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

Mounting is possible in three directions.

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

Various options

■ Adjuster options
 • With stroke adjuster, With shock absorber

■ Functional options
 • With buffer mechanism, With end lock
 • Axial piping

Variations

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

Series *MXS*

Adjuster Options

Stroke adjuster

■ Adjustable stroke range: 0 to 5mm

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

Adjuster at extension end
Adjuster at retraction end
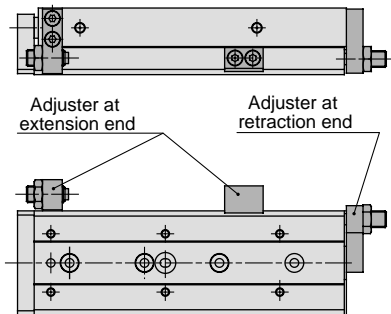
With shock absorber

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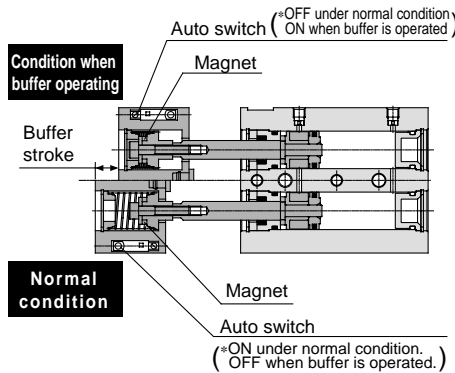■ Enables adjustment of stroke

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

Shock absorber at retraction end
Shock absorber at extension end
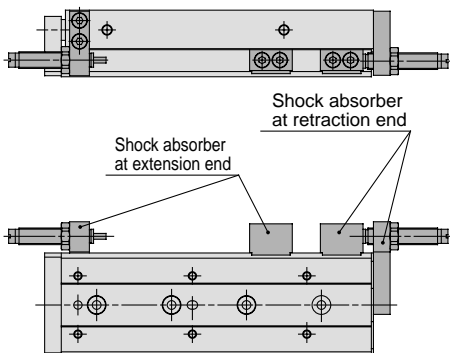
Functional Options

With buffer

■ Cushioning at the extending stroke end protects the work and tool.
■ Auto switch is attachable at buffer section.

Auto switch (*OFF under normal condition ON when buffer is operated)

Condition when buffer operating
Magnet
Buffer stroke

Normal condition
Magnet
Auto switch
(*ON under normal condition. OFF when buffer is operated.)

*ON/OFF setting can be changed with auto switch mounting direction.

Applicable example

Buffer mechanism absorbs shock and prevents damage to work in case the positioning is not accurate when load is inserted.
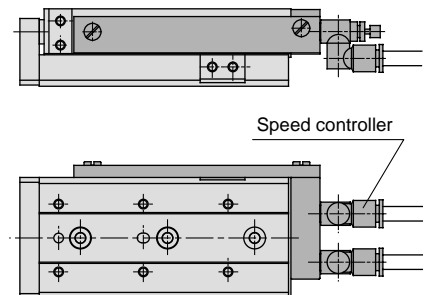
Buffer mechanism
Air gripper
Work
Failure in positioning
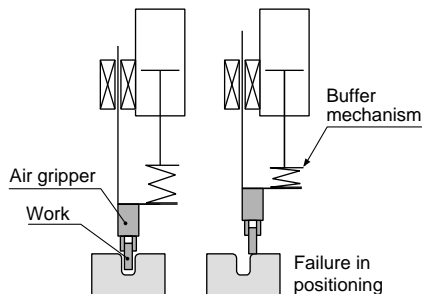
With end lock

■ Keeps cylinder at original position and prevents the load from dropping when air is cut off.

Locking piston
Spring
Table actuation
W
W
When cylinder is locked.
When locking is released.
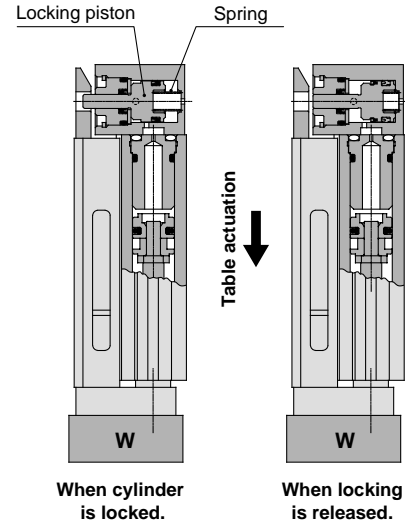
Axial piping

■ Centralized piping in axial direction saves space around the body.

Speed controller

3.11-2

Be sure to read before handling.

Refer to p.0-39 to 0-43 for Safety Instructions and actuator precautions.


| Selection | Mounting |

⚠Caution

① **Do not apply a load over the operating limit range.**

Select the model considering max. allowable load and allowable moment. Refer to p.3.11-10 and 3.11-11 for the details. When actuator is used outside of operating limits, eccentric loads on guide will be in excess this causing vibration on guide and inaccuracy, and shortens life.

② **If intermediate stops by external stopper is done, avoid ejection.**

If ejection occurs, it may cause damage. In case the slid table is stopped at intermediate positions by an external stopper then forwarded to the front, return the slide table to the back for just a moment to retract the stopper, then supply pressure to the opposite port to operate slide table.

③ **Do not apply excessive forces and impacts.**

This will cause problems and possible failure.

Mounting

⚠Caution

① **Do not scratch and dent mounting side of body, table and end plate.**

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

② **Do not scratch and dent forward side of rail and guide.**

This causes vibration and increases moving part resistance.

