pages 1358 and 1359.
∗ Auto switches are shipped together (not assembled).

Dimensions: MXS6L/Symmetric Type

Basic type



* For detailed dimensions on adjuster options, refer to the options available with adjusters.
Rubber stopper (Refer to page 80.)

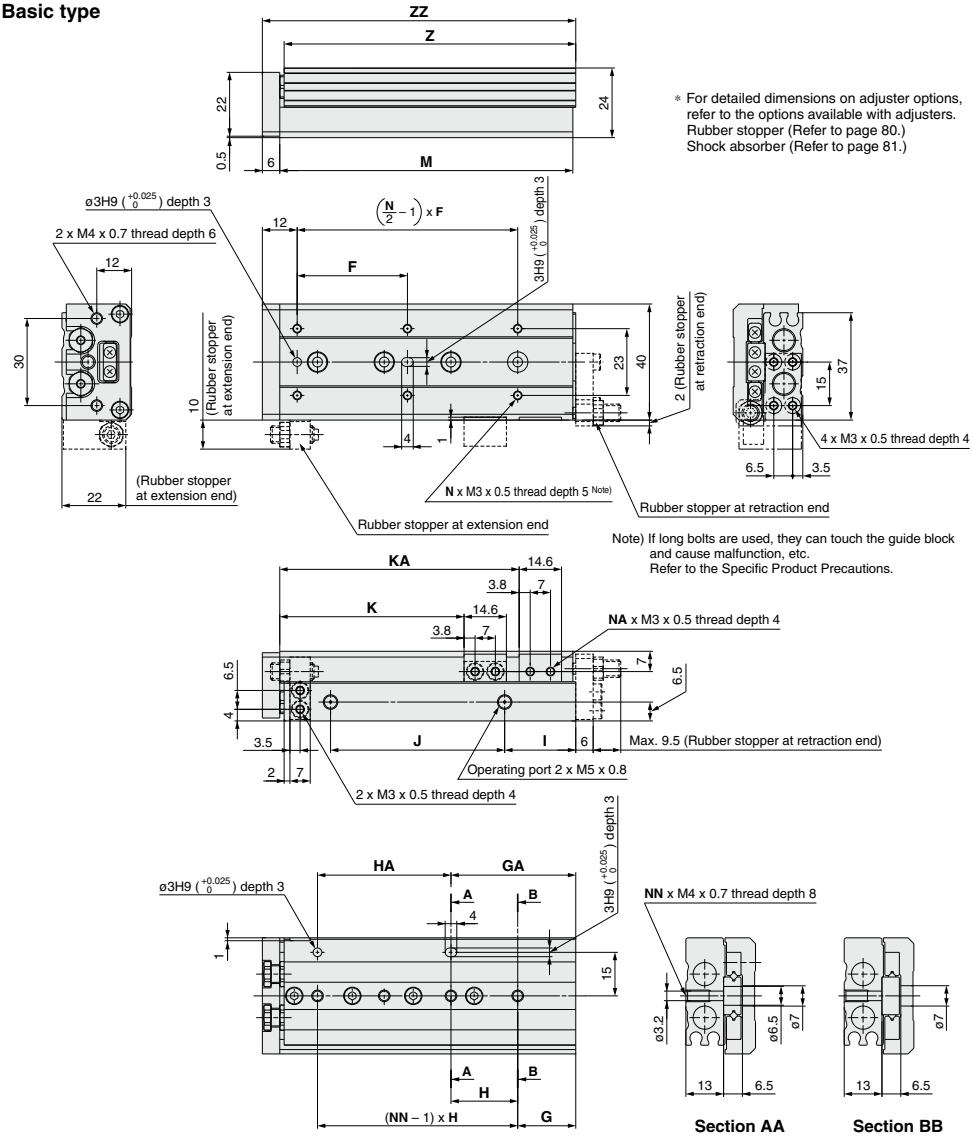
Note) If long bolts are used, they can touch the guide block and cause malfunction, etc.
Refer to the Specific Product Precautions.

(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	M	Z	ZZ
MXS6L-10	20	4	6	25	2	11	20	10	17	22.5	42	41.5	48
MXS6L-20	30	4	6	35	2	21	20	10	27	32.5	52	51.5	58
MXS6L-30	20	6	11	20	3	31	20	7	40	42.5	62	61.5	68
MXS6L-40	28	6	13	30	3	43	30	19	50	52.5	84	83.5	90
MXS6L-50	38	6	17	24	4	41	48	25	60	62.5	100	99.5	106

Dimensions: MXS8L/Symmetric Type

Basic type



* For detailed dimensions on adjuster options, refer to the options available with adjusters.
Rubber stopper (Refer to page 80.)
Shock absorber (Refer to page 81.)

