

Air Slide Table Long Stroke Type MXY Series

ø6, ø8, ø12



How to Order

MXY 6 - 50 - [] - [] - M9BW [] - []

Bore size/Standard stroke (mm)

6	50, 100, 150, 200
8	50, 100, 150, 200, 250, 300
12	50, 100, 150, 200, 250, 300, 350, 400

Adjuster option

Nil	Rubber stopper
B*	Shock absorber
C	Metal stopper

* Only for MXY12

Mode to Order
For details, refer to page 363.

Number of auto switches

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

Auto switch type

Nil	Without auto switch (Built-in magnet)
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One side centralized piping, switch rail

Nil	One side centralized piping, with switch rail
N	Without one side centralized piping, without switch rail

The auto switch cannot be mounted on the one side centralized piping type without switch rail (N).

Applicable Auto Switches

Refer to pages 1119 to 1245 for further information on auto switches.

Type	Special function	Electrical entry	Indicator	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)			Pre-wired connector	Applicable load					
					DC	AC	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)			5 (Z)				
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	○	○	IC circuit	Relay, PLC			
				3-wire (PNP)				M9PV	M9P	●	●	○	○					
				2-wire				M9BV	M9B	●	●	○	○					
				3-wire (NPN)				M9NVV	M9NV	●	●	○	○					
	Diagnostic indication (2-color indicator)	Grommet	Yes	3-wire (PNP)	24 V	5 V, 12 V	—	—	M9PVV	M9PV	●	●	○	○	IC circuit	Relay, PLC		
									2-wire	M9BWW	M9BW	●	●	○			○	
									3-wire (NPN)	M9NAV*1	M9NA*1	○	○	●			●	
									3-wire (PNP)	M9PAV*1	M9PA*1	○	○	●			●	
Water resistant (2-color indicator)	Grommet	Yes	2-wire	24 V	12 V	—	—	M9BAV*1	M9BA*1	○	○	●	●	IC circuit	—			
								3-wire (NPN)	M9NAV*1	M9NA*1	○	○	●			●		
								3-wire (PNP)	M9PAV*1	M9PA*1	○	○	●			●		
								2-wire	M9BAV*1	M9BA*1	○	○	●			●		
Read auto switch	—	Grommet	Yes	3-wire (Equiv. to NPN)	24 V	5 V	—	A96V	A96	●	—	●	—	IC circuit	—			
				2-wire				100 V	12 V	A93V*2	A93	●	●			●	—	Relay, PLC
				100 V or less				A90V	A90	●	—	●	—			—		

*1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance.

*2 1 m type lead wire is only applicable to D-A93.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW
 1 m..... M (Example) M9NWM
 3 m..... L (Example) M9NWL
 5 m..... Z (Example) M9NWX

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

* Refer to page 369 for applicable auto switches in addition to those listed above.

* For details on auto switches with a pre-wired connector, refer to pages 1192 and 1193.

* Auto switches are shipped together (not assembled).

Specifications



Symbol

Rubber bumper
(Magnet type)



Model	MX _Y 6	MX _Y 8	MX _Y 12
Bore size (mm)	6	8	12
Port size	M5 x 0.8		
Fluid	Air		
Action	Double acting (type)		
Operating pressure	0.2 to 0.55 MPa		
Proof pressure	0.83 MPa		
Ambient and fluid temperature	-10 to 60°C		
Operating speed range (Average operating speed) ^{Note 1)}	50 to 400 mm/s ^{Note 2)} Metal stopper: 50 to 200 mm/s		
Cushion	Rubber bumper Shock absorber ^{Note 3)} (option, not available on MX _Y 6, MX _Y 8) None (with metal stopper)		
Lubrication	Non-lube (equipment), unlubricated		
Stroke adjuster	Standard		
Stroke adjustment range	Rubber stopper	One side 0 to 5 mm	
	Shock absorber	—	— One side 0 to 15 mm
	Metal stopper	One side 0 to 5 mm	
Auto switch	Reed auto switches (2-wire, 3-wire) Solid state auto switches (2-wire, 3-wire) 2-color indicator solid state auto switches (2-wire, 3-wire)		
Stroke length tolerance	+ $\frac{1}{0}$ mm		

Note 1) Average operating speed: Speed that the stroke is divided by a period of time from starting the operation to reaching the end.