---
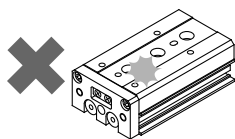
③ **Do not apply excessive power and load when work is mounted.**

Vibrations on guide and moving part resistance will result when power over the allowable moment is applied.

④ **Flatness of mounting surface should be less than 0.02mm.**

Insufficient flatness of workpiece or base to which Air Slide Table is mounted can cause generation of play at guide section or increase sliding resistance.

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 air slide table during operation.**

Adjuster option creates additional pinch points which can cause injury to operator when table is moving. Preventative measures, e.g. installation of a cover, should be taken to avoid such accidents.

⑦ **Keep away from objects which is influenced by magnets.**

A magnet is built in the guide block for use with an auto switch, there for do not use magnetic disk, magnetic card, or magnetic tape, else data will be eliminated.
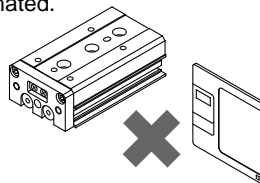
⑧ **When mounting an air slide table, use appropriate length of screws and do not exceed the maximum tightening torque.**

If tightening the screw beyond the designated value, it may malfunction. If tightening it insufficiently, it may result in position sliding or falling off of air slide table.

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1. Lateral mounting (Body tapped)
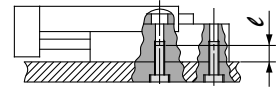
Model	Bolt	Max. torque (Nm)	Max. screw-in depth (ℓ mm)
MXS 6	M4 X 0.7	2.1	8
MXS 8	M4 X 0.7	2.1	8
MXS12	M5 X 0.8	4.4	10
MXS16	M6 X 1	7.4	12
MXS20	M6 X 1	7.4	12
MXS25	M8 X 1.25	18	16

2. Lateral mounting (Through hole)
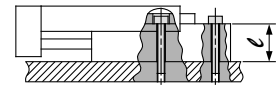
Model	Bolt	Max. torque (Nm)	Max. screw-in depth ℓ (mm)
MXS 6	M3 X 0.5	1.2	11
MXS 8	M3 X 0.5	1.2	13
MXS12	M4 X 0.7	2.8	18.5
MXS16	M5 X 0.8	5.7	24
MXS20	M5 X 0.8	5.7	29
MXS25	M6 X 1	10	34

3. Axial mounting (Body tapped)
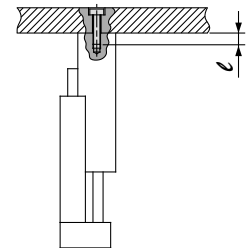
Model	Bolt	Max. torque (Nm)	Max. screw-in depth ℓ (mm)
MXS 6	M2.5 X 0.45	0.5	3.5
MXS 8	M3 X 0.5	0.9	4
MXS12	M4 X 0.7	2.1	6
MXS16	M5 X 0.8	4.4	7
MXS20	M5 X 0.8	4.4	8
MXS25	M6 X 1	7.4	10

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

Mounting

⚠ Caution

1.Front face mounting
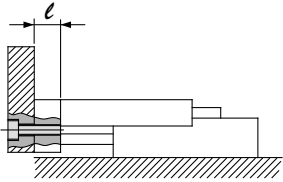
Model	Bolt	Max. torque (Nm)	Max. screw-in depth ℓ (mm)
MXS 6	M3 X 0.5	0.9	5
MXS 8	M4 X 0.7	2.1	6
MXS12	M5 X 0.8	4.4	8
MXS16	M6 X 1	7.4	10
MXS20	M6 X 1	7.4	13
MXS25	M8 X 1.25	18	15

2.Top face mounting
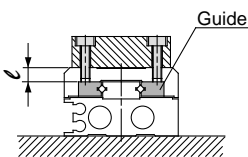
Guide

⚠ Caution

When attaching work to guide, use a bolt which is at least 0.5mm shorter than the maximum thread depth. Longer bolts can cause malfunction due to contact with guide bearings.

Model	Bolt	Max. torque (Nm)	Max. screw-in depth ℓ (mm)
MXS 6	M3 X 0.5	0.9	4
MXS 8	M3 X 0.5	0.9	5
MXS12	M4 X 0.7	2.1	5.5
MXS16	M5 X 0.8	4.4	6
MXS20	M5 X 0.8	4.4	10
MXS25	M6 X 1	7.4	13

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.**

Environment

⚠ Caution

①**Do not use in atmosphere where the actuator contacts directly the liquid such as cutting oil.**

Conditions where the cylinder piston rod and guide shafts are exposed directly to cutting oil, coolant and oil mist lead to vibration, increase of moving part resistance, air leakage, etc.

②**Do not use in atmosphere where the actuator contacts directly the material such as powder dust, dust, spatter etc.**

This causes vibration, increase of moving part and air leakage. Consult SMC when the use in such environment is required.

③**Do not use in direct sun light.**

④**Do not use in environment where there is heat source.**

Use a cover when there is a heat source around the actuator, or if temperature of product increases and exceeds operating temperature range by emissive heat.

⑤**Do not subject it to excessive vibration and/or impact.**

This results in damage and/or malfunction. Contact SMC if the actuator is used in the above conditions.

Precautions for Adjuster Option

Stroke adjuster

⚠ Caution

①**Never replace the original adjuster bolts.**

Impact energy causes play, damage, etc.

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

If the lock nut is not tightened sufficiently, it leads to low positioning accuracy.