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

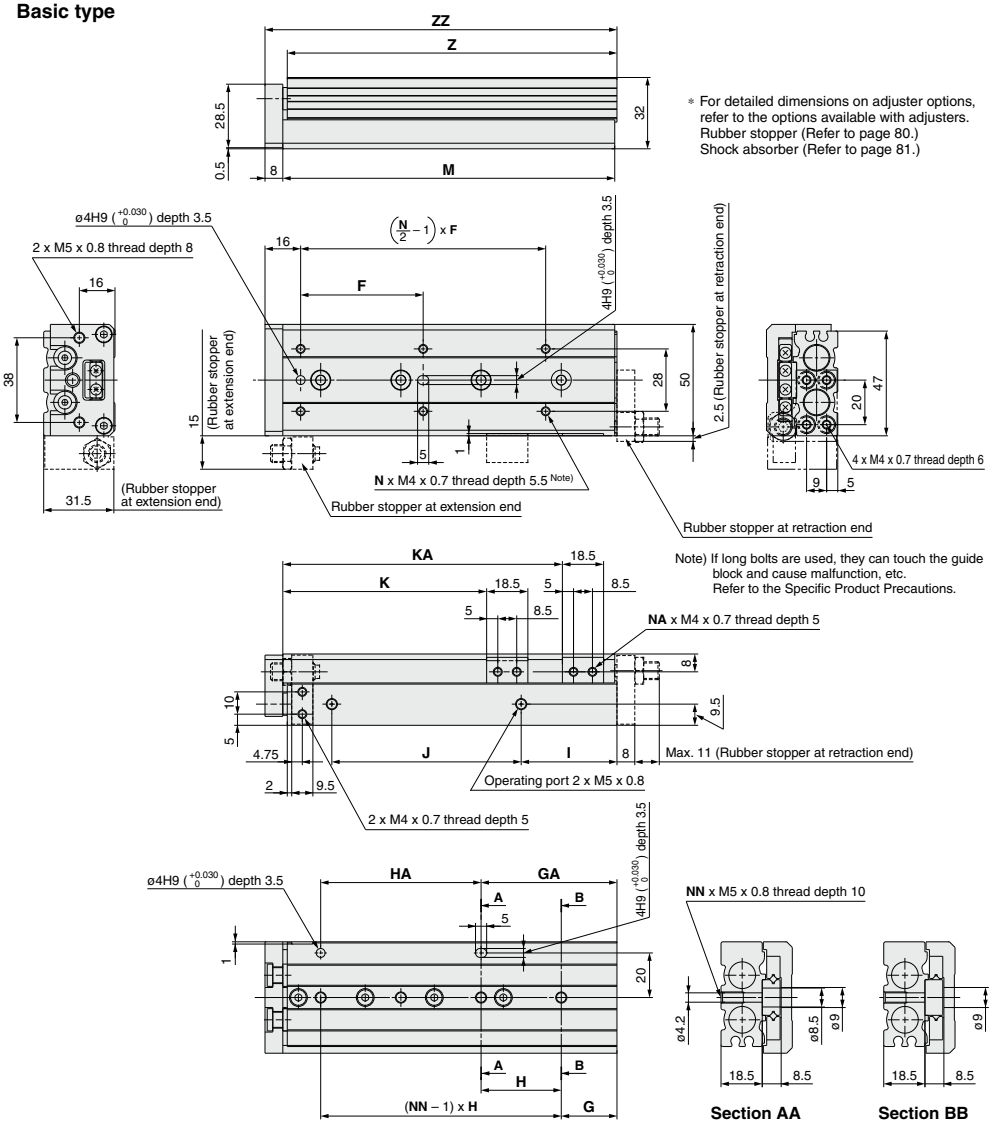
(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS8L-10	25	4	9	28	2	17	20	13	19.5	23.5	—	2	49	48.5	56
MXS8L-20	25	4	12	30	2	12	30	8.5	29	33.5	—	2	54	53.5	61
MXS8L-30	40	4	13	20	3	33	20	9.5	39	43.5	—	2	65	64.5	72
MXS8L-40	50	4	15	28	3	43	28	10.5	56	53.5	—	2	83	82.5	90
MXS8L-50	38	6	20	23	4	43	46	24.5	60	63.5	82.5	4	101	100.5	108
MXS8L-75	50	6	27	28	5	83	56	38.5	96	88.5	132.5	4	151	150.5	158

Regarding the external dimensions with a shock absorber, view the external dimensions of MXS8 symmetrically on page 71.

Dimensions: MXS12L/Symmetric Type

Basic type



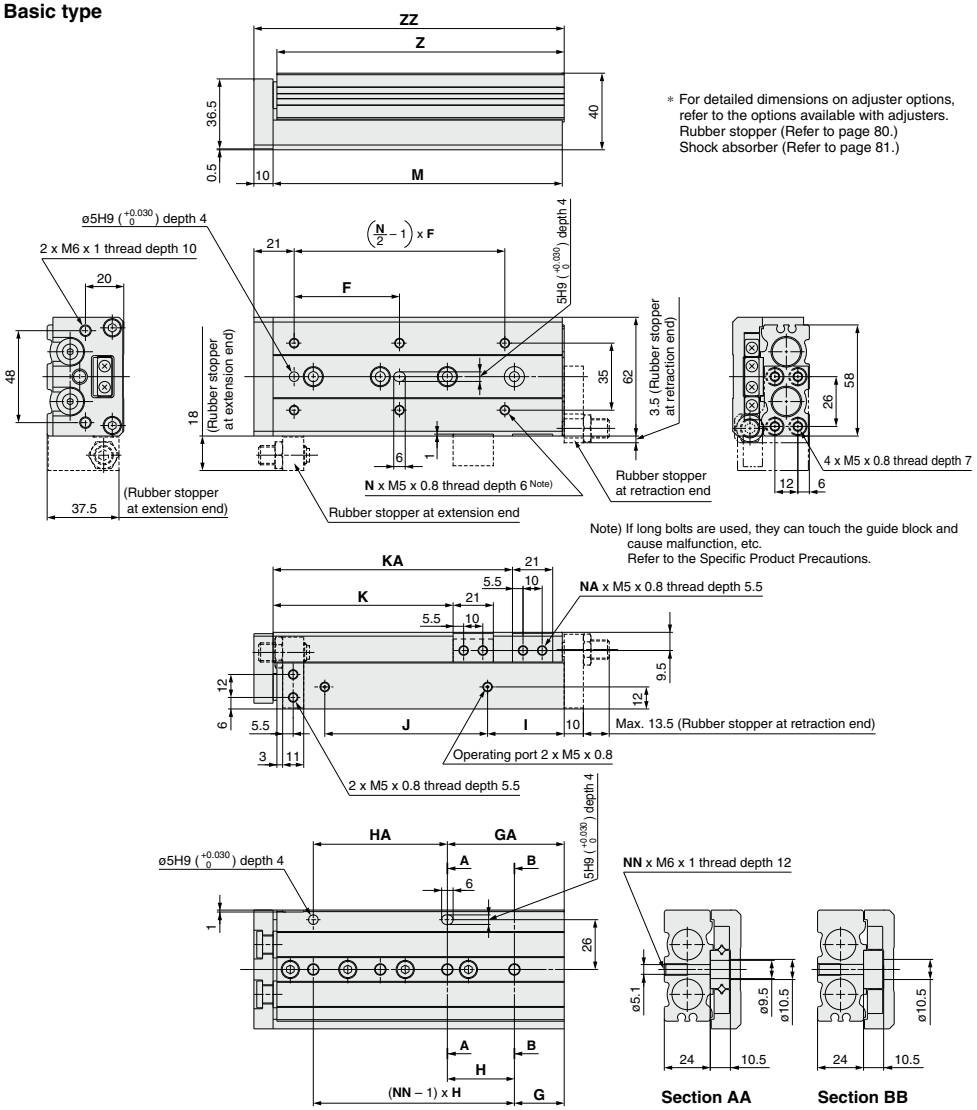
(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS12L-10	35	4	15	40	2	15	40	10	40	26.5	—	2	71	70	80
MXS12L-20	35	4	15	40	2	15	40	10	40	36.5	—	2	71	70	80
MXS12L-30	35	4	15	40	2	15	40	10	40	46.5	—	2	71	70	80
MXS12L-40	50	4	17	25	3	42	25	10	52	56.5	—	2	83	82	92
MXS12L-50	35	6	15	36	3	51	36	22	60	66.5	—	2	103	102	112
MXS12L-75	55	6	25	36	4	61	72	43	85	91.5	125.5	4	149	148	158
MXS12L-100	65	6	35	38	5	111	76	52	130	116.5	179.5	4	203	202	212

