Air Slide Table

Series MXQ

ø6, ø8, ø12, ø16, ø20, ø25

Integration of the guide rail and the table. Uses a recirculating linear guide for high rigidity and high precision. Air slide table for precision assembly processes.

High precision, compact design

Comparison of MXQ and MXS (mm)

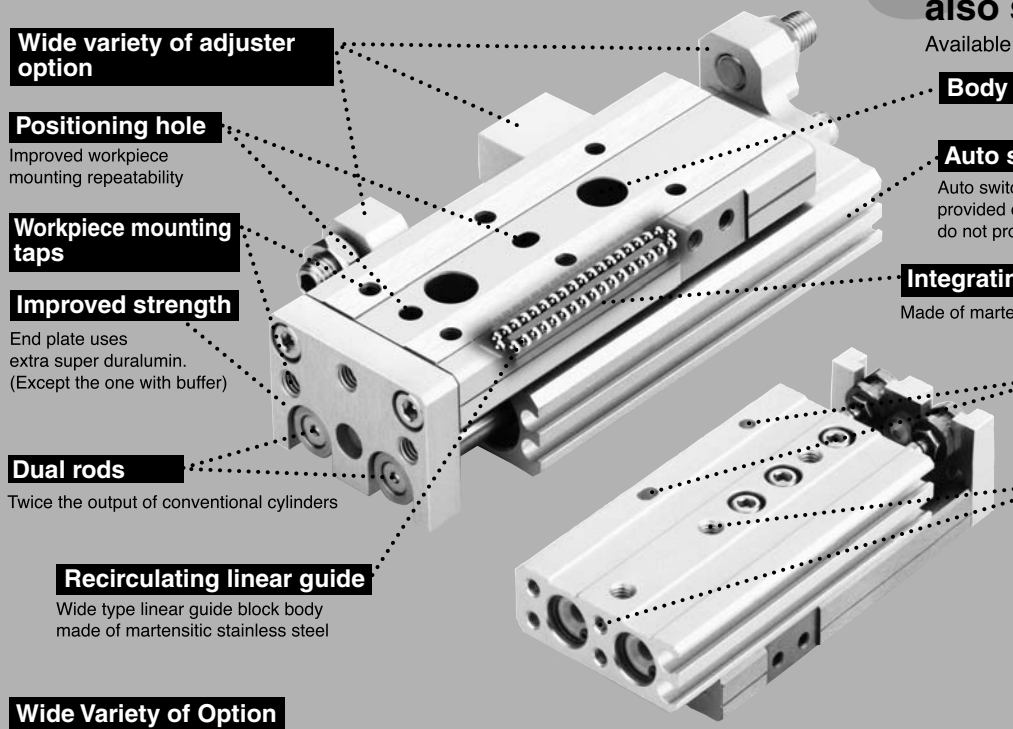
Model	Repeatability		Dimensions		
	Parallelism	Height tolerance	Width	Height	Overall length
MXQ12-30	**0.035**	**±0.08**	**46**	**30**	**86**
MXS12-30	0.2	±0.2	50	32	80

Improved load resistance

Load resistance against sudden and excessive external forces is nearly three times greater than Series MXS.

Symmetric type is also standardized.

Available for all option



Wide variety of adjuster option

Positioning hole
Improved workpiece mounting repeatability

Workpiece mounting taps

Improved strength
End plate uses extra super duralumin. (Except the one with buffer)

Dual rods
Twice the output of conventional cylinders

Recirculating linear guide
Wide type linear guide block body made of martensitic stainless steel

Body mounting through-hole

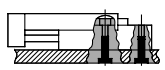
Auto switch mounting groove
Auto switches can be mounted in grooves provided on the side of the body where they do not protrude.

Integrating table with guide rail
Made of martensitic stainless steel

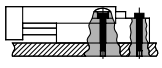
Positioning hole
Reproducibility for mounting on the body has been improved.

Body mounting taps
Mounting is possible from 3 directions.

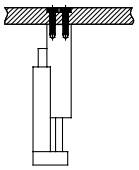
1. Lateral mounting (Body tapped)



2. Lateral mounting (Body through-hole)

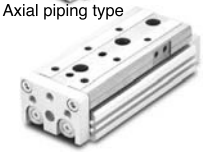


3. Vertical mounting (Body tapped)



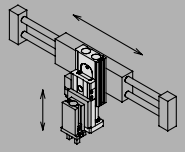
Wide Variety of Option

Adjuster option and function option can be combined

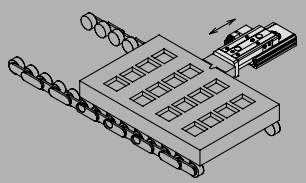
Symmetric type	Adjuster option	Functional option
	With stroke adjuster  With shock absorber 	With buffer mechanism  With end lock  Axial piping type 

Application Example

As Z-axis for picking and placing



For positioning of pallets on a conveyor



Series Variations

Model		Bore size
Standard type	Symmetric type	(mm)
MXQ 6	**MXQ6L**	6
MXQ 8	**MXQ8L**	8
MXQ12	**MXQ12L**	12
MXQ16	**MXQ16L**	16
MXQ20	**MXQ20L**	20
MXQ25	**MXQ25L**	25

Standard stroke (mm): 10 20 30 40 50 75 100 125 150

Adjuster option: Rubber stopper; Shock absorber; Metal stopper — Extension end, Retraction end, Both ends

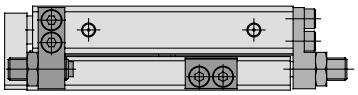
Functional option: With buffer, With end lock, Axial piping type

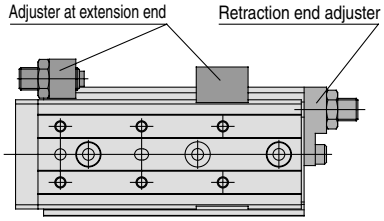
Auto switch:
Reed auto switch
- D-A9□
- D-A9□V

Solid state auto switch
- D-M9□
- D-M9□V

2-color indication solid state auto switch
- D-M9□W
- D-M9□WV

Adjuster Option





Three different types of adjusting bolt have been standardized for front end rear and double end adjusters and cushion mechanisms.

■ Rubber stopper
Standard stroke adjuster

■ Shock absorber
For use in harsh conditions.
Absorbs the impact at the stroke end for smooth stopping.
Improved stopping accuracy.

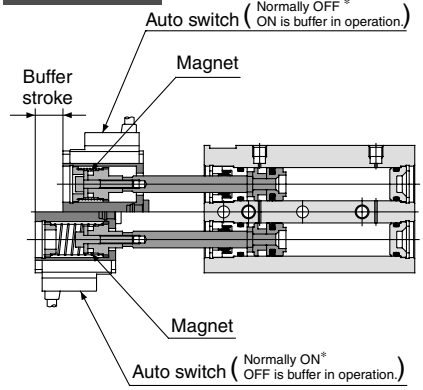
■ Metal stopper
Improved stopping accuracy.
Without cushioning function for use with light loads and low speeds.

Functional Option

With Buffer Mechanism

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

Buffer mechanism in operational condition

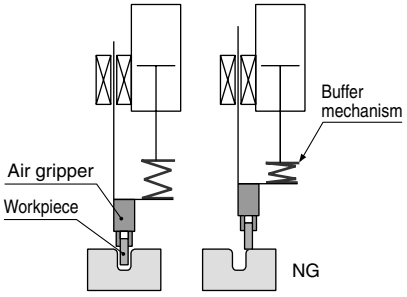


Normal condition

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

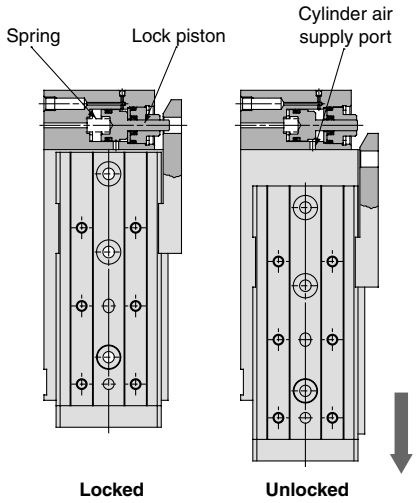
Application Example

In workpiece insertion processes when there is a problem such as faulty positioning, the buffer mechanism absorbs the shock from the workpiece impact to prevent damage.



With End Lock

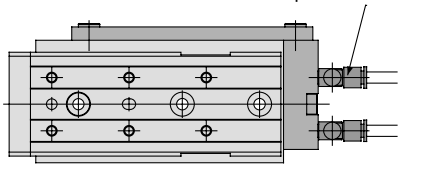
■ Holds the cylinder's home position to prevent dropping of the workpiece even if the air supply is cut off.



Axial Piping Type

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





Series MXQ
Model Selection

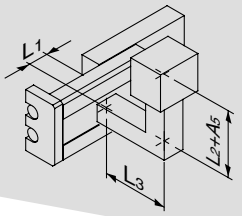
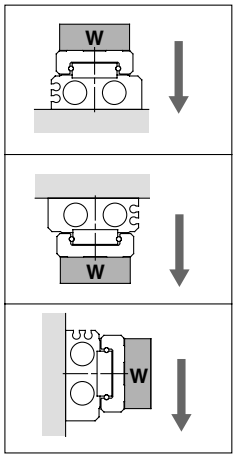
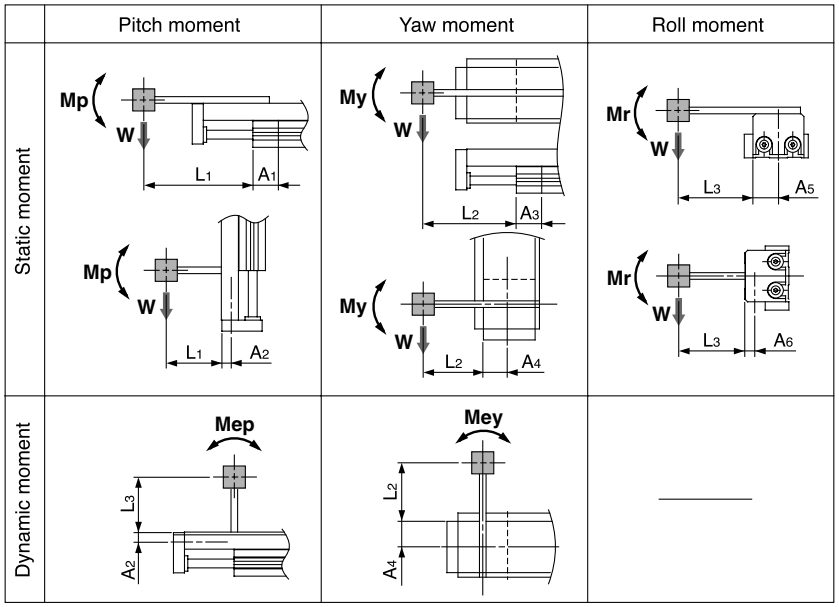
Model Selection Step	Formula/Data	Selection Example
1 Operating Conditions Enumerate the operating conditions considering the mounting position and workpiece configuration.	• Model to be used • Type of cushion • Workpiece mounting position • Mounting orientation • Average speed Va (mm/s) • Load mass W (kg): Fig. (1) • Overhang Ln (mm) Fig. (2)	 Cylinder: MXQ16-50 Cushion: Rubber stopper Workpiece table mounting Mounting: Horizontal wall mounting Average 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.	$E = \frac{1}{2} \cdot W \left(\frac{V}{1000}\right)^2$ Collision speed $V = \underset{*}{\underline{1.4}} \cdot Va$ *) Correction factor (Reference values) $Ea = K \cdot E\,max$ Workpiece mounting coefficient K: Fig. (3) Max. allowable kinetic energy Emax: Table (1) Kinetic energy (E) ≤ Allowable kinetic energy (Ea)	$E = \frac{1}{2} \times 1 \left(\frac{420}{1000}\right)^2 = 0.088$ $V = 1.4 \times 300 = 420$ $Ea = 1 \times 0.11 = 0.11$ 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) No need to consider this load factor in the case of using perpendicularly in a vertical position. (Define $\alpha_1 = 0$.) Find the load factor of the load weight α_1.	$Wa = K \cdot \beta \cdot Wmax$ Workpiece mounting coefficient K: Fig. (3) Allowable load weight coefficient β: Graph (1) Max. allowable load mass Wmax: Table (2) $\alpha_1 = W/Wa$	$Wa = 1 \times 1 \times 4 = 4$ K = 1 $\beta = 1$ Wmax = 4 $\alpha_1 = 1/4 = 0.25$
3-2 Load Factor of the 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.	$M = W \times 9.8\,(Ln + An)/1000$ Correction value of moment center position distance An: Table (3) $Ma = K \cdot \gamma \cdot Mmax$ Workpiece mounting coefficient K: Fig. (3) Allowable moment coefficient γ: Graph (2) Maximum allowable moment Mmax: Table (4) $\alpha_2 = M/Ma$	Yawing Examine My. $My = 1 \times 9.8\,(10 + 30)/1000 = 0.39$ $A_3 = 30$ $May = 1 \times 1 \times 18 = 18$ Mymax = 18 K = 1 $\gamma = 1$ $\alpha_2 = 0.39/18 = 0.022$ Rolling Examine Mr. $Mr = 1 \times 9.8\,(30 + 10.5)/1000 = 0.39$ $A_6 = 10.5$ Mar = 36 Mrmax = 36 K = 1 $\gamma = 1$ $\alpha'_2 = 0.39/36 = 0.011$
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.	$Me = 1/3 \cdot We \times 9.8 \frac{(Ln + An)}{1000}$ Collision equivalent to impact $We = \delta \cdot W \cdot V$ δ: Bumper coefficient Rubber stopper without adjuster = 4/100 Shock absorber = 1/100 Metal stopper= 16/100 Correction value of moment center position distance An: Table (3) $Mea = K \cdot \gamma \cdot Mmax$ Workpiece mounting coefficient K: Fig. (3) Allowable moment coefficient γ: Graph (2) Max. allowable moment Mmax: Graph (4) $\alpha_3 = Me/Mea$	Pitching Examine Mep. $Mep = 1/3 \times 16.8 \times 9.8 \times \frac{(30 + 10.5)}{1000} = 2.2$ $We = 4/100 \times 1 \times 420 = 16.8$ $A_2 = 10.5$ $Meap = 1 \times 0.7 \times 18 = 12.6$ K = 1 $\gamma = 0.7$ Mpmax = 18 $\alpha_3 = 2.2/12.6 = 0.17$ Yawing Examine Mey. $Mey = 1/3 \times 16.8 \times 9.8 \times \frac{(30 + 24.5)}{1000} = 3.0$ We=168 $A_4 = 24.5$ Meay = 12.6 (Same value as Meap) $\alpha'_3 = 3.0/12.6 = 0.24$
3-4 Sum of the Load Factors Use is possible if the sum of the load factors does not exceed 1.	$\Sigma\alpha n = \alpha_1 + \alpha_2 + \cdots\cdots\cdots + \alpha_n \leq 1$	$\Sigma\alpha n = \alpha_1 + \alpha_2 + \alpha'_2 + \alpha_3 + \alpha'_3$ $= 0.25 + 0.022 + 0.011 + 0.17 + 0.24 = 0.693 \leq 1$ And it is possible to use.

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



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

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

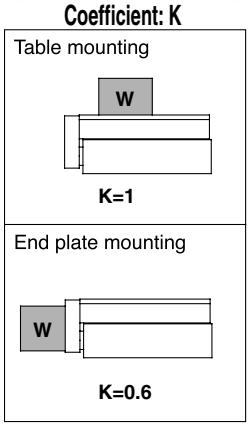


Table (1) Allowable Kinetic Energy: Emax (J)

Model	Allowable kinetic energy			
	Without adjuster	Adjuster option		
		Rubber stopper	Shock absorber	Metal stopper
MXQ 6	0.018	0.018	—	0.009
MXQ 8	0.027	0.027	0.054	0.013
MXQ12	0.055	0.055	0.11	0.027
MXQ16	0.11	0.11	0.22	0.055
MXQ20	0.16	0.16	0.32	0.080
MXQ25	0.24	0.24	0.48	0.12

⚠ **Caution** The maximum operating speed for metal stopper is 200 mm/s.

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

Model	Maximum allowable load weight
MXQ 6	0.6
MXQ 8	1
MXQ12	2
MXQ16	4
MXQ20	6
MXQ25	9

Graph (1) Allowable Load Mass Coefficient: β

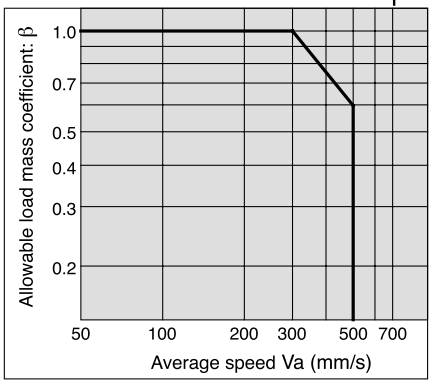
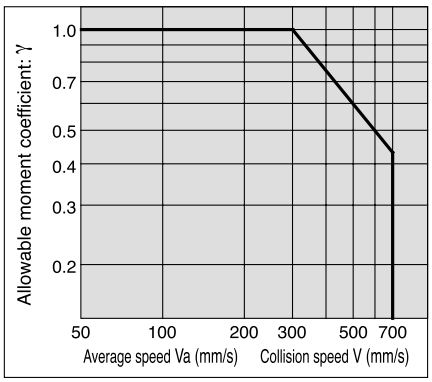


Table (3) Correction Value of Moment Center Position Distance: An (mm)

Model	Correction value of moment center position distance (Refer to Figure (2).)												
	A1, A3 Stroke (mm)									A2	A4	A5	A6
	10	20	30	40	50	75	100	125	150				
MXQ 6	14.5	14.5	14.5	18.5	18.5	—	—	—	—	6	13.5	13.5	6
MXQ 8	16.5	16.5	18.5	20.5	28	28.5	—	—	—	7	16	16	7
MXQ12	21	21	21	25	25	34	34	—	—	9	19.5	19.5	9
MXQ16	27	27	27	27	30	33	42.5	42.5	—	10.5	24.5	24.5	10.5
MXQ20	29.5	29.5	29.5	29.5	33.5	37.5	53.5	55	56.5	14	30	30	14
MXQ25	35.5	35.5	35.5	35.5	43	43	50	64	64	16.5	37	37	16.5

Note) For A2, A4, A5 and A6, there is no difference in the corrected values due to the stroke.