Model	Tightening torque (Nm)
MXS 6	3.0
MXS 8	5.0
MXS12	12.5
MXS16	25.0
MXS20	43.0
MXS25	69.0

Precautions for Adjuster Option

Stroke adjuster

⚠ Caution

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

This can cause excessive play.
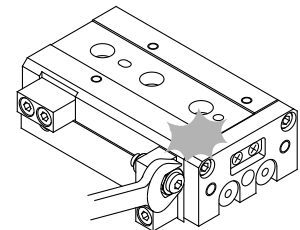
With shock absorber

⚠ Caution

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

This is not the screw for adjusting. If this screw is rotated, it may cause oil leakage.

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

Decrease in life or malfunction may result.

Piston rod
Bottom screw
Do not rotate
Do not damage.
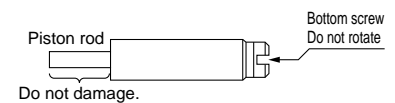
③**Shock absorber is considered a consumable component. When energy absorption is decreased, replace it.**

Model	Part No. of shock absorber
MXS 8	RB0805
MXS12	RB0806
MXS16	RB1007
MXS20	RB1411
MXS25	RB1412

④**Refer to the below table for tightening torque for lock nut of shock absorber.**

| Model	Tightening torque (Nm)
MXS 8 MXS12	1.67
MXS16	3.14
MXS20 MXS25	10.8

⚠ **Series MXS/Precautions③**

Be sure to read before handling.

Refer to p.0-39 to 0-43 for Safety Instructions and actuator precautions.

Precautions on Functional Option

With end lock

⚠ Caution

① **2 position, 4 or 5 port solenoid valves are recommended.**

Recommended pneumatic circuit

Air slide table

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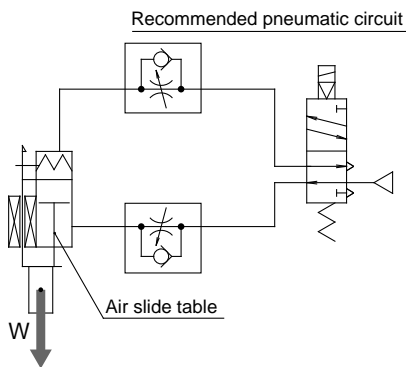
② **Be sure to use meter-out speed control valves.**

③ **When releasing the end lock manually, be sure that air pressure is released.**
If the end lock is disengaged while air pressure remains in the cylinder, the piston could lurch suddenly, causing damage to the workpiece.

┌─ **How to release end lock** ─
∗ Prior to work, be sure that air pressure is released.
① Push down the lock piston pin.
② Slide the table forward.
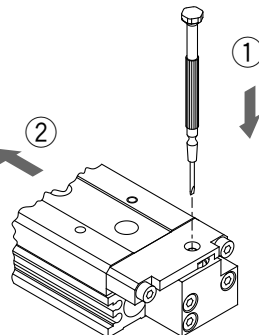
With buffer mechanism

⚠ Caution

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

When mounting horizontally, operation of the buffer is dependent on the speed and the load. Auto switch should be set according to the buffer stroke used, subject to the speed and load.

○   ×
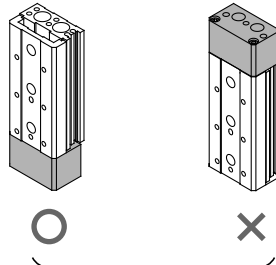
Vertical use

○
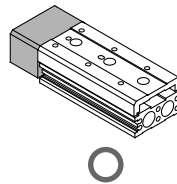
Horizontal use

② **Auto switch for buffer/Correct mounting position for detection at the end of stroke.**
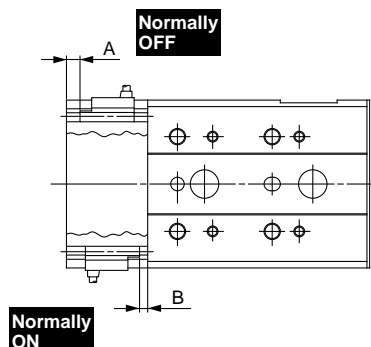
∗ Adjust the switch position according to load and speed.

(Unit: mm)

Model	A	B
MXS 6	2	
MXS 8	2.5	
MXS12	4	3
MXS16	5	
MXS20	5.5	
MXS25	10	

Air Slide Table (Symmetric Style)
Series MXS☐L

How to Order

| Air slide table | MXS | 12 | L | — | 50 | AS | — | F9N | S |

Symmetric style

Number of auto switches

—	2
S	1
n	n

Auto switch

—	Without auto switch

∗Refer to below table for parts No. of auto switch.

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 MXS6L.
Note 2) Functional option is not available for MXS☐☐L.

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)		Load		Specification details
					DC	AC	Electrical entry		0.5 (—)	3 (L)			
							Perpendicular	In-line					
Reed switch	——	Grommet	No	2 wire	24V	5V, 12V / 100V or less	A90V	A90	●	●	IC circuit	Relay, PLC	P.5.3-19
			Yes			12V / 100V	A93V	A93	●	●	——		
				3 wire(Equiv. NPN)	——	5V / ——	A96V	A96	●	●	IC circuit	——	
Solid state switch	Diagnostic indication (2 color)	Grommet	Yes	3 wire(NPN)	24V	12V / ——	F9NV	F9N	●	●		Relay, PLC	P.5.3-39
				3 wire(PNP)			F9PV	F9P	●	●			
				2 wire			F9BV	F9B	●	●			
	——			3 wire(NPN)			F9NWV	F9NW	●	●			P.5.3-66
				3 wire(PNP)			F9PWV	F9PW	●	●			
				2 wire			F9BWV	F9BW	●	●			