Regarding the external dimensions with a shock absorber, view the external dimensions of MXS12 symmetrically on page 73.

Dimensions: MXS16L/Symmetric Type

Basic type



* For detailed dimensions on adjuster options, refer to the options available with adjusters.
Rubber stopper (Refer to page 80.)
Shock absorber (Refer to page 81.)

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

Section AA **Section BB**

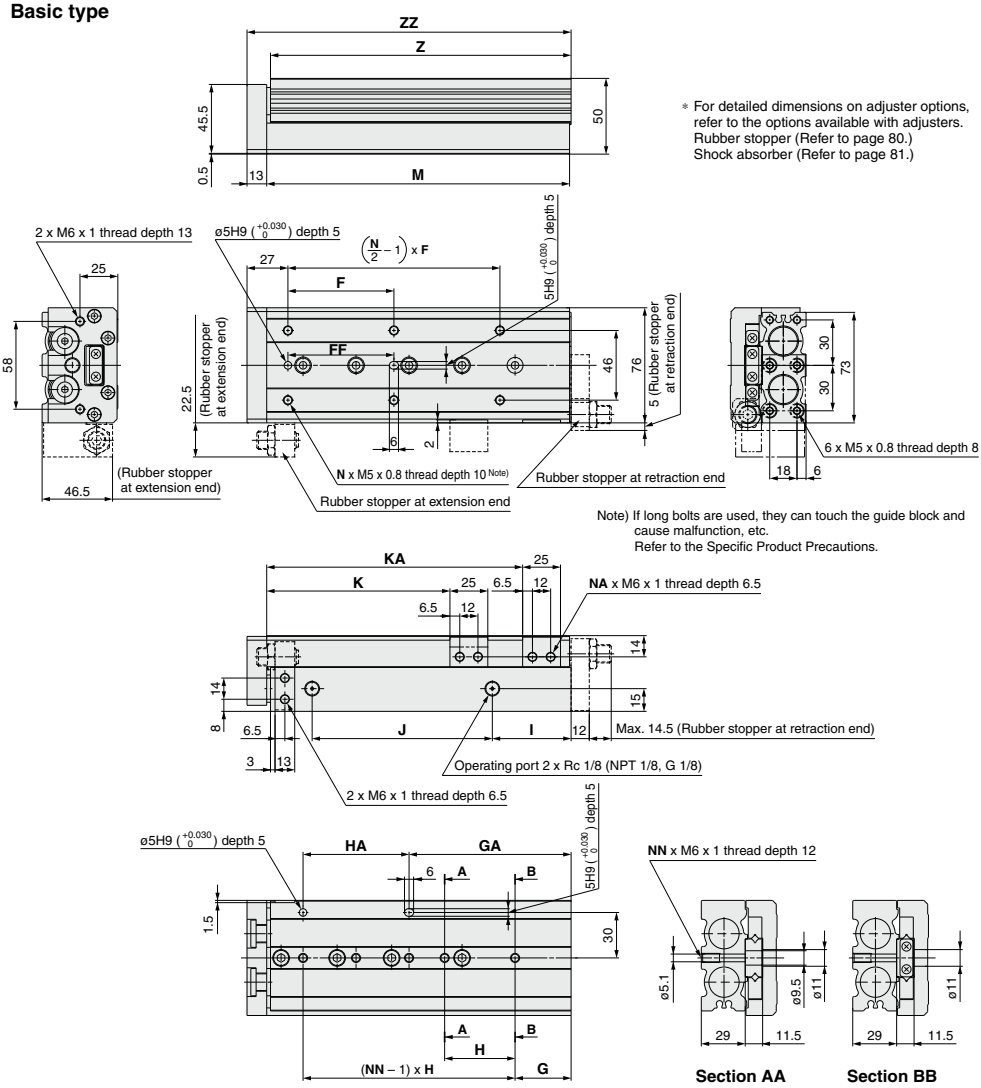
(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS16L-10	35	4	16	40	2	16	40	10	40	29	—	2	76	75	87
MXS16L-20	35	4	16	40	2	16	40	10	40	39	—	2	76	75	87
MXS16L-30	35	4	16	40	2	16	40	10	40	49	—	2	76	75	87
MXS16L-40	40	4	16	50	2	16	50	10	50	59	—	2	86	85	97
MXS16L-50	30	6	21	30	3	51	30	15	60	69	—	2	101	100	112
MXS16L-75	55	6	26	35	4	61	70	40	85	94	125	4	151	150	162
MXS16L-100	65	6	39	35	5	109	70	55	118	119	173	4	199	198	210
MXS16L-125	70	8	19	35	7	159	70	68	155	144	223	4	249	248	260

Regarding the external dimensions with a shock absorber, view the external dimensions of MXS16 symmetrically on page 75.