Graph (2) Allowable Moment Coefficient: γ



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

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

Model	Pitch/Yaw moment: Mpmax/Mymax Stroke (mm)									Roll moment: Mrmax Stroke (mm)								
	10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150
MXQ 6	1.4	1.4	1.4	2.8	2.8	—	—	—	—	3.5	3.5	3.5	5.1	5.1	—	—	—	—
MXQ 8	2.0	2.0	2.8	3.7	7.9	7.9	—	—	—	5.1	5.1	6.0	6.9	7.4	7.4	—	—	—
MXQ12	4.7	4.7	4.7	7.2	7.2	15	15	—	—	11	11	11	13	13	14	14	—	—
MXQ16	13	13	13	13	18	23	42	42	—	31	31	31	31	36	41	41	41	—
MXQ20	19	19	19	19	27	36	84	84	84	47	47	47	47	57	66	75	75	75
MXQ25	32	32	32	32	52	52	78	140	140	81	81	81	81	110	110	130	130	130

Symbol

Symbol	Definition	Unit
An (n = 1 to 6)	Correction value of moment center position distance	mm
E	Kinetic energy	J
Emax	Allowable kinetic energy	J
Ln (n = 1 to 3)	Overhang	mm
M (Mp, My, Mr)	Static moment (Pitch, Yaw, Roll)	N·m
Ma (Map, May, Mar)	Allowable static moment (Pitch, Yaw, Roll)	N·m
Me (Mep, Mey)	Dynamic moment (Pitch, Yaw)	N·m
Mea (Meap, Meay)	Allowable dynamic moment (Pitch, Yaw)	N·m
Mmax (Mpmax, Mymax, Mrmax)	Maximum allowable moment (Pitch, Yaw, Roll)	N·m
V	Collision speed	mm/s

Symbol	Definition	Unit
Va	Average speed	mm/s
W	Load mass	kg
Wa	Allowable load mass	kg
We	Weight equivalent to impact	kg
Wmax	Max. allowable load mass	kg
α	Load factor	—
β	Allowable load mass coefficient	—
γ	Allowable moment coefficient	—
K	Workpiece mounting coefficient	—

Air Slide Table

Series MXQ

ø6, ø8, ø12, ø16, ø20, ø25

How to Order

MXQ | **12** | | | – | **50** | **AS** | **FR** – | **M9BW** | | – | |

Port thread type

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

Symmetric type

Nil	Standard type
L	Symmetric type

Bore size/Stroke (mm)

ø6	10, 20, 30, 40, 50
ø8	10, 20, 30, 40, 50, 75
ø12	10, 20, 30, 40, 50, 75, 100
ø16	10, 20, 30, 40, 50, 75, 100, 125
ø20	10, 20, 30, 40, 50, 75, 100, 125, 150
ø25	10, 20, 30, 40, 50, 75, 100, 125, 150

Adjuster option

Nil	Without adjuster
AS	Extension end adjuster
AT	Retraction end adjuster
A	Double end adjuster
BS (1)	Extension end absorber
BT (1)	Retraction end absorber
B (1)	Double absorber
CS	Extension end metal stopper
CT	Retraction end metal stopper
C	Double metal stopper
ASBT (1)	Extension end adjustor + Retraction end absorber
ASCT	Extension end adjustor + Retraction end metal stopper
BSAT (1)	Extension end absorber + Retraction end adjuster
BSCT (1)	Extension end absorber + Retraction end metal stopper
CSAT	Extension end metal stopper + Retraction end adjuster
CSBT (1)	Extension end metal stopper + Retraction end absorber

Note 1) W/ shock absorber is not available in Series MXQ6.

Functional option

Nil	Standard type
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) W/ end lock is not available in Series MXQ6.

Number of auto switches

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

Auto switch

Nil	Without auto switch (Built-in magnet)

* For the applicable auto switch model, refer to the table below.
* For the applicable auto switch to buffer, refer to page 95. It requires to order separately.

Made to Order

Refer to page 93 for details.

Option Combinations

Adjuster option \ Functional option	Nil	F	R	P	FR	FP
Nil	○	○	○	○	○	○
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
CS	○	○(3)	○	○	○(3)	○(3)
CT	○	○	x	x	x	x
C	○	○(3)	x	x	x	x
ASBT	○	○(3)	x	x	x	x
ASCT	○	○(3)	x	x	x	x
BSAT	○	x	x	x	x	x
BSCT	○	x	x	x	x	x
CSAT	○	○(3)	x	x	x	x
CSBT	○	○(3)	x	x	x	x

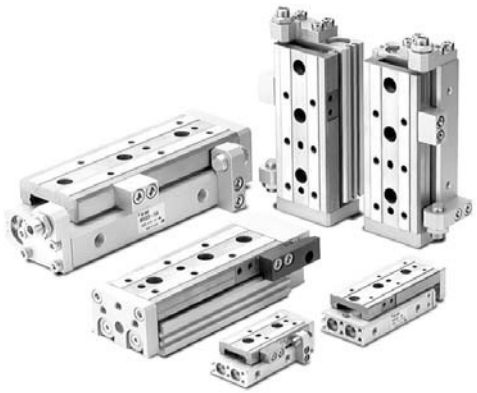
○ : Available, x : Not available

Note 3) With the combination of buffer mechanism and extension end stroke adjuster, the buffer stroke decreases by the amount of stroke adjusted with the extension end stroke adjuster.

Applicable Auto Switch/Refer to pages 1719 to 1827 for the detailed specifications of auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC		Load voltage AC	Auto switch model: Perpendicular	Auto switch model: In-line	Lead wire length (m): 0.5 (Nil)	1 (M)	3 (L)	5 (Z)	Pre-wired connector	Applicable load	
Solid state 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 indication)			3-wire (NPN)		5 V,12 V		**M9NWV**	**M9NW**	●	●	●	○	○	IC circuit	
				3-wire (PNP)				**M9PWV**	**M9PW**	●	●	●	○	○		
				2-wire		12 V		**M9BWV**	**M9BW**	●	●	●	○	○	—	
Reed switch	——	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	**A96V**	**A96**	●	—	●	—	—	IC circuit	—
			No	2-wire	24 V	12 V	100 V	**A93V**	**A93**	●	—	●	—	—	—	Relay, PLC
							100 V or less	**A90V**	**A90**	●	—	●	—	—	IC circuit	

* Lead wire length symbols: 0.5 m ····· Nil (Example) M9NW
  1 m ····· M (Example) M9NWM
  3 m ····· L (Example) M9NWL
  5 m ····· Z (Example) M9NWZ
* Solid state auto switches marked with "○" are produced upon receipt of order.
* Since there are other applicable auto switches than listed, refer to page 128 for details.
* For details about auto switches with pre-wired connector, refer to pages 1784 and 1785.
* Auto switches are shipped together (not assembled).



Specifications

Bore size (mm)	6	8	12	16	20	25
Piping port size	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					
Piston speed	50 to 500 mm/s (Adjuster option/Metal stopper: 50 to 200 mm/s)					
Cushion	Rubber bumper (Standard, Adjuster option/Rubber stopper) Shock absorber (Adjuster option/Shock absorber) None (Adjuster option/Metal stopper)					
Lubrication	Non-lube					
Auto switch	Reed auto switch (2-wire, 3-wire) Solid state auto switch (2-wire, 3-wire) 2-color indication solid state auto switch (2-wire, 3-wire)					
Stroke length tolerance	$^{+1}_{0}$ mm					

Option

Adjuster option	Rubber stopper	Extension end (AS)	Stroke adjustment range 0 to 5 mm
		Retraction end (AT)	
		Both ends (A)	
	Shock absorber	Extension end (BS)	W/ shock absorber is not available in Series MXQ6.
		Retraction end (BT)	
		Both ends (B)	
	Metal stopper	Extension end (CS)	Stroke adjustment range 0 to 5 mm
		Retraction end (CT)	
		Both ends (C)	
Functional option	With buffer (F)		W/ end lock is not available in Series MXQ6.
	With end lock (R)		
	Axial piping type (P)		

∗ For details of adjuster and functional option, refer to pages 94 and 95 in “Option Specifications”.

Standard Stroke

Model	Standard stroke (mm)
MXQ 6	10, 20, 30, 40, 50
MXQ 8	10, 20, 30, 40, 50, 75
MXQ12	10, 20, 30, 40, 50, 75, 100
MXQ16	10, 20, 30, 40, 50, 75, 100, 125
MXQ20	10, 20, 30, 40, 50, 75, 100, 125, 150
MXQ25	10, 20, 30, 40, 50, 75, 100, 125, 150

Made to Order

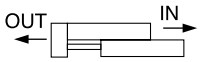
Made to Order Specifications

(For details, refer to pages 1955 to 2021.)

Symbol	Specifications
-X7	PTFE grease
-X9	Grease for food
-X11	Adjusting bolt, long specification (Adjustment range: 15 mm)
-X12	Adjusting bolt, long specification (Adjustment range: 25 mm)
-X16	Heat treated metal stopper bolt (Adjustment range: 5 mm)
-X17	Heat treated metal stopper bolt (Adjustment range: 15 mm)
-X18	Heat treated metal stopper bolt (Adjustment range: 25 mm)
-X33	Without built-in auto switch magnet
-X39	Fluororubber seals
-X42	Anti-corrosive specifications for guide section
-X45	EPDM seals

For clean room specifications, refer to “Pneumatic Clean Series” catalog.

Theoretical Output



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

Bore size (mm)	Rod size (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 output (N) = Pressure (MPa) x Piston area (mm^2)

Mass

(g)

Model	Standard stroke (mm)									Additional weight of adjuster option						Extra for option		
	10	20	30	40	50	75	100	125	150	Rubber stopper		Shock absorber		Metal stopper		With buffer	With end lock	Axial piping type (S: Stroke (mm))
										Extension end	Retraction end	Extension end	Retraction end	Extension end	Retraction end			
MXQ 6	100	120	140	180	200	—	—	—	—	6	5	—	—	10	5	25	—	13 + 0.2 S
MXQ 8	140	170	210	250	315	385	—	—	—	10	10	30	23	23	10	35	40	26 + 0.2 S
MXQ12	335	340	380	450	490	655	745	—	—	25	23	47	30	35	23	70	100	43 + 0.2 S
MXQ16	605	610	670	735	835	1000	1250	1400	—	45	40	75	53	60	40	105	160	55 + 0.2 S
MXQ20	1100	1100	1100	1200	1400	1750	2350	2650	2900	80	65	170	120	115	65	130	310	166 + 0.5 S
MXQ25	1750	1750	1750	1950	2400	2750	3450	4300	4700	130	110	220	140	180	110	200	560	240 + 0.5 S

Option Specifications

Stroke Adjustment Range of Adjuster Option (Identical for extension and retraction ends)

Type	Stroke adjustment range
Rubber stopper	0 to 5 mm
With shock absorber	Refer to the dimensions on page 124.
Metal stopper	0 to 5 mm

∗ Optional wide adjustment range adjuster are available with rubber stopper and metal stopper.

How to Order Stroke Adjuster (Accessory)

MXQ — AS 12 L — X11

Adjuster option

AS	Rubber stopper	Extension end
AT		Retraction end
BS	Shock absorber	Extension end
BT		Retraction end
CS	Metal stopper	Extension end
CT		Retraction end

Applicable bore size

6	ø6
8	ø8
12	ø12
16	ø16
20	ø20
25	ø25

Symmetric type

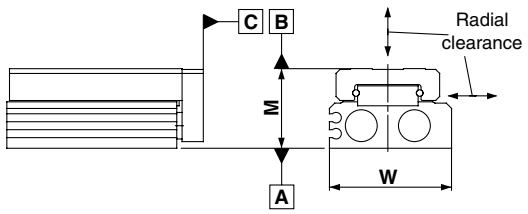
Nil	Standard type
L	Symmetric type

Adjustment range

Nil	5 mm	Standard
-X11	15 mm	Option
-X12	25 mm	

Note 1) -X12 (adjusting range: 25 mm) is not available in Series MXQ6.
Note 2) -X11 and -X12 are not available with shock absorber.
Note 3) W/ Shock absorber is not available in Series MXQ6.
Note 4) For dimensions, refer to pages 122 to 126.
For the symmetric type, refer to the external dimensions symmetrically. (Symmetric type is what the direction of the adjusting bolt is reversed.)

Table Accuracy



Model	MXQ6	MXQ8	MXQ12	MXQ16	MXQ20	MXQ25
B side parallelism to **A** side	Refer to Table (1).					
B side traveling parallelism to **A** side	Refer to Graph (1).					
C side perpendicularity to **A** side	0.05 mm					
M dimension tolerance	±0.08 mm (±0.1 mm) *1					
W dimension tolerance	±0.1 mm					
Radial internal clearance (μm)	–4 to 0	–4 to 0	–6 to 0	–10 to 0	–12 to 0	–14 to 0

*1) ±0.1 mm for 75 mm or longer stroke

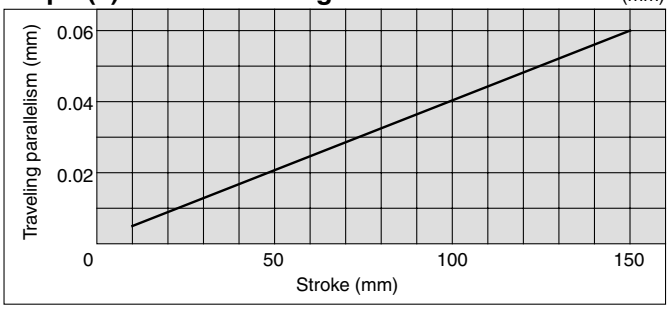
Table (1) B Side Parallelism to A Side

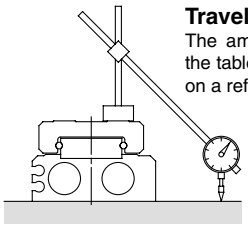
(mm)

Model	Stroke (mm)								
	10	20	30	40	50	75	100	125	150
MXQ 6	0.025	0.03	0.035	0.04	0.045	—	—	—	—
MXQ 8	0.025	0.03	0.035	0.04	0.055	0.065	—	—	—
MXQ12	0.03	0.03	0.035	0.04	0.045	0.065	0.075	—	—
MXQ16	0.035	0.035	0.04	0.045	0.05	0.065	0.08	0.095	—
MXQ20	0.04	0.04	0.04	0.045	0.055	0.07	0.095	0.105	0.125
MXQ25	0.045	0.045	0.045	0.05	0.06	0.07	0.09	0.115	0.125

Graph (1) B Side Traveling Parallelism to A Side

(mm)





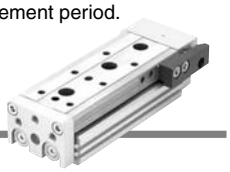
Traveling parallelism:
The amount of deflection on a dial gauge when the table travels a full stroke with the body secured on a reference base surface.

Shock Absorber Specifications

Shock absorber model		RB0805	RB0806	RB1007	RB1411	RB1412
Applicable slide table		MXQ8	MXQ12	MXQ16	MXQ20	MXQ25
Max. energy absorption (J)		0.98	2.94	5.88	14.7	19.6
Stroke absorption (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 temperature range (°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
Mass (g)		15	15	25	65	65

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

With End Lock Specifications



Model	MXQ8	MXQ12	MXQ16	MXQ20	MXQ25
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 132.

Buffer Mechanism Specifications



Model		MXQ6	MXQ8	MXQ12	MXQ16	MXQ20	MXQ25
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 1) For caution on handling the one with buffer mechanism,refer to page 132.
Note 2) The buffer stroke decreases by the amount of stroke adjusted with the extension end stroke adjuster.

Applicable Auto Switch to Buffer

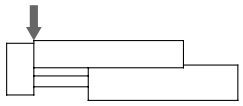
Type	model	Specifications	Electrical entry direction
Solid state switch	**D-M9BV**	With light, 2-wire	Vertical
	D-M9NV	With light, 3-wire, Output: NPN	
	D-M9PV	With light, 3-wire, Output: PNP	

* The auto switch for buffer must be ordered separately.