Note 2) When the smooth operation is required in a low speed range of 80 mm/s or less, contact SMC.

Note 3) The shock absorber service life is different from that of the MX_Y cylinder depending on operating conditions. Refer to the Specific Product Precautions for the replacement period.

Theoretical Output

(N)

Cylinder bore (mm)	Piston area (mm ²)	Operating pressure (MPa)				
		0.2	0.3	0.4	0.5	0.55
6	28	6	8	11	14	15
8	50	10	15	20	25	28
12	113	23	34	45	57	62



Made to Order:
Individual Specifications
(Refer to pages 370 and 371 for details.)

Symbol	Specifications
-X7	PTFE grease
-X9	Grease for food processing machines
-X11	Adjusting bolt, long specification (Adjustment range: 15 mm)
-X12	Adjusting bolt, long specification (Adjustment range: 25 mm)
-X39	Fluororubber seal
-X42	Anti-corrosive guide unit
-X45	EPDM seal

Magnetic

Holding Force

(N)

Standard Stroke

(mm)

Model	Standard stroke
MX_Y6	50, 100, 150, 200
MX_Y8	50, 100, 150, 200, 250, 300
MX_Y12	50, 100, 150, 200, 250, 300, 350, 400

Model	Magnetic holding force
MX_Y6	19
MX_Y8	34
MX_Y12	77

Weight

(g)

Model	One side centralized piping, with switch rail								One side centralized piping, without switch rail								Additional weight of option Shock absorber
	Stroke (mm)								Stroke (mm)								
	50	100	150	200	250	300	350	400	50	100	150	200	250	300	350	400	
MX_Y6	270	330	390	450	—	—	—	—	230	280	330	380	—	—	—	—	—
MX_Y8	420	510	600	690	780	870	—	—	410	480	550	620	690	760	—	—	—
MX_Y12	930	1060	1190	1320	1450	1580	1710	1840	910	1020	1130	1240	1350	1460	1570	1680	15

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 [IDK series in the Best Pneumatics No. 6](#).

MXH

MXS

MXQ

MXQ

MXF

MXW

MXJ

MXP

MX_Y

MTS

D-□

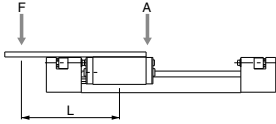
-X□

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 Deflection (Reference Values)

Table deflection due to pitch moment load

Displacement at "A" when load is applied "F"



L dimension	mm
MX Y6	100
MX Y8	100
MX Y12	140

Pitch moment

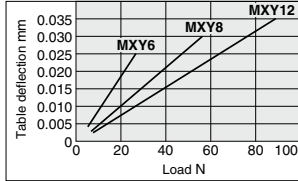
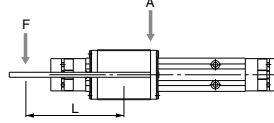


Table deflection due to yaw moment load

Displacement at "A" when load is applied "F"



L dimension	mm
MX Y6	100
MX Y8	100
MX Y12	140

Yaw moment

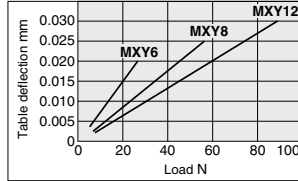
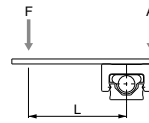


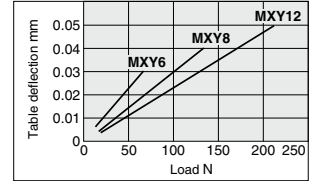
Table deflection due to roll moment load

Displacement at "A" when load is applied "F"