Dimensions: MXS20L/Symmetric Type

Basic type



* For detailed dimensions on adjuster options, refer to the options available with adjusters.
Rubber stopper (Refer to page 80.)
Shock absorber (Refer to page 81.)

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

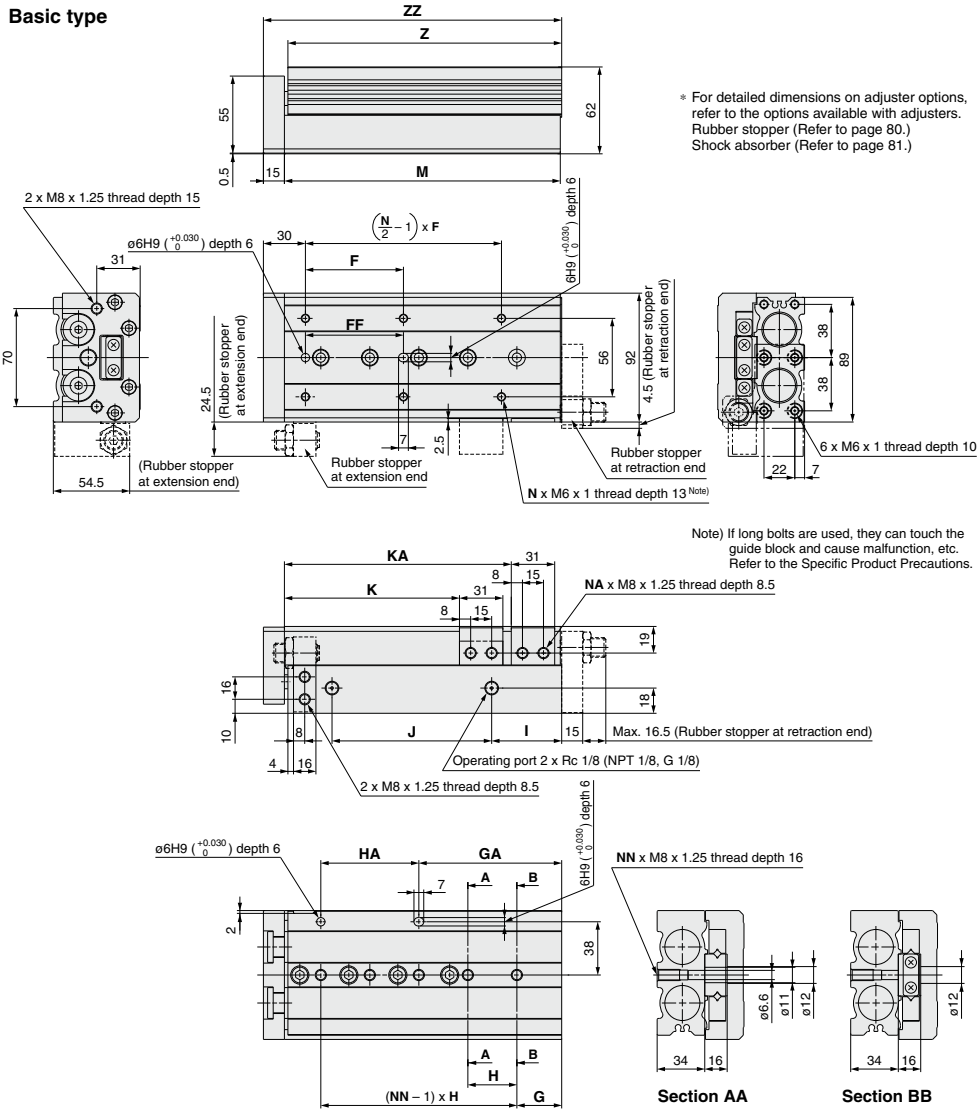
(mm)

Model	F	FF	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS20L-10	50	40	4	15	45	2	25	35	10	44	31	—	2	83	81.5	97
MXS20L-20	50	40	4	15	45	2	25	35	10	44	41	—	2	83	81.5	97
MXS20L-30	50	40	4	15	45	2	25	35	10	44	51	—	2	83	81.5	97
MXS20L-40	60	50	4	15	55	2	35	35	10	54	61	—	2	93	91.5	107
MXS20L-50	35	35	6	15	35	3	50	35	10	69	71	—	2	108	106.5	122
MXS20L-75	60	60	6	19	35	4	54	70	10	108	96	—	2	147	145.5	161
MXS20L-100	70	70	6	37	35	5	107	70	58	113	121	169	4	200	198.5	214
MXS20L-125	70	70	8	41	38	6	155	76	70	155	146	223	4	254	252.5	268
MXS20L-150	80	80	8	19	44	7	195	88	87	190	171	275	4	306	304.5	320

Regarding the external dimensions with a shock absorber, view the external dimensions of MXS20 symmetrically on page 77.

Dimensions: MXS25L/Symmetric Type

Basic type



∗ For detailed dimensions on adjuster options, refer to the options available with adjusters.
Rubber stopper (Refer to page 80.)
Shock absorber (Refer to page 81.)

