

Air Slide Table Series MXS

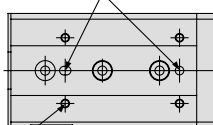
ø6, ø8, ø12, ø16, ø20, ø25

**Work table and air cylinder are integrated compactly.
Air slide table is ideal for precise assembly.**

With shock absorber and Symmetric styles are released.

Repeatability of work mounting

Pin holes for positioning



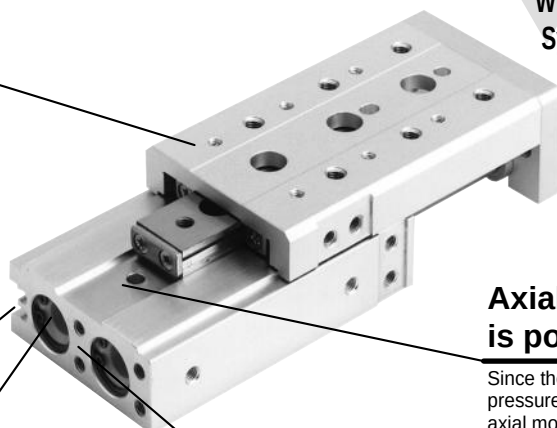
Thread for work mounting
Helisert is used for improved strength.

Flush mountable auto switches

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

Dual piston rod

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

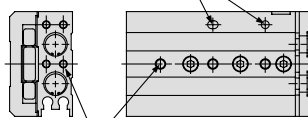


Axial mounting is possible

Since there is suitable setting pre-pressure for the unused cross roller guide, axial mounting is possible.

Body mounting

Pin holes for positioning



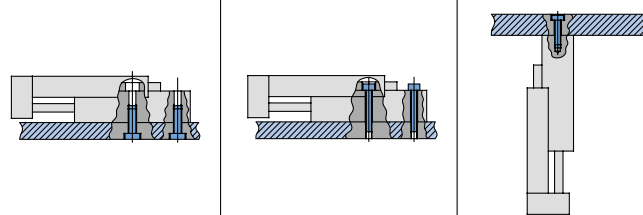
Threaded for body mounting

Various options

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

Mounting is possible in three directions.

1. Side mounting (Body tapped) 2. Side mounting (Body through hole) 3. Axial mounting (Body tapped)



Variations

Model	Bore (mm)	Standard stroke (mm)									Adjuster		Functional option	Auto switch
		10	20	30	40	50	75	100	125	150	Stroke adjuster	Shock absorber (Except ø6)		
MXS 6	6	●	●	●	●	●	●	●	●	●	Extension end		With buffer	Reed switch · D-A9□ · D-A9□V
MXS 8	8	●	●	●	●	●	●	●	●	●	Retraction end		With end lock (Except ø6)	Solid state switch · D-F9□ · D-F9□V
MXS12	12	●	●	●	●	●	●	●	●	●	Both ends		Axial piping	2 color solid state switch · D-F9□W · D-F9□VW
MXS16	16	●	●	●	●	●	●	●	●	●				
MXS20	20	●	●	●	●	●	●	●	●	●				
MXS25	25	●	●	●	●	●	●	●	●	●				

CL
MLGC
CNA
CB
CV/MVG
CXW
CXS
CXT
MX
MXU
MXS
MXQ
MXF
MXW
MXP
MG
MGP
MGQ
MGG
MGC
MGF
CY1
MY1

Air Slide Table

Series MXS

How to Order

Air slide table

MXS 12 50 F9N S

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

Stroke adjuster option

—	Without adjuster
AS	Adjuster at extension end
AT	Adjuster at retraction end
A	Adjuster at both ends
BS ⁽¹⁾	Absorber at extension end
BT ⁽¹⁾	Absorber at retraction end
B ⁽¹⁾	Absorber at both ends

Note 1) Shock absorber is not available for series MXS6.

Number of auto switches

—	2
S	1
n	n

Auto switch

—	Without auto switch
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* Refer to below table for parts No. of auto switch.

Functional option

—	Standard
F	With buffer
R ⁽²⁾	With end lock
P	Axial piping
FR ⁽²⁾	With buffer, end lock
FP	With buffer, axial piping

Note 2) End lock option is not available for series MXS6.

Combination of Options

○: Possible X: Not possible

Combination of options		C: Possible X: Not possible					
Functional option		—	F	R	P	FR	FP
Adjuster option							
—		○	○	○	○	○	○
AS		○	○ ⁽³⁾	○	○	○ ⁽³⁾	○ ⁽³⁾
AT		○	○	X	X	X	X
A		○	○ ⁽³⁾	X	X	X	X
BS		○	X	○	○	X	X
BT		○	○	X	X	X	X
B		○	X	X	X	X	X

Note 3) For combination of buffer mechanism style and stroke adjuster at extension end style, the buffer stroke is shortened by the adjusted length with the stroke adjuster at extension end.

Applicable Auto Switches/Refer to p.5.3-2 for further information on auto switch.