∗Lead wire length 0.5m·········· — (Ex.) A93
          3m··········· L   A93L

PLC: Programmable Logic Controller

Specifications

Specifications are same as the standard style. Refer to p.3.11-7

Dimensions MXS **6L**/Symmetric style
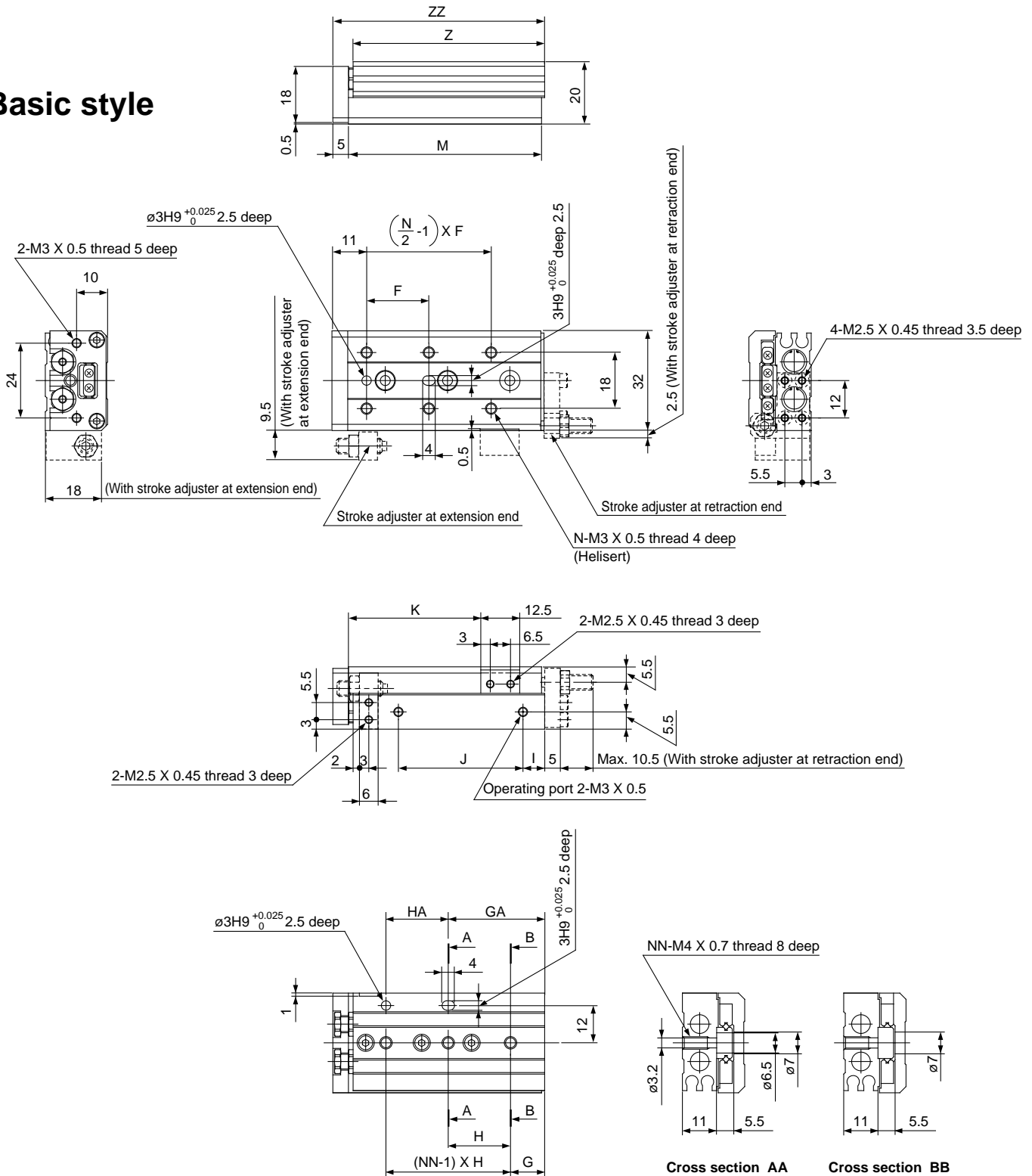
Basic style

ø3H9 $^{+0.025}_{0}$ 2.5 deep

2-M3 X 0.5 thread 5 deep

$\left(\dfrac{N}{2}-1\right)$ X F

3H9 $^{+0.025}_{0}$ deep 2.5

2.5 (With stroke adjuster at retraction end)

9.5 (With stroke adjuster at extension end)

18 (With stroke adjuster at extension end)

Stroke adjuster at extension end

Stroke adjuster at retraction end

4-M2.5 X 0.45 thread 3.5 deep

N-M3 X 0.5 thread 4 deep (Helisert)

2-M2.5 X 0.45 thread 3 deep

2-M2.5 X 0.45 thread 3 deep

Operating port 2-M3 X 0.5

Max. 10.5 (With stroke adjuster at retraction end)

ø3H9 $^{+0.025}_{0}$ 2.5 deep

3H9 $^{+0.025}_{0}$ 2.5 deep

NN-M4 X 0.7 thread 8 deep

(NN-1) X H

Cross section AA

Cross section BB

													(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

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

Dimensions MXS **8L**/Symmetric style

Basic style

ø3H9 $^{+0.025}_{0}$ 3 deep

2-M4 X 0.7 thread 6 deep

$\left(\frac{N}{2}-1\right)$ X F

3H9 $^{+0.025}_{0}$ 3 deep

2.5(Stroke adjuster at retraction end)

4-M3 X 0.5 thread 4 deep

(With stroke adjuster at extension end)