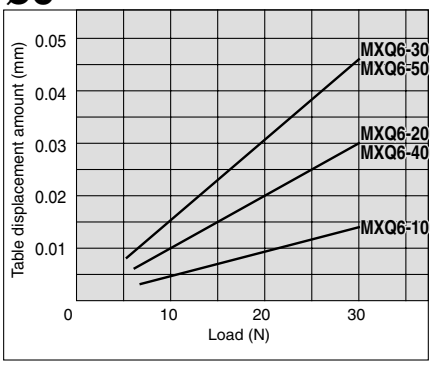
Table Deflection (Reference Values)

Table displacement due to pitch moment load

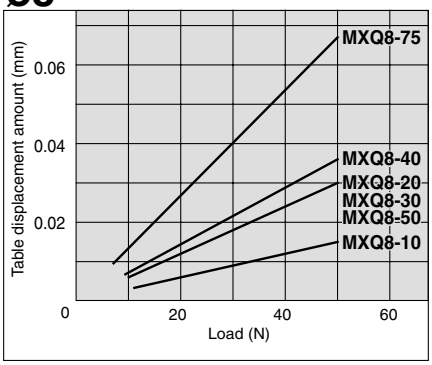
Table displacement when loads are applied to the section marked with the arrow at the full stroke.



ø6



ø8



ø12

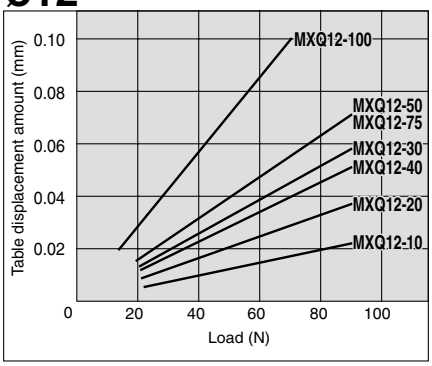
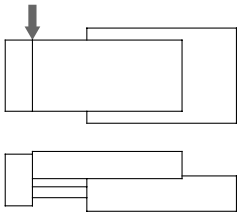
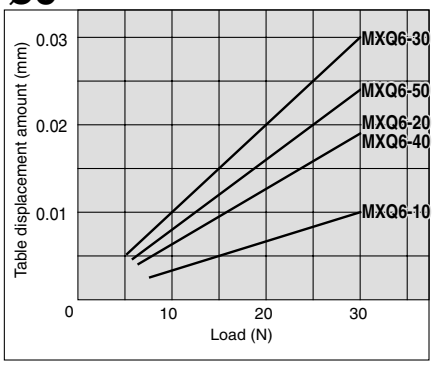


Table displacement due to yaw moment load

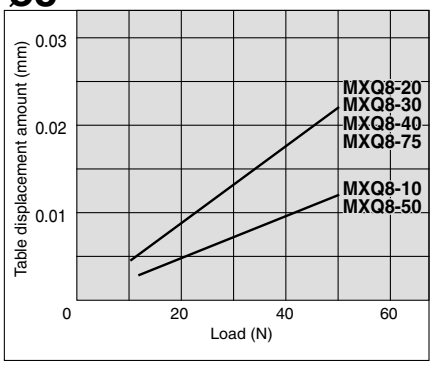
Table displacement when loads are applied to the section marked with the arrow at the full stroke.



ø6



ø8



ø12

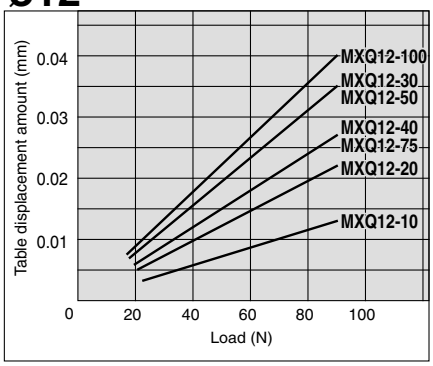
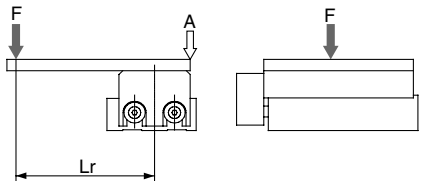
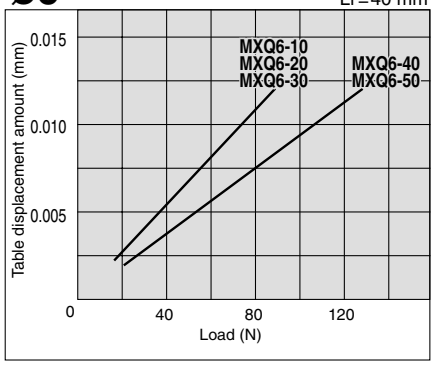


Table displacement due to roll moment load

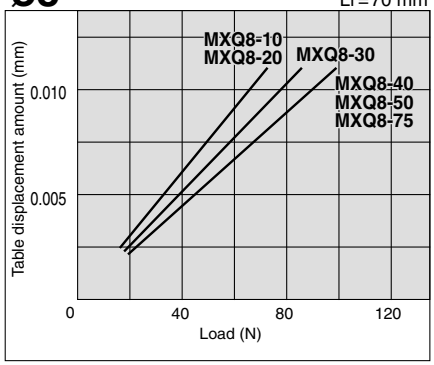
Table displacement of section A when loads are applied to the section F with the slide table retracted.



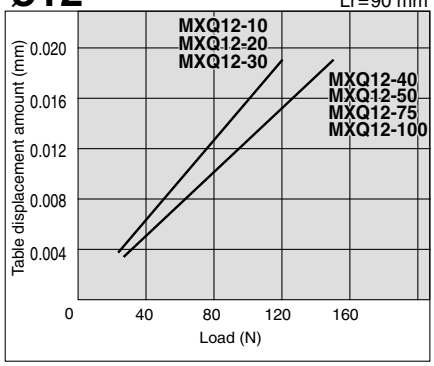
ø6



ø8



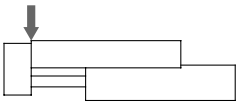
ø12



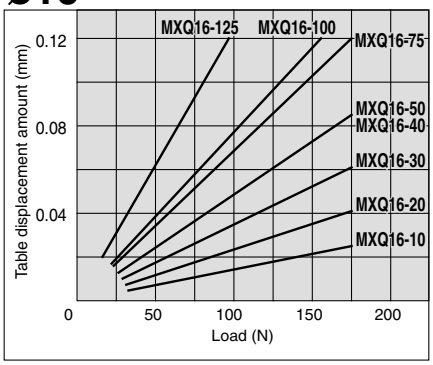
The graphs below show the table displacement when the static moment load is applied to the table. The graphs do not show the loadable mass. Refer to the Model Selection for the loadable mass.

Table displacement due to pitch moment load

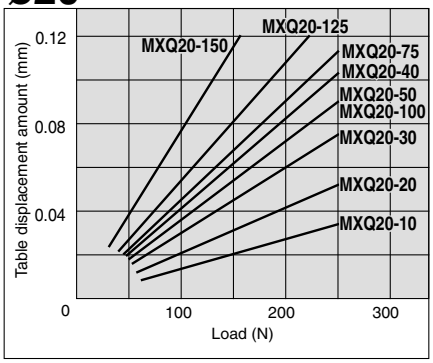
Table displacement when loads are applied to the section marked with the arrow at the full stroke.



ø16



ø20



ø25

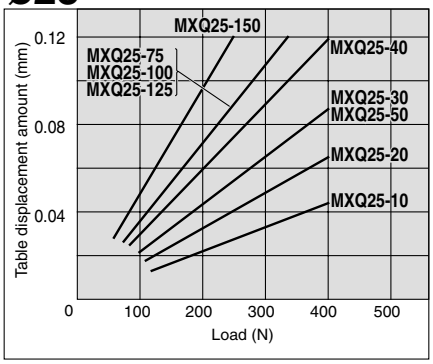
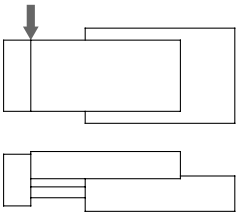
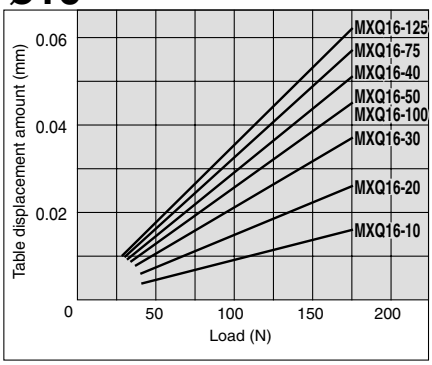


Table displacement due to yaw moment load

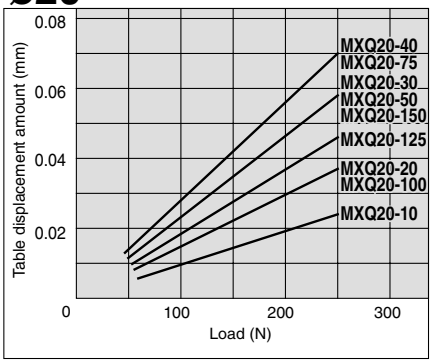
Table displacement when loads are applied to the section marked with the arrow at the full stroke.



ø16



ø20



ø25

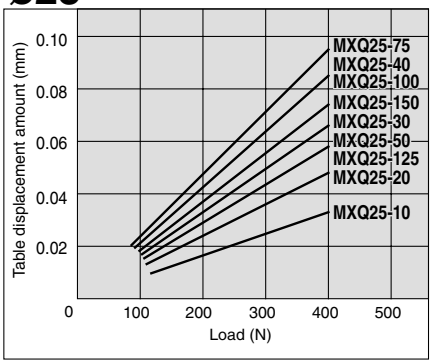
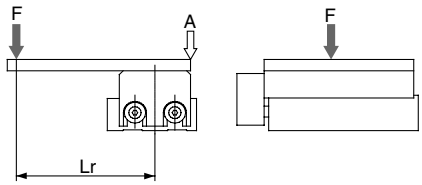
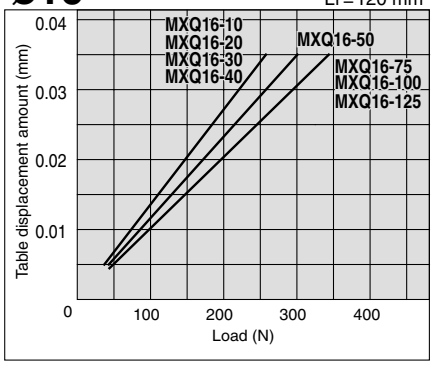


Table displacement due to roll moment load

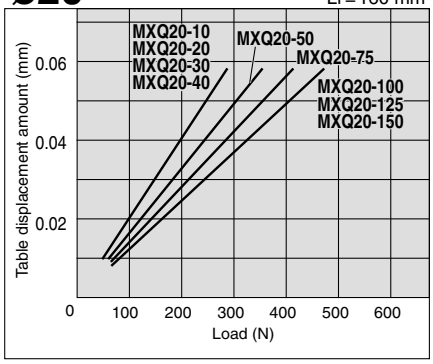
Table displacement of section A when loads are applied to the section F with the slide table retracted.



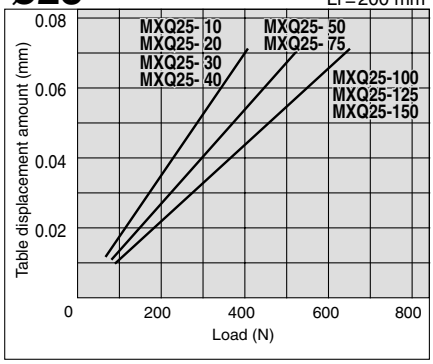
ø16 Lr=120 mm



ø20 Lr=160 mm



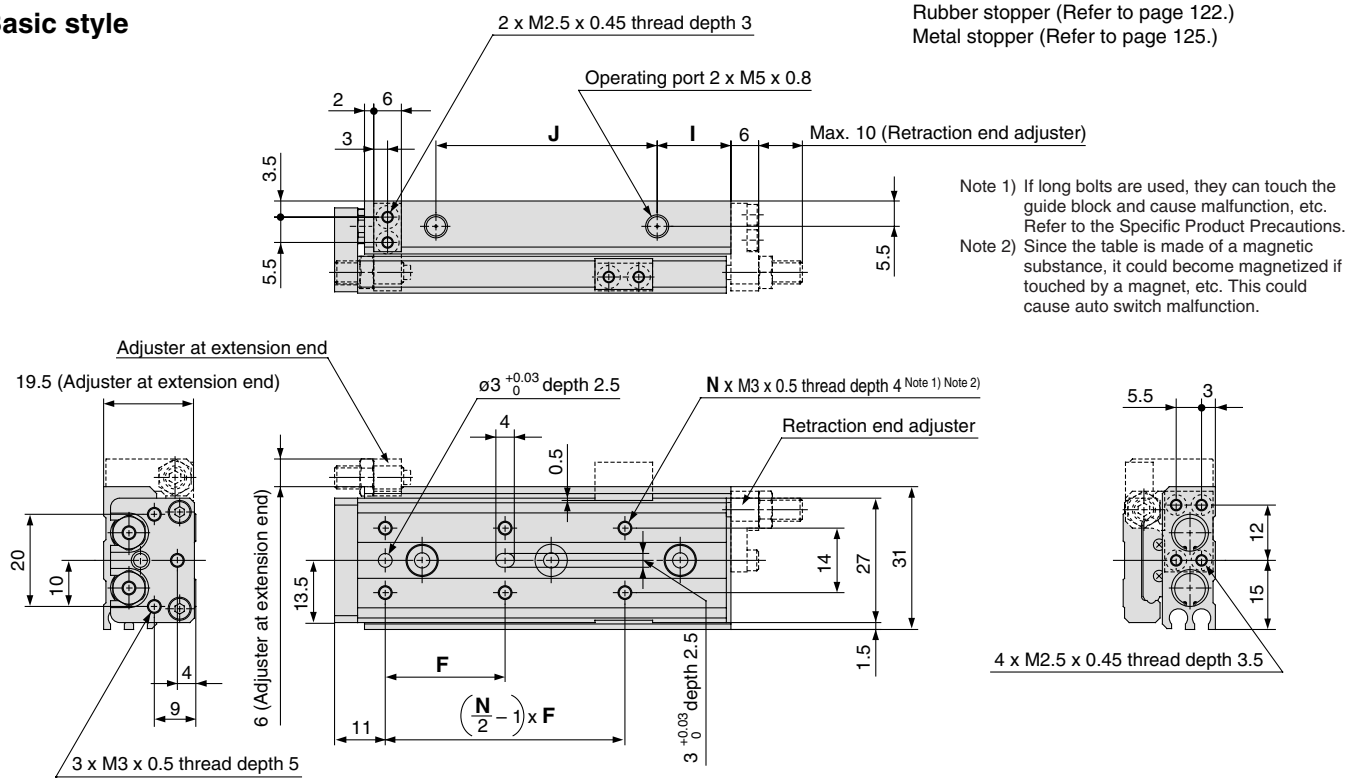
ø25 Lr=200 mm



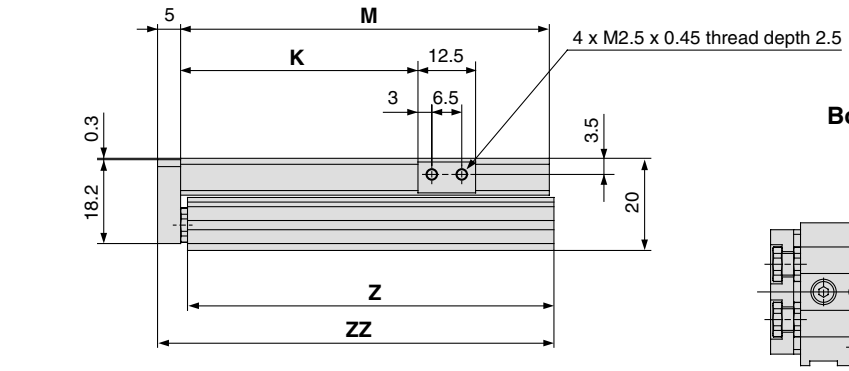
Dimensions: MXQ6

∗ For detailed dimensions about the stroke adjuster, refer to the option for the stroke adjuster.
Rubber stopper (Refer to page 122.)
Metal stopper (Refer to page 125.)

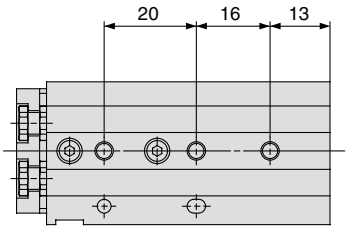
Basic style

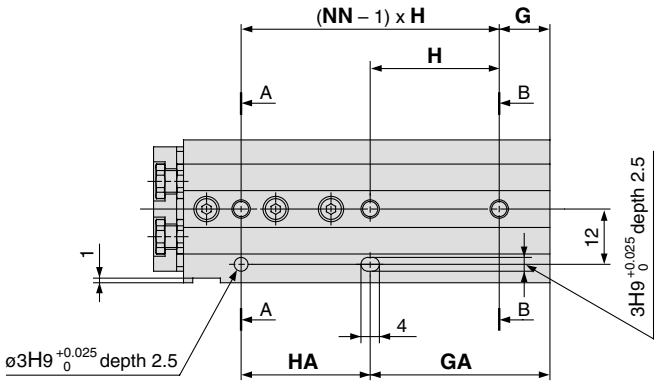


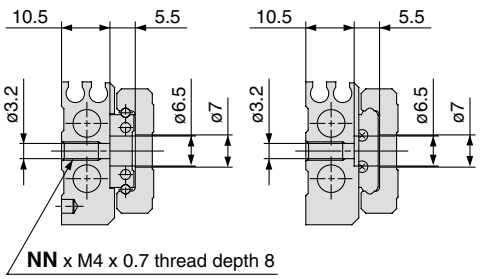
Note 1) If long bolts are used, they can touch the guide block and cause malfunction, etc. Refer to the Specific Product Precautions.
Note 2) Since the table is made of a magnetic substance, it could become magnetized if touched by a magnet, etc. This could cause auto switch malfunction.