Style	Special function	Electrical entry	Indicator	Wiring (Output)	Load voltage			Auto switch model		Lead wire (m) ⁽¹⁾		Load		Specification details
					DC	AC	Electrical entry		0.5 (—)	3 (L)				
							Perpendicular	In-line						
Reed switch	—	Grommet	No	2 wire	24V	5V, 12V	≤100V	A90V	A90	●	●	IC circuit	Relay,	P.5.3-19
			Yes			12V	100V	A93V	A93	●	●	—	PLC	
			3 wire (NPN)	—	5V	—	A96V	A96	●	●	IC circuit	—		
Solid state switch	—	Grommet	Yes	3 wire (NPN)	24V	12V	—	F9NV	F9N	●	●	—	Relay, PLC	P.5.3-39
				3 wire (PNP)				F9PV	F9P	●	●			
				2 wire				F9BV	F9B	●	●			
	Diagnostic indication (2 color)			3 wire (NPN)				F9NWV	F9NW	●	●			P.5.3-66
				3 wire (PNP)				F9PWV	F9PW	●	●			
				2 wire				F9BWV	F9BW	●	●			

Note 1) Lead wire length 0.5m..... — (Ex.) A93
3m..... L A93L

PLC: Programmable Logic Controller

Air Slide Table *Series MXS*

Specifications

Bore size (mm)	6	8	12	16	20	25
Port size	M3 X 0.5	M5 X 0.8			Rc(PT)1/8	
Fluid	Air					
Action	Double acting					
Operating pressure	0.15 to 0.7MPa					
Proof pressure	1.05MPa					
Ambient and fluid temperature	-10 to 60°C					
Piston speed	50 to 500mm/s					
Cushion	Rubber bumper (Standard, With stroke adjuster) Shock absorber (Option)					
Lubrication	Not required					
Auto switch (Option)	Reed switch (2 wire, 3 wire) Solid state switch (2 wire, 3 wire) 2 color solid state switch (2 wire, 3 wire)					
Stroke length tolerance	+ ₀ ¹ mm					

Option

Stroke adjuster option	With stroke adjuster	Adjuster at extension end (AS)	Adjustable stroke range 0 to 5mm
		Adjuster at retraction end (AT)	
		Adjuster at both ends (A)	
	With shock absorber	Absorber at extension end (BS)	Shock absorber is not available for MXS6.
		Absorber at retraction end (BT)	
		Absorber at both ends (B)	
Functional option	With buffer (F)		End lock is not available for MXS6.
	With end lock (R)		
	Axial piping (P)		



Made to Order Specifications

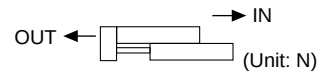
Refer to p.5.4-89 for "Made to Order Specifications" of series MXS.



* For details of adjuster and functional options, please refer to "Optional specifications" on p.3.11-24 to 3.11-26.

Theoretical Force

The dual rod ensures an output twice that of existing cylinders.



Bore size (mm)	Rod diameter (mm)	Operating direction	Piston area (mm ²)	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 force (N)=Pressure (MPa) X Piston area (mm²)

Standard Stroke

Model	Standard stroke (mm)
MXS 6	10, 20, 30, 40, 50
MXS 8	10, 20, 30, 40, 50, 75
MXS12	10, 20, 30, 40, 50, 75, 100
MXS16	10, 20, 30, 40, 50, 75, 100, 125
MXS20	10, 20, 30, 40, 50, 75, 100, 125, 150
MXS25	10, 20, 30, 40, 50, 75, 100, 125, 150

Weight

Model	Standard stroke (mm)									Extra for options						
	10	20	30	40	50	75	100	125	150	Extension adjuster	Retraction adjuster	Extension shock absorber	Retraction shock absorber	Buffer	End lock	Axial piping S: Stroke (mm)
MXS 6	80	100	115	155	180	—	—	—	—	10	5	—	—	30	—	13+0.15S
MXS 8	150	160	190	235	285	415	—	—	—	15	9	35	45	40	40	26+0.17S
MXS12	340	340	340	400	500	690	930	—	—	30	20	50	60	80	90	43+0.21S
MXS16	600	600	610	670	800	1150	1450	1800	—	50	30	80	105	120	160	55+0.21S
MXS20	1000	1020	1050	1150	1300	1700	2250	2800	3350	100	71	170	205	140	310	166+0.45S
MXS25	1720	1740	1750	1900	2160	2750	3400	4300	4900	150	125	215	300	240	540	240+0.45S

Fig.1 Allowable load: W (N)

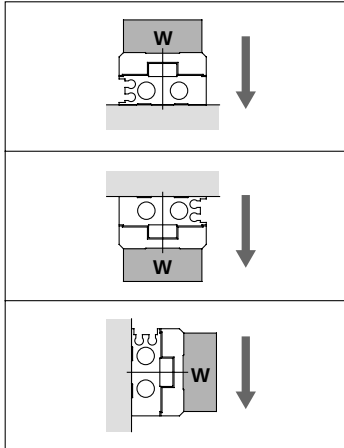


Fig.3 Work mounting coefficient: K

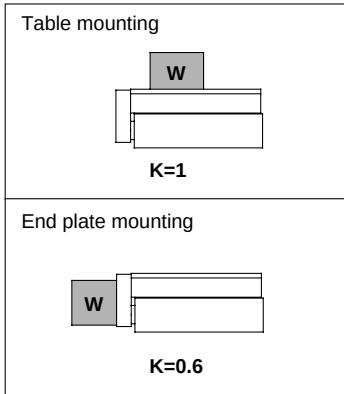


Table 2 Max. allowable static load: W_{max} (kg)

Model	Max. allowable static load
MXS 6	0.6
MXS 8	1
MXS12	2
MXS16	4
MXS20	6
MXS25	9

Table 4 Max. allowable moment: M_{max} (Nm)

Model	Stroke (mm)								
	10	20	30	40	50	75	100	125	150
MXS 6	0.7	1.0	1.2	1.2	1.2	—	—	—	—
MXS 8	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

Fig.2 Overhang: L_n (mm), Correction value for moment center distance A_n (mm)

	Pitch moment	Yaw moment	Roll moment
Static moment			
Dynamic moment			

Note) Static moment: Moment by gravity
Kinetic moment: Moment by stopper collision