N-M3 X 0.5 thread 5 deep
(Helisert)

(Stroke adjuster at extension end)

Stroke adjuster at extension end

Stroke adjuster at retraction end

NA-M3 X 0.5 thread 4 deep

Max. 9.5 (With stroke adjuster at retraction end)

Operating port 2-M5 X 0.8

2-M3 X 0.5 thread 4 deep

ø3H9 $^{+0.025}_{0}$ 3 deep

3H9 $^{+0.025}_{0}$ 3 deep

NN-M4 X 0.7 thread 8 deep

(NN-1) X H

Cross section AA　　**Cross section BB**

(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

MXS **12L**/Symmetric style

Basic style

(mm)

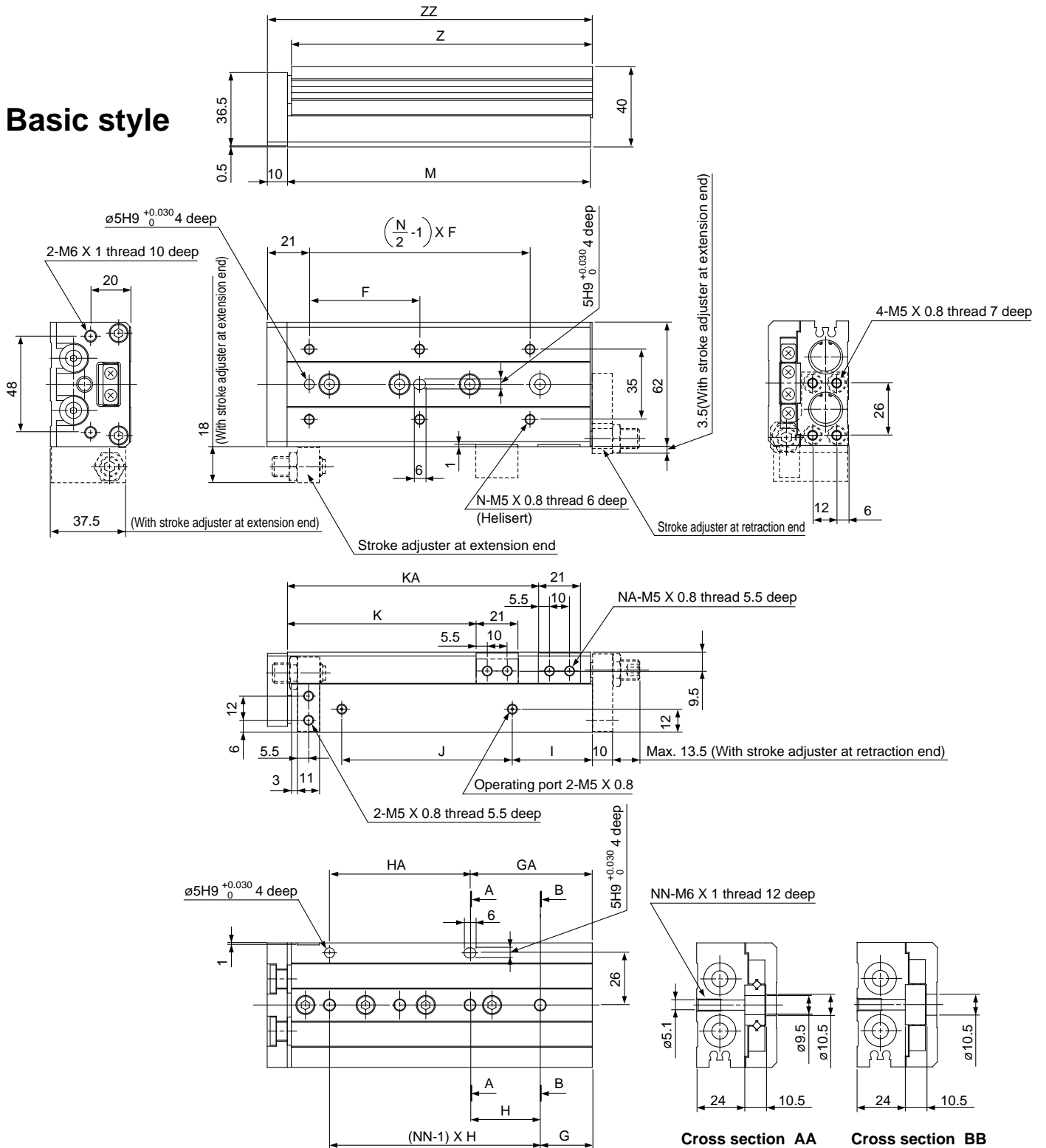| Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXS12L-10	35	4	15	40	2	15	40	10	40	26.5	—	2	71	70	80
MXS12L-20	35	4	15	40	2	15	40	10	40	36.5	—	2	71	70	80
MXS12L-30	35	4	15	40	2	15	40	10	40	46.5	—	2	71	70	80
MXS12L-40	50	4	17	25	3	42	25	10	52	56.5	—	2	83	82	92
MXS12L-50	35	6	15	36	3	51	36	22	60	66.5	—	2	103	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