Bottom view of MXQ6-30







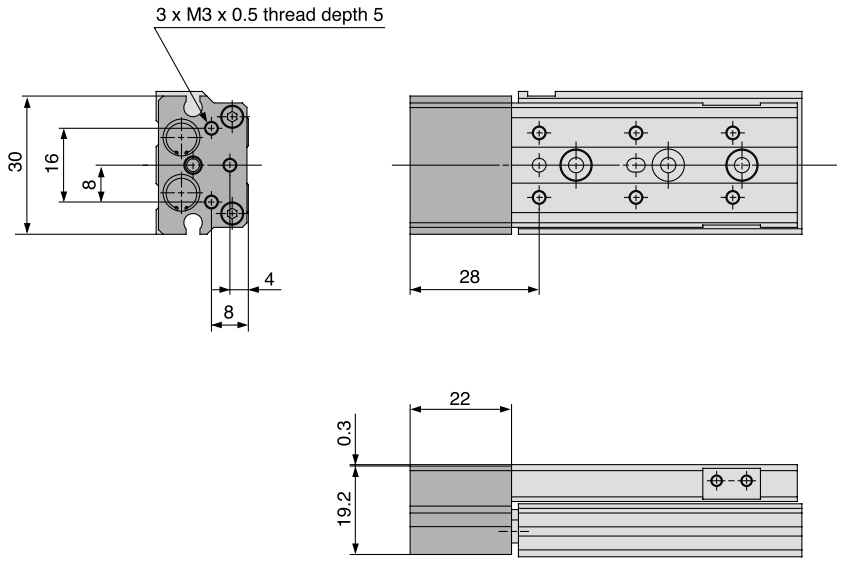
Section AA **Section BB**

(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	M	Z	ZZ
MXQ6-10	22	4	6	23	2	13	16	9	17	21.5	42	41.5	48
MXQ6-20	25	4	13	26	2	13	26	9	27	31.5	52	51.5	58
MXQ6-30	21	6	Note)	Note)	3	29	20	9	37	41.5	62	61.5	68
MXQ6-40	26	6	11	28	3	39	28	16	48	51.5	80	79.5	86
MXQ6-50	27	6	21	28	3	49	28	9	65	61.5	90	89.5	96

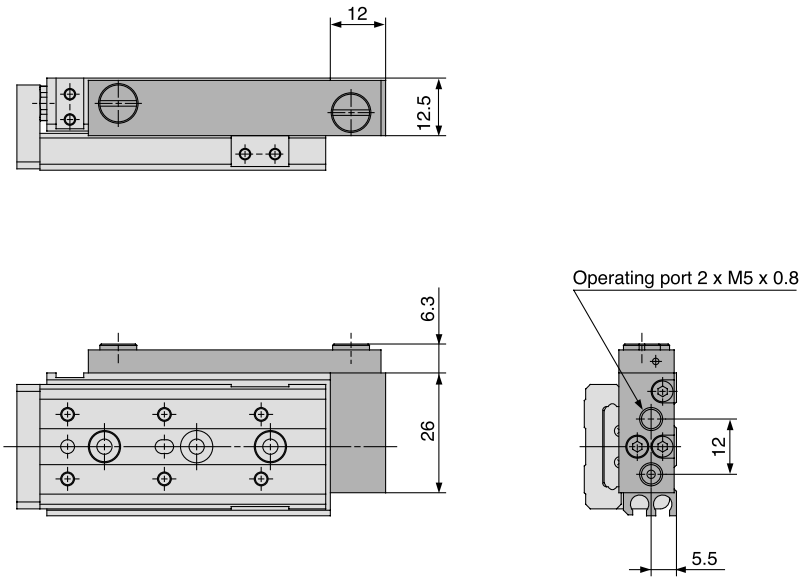
Note) Refer to the bottom view of MXQ6-30.

With buffer (ø6): MXQ6-□□F



∗ Other dimensions are the same as basic style.

Axial piping type (ø6): MXQ6-□□P

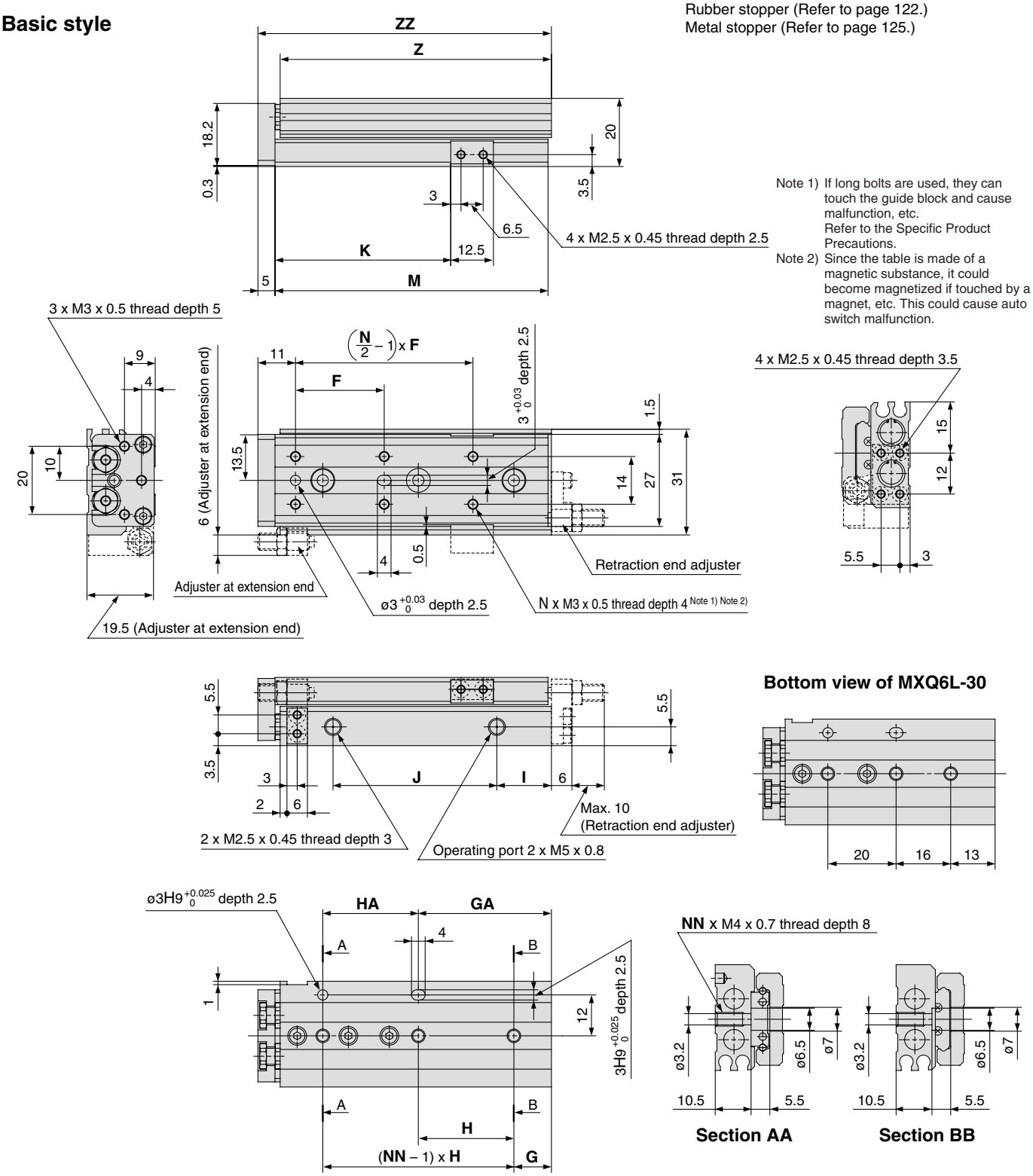


∗ Other dimensions are the same as basic style.

Dimensions: MXQ6L/Symmetric Type

* For detailed dimensions about the stroke adjuster, refer to the option for the stroke adjuster.
Rubber stopper (Refer to page 122.)
Metal stopper (Refer to page 125.)

Basic style



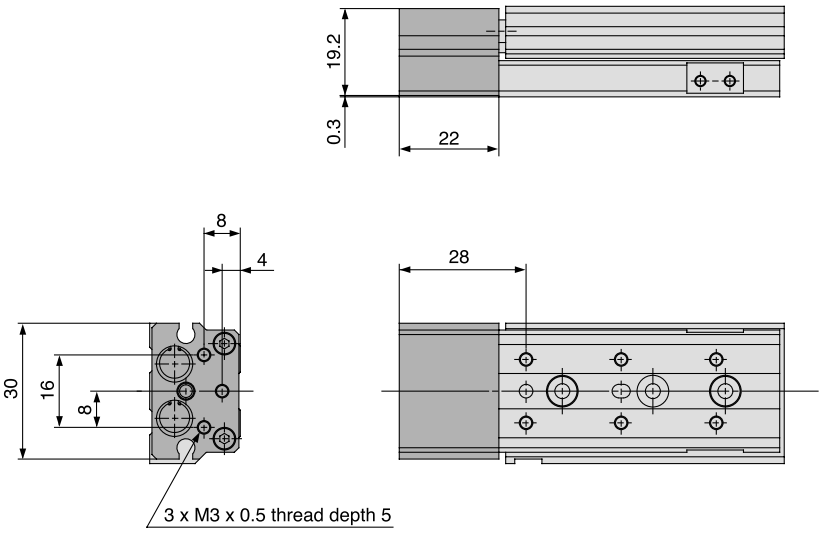
Note 1) If long bolts are used, they can touch the guide block and cause malfunction, etc.
Refer to the Specific Product Precautions.
Note 2) Since the table is made of a magnetic substance, it could become magnetized if touched by a magnet, etc. This could cause auto switch malfunction.

(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	M	Z	ZZ
MXQ6L-10	22	4	6	23	2	13	16	9	17	21.5	42	41.5	48
MXQ6L-20	25	4	13	26	2	13	26	9	27	31.5	52	51.5	58
MXQ6L-30	21	6	—Note)	—Note)	3	29	20	9	37	41.5	62	61.5	68
MXQ6L-40	26	6	11	28	3	39	28	16	48	51.5	80	79.5	86
MXQ6L-50	27	6	21	28	3	49	28	9	65	61.5	90	89.5	96

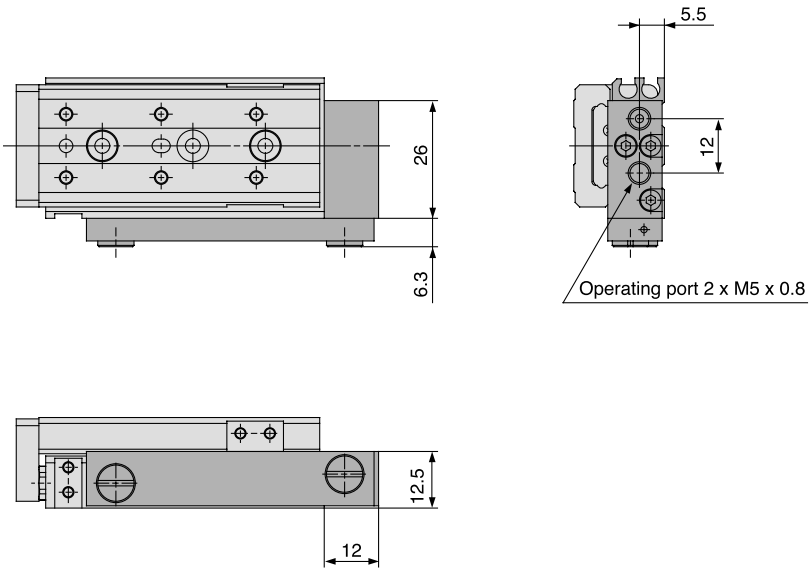
Note) Refer to the bottom view of MXQ6L-30.

With buffer (ø6): MXQ6L-□□F



∗ Other dimensions are the same as basic style.

Axial piping type (ø6): MXQ6L-□□P

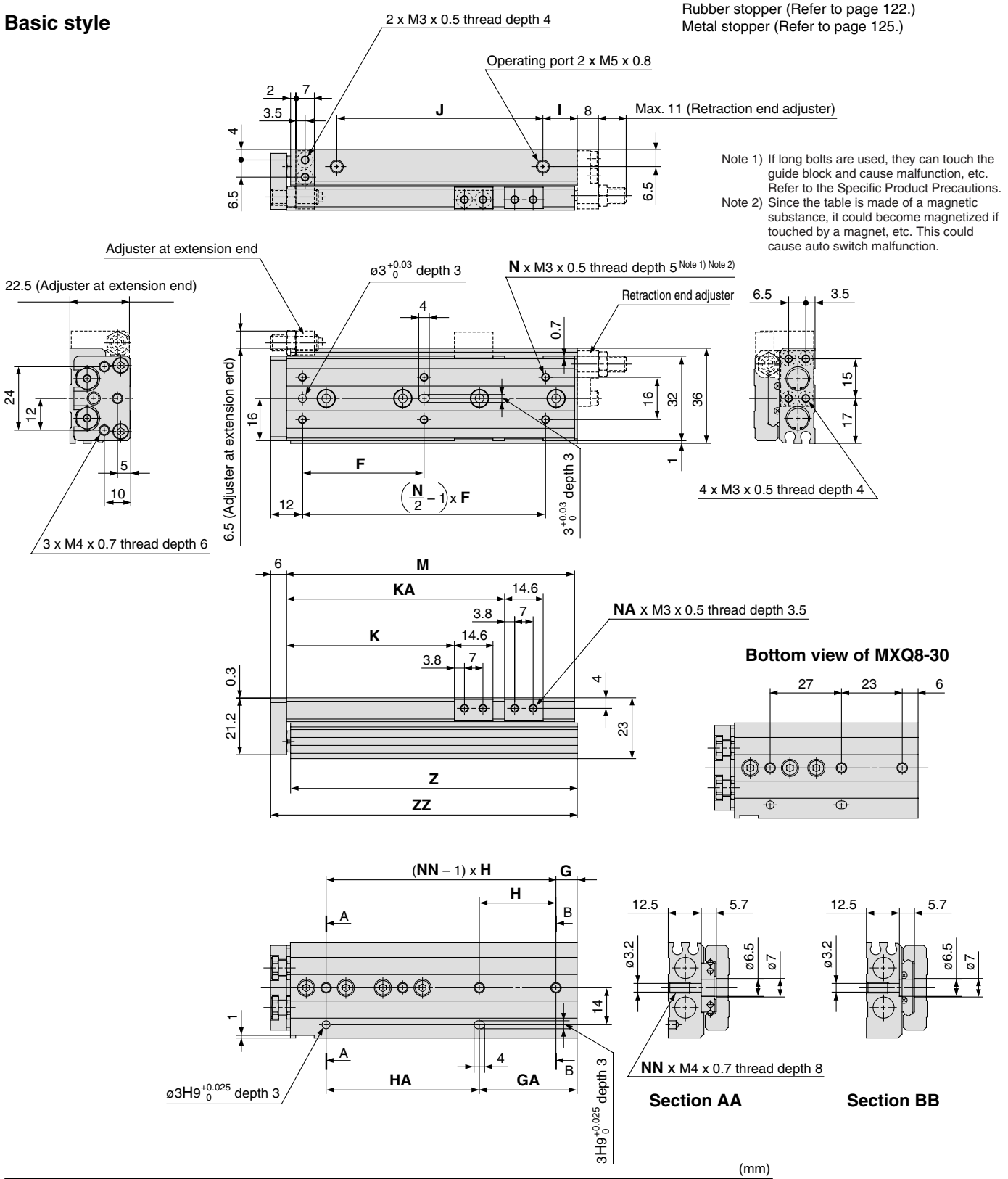


∗ Other dimensions are the same as basic style.

Dimensions: MXQ8

∗ For detailed dimensions about the stroke adjuster, refer to the option for the stroke adjuster.
Rubber stopper (Refer to page 122.)
Metal stopper (Refer to page 125.)

Basic style



Note 1) If long bolts are used, they can touch the guide block and cause malfunction, etc. Refer to the Specific Product Precautions.
Note 2) Since the table is made of a magnetic substance, it could become magnetized if touched by a magnet, etc. This could cause auto switch malfunction.

(mm)

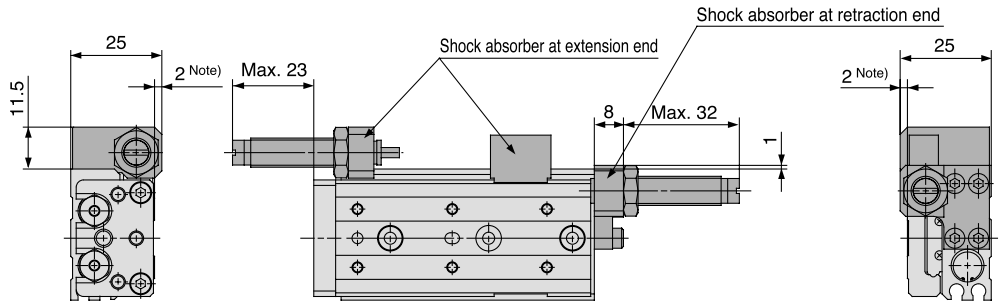
Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ8-10	25	4	7	25	2	13	19	11	17	23.5	—	4	46	45.5	53
MXQ8-20	25	4	14	28	2	14	28	10	28	33.5	—	4	56	55.5	63
MXQ8-30	26	6	—Note)	—Note)	3	29	27	12	40	43.5	—	4	70	69.5	77
MXQ8-40	32	6	8	31	3	39	31	14	52	53.5	—	4	84	83.5	91
MXQ8-50	46	6	8	29	4	37	58	13	78	63.5	82.5	8	109	108.5	116
MXQ8-75	50	6	31	30	4	61	60	12	105	88.5	112.5	8	135	134.5	142

Note) Refer to the bottom view of MXQ8-30.