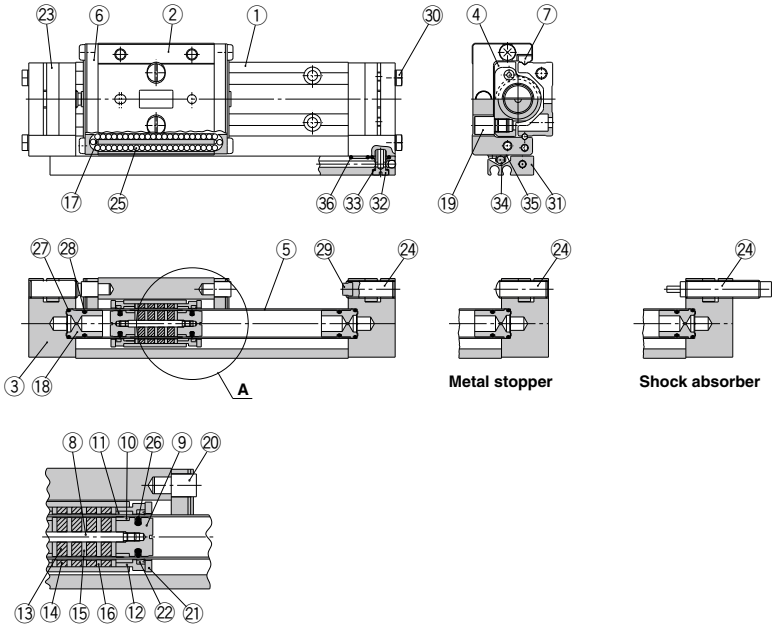


L dimension	mm
MX Y6	100
MX Y8	100
MX Y12	140

Roll moment



Construction



Detail drawing of part A

Component Parts

No.	Description	Material	Note
1	Rail	Stainless steel	Heat treatment, electroless nickel plated
2	Guide block	Stainless steel	Heat treatment, electroless nickel plated
3	End plate	Aluminum alloy	Hard anodized
4	Body	Aluminum alloy	Hard anodized
5	Tube	Stainless steel	
6	Cover	Resin	
7	Scraper	Stainless steel, NBR	
8	Shaft	Stainless steel	
9	Piston	Brass	Electroless nickel plated
10	Wear ring A	Resin	
11	Wear ring B	Resin	
12	Spacer	Brass	Electroless nickel plated
13	Magnet A	—	Nickel plated
14	Magnet B	—	Nickel plated
15	Yoke A	Steel	Electroless nickel plated
16	Yoke B	Steel	Electroless nickel plated
17	Return guide	Resin	
18	End cap	Resin	
19	Stud	Stainless steel	Heat treatment

No.	Description	Material	Note
20	Stopper screw	Stainless steel	Heat treatment
21	External magnet fix plate	Stainless steel	
22	Cylinder scraper	NBR	
23	Lock plate	Stainless steel	
24	Adjustment bolt	Steel	Zinc chromated Rubber stopper
		Stainless steel	Metal stopper
	Shock absorber	—	Shock absorber
25	Steel ball	High carbon chrome bearing steel	
26	Piston seal	NBR	
27	O-ring	NBR	
28	O-ring	NBR	
29	Adjustment bumper	Polyurethane	Rubber stopper
30	Plug	Brass	Electroless nickel plated
31	Switch rail	Aluminum alloy	Hard anodized
32	Stud	Brass	Electroless nickel plated
33	Gasket	NBR	
34	Magnet	—	Nickel plated
35	Magnet holder	Steel	Electroless nickel plated
36	O-ring	NBR	

Replacement Parts

Bore size (mm)	Kit no.	Contents
6	MX _Y 6-PS	A set of two of 10, 11, 22 and 26 each
8	MX _Y 8-PS	
12	MX _Y 12-PS	