Refer to "Dimensions" of MXS 12 on p.3.11-17 for one with shock absorber as symmetric.
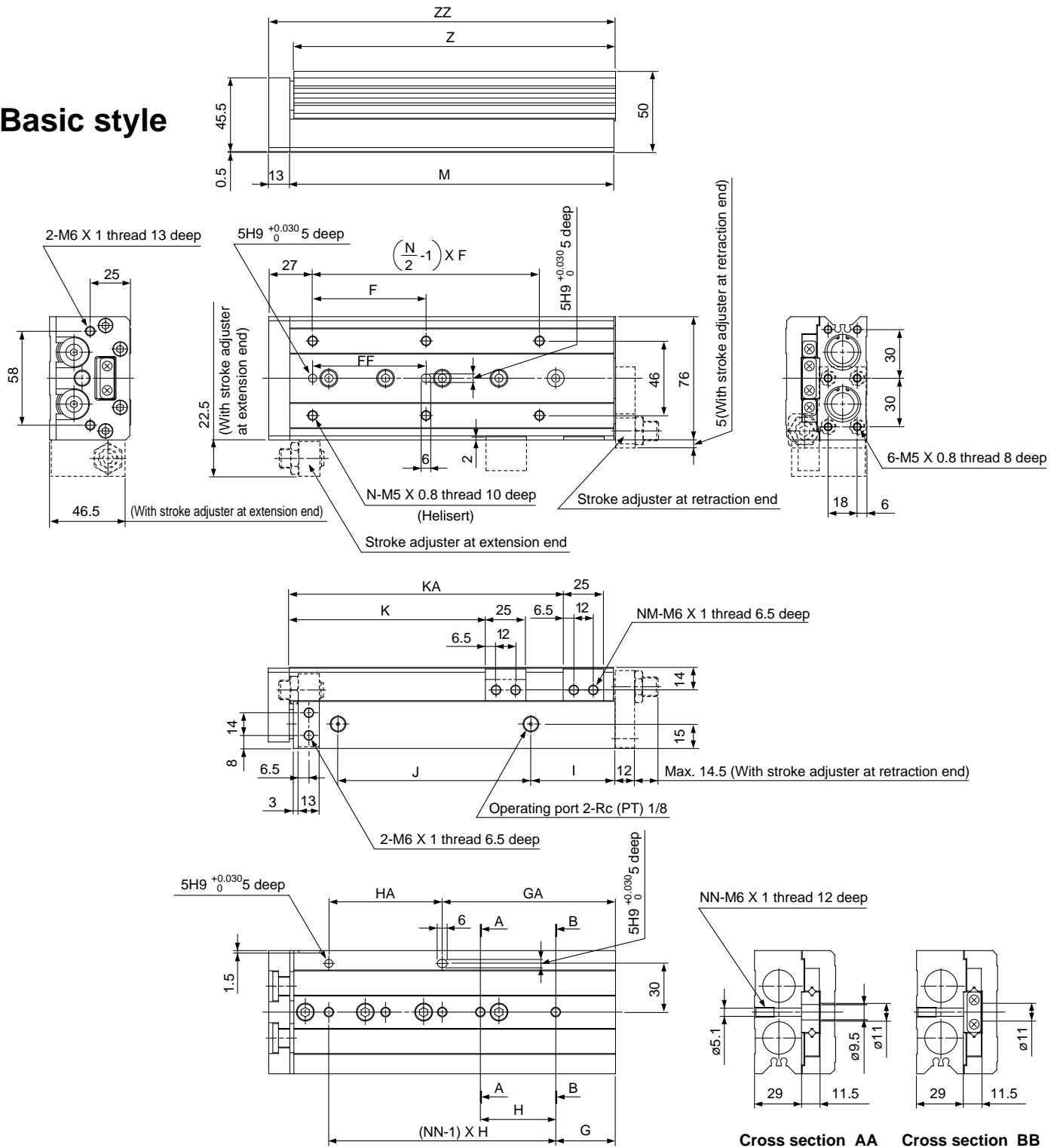
Dimensions MXS **16L**/Symmetric style

Basic style

ø5H9 $^{+0.030}_{0}$ 4 deep

2-M6 X 1 thread 10 deep

$\left(\dfrac{N}{2}-1\right)$ X F

5H9 $^{+0.030}_{0}$ 4 deep

3.5(With stroke adjuster at extension end)

18 (With stroke adjuster at extension end)

4-M5 X 0.8 thread 7 deep

37.5 (With stroke adjuster at extension end)

N-M5 X 0.8 thread 6 deep (Helisert)

Stroke adjuster at extension end

Stroke adjuster at retraction end

KA

NA-M5 X 0.8 thread 5.5 deep

Max. 13.5 (With stroke adjuster at retraction end)

2-M5 X 0.8 thread 5.5 deep

Operating port 2-M5 X 0.8

ø5H9 $^{+0.030}_{0}$ 4 deep

5H9 $^{+0.030}_{0}$ 4 deep

NN-M6 X 1 thread 12 deep

(NN-1) X H

Cross section AA

Cross 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

Refer to "Dimensions" of MXS 16 on p.3.11-19 for one with shock absorber as symmetric.

MXS **20L**/Symmetric style

Basic style

2-M6 X 1 thread 13 deep

5H9 $^{+0.030}_{0}$ 5 deep

$\left(\dfrac{N}{2}-1\right) \times F$

5H9 $^{+0.030}_{0}$ 5 deep

5(With stroke adjuster at retraction end)

N-M5 X 0.8 thread 10 deep (Helisert)

Stroke adjuster at extension end

Stroke adjuster at retraction end

(With stroke adjuster at extension end)

6-M5 X 0.8 thread 8 deep

NM-M6 X 1 thread 6.5 deep

Operating port 2-Rc (PT) 1/8

2-M6 X 1 thread 6.5 deep

Max. 14.5 (With stroke adjuster at retraction end)

5H9 $^{+0.030}_{0}$ 5 deep

5H9 $^{+0.030}_{0}$ 5 deep

NN-M6 X 1 thread 12 deep

(NN-1) X H

Cross section AA

Cross section BB

(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

Refer to "Dimensions" of MXS20 on p.3.11-21 for one with shock absorber as symmetric.