With shock absorber (ø8): MXQ8-□□BS/BT/B

Stroke Adjustable Range
(mm)

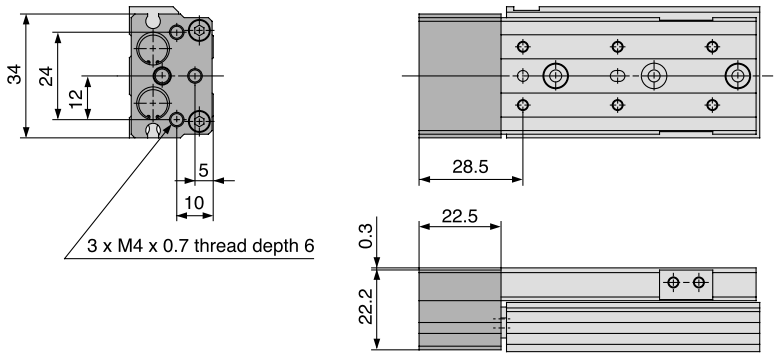
Extension end	Retraction end
20	20



∗ Other dimensions are the same as basic style.

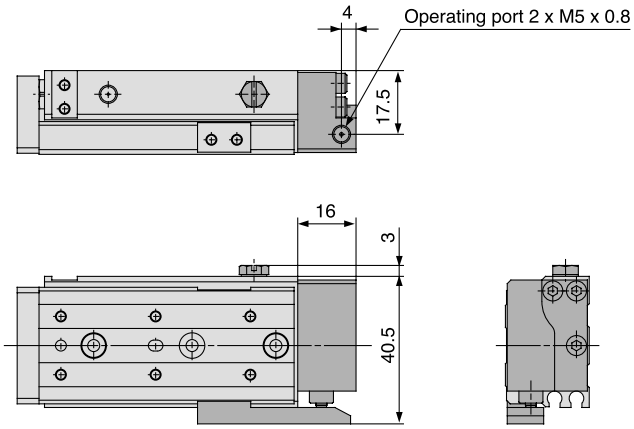
Note) Note that the top of the shock absorber unit will be higher than that of the table.

With buffer (ø8): MXQ8-□□F



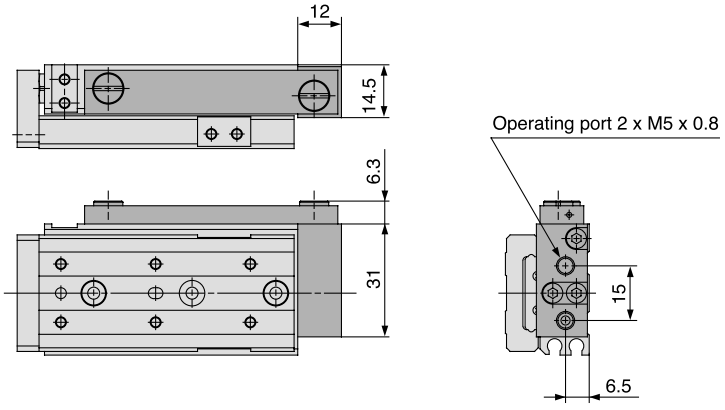
∗ Other dimensions are the same as basic style.

With end lock (ø8): MXQ8-□□R



∗ Other dimensions are the same as basic style.

Axial piping type (ø8): MXQ8-□□P

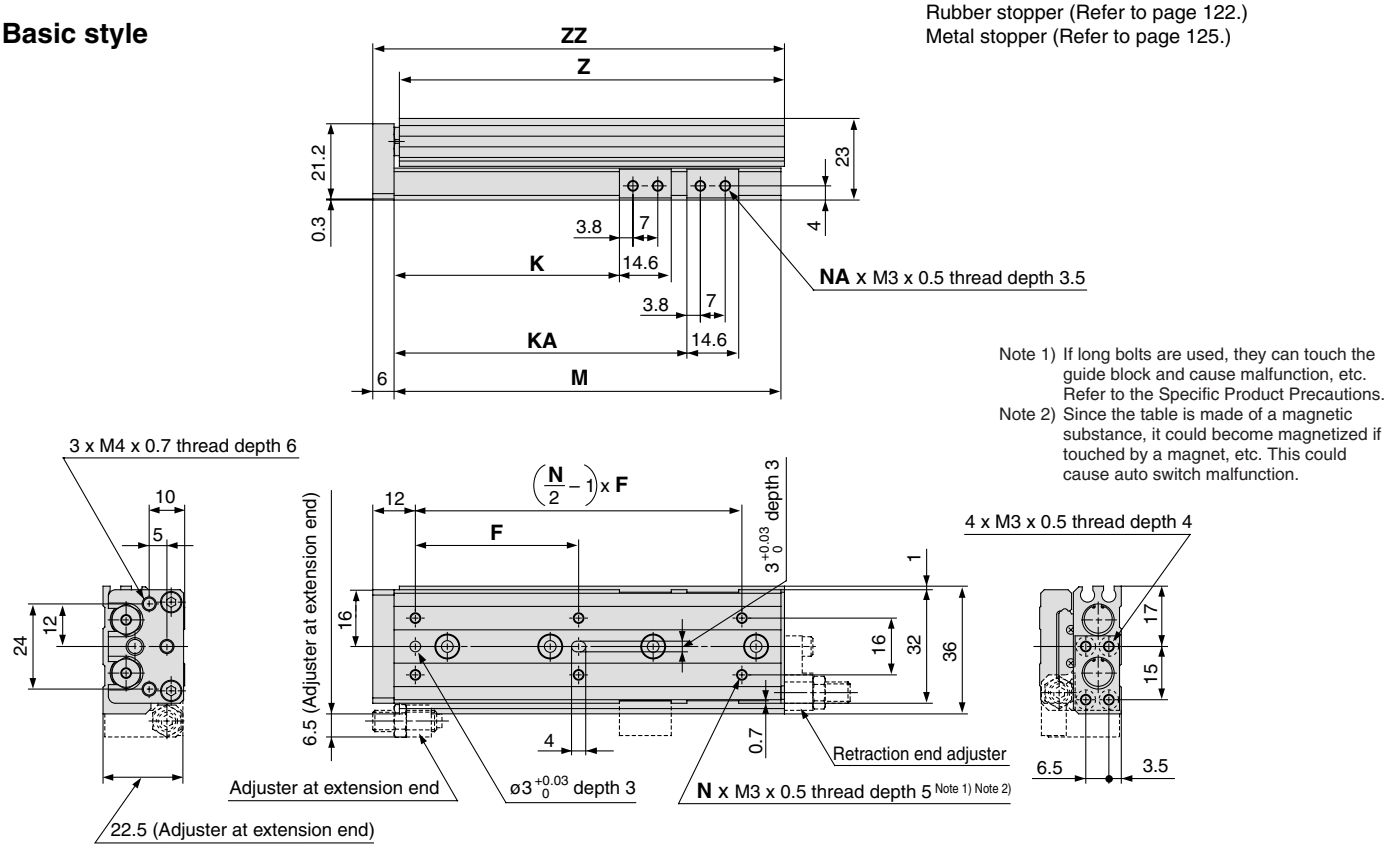


∗ Other dimensions are the same as basic style.

Dimensions: MXQ8L/Symmetric Type

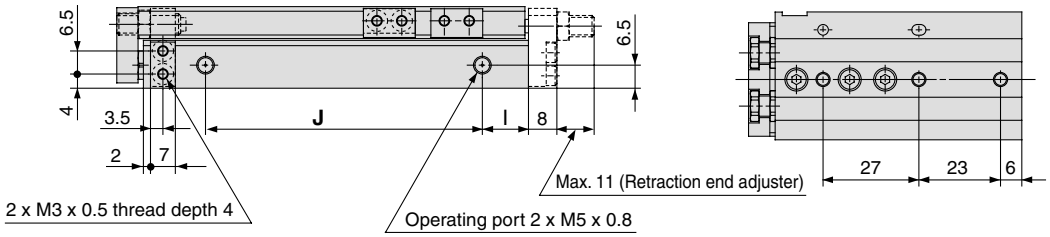
* For detailed dimensions about the stroke adjuster, refer to the option for the stroke adjuster.
Rubber stopper (Refer to page 122.)
Metal stopper (Refer to page 125.)

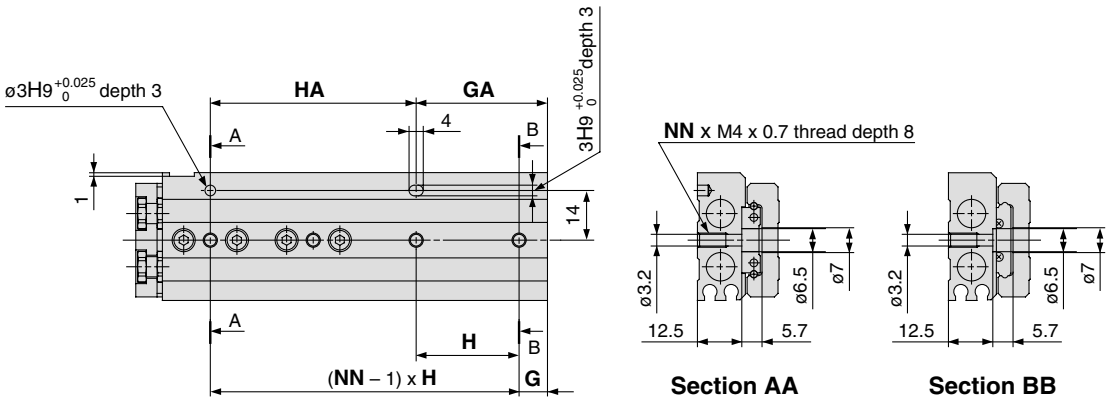
Basic style



Note 1) If long bolts are used, they can touch the guide block and cause malfunction, etc. Refer to the Specific Product Precautions.
Note 2) Since the table is made of a magnetic substance, it could become magnetized if touched by a magnet, etc. This could cause auto switch malfunction.

Bottom view of MXQ8L-30





(mm)

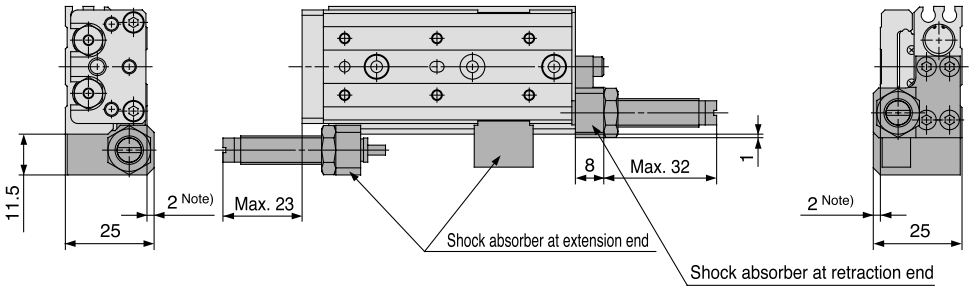
Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ8L-10	25	4	7	25	2	13	19	11	17	23.5	—	4	46	45.5	53
MXQ8L-20	25	4	14	28	2	14	28	10	28	33.5	—	4	56	55.5	63
MXQ8L-30	26	6	Note)	Note)	3	29	27	12	40	43.5	—	4	70	69.5	77
MXQ8L-40	32	6	8	31	3	39	31	14	52	53.5	—	4	84	83.5	91
MXQ8L-50	46	6	8	29	4	37	58	13	78	63.5	82.5	8	109	108.5	116
MXQ8L-75	50	6	31	30	4	61	60	12	105	88.5	112.5	8	135	134.5	142

Note) Refer to the bottom view of MXQ8L-30.

With shock absorber (ø8): MXQ8L-□□BS/BT/B

Stroke Adjustable Range
(mm)

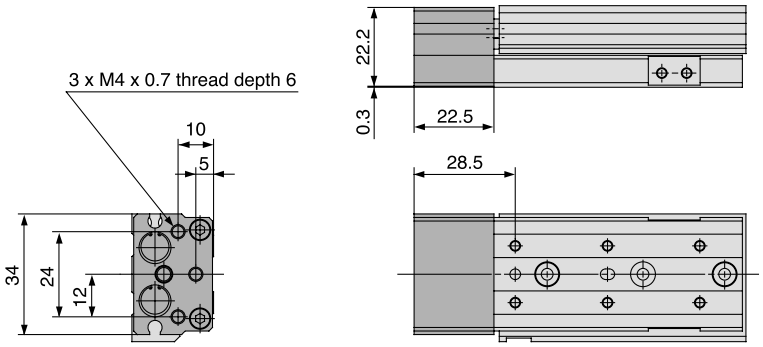
Extension end	Retraction end
20	20



∗ Other dimensions are the same as basic style

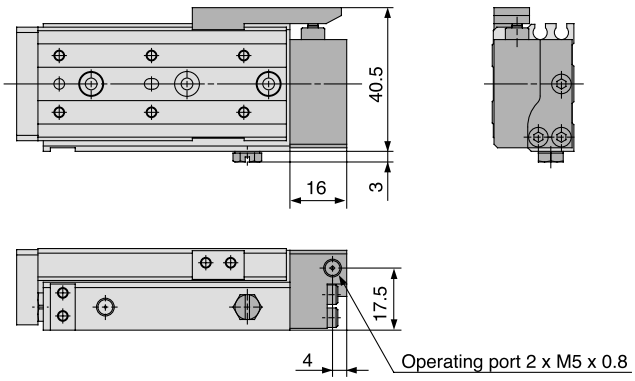
Note) Note that the top of the shock absorber unit will be higher than that of the table.

With buffer (ø8): MXQ8L-□□F



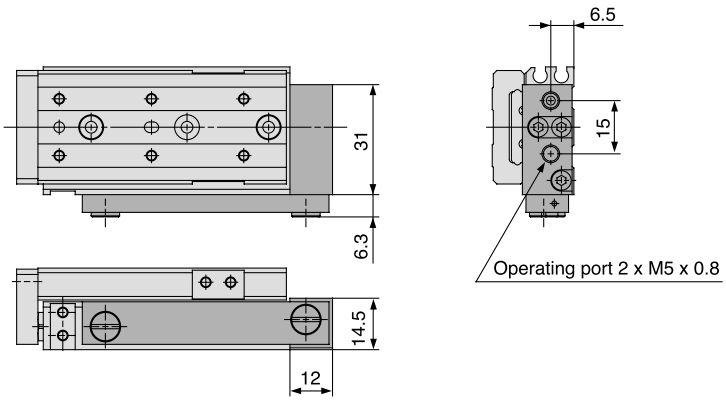
∗ Other dimensions are the same as basic style

With end lock (ø8): MXQ8L-□□R



∗ Other dimensions are the same as basic style

Axial piping type (ø8): MXQ8L-□□P

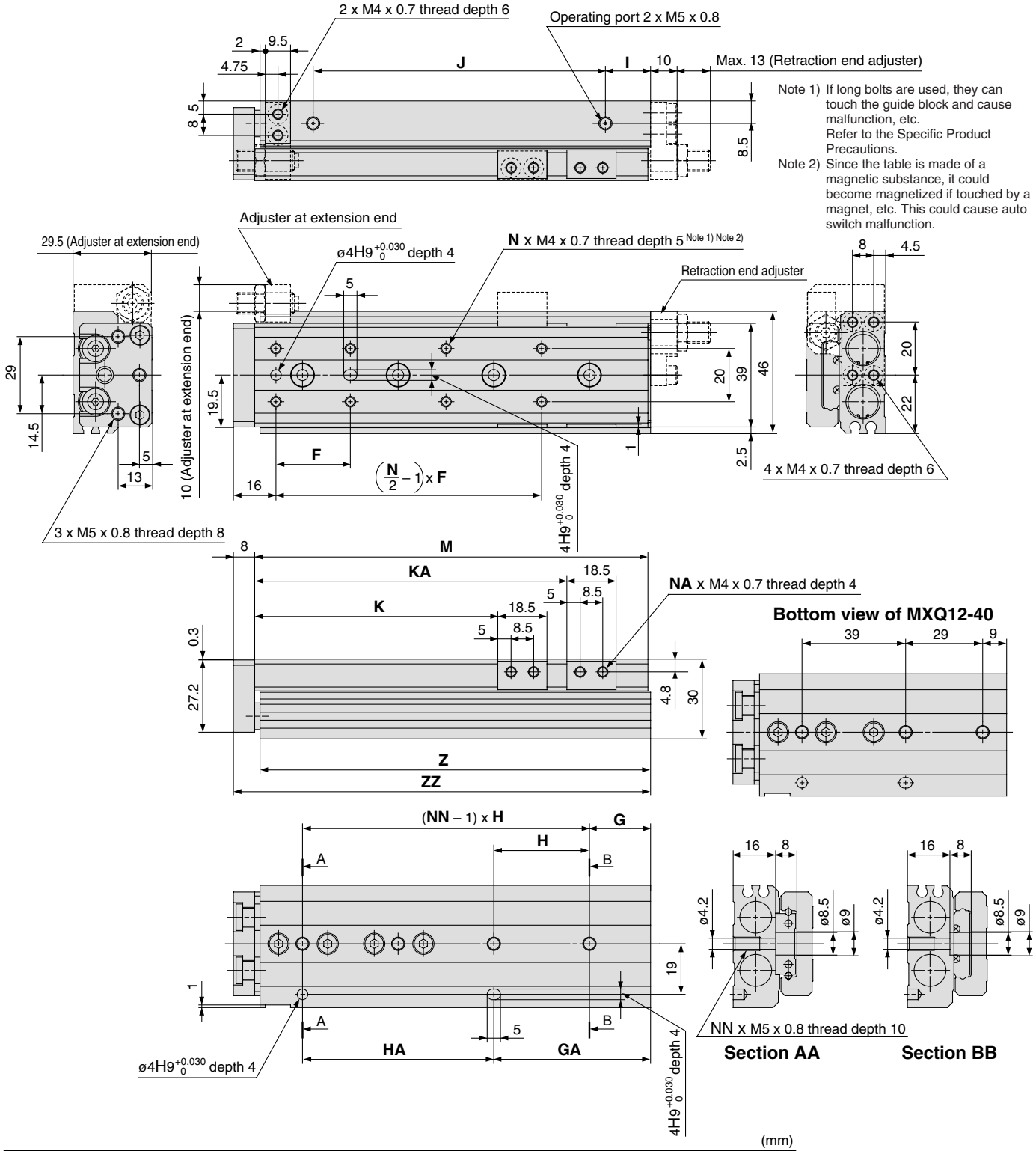


∗ Other dimensions are the same as basic style

Dimensions: MXQ12

* For detailed dimensions about the stroke adjuster, refer to the option for the stroke adjuster.
Rubber stopper (Refer to page 122.)
Metal stopper (Refer to page 125.)