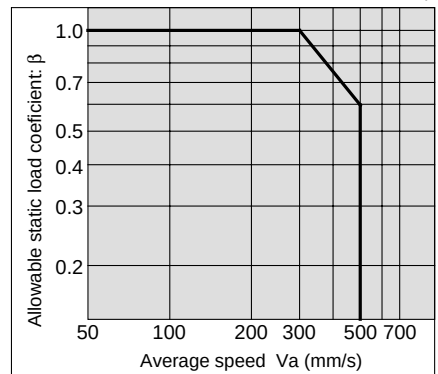
Table 1 Max. allowable kinetic energy: E_{max} (J)

Model	Allowable kinetic energy	
	Rubber bumper	Shock absorber
MXS 6	0.018	—
MXS 8	0.027	0.045
MXS12	0.055	0.11
MXS16	0.11	0.22
MXS20	0.16	0.32
MXS25	0.24	0.48

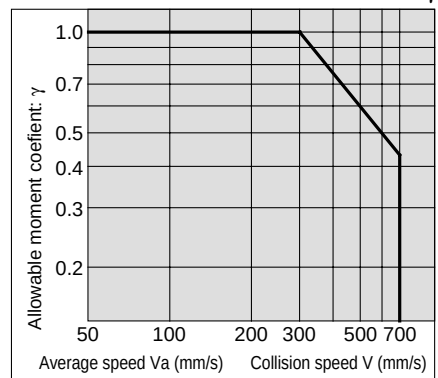
Table 3 Correction value for moment center distance A_n (mm)

Model	Correction value for moment center distance (Refer to Fig.2)					
	A1	A2	A3	A4	A5	A6
MXS 6	11	6	13	16	16	6
MXS 8	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 static load coefficient: β



Graph 2 Allowable moment coefficient: γ



Note) Average speed for static moment
Collision speed for kinetic moment

Symbol

Symbol	Definition	Unit	Symbol	Definition	Unit
A_n ($n=1$ to 6)	Correction value for moment center distance	mm	V_a	Average speed	mm/s
E	kinetic energy	J	W	Static load	kg
E_a	Allowable kinetic energy	J	W_a	Allowable static load	kg
E_{max}	Max. allowable kinetic energy	J	W_e	Load equivalent to collision	kg
L_n ($n=1$ to 3)	Over hung	mm	W_{max}	Max. allowable static load	kg
M (M_p, M_y, M_r)	Static moment (Pitch, Yaw, Roll)	Nm	α	Load rate	—
M_a (M_{ap}, M_{ay}, M_{ar})	Allowable static moment (Pitch, Yaw, Roll)	Nm	β	Allowable static load coefficient	—
M_e (M_{ep}, M_{ey})	Kinetic moment (Pitch, Yaw)	Nm	γ	Allowable moment coefficient	—
M_{ea} (M_{eap}, M_{eay})	Allowable kinetic moment (Pitch, Yaw)	Nm	δ	Damper coefficient	—
M_{max} ($M_{pmax}, M_{ymax}, M_{rmax}$)	Max. allowable kinetic moment (Pitch, Yaw, Roll)	Nm	K	Work mounting coefficient	—
V	Collision speed	mm/s			

Technical drawings of the M3000 series solenoid valve, showing various views and dimensions.

Top View: Shows the overall dimensions and thread specifications. Key dimensions include 6, 2, 3, J, I, 5, Max. 10.5 (With stroke adjuster at retraction end), 5.5, 3, 6.5, 12.5, K, and 2-M2.5 X 0.45 thread 3 deep. The operating port is specified as 2-M3 X 0.5.

Side View (Left): Shows the stroke adjuster at extension end and retraction end. Key dimensions include N-M3 X 0.5 thread 4 deep, 4, 0.5, 18, 32, 11, F, $(\frac{N}{2}-1) \times F$, 3H9 $^{+0.025}_0$ 2.5 deep, and 2.5 (With stroke adjuster at retraction end).

Side View (Right): Shows the stroke adjuster at retraction end. Key dimensions include 5.5, 3, 4-M2.5 X 0.45 thread 3.5 deep, and 12.

Bottom View: Shows the overall dimensions and thread specifications. Key dimensions include 5, M, 20, Z, ZZ, (NN-1) X H, G, H, A, B, 12, 4, B, HA, GA, 2.5 deep, and 3H9 $^{+0.025}_0$ 2.5 deep.

Cross Section AA: Shows the internal components and dimensions. Key dimensions include 11, 5.5, $\phi 3.2$, $\phi 6.5$, $\phi 7$, and NN-M4 X 0.7 thread 8 deep.

Cross Section BB: Shows the internal components and dimensions. Key dimensions include 11, 5.5, and $\phi 7$.