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

Section AA **Section BB**

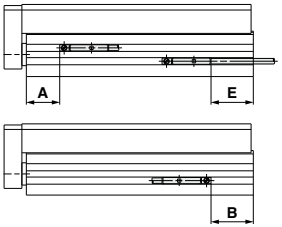
(mm)

Model	F	FF	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS25L-10	50	40	4	22	45	2	22	45	12	47	35	—	2	92	90.5	108
MXS25L-20	50	40	4	22	45	2	22	45	12	47	45	—	2	92	90.5	108
MXS25L-30	50	40	4	22	45	2	22	45	12	47	55	—	2	92	90.5	108
MXS25L-40	60	50	4	22	55	2	22	55	12	57	65	—	2	102	100.5	118
MXS25L-50	35	35	6	20	35	3	55	35	12	70	75	—	2	115	113.5	131
MXS25L-75	60	60	6	26	35	4	61	70	33	90	100	—	2	156	154.5	172
MXS25L-100	70	70	6	32	35	5	102	70	50	114	125	162	4	197	195.5	213
MXS25L-125	75	75	8	40	38	6	154	76	67	155	150	218	4	255	253.5	271
MXS25L-150	80	80	8	30	40	7	190	80	82	180	175	258	4	295	293.5	311

Regarding the external dimensions with a shock absorber, view the external dimensions of MXS25 symmetrically on page 79.

MXS Series
Auto Switch Mounting

Auto Switch Proper Mounting Position (Detection at Stroke End)



Reed Auto Switch: D-A90, D-A93, D-A96, D-A90V, D-A93V, D-A96V

Model	A	B Stroke									E Stroke								
		10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150
MXS6	5.9	5.6	5.6	5.6	17.6	23.6	—	—	—	—	3.6 (1.1)	3.6 (1.1)	3.6 (1.1)	15.6 (13.1)	21.6 (19.1)	—	—	—	—
MXS8	7.6	10.9	5.9	6.9	14.9	22.9	47.9	—	—	—	8.9 (6.4)	3.9 (1.4)	4.9 (2.4)	12.9 (10.4)	20.9 (18.4)	45.9 (43.4)	—	—	—
MXS12	11.6	28.4	18.4	8.4	10.4	20.4	41.4	70.4	—	—	26.4 (23.9)	16.4 (13.9)	6.4 (3.9)	8.4 (5.9)	18.4 (15.9)	39.4 (36.9)	68.4 (65.9)	—	—
MXS16	16.3	28.7	18.7	8.7	8.7	13.7	38.7	61.7	86.7	—	26.7 (24.2)	16.7 (14.2)	6.7 (4.2)	6.7 (4.2)	11.7 (9.2)	36.7 (34.2)	59.7 (57.2)	84.7 (82.2)	—
MXS20	18.9	32.6	22.6	12.6	12.6	17.6	31.6	59.6	88.6	115.6	30.6 (28.1)	20.6 (18.1)	10.6 (8.1)	10.6 (8.1)	15.6 (13.1)	29.6 (27.1)	57.6 (55.1)	86.6 (84.1)	113.6 (111.1)
MXS25	23	37.5	27.5	17.5	17.5	20.5	36.5	52.5	85.5	100.5	35.5 (33)	25.5 (23)	15.5 (13)	15.5 (13)	18.5 (16)	34.5 (32)	50.5 (48)	83.5 (81)	98.5 (96)

∗ ( ): Denotes D-A93.

Solid State Auto Switch: D-M9B, D-M9N, D-M9P, D-M9BW, D-M9NW, D-M9PW, D-M9□A

Model	A	B Stroke									E Stroke									E (D-M9□A) Stroke									
		10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150
MXS6	10	9.6	9.6	9.6	21.6	27.6	—	—	—	—	-0.4	-0.4	-0.4	11.6	17.5	—	—	—	—	-2.4	-2.4	-2.4	9.6	15.5	—	—	—	—
MXS8	11.6	14.9	9.9	10.9	18.9	26.9	51.9	—	—	—	4.9	-0.1	0.9	8.9	16.9	41.9	—	—	—	2.9	-2.1	1.1	6.9	14.9	39.9	—	—	—
MXS12	15.6	32.4	22.4	12.4	14.4	24.4	45.4	74.4	—	—	22.4	12.4	2.4	4.4	14.4	35.4	64.4	—	—	20.4	10.4	0.4	2.4	12.4	33.4	62.4	—	—
MXS16	20.3	32.7	22.7	12.7	12.7	17.7	42.7	65.7	90.7	—	22.7	12.7	2.7	2.7	7.7	32.7	55.7	80.7	—	20.7	10.7	0.7	0.7	5.7	30.7	53.7	78.7	—
MXS20	22.9	36.6	26.6	16.6	16.6	21.6	35.6	63.6	92.6	119.6	26.6	16.6	6.6	6.6	11.6	25.6	53.6	82.6	109.6	24.6	14.6	4.6	4.6	9.6	23.6	51.6	80.6	107.6
MXS25	27	41.5	31.5	21.5	21.5	24.5	40.5	56.5	89.5	104.5	31.5	21.5	11.5	11.5	14.5	30.5	46.5	79.5	94.5	29.5	19.5	9.5	9.5	12.5	28.5	44.5	77.5	92.5

Solid State Auto Switch: D-M9BV, D-M9NV, D-M9PV, D-M9BWV, D-M9NWV, D-M9PWV, D-M9□AV