Basic style



(mm)

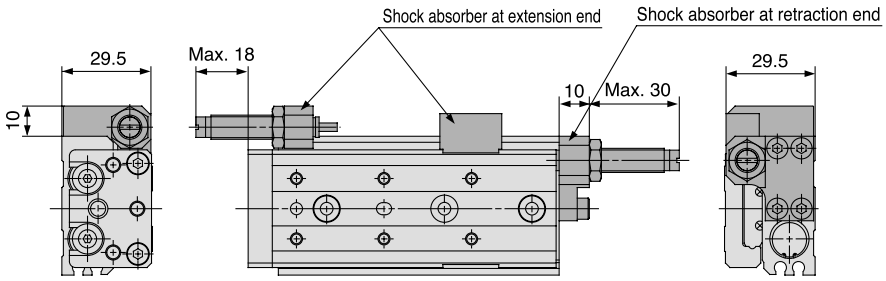
Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ12- 10	28	4	18	32	2	18	32	12	34	26.5	—	4	67	66	76
MXQ12- 20	28	4	18	32	2	18	32	12	34	36.5	—	4	67	66	76
MXQ12- 30	38	4	20	40	2	20	40	14	42	46.5	—	4	77	76	86
MXQ12- 40	34	6	—Note)	—Note)	3	38	39	15	58	56.5	—	4	94	93	103
MXQ12- 50	34	6	9	39	3	48	39	13	70	66.5	—	4	104	103	113
MXQ12- 75	36	8	23	36	4	59	72	17	110	91.5	117.5	8	148	147	157
MXQ12-100	36	10	12	36	5	84	72	17	135	116.5	142.5	8	173	172	182

Note) Refer to the bottom view of MXQ12-40.

With shock absorber (ø12): MXQ12-□□BS/BT/B

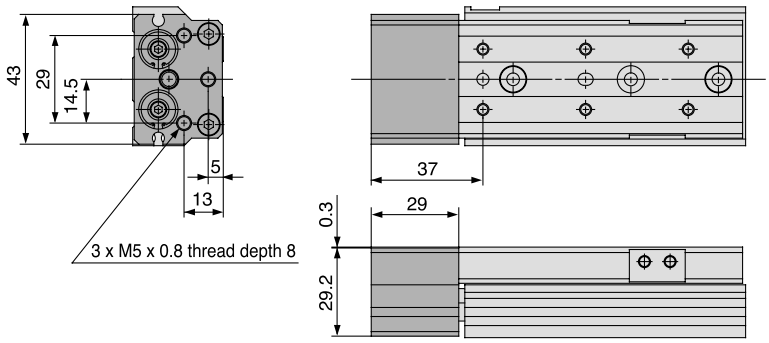
Stroke Adjustable Range
(mm)

Extension end	Retraction end
18	18



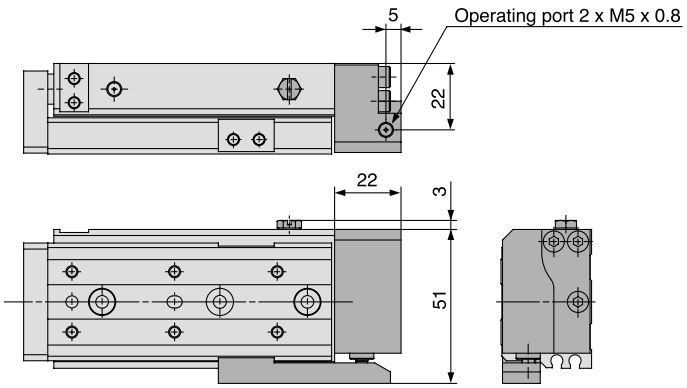
∗ Other dimensions are the same as basic style.

With buffer (ø12): MXQ12-□□F



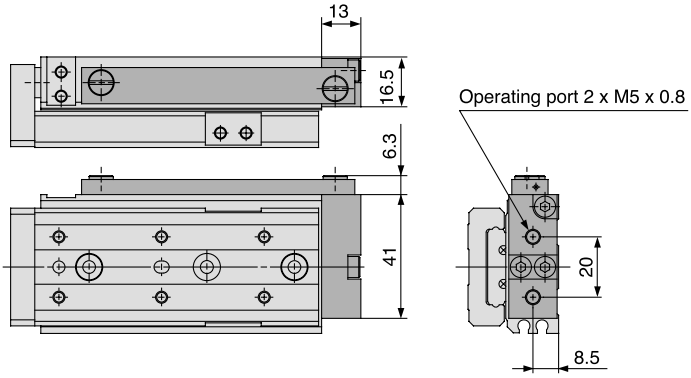
∗ Other dimensions are the same as basic style.

With end lock (ø12): MXQ12-□□R



∗ Other dimensions are the same as basic style.

Axial piping type (ø12): MXQ12-□□P

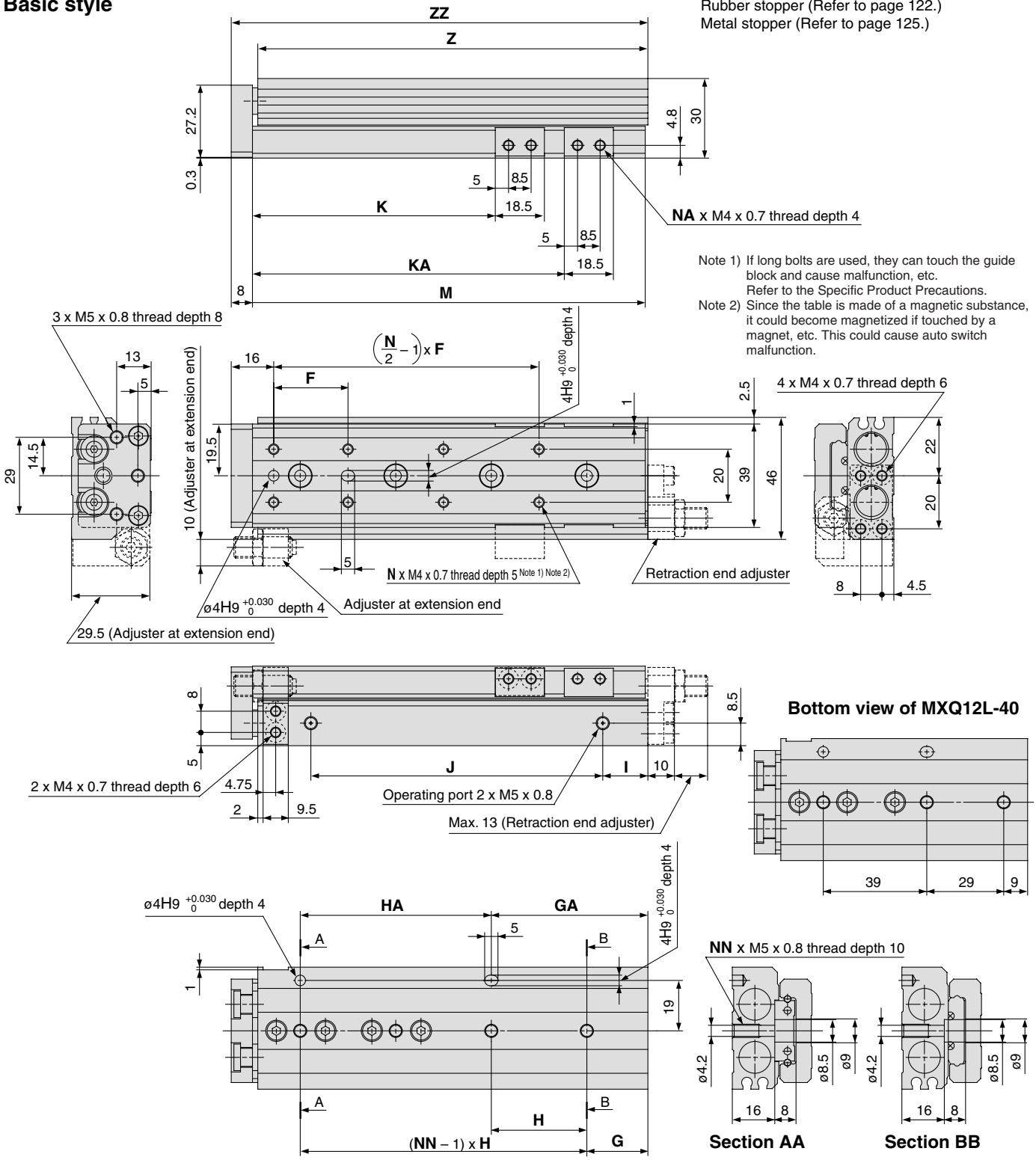


∗ Other dimensions are the same as basic style.

Dimensions: MXQ12L/Symmetric Type

Basic style

* For detailed dimensions about the stroke adjuster, refer to the option for the stroke adjuster.
Rubber stopper (Refer to page 122.)
Metal stopper (Refer to page 125.)



Note 1) If long bolts are used, they can touch the guide block and cause malfunction, etc.
Refer to the Specific Product Precautions.
Note 2) Since the table is made of a magnetic substance, it could become magnetized if touched by a magnet, etc. This could cause auto switch malfunction.

(mm)

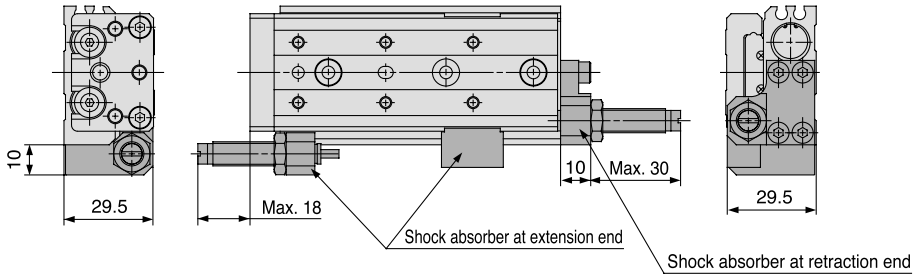
Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ12L- 10	28	4	18	32	2	18	32	12	34	26.5	—	4	67	66	76
MXQ12L- 20	28	4	18	32	2	18	32	12	34	36.5	—	4	67	66	76
MXQ12L- 30	38	4	20	40	2	20	40	14	42	46.5	—	4	77	76	86
MXQ12L- 40	34	6	—Note)	—Note)	3	38	39	15	58	56.5	—	4	94	93	103
MXQ12L- 50	34	6	9	39	3	48	39	13	70	66.5	—	4	104	103	113
MXQ12L- 75	36	8	23	36	4	59	72	17	110	91.5	117.5	8	148	147	157
MXQ12L-100	36	10	12	36	5	84	72	17	135	116.5	142.5	8	173	172	182

Note) Refer to the bottom view of MXQ12L-40.

With shock absorber (ø12): MXQ12L-□□BS/BT/B

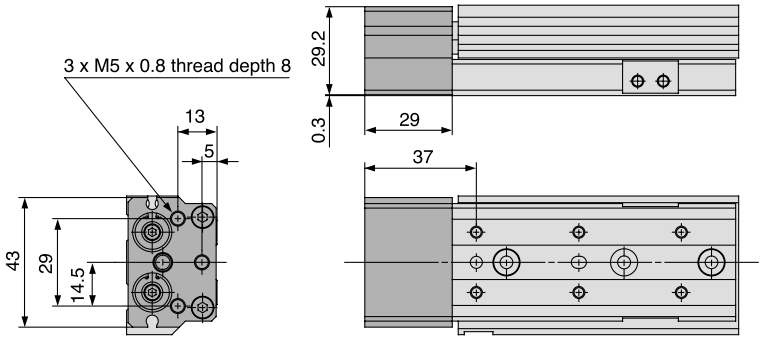
Stroke Adjustable Range
(mm)

Extension end	Retraction end
18	18



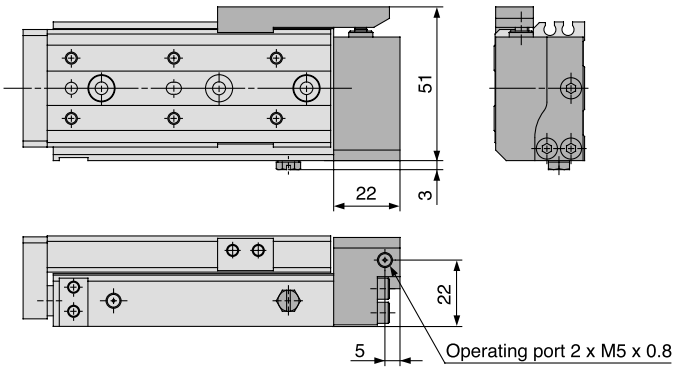
∗ Other dimensions are the same as basic style.

With buffer (ø12): MXQ12L-□□F



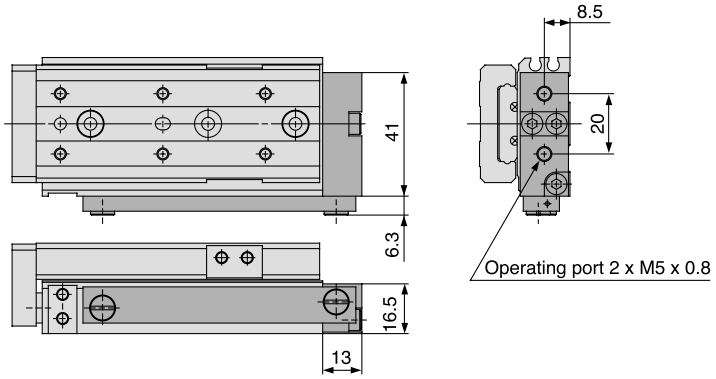
∗ Other dimensions are the same as basic style.

With end lock (ø12): MXQ12L-□□R



∗ Other dimensions are the same as basic style.

Axial piping type (ø12): MXQ12L-□□P

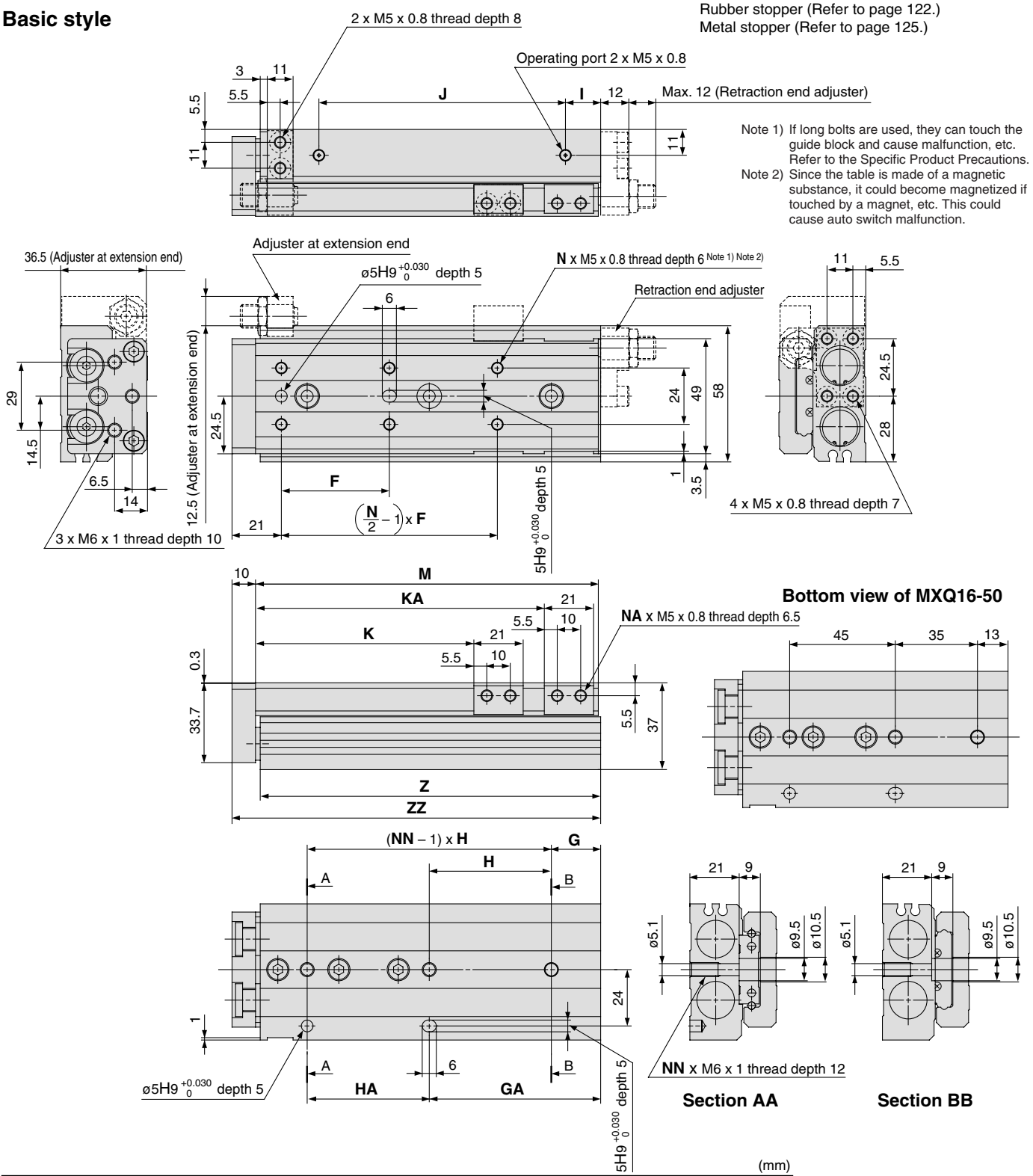


∗ Other dimensions are the same as basic style.