Legend: With auto switch

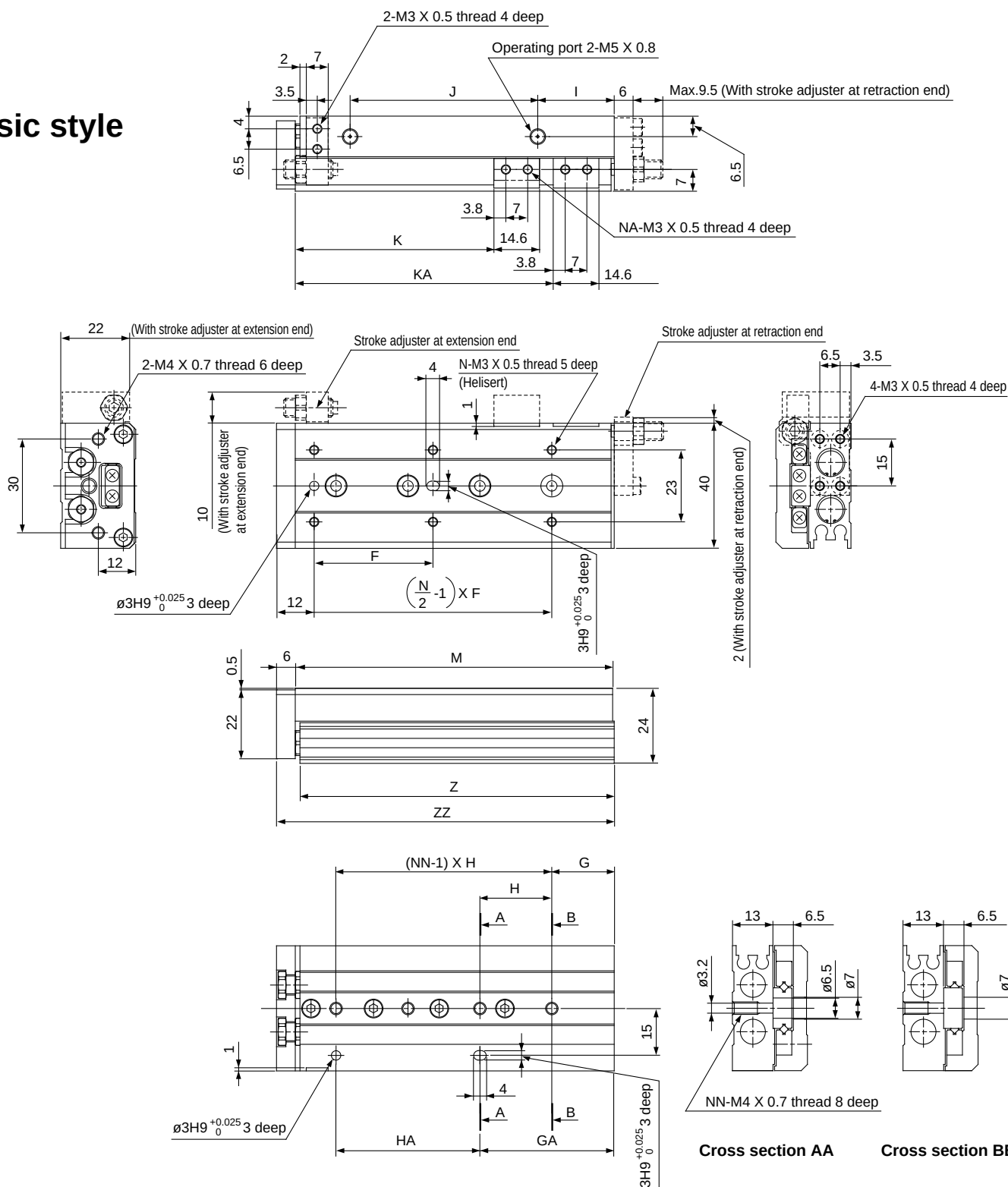
	(mm)												
Model	F	N	G	H	NN	GA	HA	I	J	K	M	Z	ZZ
MXS6-10	20	4	6	25	2	11	20	10	17	22.5	42	41.5	48
MXS6-20	30	4	6	35	2	21	20	10	27	32.5	52	51.5	58
MXS6-30	20	6	11	20	3	31	20	7	40	42.5	62	61.5	68
MXS6-40	28	6	13	30	3	43	30	19	50	52.5	84	83.5	90
MXS6-50	38	6	17	24	4	41	48	25	60	62.5	100	99.5	106



MXS6-10	.....	SMXS6N, #1
MXS6-20	.....	SMXS6N, #2
MXS6-30	.....	SMXS6N, #3
MXS6-50	.....	SMXS6, #1(#1+#5)
●With stroke adjuster		
MXS6-10AS	.....	SMXS6N, #4(#1+#4)
MXS6-20AS	.....	SMXS6N, #5(#2+#5)
MXS6-30AS	.....	SMXS6N, #6(#3+#6+#7)
MXS6-50AS	.....	SMXS6, #2(#1+#2+#5)