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

Dimensions MXS **25L**/Symmetric style

Basic style

2-M8 X 1.25 thread 15 deep

ø6H9 $^{+0.030}_{0}$ 6 deep

$\left(\dfrac{N}{2}-1\right)$ X F

6H9 $^{+0.030}_{0}$ 6 deep

4.5 (With stroke adjuster at retraction end)

6-M6 X 1 thread 10 deep

(With stroke adjuster at extension end)

Stroke adjuster at extension end

Stroke adjuster at retraction end

N-M6 X 1 thread 13 deep (Helisert)

NA-M8 X 1.25 thread 8.5 deep

Max. 16.5 (With stroke adjuster at retraction end)

Operating port 2-Rc (PT) 1/8

2-M8 X 1.25 thread 8.5 deep

ø6H9 $^{+0.030}_{0}$ 6 deep

6H9 $^{+0.030}_{0}$ 6 deep

NN-M8 X 1.25 thread 16 deep

(NN-1) X H

Cross section AA

Cross 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

Refer to "Dimensions" of MXS25 on p.3.11-23 for one with shock absorber as symmetric.

Auto Switch Mounting Position for Stroke End Detection
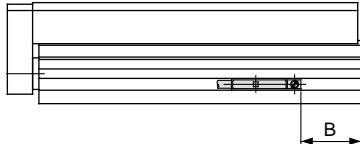
Reed switch: D-A90, D-A93, D-A96, D-A90V, D-A93V, D-A96V

Model	A	B Stroke 10	20	30	40	50	75	100	125	150	E Stroke 10	20	30	40	50	75	100	125	150	Operating range
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 (32)	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 Stroke 10	20	30	40	50	75	100	125	150	E Stroke 10	20	30	40	50	75	100	125	150	Operating range
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 Stroke 10	20	30	40	50	75	100	125	150	E Stroke 10	20	30	40	50	75	100	125	150	Operating range
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 01Nm. Rotate about 90° from when you feel the fitting tightness.

Set screw (Attached to the auto switch)
Watch maker's screwdriver
Auto switch
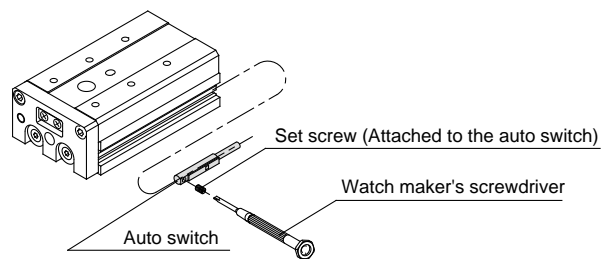
CL
MLGC
CNA
CB
CV/MVG
CXW
CXS
CXT
MX
MXU
MXS
MXQ
MXF
MXW
MXP
MG
MGP
MGQ
MGG
MGC
MGF
CY1
MY1

SMC Information

Solid-state Auto Switches for Direct Mounting
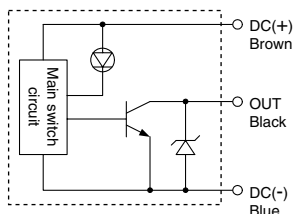## Series D-M9N(V)/D-M9P(V)/D-M9B(V) CE

Grommet

- Reduced load currents for two-wire model (2.5 to 40 mA)
- Compliance with lead-free requirements
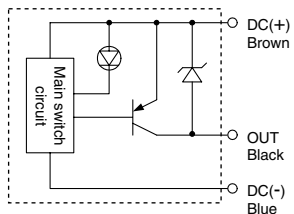- Use of UL-approved lead wires (style 2844)

Auto Switch Specifications
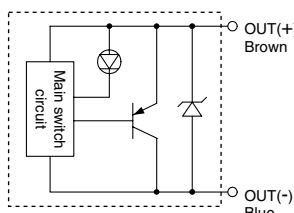
PLC: Programmable Logic Controller

D-M9□/D-M9□V (with Indicator light)						
Model number	**D-M9N**	**D-M9NV**	**D-M9P**	**D-M9PV**	**D-M9B**	**D-M9BV**
Electrical entry	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring	Three-wire				Two-wire	
Output	NPN		PNP		—	
Applicable load	Integrated circuit, relay and PLC				24 V DC relay and PLC	
Power voltage	5, 12, or 24 V DC (4.5 to 28 V DC)				—	
Current consumption	10 mA or less				—	
Load voltage	28 V DC or less		—		24 V DC (10 to 28 V DC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less				4 V or less	
Leakage current	100 μA max. at 24 V DC				0.8 mA or less	
Indicator light	Red LED lights when ON.					