Dimensions: MXQ16

∗ For detailed dimensions about the stroke adjuster, refer to the option for the stroke adjuster.
Rubber stopper (Refer to page 122.)
Metal stopper (Refer to page 125.)

Basic style



Note 1) If long bolts are used, they can touch the guide block and cause malfunction, etc. Refer to the Specific Product Precautions.
Note 2) Since the table is made of a magnetic substance, it could become magnetized if touched by a magnet, etc. This could cause auto switch malfunction.

(mm)

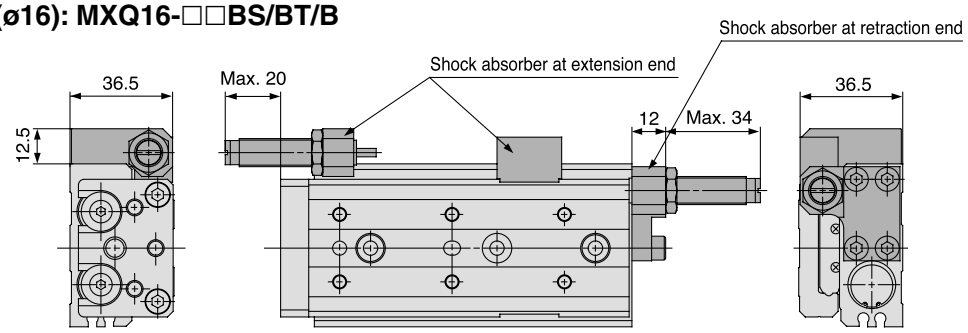
Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ16- 10	38	4	18	39	2	18	39	12	40	28	—	4	78	77	89
MXQ16- 20	38	4	18	39	2	18	39	12	40	38	—	4	78	77	89
MXQ16- 30	48	4	19	48	2	19	48	12	50	48	—	4	88	87	99
MXQ16- 40	58	4	19	58	2	19	58	12	60	58	—	4	98	97	109
MXQ16- 50	40	6	—Note)	—Note)	3	48	45	20	68	68	91	8	114	113	125
MXQ16- 75	46	6	21	52	3	73	52	15	105	93	123	8	146	145	157
MXQ16-100	44	8	36	44	4	80	88	18	145	118	166	8	189	188	200
MXQ16-125	44	10	17	44	5	105	88	23	165	143	191	8	214	213	225

Note) Refer to the bottom view of MXQ16-50.

With shock absorber (ø16): MXQ16-□□BS/BT/B

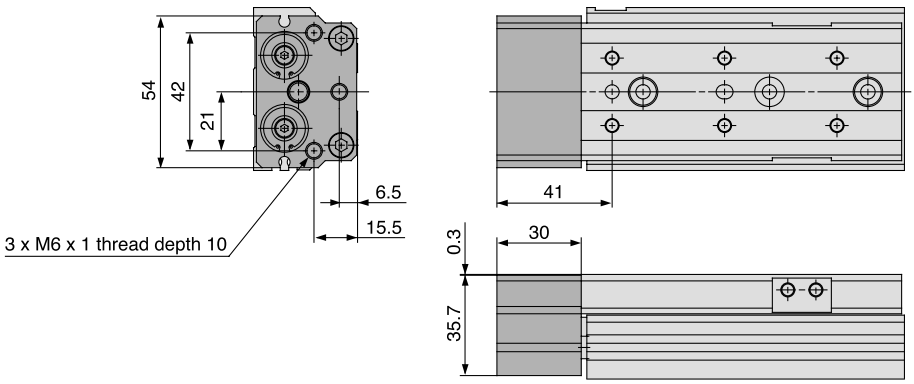
Stroke Adjustable Range
(mm)

Extension end	Retraction end
22	22



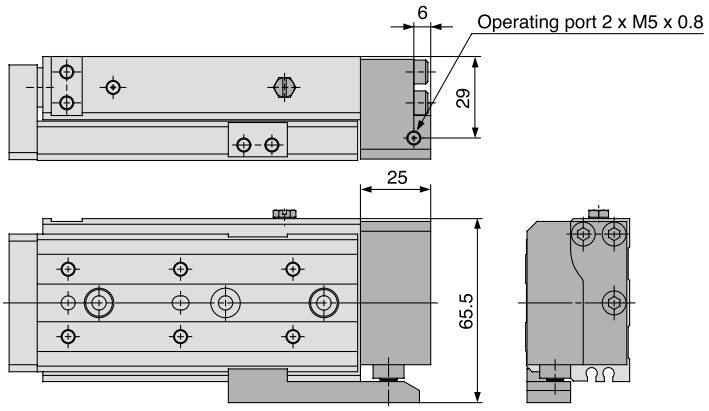
∗ Other dimensions are the same as basic style.

With buffer (ø16): MXQ16-□□F



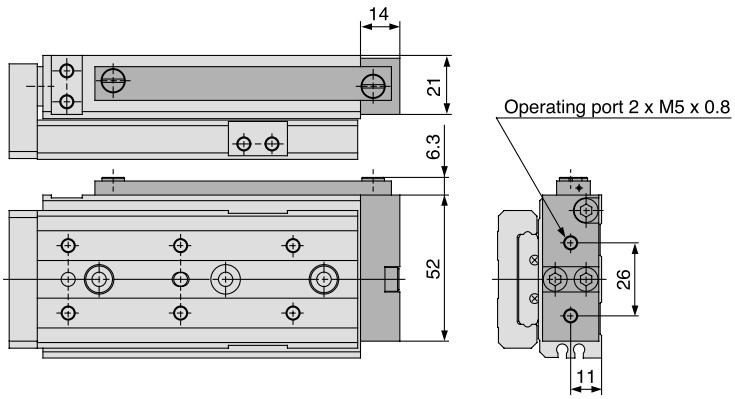
∗ Other dimensions are the same as basic style.

With end lock (ø16): MXQ16-□□R



∗ Other dimensions are the same as basic style.

Axial piping type (ø16): MXQ16-□□P

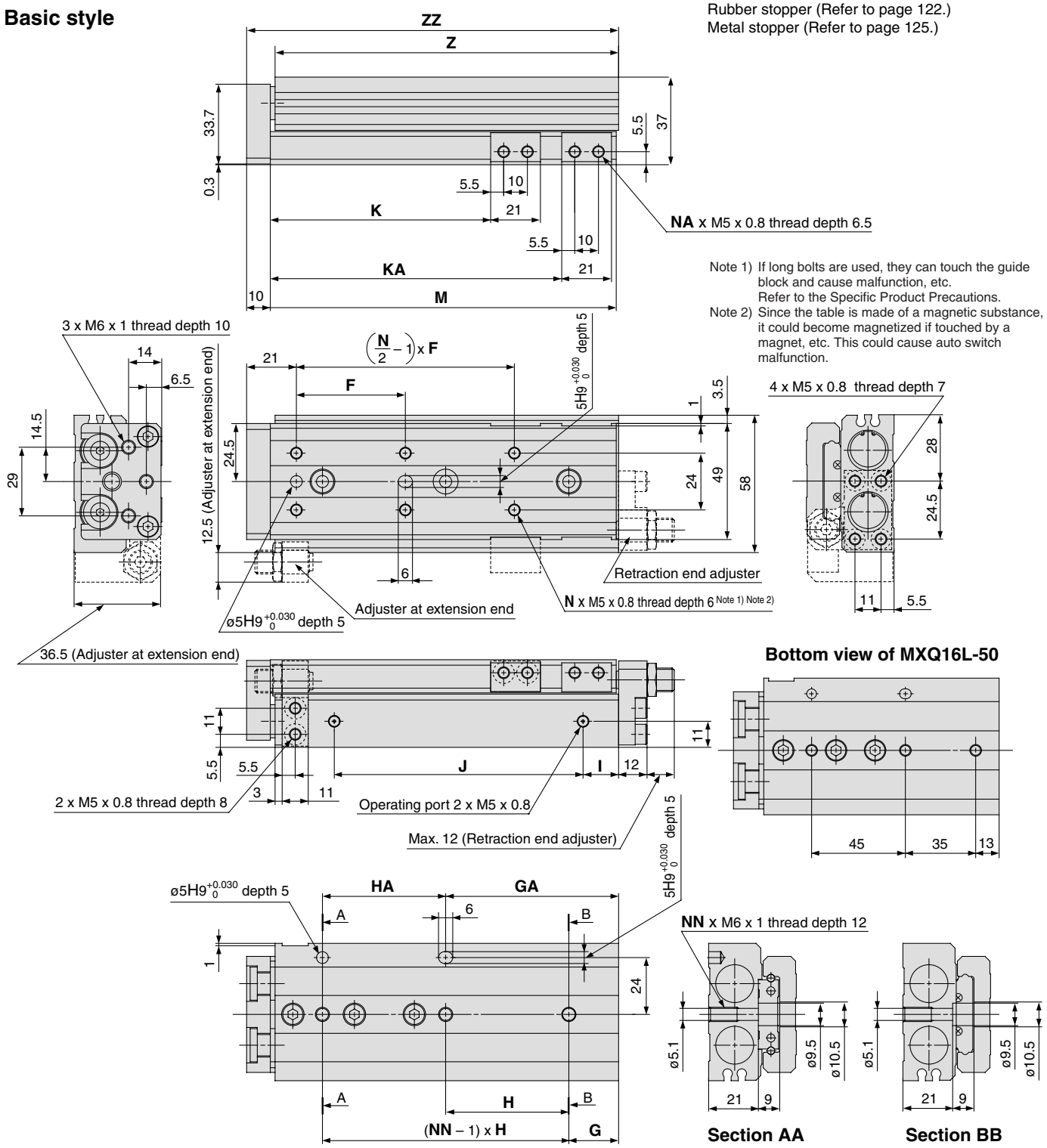


∗ Other dimensions are the same as basic style.

Dimensions: MXQ16L/Symmetric Type

∗ For detailed dimensions about the stroke adjuster, refer to the option for the stroke adjuster.
Rubber stopper (Refer to page 122.)
Metal stopper (Refer to page 125.)

Basic style



Note 1) If long bolts are used, they can touch the guide block and cause malfunction, etc.
Refer to the Specific Product Precautions.
Note 2) Since the table is made of a magnetic substance, it could become magnetized if touched by a magnet, etc. This could cause auto switch malfunction.

(mm)

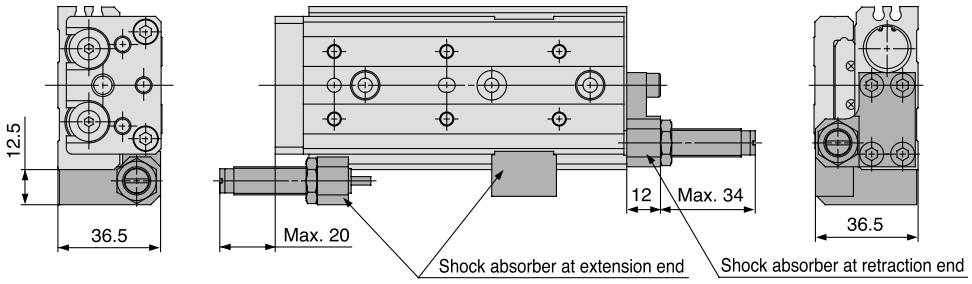
Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ16L- 10	38	4	18	39	2	18	39	12	40	28	—	4	78	77	89
MXQ16L- 20	38	4	18	39	2	18	39	12	40	38	—	4	78	77	89
MXQ16L- 30	48	4	19	48	2	19	48	12	50	48	—	4	88	87	99
MXQ16L- 40	58	4	19	58	2	19	58	12	60	58	—	4	98	97	109
MXQ16L- 50	40	6	—Note)	—Note)	3	48	45	20	68	68	91	8	114	113	125
MXQ16L- 75	46	6	21	52	3	73	52	15	105	93	123	8	146	145	157
MXQ16L-100	44	8	36	44	4	80	88	18	145	118	166	8	189	188	200
MXQ16L-125	44	10	17	44	5	105	88	23	165	143	191	8	214	213	225

Note) Refer to the bottom view of MXQ16L-50.

With shock absorber (ø16): MXQ16L-□□BS/BT/B

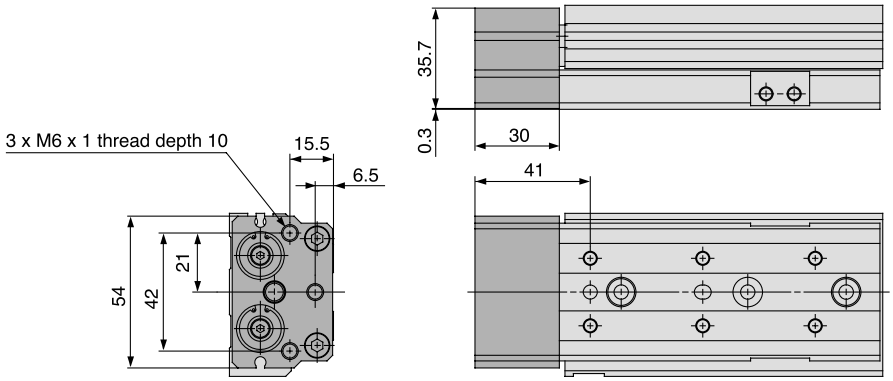
Stroke Adjustable Range (mm)

Extension end	Retraction end
22	22



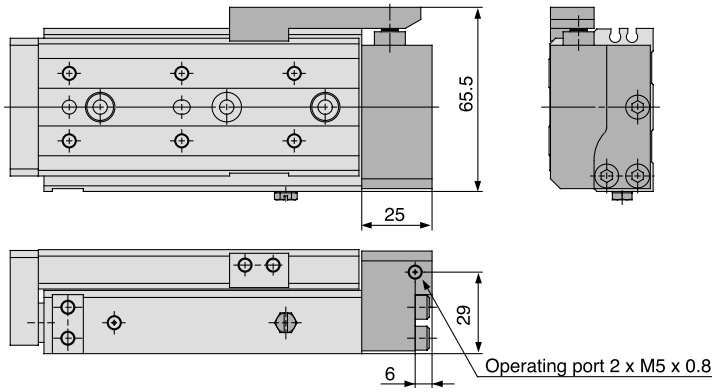
∗ Other dimensions are the same as basic style.

With buffer (ø16): MXQ16L-□□F



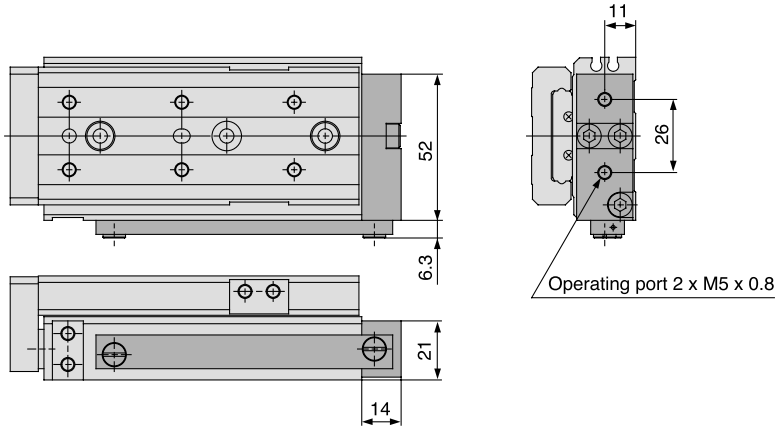
∗ Other dimensions are the same as basic style.

With end lock (ø16): MXQ16L-□□R



∗ Other dimensions are the same as basic style.