Basic style



With auto switch

Basic style

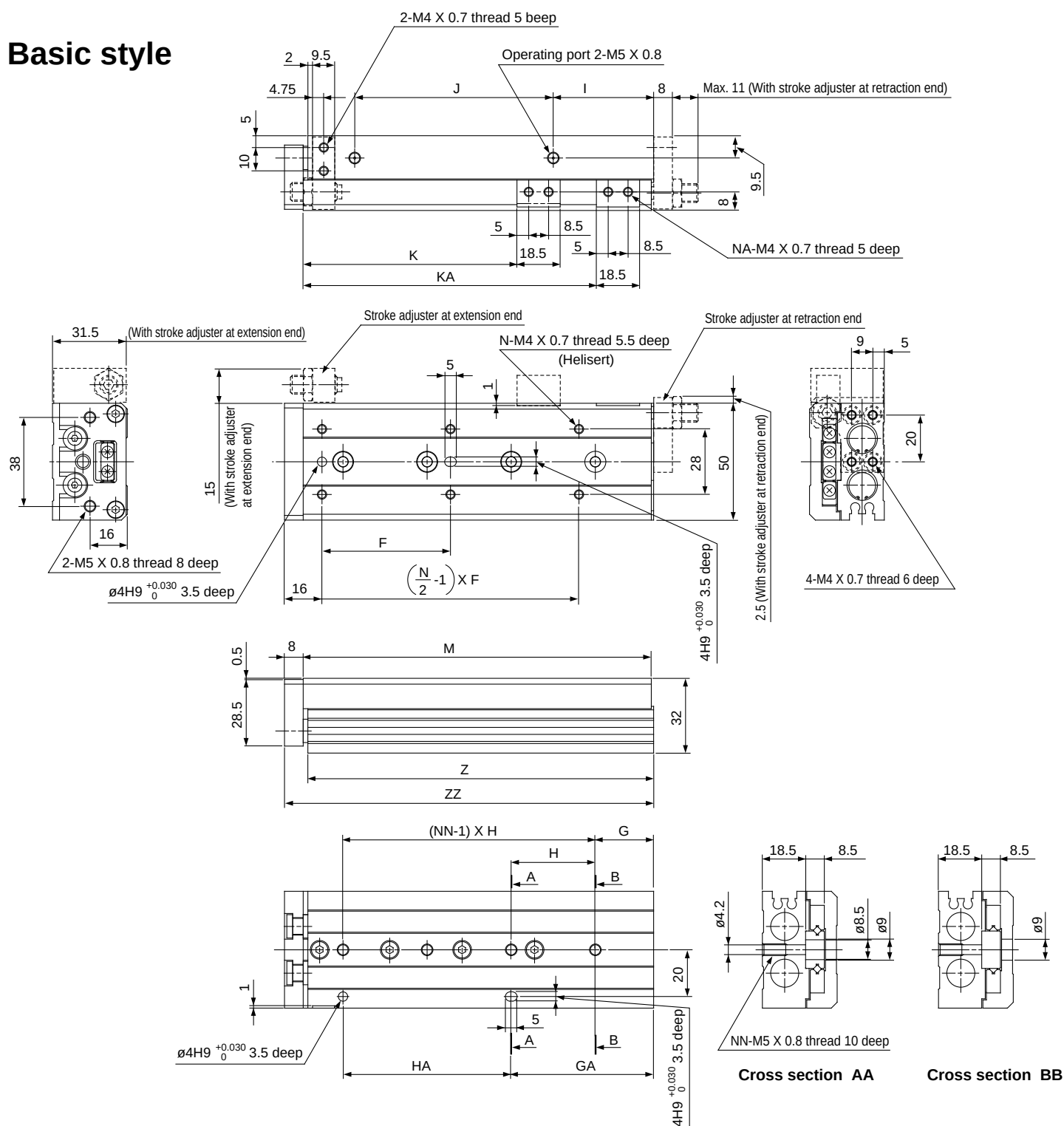
MXS8-10 SMXS8A, #1
 MXS8-20 SMXS8A, #2
 MXS8-30 SMXS8A, #3(#3+#7)
 MXS8-40 SMXS8B, #1
 MXS8-50 SMXS8B, #2(#2+#5)

● With stroke adjuster

MXS8-10AS SMXS8A, #4(#1+#4)
 MXS8-20AS SMXS8A, #5(#2+#5)
 MXS8-30AS SMXS8A, #6(#3+#6+#7)
 MXS8-40AS SMXS8B, #3(#1+#3)
 MXS8-50AS SMXS8B, #4(#2+#4+#5)

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

Basic style



With auto switch

Basic style

- MXS12-10SMXS12A, #1
- MXS12-20SMXS12A, #2
- MXS12-30SMXS12A, #3(#3+#7)
- MXS12-40SMXS12B, #1
- MXS12-50SMXS12B, #2(#2+#5)
- MXS12-75SMXS12B, #3(#3+#7)
- With stroke adjuster
- MXS12-10ASSMXS12A, #4(#1+#4)
- MXS12-20ASSMXS12A, #5(#2+#5)
- MXS12-30ASSMXS12A, #6(#3+#6+#7)
- MXS12-40ASSMXS12B, #4(#1+#4)
- MXS12-50ASSMXS12B, #5(#2+#5)

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

Dimensions MXS 16

2-M5 X 0.8 thread 5.5 deep

Operating port 2-M5 X 0.8

Max. 13.5 (With stroke adjuster at retraction end)

12

9.5

5.5

10

21

5.5

21

2-M5 X 0.8 thread 5.5 deep

NA-M5 X 0.8 thread 5.5 deep

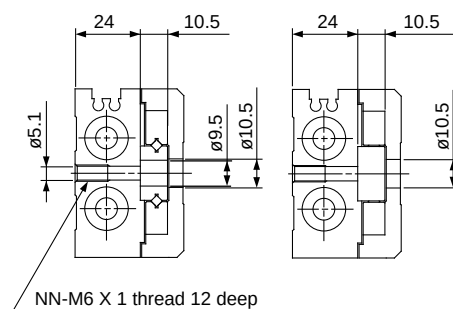
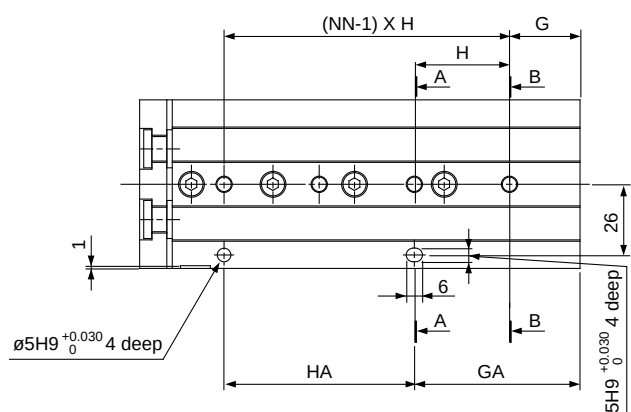
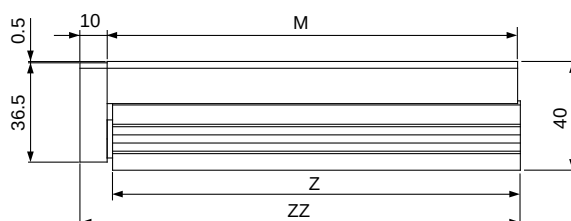
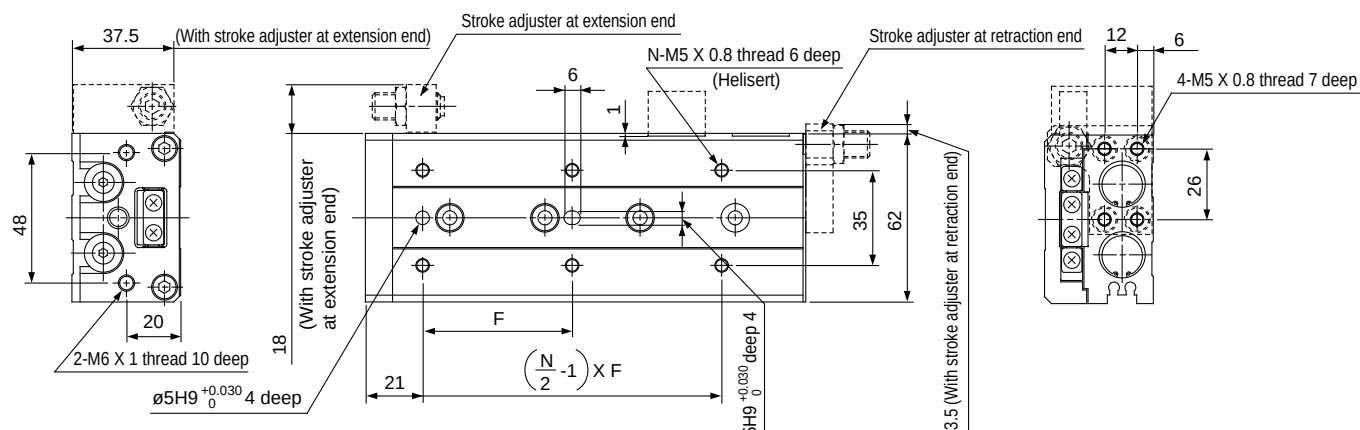
J