Model	A	B Stroke									E Stroke									E (D-M9□AV) Stroke									
		10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150
MXS6	10	9.6	9.6	9.6	21.6	27.6	—	—	—	—	1.6	1.6	1.6	13.6	19.6	—	—	—	—	-0.4	-0.4	-0.4	11.6	17.6	—	—	—	—
MXS8	11.6	14.9	9.9	10.9	18.9	26.9	51.9	—	—	—	6.9	1.9	2.9	10.9	18.9	43.9	—	—	—	4.9	-0.1	0.9	8.9	16.9	41.9	—	—	—
MXS12	15.6	32.4	22.4	12.4	14.4	24.4	45.4	74.4	—	—	24.4	14.4	4.4	6.4	16.4	37.4	66.4	—	—	22.4	12.4	2.4	4.4	12.4	35.4	64.4	—	—
MXS16	20.3	32.7	22.7	12.7	12.7	17.7	42.7	65.7	90.7	—	24.7	14.7	4.7	4.7	9.7	34.7	57.7	82.7	—	22.7	12.7	2.7	2.7	7.7	32.7	55.7	80.7	—
MXS20	22.9	36.6	26.6	16.6	16.6	21.6	35.6	63.6	92.6	119.6	28.6	18.6	8.6	8.6	13.6	27.6	55.6	84.6	111.6	26.6	16.6	6.6	6.6	11.6	25.6	53.6	82.6	109.6
MXS25	27	41.5	31.5	21.5	21.5	24.5	40.5	56.5	89.5	104.5	33.5	23.5	13.5	13.5	16.5	32.5	48.5	81.5	96.5	31.5	21.5	11.5	11.5	14.5	30.5	46.5	79.5	94.5

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

Auto Switch Mounting

⚠ Caution

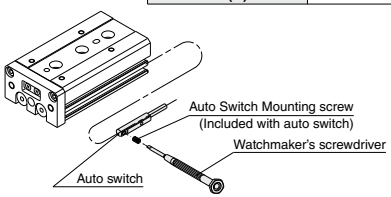
Auto Switch Mounting Tool

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

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



Operating Range

(mm)

Auto switch model	Applicable bore size (mm)					
	6	8	12	16	20	25
D-A9□/A9□V	4.5	5	6	7	8	8
D-M9□/M9□V **D-M9□W/M9□WV** **D-M9□A/M9□AV**	2.5	2.5	3	4	4.5	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.

Other than the applicable auto switches listed in "How to Order", the following auto switches can be mounted.

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

Made to Order: Individual Specifications

Made to Order

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

1 PTFE Grease

Symbol **-X7**

MXS | 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)	6, 8, 12, 16, 20, 25

∗ Specifications and dimensions other than the above are 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 Equipment

Symbol **-X9**

MXS | Standard model no. | – X9

X9: Grease for food processing equipment

Grease for food processing equipment 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 equipment (NSF-H1 certified)/Aluminum complex soap base grease
Bore size (mm)	6, 8, 12, 16, 20, 25

∗ Specifications and dimensions other than the above are 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.

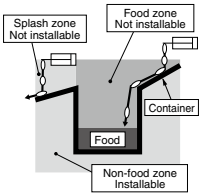
<Not installable>

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**

MXS | 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)	6, 8, 12, 16, 20, 25
Auto switch	Not mountable

∗ Specifications and dimensions other than the above are the same as the standard type.

4 Fluororubber Seal

Symbol **-X39**

MXS | Standard model no. | – X39

X39: Fluororubber seal

Change the materials for the piston seal, rod seal and O-rings to fluororubber.

Specifications

Type	Fluororubber seal
Bore size (mm)	6, 8, 12, 16, 20, 25
Seal material	Fluororubber

∗ Specifications and dimensions other than the above are the same as the standard type.

5 Anti-corrosive Specifications for Guide Unit

Symbol **-X42**

MXS | 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)	6, 8, 12, 16, 20, 25
Surface treatment	Special anti-corrosive treatment ∗2

∗1 Specifications and dimensions other than the above are the same as the standard type.

∗2 Special anti-corrosive treatment makes the rail and the guide black.

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

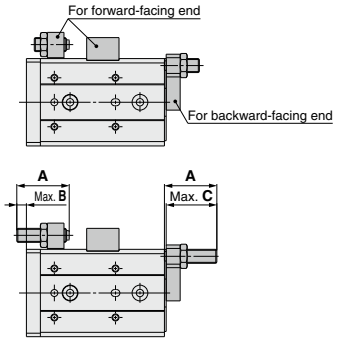
MXS | Standard model no. | – X11

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

∗ -X11 is not available for those with a shock absorber (BS, BT, B).

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

Dimensions



(mm)

Model	A	B	C
MXS6(L)	26.5	9	25.5
MXS8(L)	26.5	7	25.5
MXS12(L)	30	5.5	29
MXS16(L)	34.5	5.5	33.5
MXS20(L)	37.5	3.5	36.5
MXS25(L)	42.5	2.5	41.5

7 Adjusting Bolt, Long Specification (Adjustment range: 25 mm) Symbol -X12

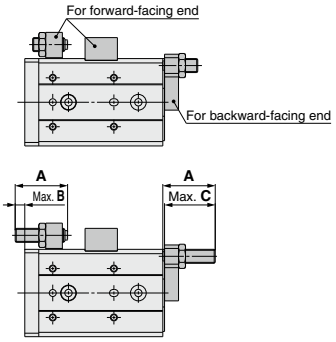
MXS | Standard model no. | – X12

● Adjusting bolt, long specification (Adjustment range: 25 mm)

∗ -X12 is not available for the MXS6.
∗ -X12 is not available for those with a shock absorber (BS, BT, B).

The average adjusting stroke range was extended from 5 mm to 25 mm with a long adjusting bolt.

Dimensions



(mm)

Model	A	B	C
MXS8(L)	36.5	17	35.5
MXS12(L)	40	15.5	39
MXS16(L)	44.5	15.5	43.5
MXS20(L)	47.5	13.5	46.5
MXS25(L)	52.5	12.5	51.5

MXS 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 a load within the range of the operating limits.

Select the model considering maximum loading mass and allowable moment. For details, refer to "Model Selection" on pages 62 and 63. 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 intermediate stops by external stopper is done, avoid ejection.