- Lead wire: oil-proof heavy-duty vinyl cable
  2.7 x 3.2 with elliptic cross-section, 0.15 mm², two cores (D-M9B),
  or three cores (D-M9N and D-M9P)

Solid state switch specifications

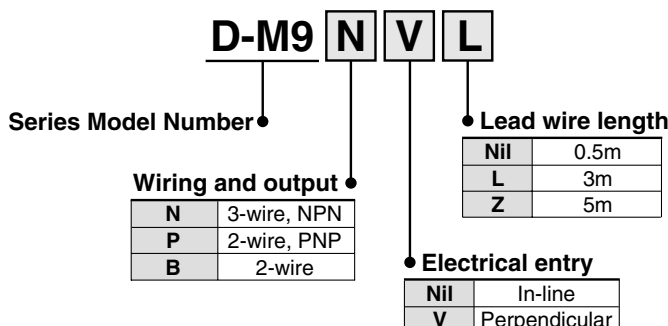|	
Leakage current	3-wire: 100 μA or less; 2-wire: 0.8 mA max.
Operating time	1 ms or less
Impact resistance	1000 m/s²
Insulation resistance	50 MΩ or more at 500 V DC (between lead wire and case)
Withstand voltage	1000 V AC for 1 min. (between lead wire and case)
Ambient temperature	−10°C to 60°C
Enclosure	IEC529 standard IP67, JIS C 0920 watertight construction

Weight

Unit: g

Model		**D-M9N(V)**	**D-M9P(V)**	**D-M9B(V)**
Lead wire length (m)	0.5	8	8	7
	3	41	41	38
	5	68	68	63

Internal circuits

D-M9N/M9NV

D-M9P/M9PV

D-M9B/M9BV

How to Order

Standard Model Number

D-M9 **N** **V** **L**

Series Model Number

Wiring and output

N	3-wire, NPN
P	2-wire, PNP
B	2-wire

Lead wire length

Nil	0.5m
L	3m
Z	5m

Electrical entry

Nil	In-line
V	Perpendicular

SMC

1

Series *D-M9*

Auto Switch Dimensions

D-M9□

M2.5 x 4ℓ slotted set screw

Indicator light

2.6

4

2.8

SMC D-M9B

22

2.7

500(3000)

3.2

6 | Most sensitive position

22

500(3000)

D-M9□V

M2.5 x 4ℓ slotted set screw   Indicator light

2

8

3.2

4.6

4

2.8

6 | Most sensitive position

20

9.5

2.6

4

500(3000)(5000)

2.7
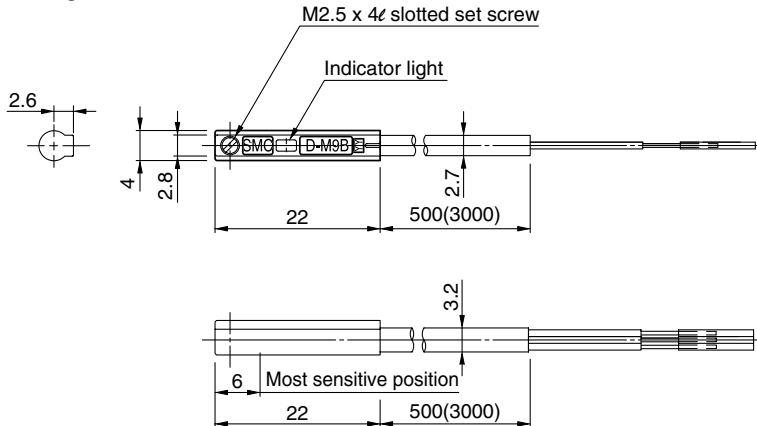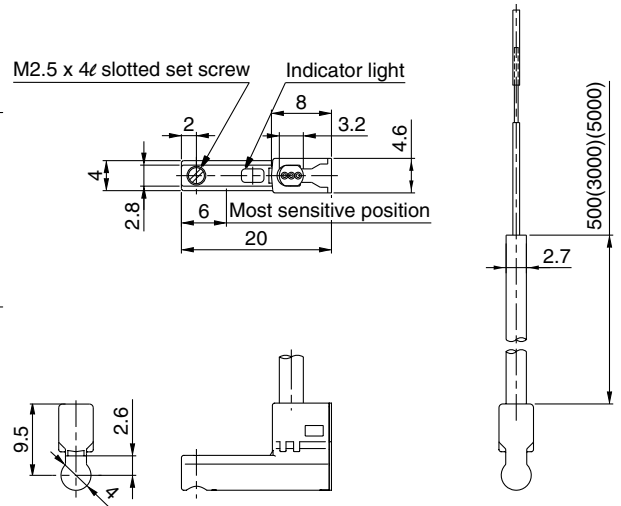
⚠ Specific Product Precautions

Be sure to read before handling. Contact SMC when the required specification is out of range.

Handling

⚠ Caution

Observe the following precautions when handling the product.

• The D-M9 series of auto switches is not overcurrent-protected.
  Faulty wiring or short circuit may result in breakage or burning-out of the switch.
• When stripping the cable clad, be careful about the orientation of the cable being stripped.
  The insulator may be accidentally torn or damaged depending on the orientation, as shown on the right.
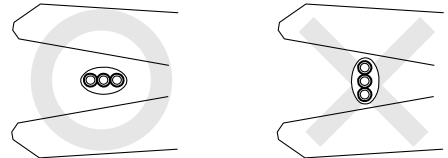
● We recommend the following tools

Manufacturer	Product name	Product number
VESSEL	Wire stripper	No 3000G
Tokyo Ideal	Strip master	45-089

∗ The stripper for the round shape cords (ø2.0) is for a 2-wire style.

● Please do not attach the switch with any other screws than those already attached to the auto switch body.

The operation range is shorter than that of the conventional models.

If the auto switch replaces the conventional model, it may not function depending on its application because the operation range is shorter. Refer to the examples below.

● **In an application where at the end, the stopping position shifting range is larger than the operation range.**
  For example, pushing a work against something, or pressing a work into a hole, or clamping a work.

● **In an application where the auto switch is used to detect an intermediate stopping position. (Detecting time is shortened.)**

Note) Please contact SMC for the operation range details for each actuator.

The switch is damaged instantly when a load is shortened since short circuit protection is not built-in. Pay special attention to avoid reversing the connection of the brown lead of the power supply line and the black output line connection.

SMC