I

10

K

KA



Cross section BB

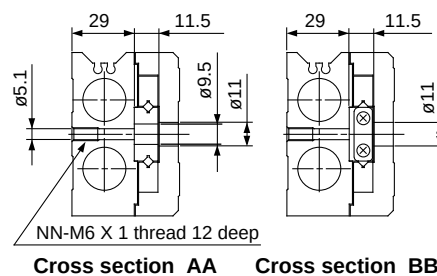
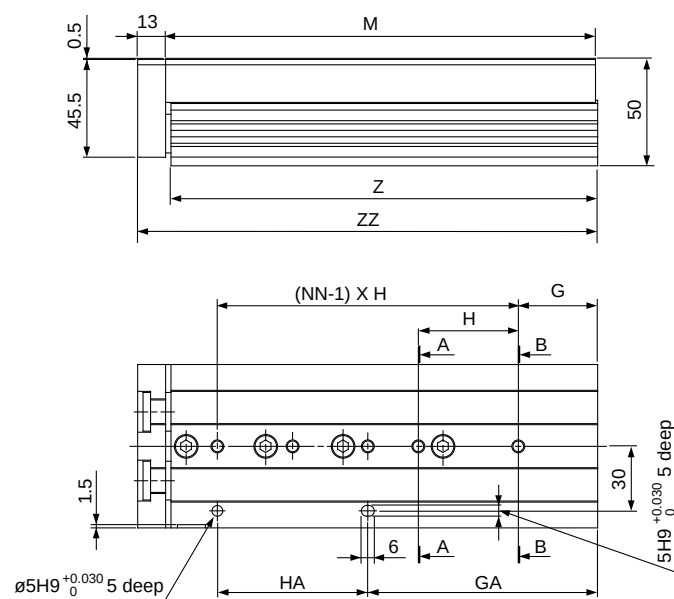
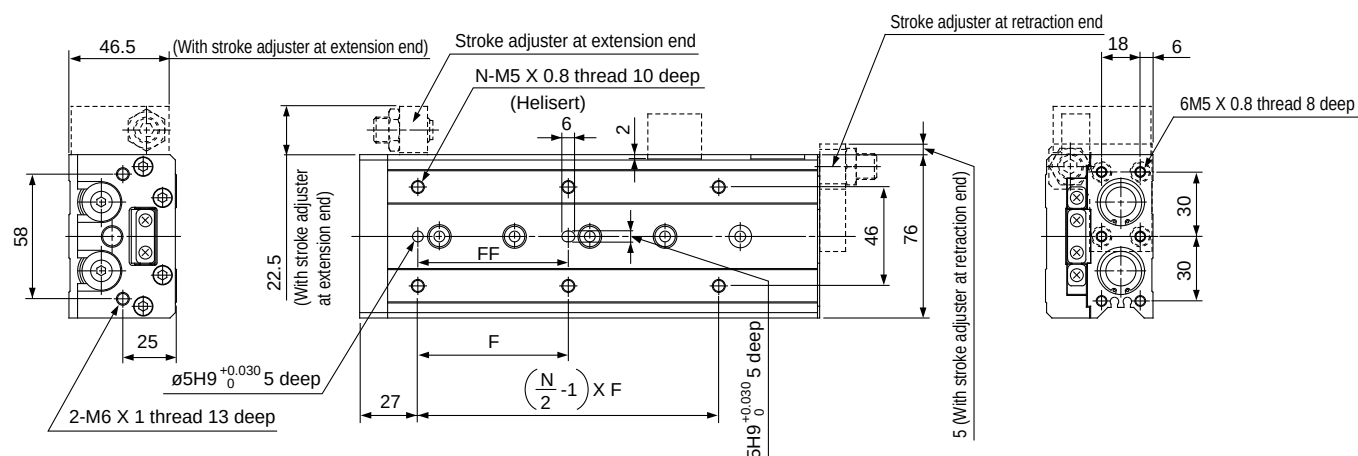


Basic style

	(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	

MXS16-40SMXS16A, #4(#4+#9)
MXS16-50SMXS16B, #1
MXS16-75SMXS16B, #2
MXS16-100SMXS16B, #3(#3+#7)