If lurching occurs, damage can result. When making an intermediate stop with an external stopper to be followed by continued forward movement, first supply pressure to momentarily reverse the table, then retract the intermediate stopper, and finally apply pressure to the opposite port to operate the table again.

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.

Mounting

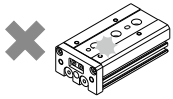
⚠ Caution

1. Do not scratch or dent the mounting side of the body, table or end plate.

The damage will result in a decrease in parallelism, vibration of the guide or an increase in moving part resistance.

2. Do not scratch or dent on the forward side of the rail or guide.

This could result in looseness, increased operating resistance, etc.



3. 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.

4. Flatness of mounting surface should be 0.02 mm or less.

Poor parallelism of the workpiece mounted on the body, the base, and other parts can cause vibration in the guide unit and increased operating resistance, etc.

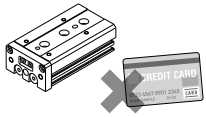
5. Select the proper connection with the load which has external support and/or guide mechanism on the outside, and align it properly.

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.

7. Keep away from objects which are influenced by magnets.

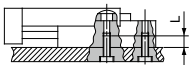
Since an body has magnets built-in, do not allow close contact with magnetic disks, magnetic cards or magnetic tapes. Data may be erased.



8. When mounting the body, use screws of an appropriate length and do not exceed the maximum tightening torque.

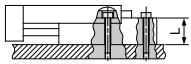
Tightening with a torque above the limit could cause malfunction. Whereas tightening insufficiently could result in misalignment or dropping.

1. Lateral mounting (Body tapped)



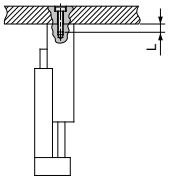
Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (L mm)
MXS6	M4 x 0.7	2.1	8
MXS8	M4 x 0.7	2.1	8
MXS12	M5 x 0.8	4.4	10
MXS16	M6 x 1	7.4	12
MXS20	M6 x 1	7.4	12
MXS25	M8 x 1.25	18	16

2. Lateral mounting (Through-hole)



Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (L mm)
MXS6	M3 x 0.5	1.2	11
MXS8	M3 x 0.5	1.2	13
MXS12	M4 x 0.7	2.8	18.5
MXS16	M5 x 0.8	5.7	24
MXS20	M5 x 0.8	5.7	29
MXS25	M6 x 1	10	34

3. Vertical mounting (Body tapped)



Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (L mm)
MXS6	M2.5 x 0.45	0.5	3.5
MXS8	M3 x 0.5	0.9	4
MXS12	M4 x 0.7	2.1	6
MXS16	M5 x 0.8	4.4	7
MXS20	M5 x 0.8	4.4	8
MXS25	M6 x 1	7.4	10

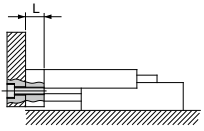
MXS Series
Specific Product Precautions 2

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

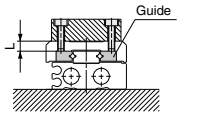
1. Front mounting



⚠ Caution If longer bolts are used, they can touch the body and cause a malfunction.

Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (L mm)
MXS6	M3 x 0.5	0.9	4.5
MXS8	M4 x 0.7	2.1	5.5
MXS12	M5 x 0.8	4.4	7.5
MXS16	M6 x 1	7.4	9.5
MXS20	M6 x 1	7.4	12.5
MXS25	M8 x 1.25	18	14.5

2. Top mounting



⚠ Caution If longer bolts are used, they can touch the guide and cause a malfunction.

Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (L mm)
MXS6	M3 x 0.5	0.9	3.5
MXS8	M3 x 0.5	0.9	4.5
MXS12	M4 x 0.7	2.1	5
MXS16	M5 x 0.8	4.4	5.5
MXS20	M5 x 0.8	4.4	9.5
MXS25	M6 x 1	7.4	12.5

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

Operating Environment

⚠ Caution

1. Do not use in an environment, where the product could be exposed to liquids such as cutting oil, etc.

Using in an environment where the product could be exposed to cutting oil, coolant, oil, etc. could result in looseness, increased operating resistance, air leakage, etc.

2. Do not use in an environment, where the product could be exposed directly to foreign materials such as powder dust, blown dust, cutting chips, spatter, etc.

This could result in looseness and increased operating resistance, and air leakage, etc.
Contact us 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.

Contact us regarding use in this kind of environment, since this can cause damage or a malfunction.

Caution on Handling Adjuster Option

Stroke Adjuster

⚠ Caution

1. Do not replace with the bolt other than the original adjusting bolt.

This could result in looseness and damage due to impact forces, etc.

Caution on Handling Adjuster Option

2. Refer to the below table for lock nut tightening torque.

Insufficient torque will cause a decrease in the positioning accuracy.

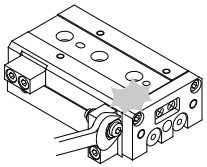
Model	Tightening torque (N·m)
MXS6	3.0
MXS8	5.0
MXS12	12.5
MXS16	25.0
MXS20	43.0
MXS25	69.0

Stroke Adjuster

⚠ Caution

3. When stroke adjuster is adjusted, do not hit the table with a wrench, etc.

This could result in looseness.



With Shock Absorber

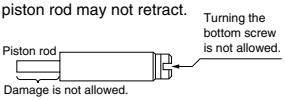
⚠ Caution

1. Do not rotate the set screw on bottom of shock absorber.

This is not an adjusting screw. Turning it could cause oil leakage.

2. Do not scratch the exposed portion of the piston rod.

Durability could be degraded and the piston rod may not retract.



3. Refer to the below table for tightening torque for lock nut of shock absorber.

Model	Tightening torque (N·m)
MXS8 **MXS12**	1.67
MXS16	3.14
MXS20 **MXS25**	10.8

MXS Series
Specific Product Precautions 3

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.

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 RB10□□ to RB14□□

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.