Replacement Parts: Grease Pack

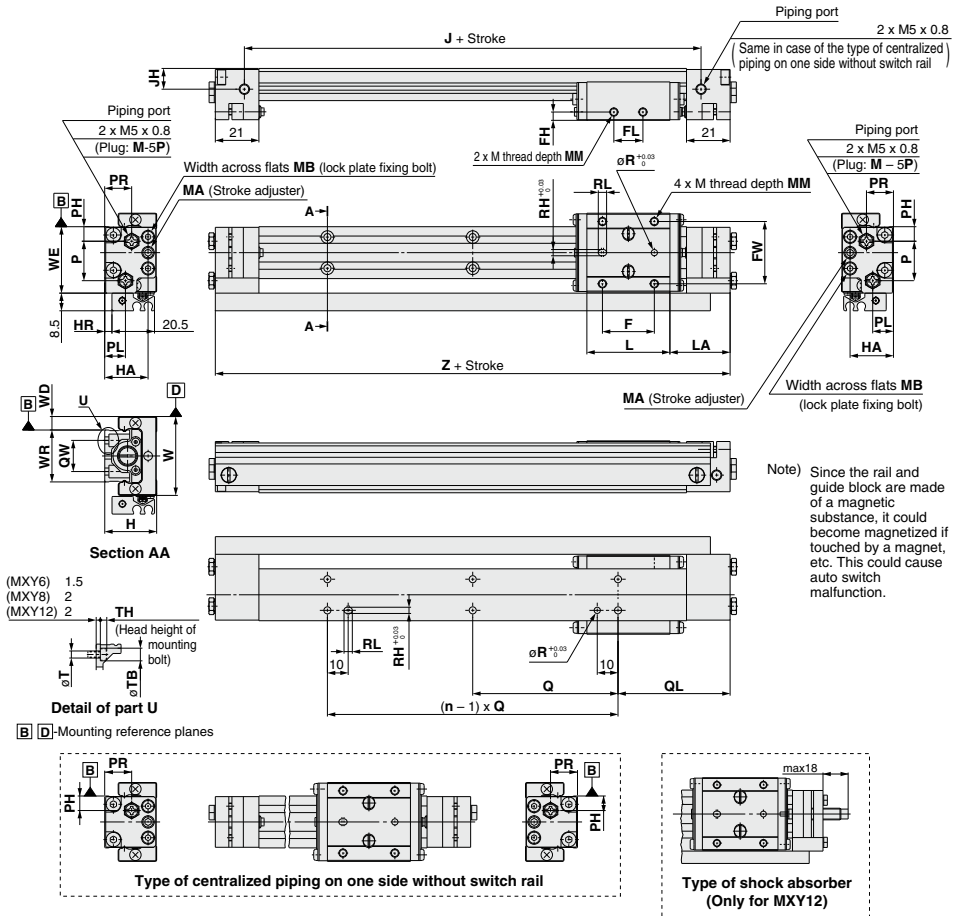
Grease pack part no.
GR-S-010 (10g)
GR-S-020 (20g)

MXH
 MXS
 MXQ
 MXQ
 MXF
 MXW
 MXJ
 MXP
MX_Y
 MTS

D
 -X

MXY Series

Dimensions

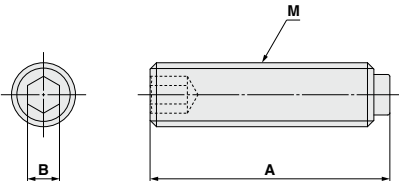


Model	F	FH	FL	FW	H	HA	HR	J	JH	L	LA	M	MM	MA	MB
MXY6	20	3	12	24	21.5	18	0.5	60	8.5	32	28	M3 x 0.5	4	M5 x 0.8 (Width across flats 2.5)	2
MXY8	25	4	14	30	25	20.9	3.5	70	10	40	29	M4 x 0.7	5	M5 x 1 (Width across flats 3)	2.5
MXY12	32	5	18	40	36	30.9	8.5	86	15	52	31	M5 x 0.8	6	M5 x 1 (Width across flats 4)	3

Model	P	PH	PL	PR	Q	QW	R	RH	RL	T	TB	TH	W	WD	WE	WR	Z
MXY6	13	7	9	11	60	12	3 (depth 3)	3 (depth 3)	4	2.9	5.1	2.5	30	5	25.5	20	88
MXY8	19	7	10	13	70	15	3 (depth 3)	3 (depth 3)	4	3.4	6.1	3	38	6.5	32	25	98
MXY12	29	7	13	18	90	21	4 (depth 4)	4 (depth 4)	5	4.5	7.8	4	50	8.5	42	33	114

Model	n								QL							
Stroke	50	100	150	200	250	300	350	400	50	100	150	200	250	300	350	400
MXY6	2	3	3	4	—	—	—	—	39	34	59	54	—	—	—	—
MXY8	2	2	3	4	5	5	—	—	39	64	54	44	34	59	—	—
MXY12	2	2	3	3	4	4	5	5	37	62	42	67	47	72	52	77

Dimensions of Adjusting Bolt/Rubber Stopper



Applicable size	Model	Stroke adjustment range mm	A	B	M
MX _Y 6	MX _Y -A627	5	22.5	2.5	M5×0.8
	MX _Y -A627-X11	15	32.5		
	MX _Y -A627-X12	25	42.5		
MX _Y 8	MX _Y -A827	5	22.5	3	M6×1
	MX _Y -A827-X11	15	32.5		
	MX _Y -A827-X12	25	42.5		
MX _Y 12	MX _Y -A1227	5	23	4	M8×1
	MX _Y -A1227-X11	15	33		
	MX _Y -A1227-X12	25	43		

How to Order Adjusting Bolt/Rubber Stopper

MX_Y — A 12 27 — X11

Applicable bore size

MX _Y 6	ø6
MX _Y 8	ø8
MX _Y 12	ø12

Adjustment range

Nil	5 mm
-X11	15 mm
-X12	25 mm

* For dimensions, refer to the figure above.