MXS16-10ASSMXS16A, #5(#1+#5)
MXS16-20ASSMXS16A, #6(#2+#6)
MXS16-30ASSMXS16A, #7(#3+#7)
MXS16-40ASSMXS16A, #8(#4+#8+#9)
MXS16-50ASSMXS16B, #4(#1+#4)
MXS16-75ASSMXS16B, #5(#2+#5)
MXS16-100AS ...SMXS16B, #6(#3+#6+#7)

[illegible]

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



Basic style

MXS20-10	.....	SMXS20A, #1
MXS20-20	.....	SMXS20A, #2
MXS20-30	.....	SMXS20A, #3
MXS20-40	.....	SMXS20A, #4(#4+#9)
MXS20-50	.....	SMXS20B, #1
MXS20-75	.....	SMXS20B, #2
MXS20-100	.....	SMXS20B, #3(#3+#7)

MXS20-10AS.....SMXS20A, #5(#1+#5)
 MXS20-20AS.....SMXS20A, #6(#2+#6)
 MXS20-30AS.....SMXS20A, #7(#3+#7)
 MXS20-40AS.....SMXS20A, #8(#4+#8+#9)
 MXS20-50AS.....SMXS20B, #4(#1+#4)
 MXS20-75AS.....SMXS20B, #5(#2+#5)
 MXS20-100AS.....SMXS20B, #6(#3+#6+#7)

Shock Absorber Specifications

Shock absorber part No.		RB0805	RB0806	RB1007	RB1411	RB1412
Applicable slide table		MXS8	MXS12	MXS16	MXS20	MXS25
Max. absorbing energy (J)		0.98	2.94	5.88	14.7	19.6
Absorbing stroke (mm)		5	6	7	11	12
Max. collision speed (mm/s)		50 to 500				
Max. operating frequency (cycle/min)		80	80	70	45	45
Max. allowable thrust (N)		245	245	422	814	814
Ambient and fluid temperature (°C)		-10 to 60				
Spring force (N)	Extended	1.96	1.96	4.22	6.86	6.86
	Retracted	3.83	4.22	6.86	15.30	15.98
Weight (g)		15	15	25	65	65

End Lock Specifications

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

Note) Refer to p.3.11-5 for cautions on end lock.

Buffer Specifications

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



Note) Refer to p.3.11-5 for cautions on buffer.

Note) If stroke is adjusted with the stroke adjuster at extension end, the buffer stroke is shortened by the adjusted length.

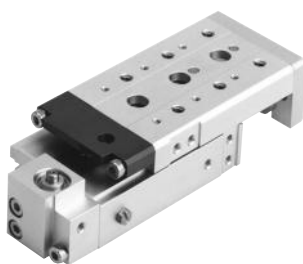
Applicable Auto Switches to Buffer

Style	Part No.	Specifications	Electrical entry
Solid state switch	D-F9BV	With light, 2 wire	Perpendicular
	D-F9NV	With light, 3 wire, Output: NPN	
	D-F9PV	With light, 3 wire, Output: PNP	

* The auto switch for buffer must be ordered separately.