Applicable size	Shock absorber model
MXS8	RB0805N
MXS12	RB0806N
MXS16	RB1007N
MXS20	RB1411N
MXS25	RB1412N

Caution on Mounting Adjuster Option

Rubber Stopper

⚠ Caution

1. Use caution because the length of the bolts for mounting on the body and for the table are different from each other for some models.

The rubber stopper at the extension end (AS) of the MXS6, 8 and 12 has a different length hexagon socket head cap screw on the body mounting section and on the table mounting section. Use sufficient care when mounting.

If assembled by making an error in length, it could cause looseness or lead to malfunction.

2. Follow the table below for tightening torque of mounting bolts.

Insufficient torque will cause a decrease in the positioning accuracy and lead to malfunction.

Model	Rubber stopper at extension end (AS)				Rubber stopper at retraction end (AT)	
	Body mounting section		Table mounting section			
	Bolt size	Tightening torque (N·m)	Bolt size	Tightening torque (N·m)	Bolt size	Tightening torque (N·m)
MXS6	M2.5 x 10	0.5	M2.5 x 8	0.5	M2.5 x 8	0.5
MXS8	M3 x 12	0.9	M3 x 10	0.9	M3 x 10	0.9
MXS12	M4 x 15	2.1	M4 x 12	2.1	M4 x 8	2.1
MXS16	M5 x 18	4.4	M5 x 18	4.4	M5 x 10	4.4
MXS20	M6 x 20	7.0	M6 x 20	7.0	M5 x 12	4.4
MXS25	M8 x 25	18.0	M8 x 25	18.0	M6 x 16	7.0

Shock Absorber

⚠ Caution

1. Use caution because the length of the bolts for mounting on the body and for the table are different from each other for some models.

The shock absorber at the retraction end (BT) has a different length hexagon socket head cap screw on the body mounting section and on the table mounting section. Use sufficient care when mounting.

If assembled by making an error in length, it could cause looseness or lead to malfunction.

2. Follow the table below for tightening torque of mounting bolts.

Insufficient torque will cause a decrease in the positioning accuracy and lead to malfunction.

Model	Shock absorber at extension end (BS)				Shock absorber at retraction end (BT)			
	Body mounting section		Table mounting section		Body mounting section		Table mounting section	
	Bolt size	Tightening torque (N·m)	Bolt size	Tightening torque (N·m)	Bolt size	Tightening torque (N·m)	Bolt size	Tightening torque (N·m)
MXS8	M3 x 16	0.9	M3 x 16	0.9	M3 x 12	0.9	M3 x 16	0.9
MXS12	M4 x 15	2.1	M4 x 15	2.1	M4 x 8	2.1	M4 x 15	2.1
MXS16	M5 x 18	4.4	M5 x 18	4.4	M5 x 10	4.4	M5 x 18	4.4
MXS20	M6 x 25	7.0	M6 x 25	7.0	M5 x 12	4.4	M6 x 25	7.0
MXS25	M8 x 25	18.0	M8 x 25	18.0	M6 x 16	7.0	M8 x 25	18.0

MXS Series
Specific Product Precautions 4

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.

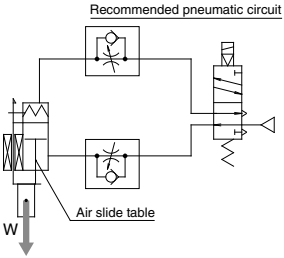
Caution on Handling Functional Option

With End Lock

⚠Caution

1. Use 2 position, 4 or 5 port solenoid valves.

A malfunction may occur with a control circuit that exhausts from both ports, such as exhaust center 3 position valves.



2. Be sure to use meter-out speed control valves.

If it is used in meter-in speed control or without a speed controller, it may result in malfunction.

3. When releasing the end lock manually, be sure that air pressure is released.

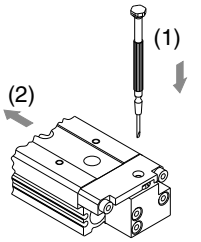
If the end lock is unlocked while the air pressure still remains, it will lead to damage a workpiece, etc. due to unexpected lurching.

How to Unlock the End Lock

∗ Before proceeding, make sure that there is no residual air pressure.

(1) Push down the lock piston pin.

(2) Slide the table forward.

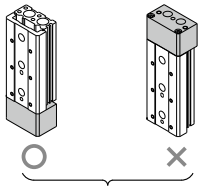


With Buffer Mechanism

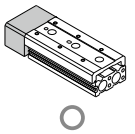
⚠Caution

1. When using the air slide table with buffer, it must be oriented as shown in the sketch below.

In horizontal operation, the buffer may travel the stroke length and activate the auto switch depending on the load and the speed. Therefore, adjust the speed according to the load.

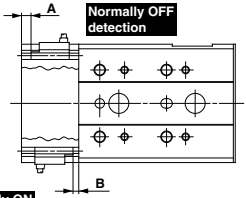


Vertical use



Horizontal use

2. Auto switch with buffer function: For the proper mounting positions for detection at stroke end, refer to the following table.



∗ Adjust the switch position according to load and speed.

(mm)

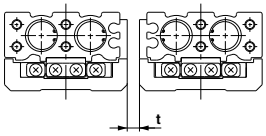
Model	A	B
MXS6	2	3
MXS8	2.5	
MXS12	4	
MXS16	5	
MXS20	5.5	
MXS25	10	

Caution on Handling Symmetric Type

⚠Caution

1. Maintain a longer distance than prescribed below if standard type and symmetric type are used side by side.

If the space is insufficient, it may cause auto switches to malfunction.



(mm)

Model	Mounting pitch: **t**
MXS6	5
MXS8	10
MXS12	10
MXS16	10
MXS20	15
MXS25	15

Other

⚠Warning

1. Do not put hands or fingers between the end plate and body.

Never put hands or fingers in the gap between the end plate and body 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.