MXH

MXS

MXQ

MXQ

MXF

MXW

MXJ

MXP

MX_Y

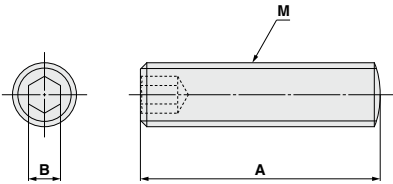
MTS

D-

-X

MX Y Series

Dimensions of Adjusting Bolt/Metal Stopper



Applicable size	Model	Stroke adjustment range mm	A	B	M
MX Y6	MX Y-A638	5	22.5	2.5	M5×0.8
	MX Y-A638-X11	15	32.5		
	MX Y-A638-X12	25	42.5		
MX Y8	MX Y-A838	5	22.5	3	M6×1
	MX Y-A838-X11	15	32.5		
	MX Y-A838-X12	25	42.5		
MX Y12	MX Y-A1238	5	23	4	M8×1
	MX Y-A1238-X11	15	33		
	MX Y-A1238-X12	25	43		

How to Order Adjusting Bolt/Metal Stopper

MX Y — A 12 38 — X11

Applicable bore size

MX Y6	ø6
MX Y8	ø8
MX Y12	ø12

Adjustment range

Nil	5 mm
-X11	15 mm
-X12	25 mm

* For dimensions, refer to the figure above.

Auto Switch Mounting

Auto Switch Proper Mounting Position (Detection at Stroke End)

Reed Auto Switch

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

Model	Mounting	Auto switch operating range
MX _Y 6	A	54
	B	34
MX _Y 8	A	59
	B	39
MX _Y 12	A	67
	B	47

Solid State Auto Switch

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

Model	Mounting	Auto switch operating range
MX _Y 6	A	50
	B	38
MX _Y 8	A	55
	B	43
MX _Y 12	A	63
	B	51

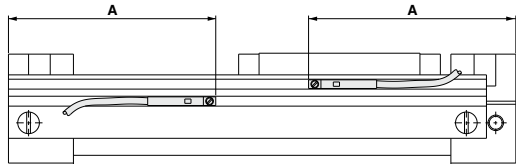
2-Color Indicator Solid State Auto Switch

D-M9BW(V), D-M9N(V), D-M9PW, D-M9□A(V) (mm)

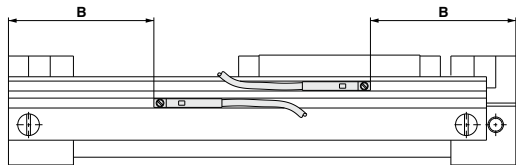
Model	Mounting	Auto switch operating range
MX _Y 6	A	50
	B	38
MX _Y 8	A	55
	B	43
MX _Y 12	A	63
	B	51

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

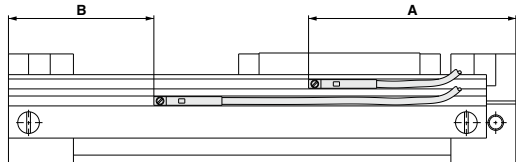
Lead wire entries outside



Lead wire entries inside



Lead wire entries parallel



MX_H

MX_S

MX_Q□

MX_Q

MX_F

MX_W

MX_J

MX_P

MX_Y

MT_S

Auto Switch Mounting

⚠ Caution

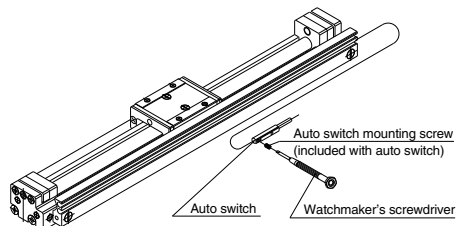
Auto Switch Mounting Tool

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

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)	0.05 to 0.15
D-M9□W(V)	
D-M9□A(V)	0.05 to 0.10



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 a solid state auto switch (D-F8) are also available. Refer to pages 1136 and 1592-1 for details.

D-□

-X□