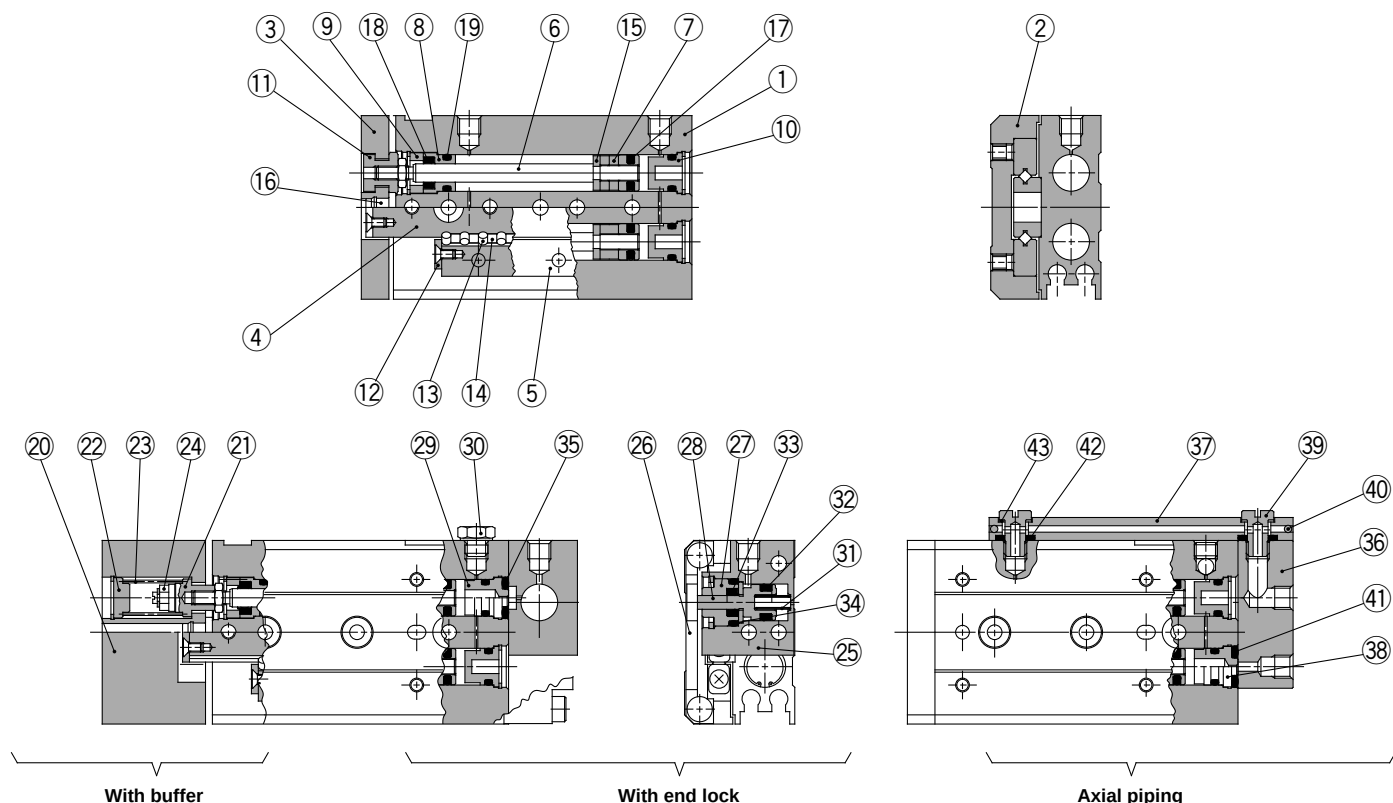


With buffer



With end lock

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	Carbon tool steel	Heat treatment
⑤	Guide	Carbon tool steel	Heat treatment
⑥	Rod	Stainless steel	
⑦	Piston assembly		With one side magnet
⑧	Rod cover	Aluminum alloy	Anodized
⑨	Seal support	Brass	Electroless nickel plated
⑩	Head cap	Resin	
⑪	Floating bushing	Stainless steel	
⑫	Roller stopper	Stainless steel	
⑬	Cylindrical roller	High carbon chromium bearing steel	
⑭	Roller spacer	Resin	
⑮	Rod bumper	Polyurethane	
⑯	End bumper	Polyurethane	
⑰	Piston seal	NBR	
⑱	Rod seal	NBR	
⑲	O ring	NBR	

Component Parts/With buffer

No.	Description	Material	Note
⑳	End plate	Aluminum alloy	Hard anodized
㉑	Spring collar	Stainless steel	
㉒	Head cap	Stainless steel	
㉓	Spring	Stainless steel	
㉔	Magnet	Rare earth	

Replacement Parts: Seal Kits

Bore (mm)	Kit No.	Contents
6	MXS6-PS	1 set including ⑰ to ⑲
8	MXS8-PS	
12	MXS12-PS	
16	MXS16-PS	
20	MXS20-PS	
25	MXS25-PS	

Replacement Parts: Seal Kits for End Lock Model

Bore (mm)	Kit No.	Contents
8	MXS8R-PS	1 set including ⑰ to ⑲ & ㉓ to ㉕
12	MXS12R-PS	
16	MXS16R-PS	
20	MXS20R-PS	
25	MXS25R-PS	

Replacement Parts: Seal kits for Axial Piping Model

Bore (mm)	Kit No.	Contents
6	MXS6P-PS	1 set including ⑰ to ⑲ & ㉑ to ㉓
8	MXS8P-PS	
12	MXS12P-PS	
16	MXS16P-PS	
20	MXS20P-PS	
25	MXS25P-PS	

Component Parts/With end lock

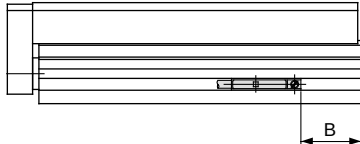
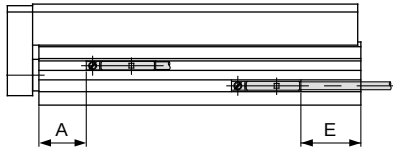
No.	Description	Material	Note
㉕	Body for lock	Aluminum alloy	Hard anodized
㉖	Table support	Carbon steel	Anticorrosive treatment
㉗	Rod cover	Aluminum alloy	
㉘	Piston rod	Stainless steel	
㉙	Bushing	Aluminum alloy	Chromated
㉚	Blanking plug	Brass	Electroless nickel plated
㉛	Return spring	Stainless steel	
㉜	Piston seal	NBR	
㉝	Rod seal	NBR	
㉞	O ring	NBR	
㉟	O ring	NBR	

Component Parts/Axial piping

No.	Description	Material	Note
㉞	Axial side piping plate	Aluminum alloy	Hard anodized
㉟	Pipe	Aluminum alloy	Hard anodized
㊱	Bushing	Aluminum alloy	Chromated
㊲	Stud	Brass	Electroless nickel plated
㊳	Steel ball	Stainless steel	
㊴	O ring	NBR	
㊵	O ring	NBR	
㊶	Gasket		

* The parts indicated with the numbers in the list below are included in a seal kit. Specify the order numbers in compliance with respective cylinder bore size.

Auto Switch Mounting Position for Stroke End Detection



Reed switch: D-A90, D-A93, D-A96, D-A90V, D-A93V, D-A96V

Model	A	B										E										Operating range
		Stroke										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)	—	—	—	—	4.5		
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)	—	—	—	5		
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)	—	—	6		
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)	—	7		
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)	8		
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)	24.5 (22)	50.5 (48)	83.5 (81)	98.5 (96)	8		

() : D-F9N

Solid state switch: D-F9B, D-F9N, D-F9P, D-F9BW, D-F9NW, D-F9PW

Model	A	B										E										Operating range
		Stroke										Stroke										
		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		
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	—	—	—	2.5		
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	—	—	3		
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	—	4		
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	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	6		

Solid state switch: D-F9BV, D-F9NV, D-F9PV, D-F9BWV, D-F9NWV, D-F9PWV

Model	A	B										E										Operating range
		Stroke										Stroke										
		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	—	—	—	—	2		
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	—	—	—	2.5		
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	—	—	3		
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	—	4		
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	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	6		

How to Install an Auto Switch

⚠ Caution

Auto switch mounting tool

- To tighten the set screw (attached to the auto switch), use a watch maker's screwdriver with a grip diameter of 5 to 6mm.

Clamping torque

- Clamping torque is approx. 0.05 to 0.1Nm. Rotate about 90° from when you feel the fitting tightness.