Axial piping type (ø16): MXQ16L-□□P

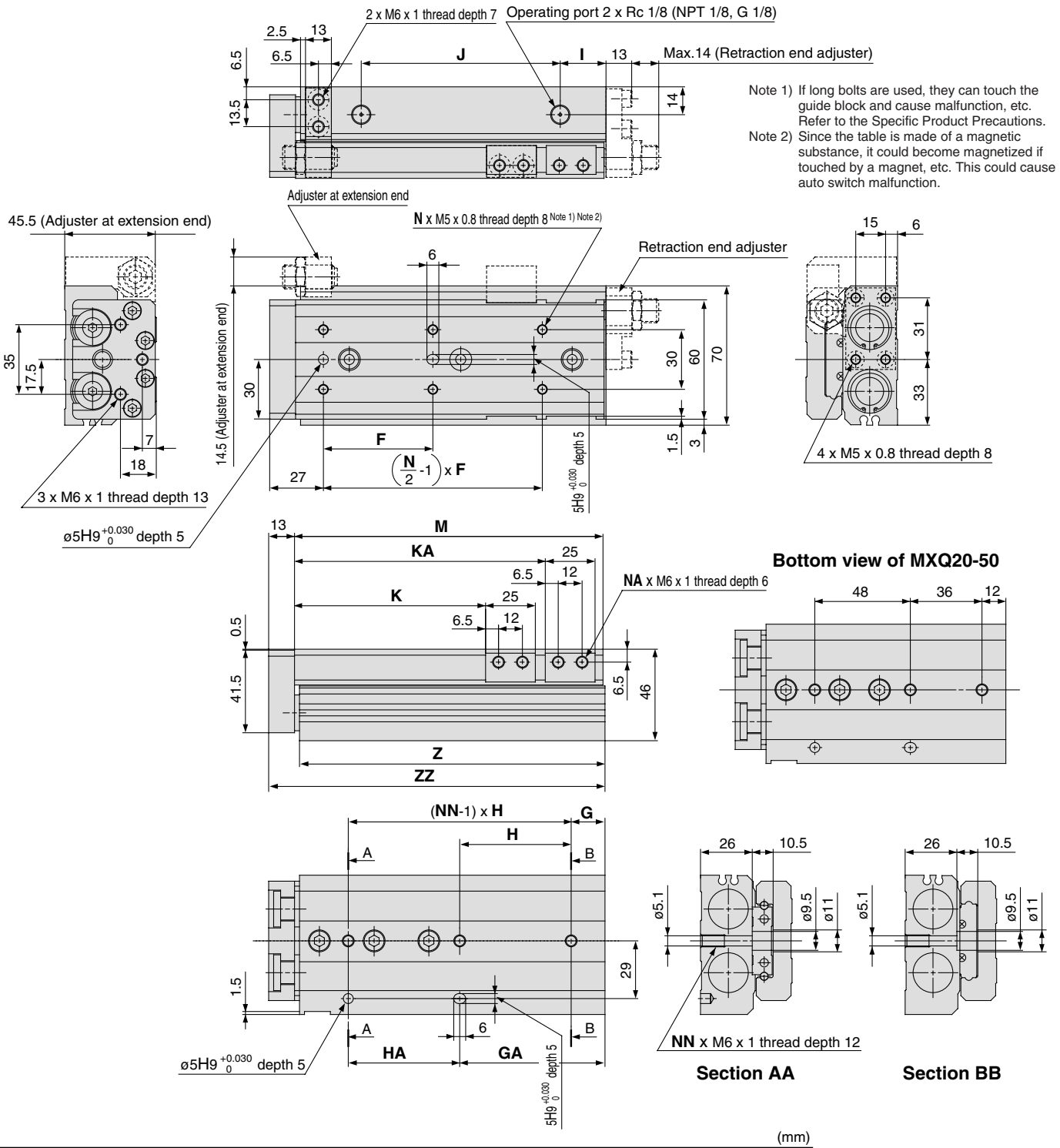


∗ Other dimensions are the same as basic style.

Dimensions: MXQ20

* For detailed dimensions about the stroke adjuster, refer to the option for the stroke adjuster.
Rubber stopper (Refer to page 122.)
Metal stopper (Refer to page 125.)

Basic style



(mm)

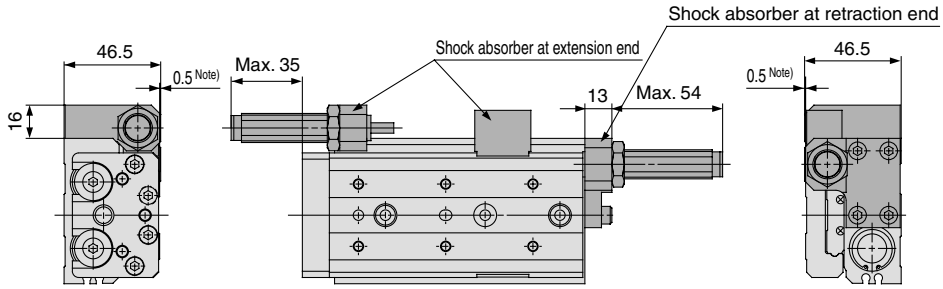
Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ20- 10	45	4	22	46	2	18	50	16	46	31	—	4	94	92.5	108
MXQ20- 20	40	4	22	46	2	18	50	16	46	41	—	4	94	92.5	108
MXQ20- 30	48	4	22	46	2	18	50	16	46	51	—	4	94	92.5	108
MXQ20- 40	58	4	22	56	2	22	56	16	56	61	—	4	104	102.5	118
MXQ20- 50	42	6	—Note)	—Note)	3	48	48	18	72	71	—	4	122	120.5	136
MXQ20- 75	55	6	17	56	3	73	56	23	100	96	126	8	155	153.5	169
MXQ20-100	50	8	18	56	4	74	112	25	155	121	183	8	212	210.5	226
MXQ20-125	55	8	37	59	4	96	118	18	190	146	211	8	240	238.5	254
MXQ20-150	62	8	56	62	4	118	124	21	215	171	239	8	268	266.5	282

Note) Refer to the bottom view of MXQ20-50.

With shock absorber (ø20): MXQ20-□□BS/BT/B

Stroke Adjustable Range
(mm)

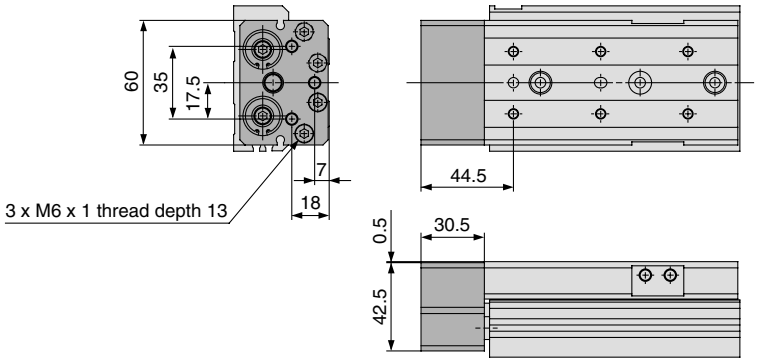
Extension end	Retraction end
35	35



∗ Other dimensions are the same as basic style.

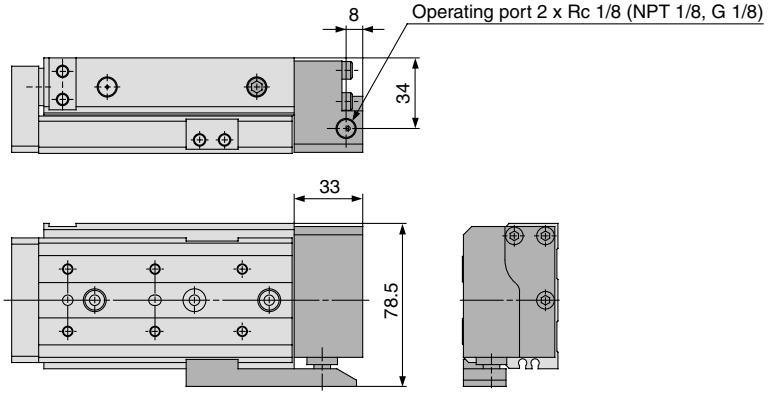
Note) Note that the top of the shock absorber unit will be higher than that of the table.

With buffer (ø20): MXQ20-□□F



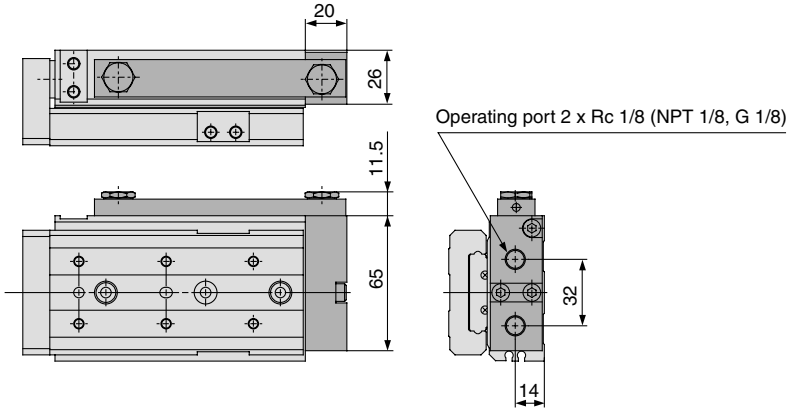
∗ Other dimensions are the same as basic style.

With end lock (ø20): MXQ20-□□R



∗ Other dimensions are the same as basic style.

Axial piping type (ø20): MXQ20-□□P

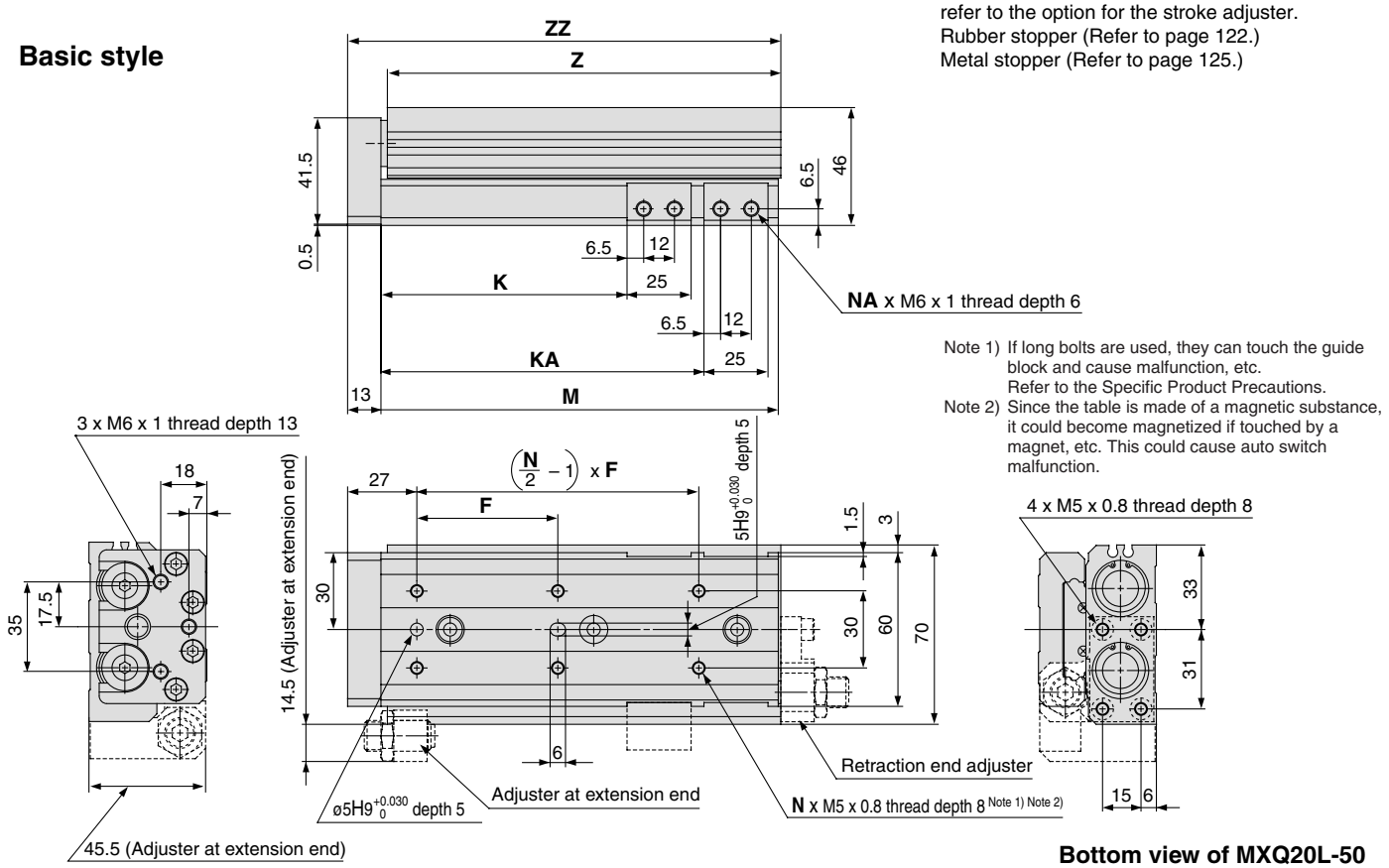


∗ Other dimensions are the same as basic style.

Dimensions: MXQ20L/Symmetric Type

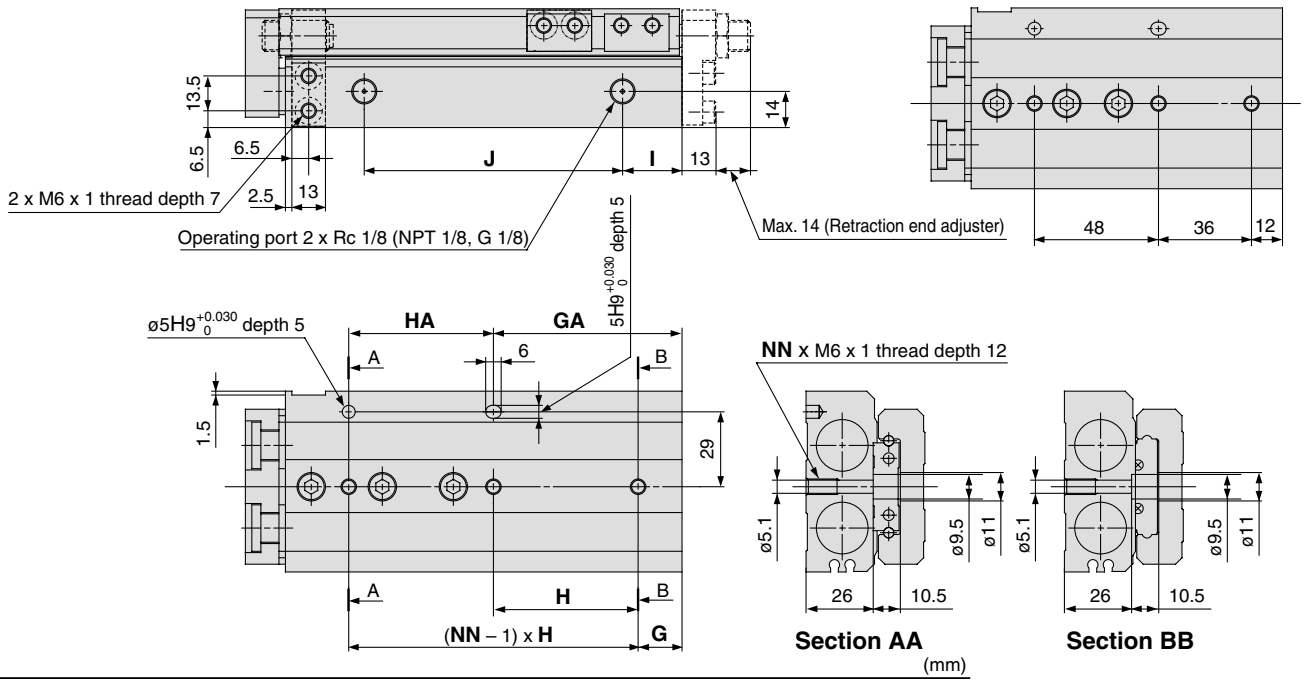
∗ For detailed dimensions about the stroke adjuster, refer to the option for the stroke adjuster.
Rubber stopper (Refer to page 122.)
Metal stopper (Refer to page 125.)

Basic style



Note 1) If long bolts are used, they can touch the guide block and cause malfunction, etc.
Refer to the Specific Product Precautions.
Note 2) Since the table is made of a magnetic substance, it could become magnetized if touched by a magnet, etc. This could cause auto switch malfunction.

Bottom view of MXQ20L-50



Section AA **Section BB**

(mm)

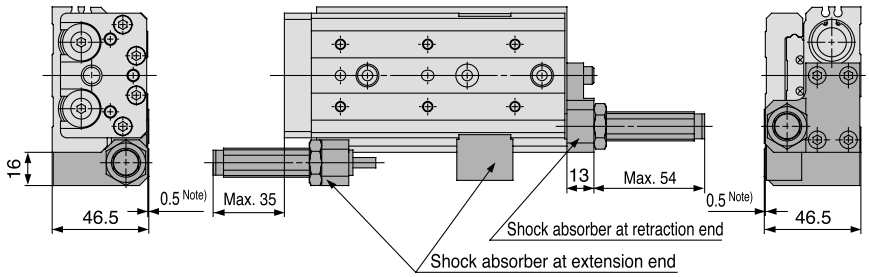
Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ20L- 10	45	4	22	46	2	18	50	16	46	31	—	4	94	92.5	108
MXQ20L- 20	40	4	22	46	2	18	50	16	46	41	—	4	94	92.5	108
MXQ20L- 30	48	4	22	46	2	18	50	16	46	51	—	4	94	92.5	108
MXQ20L- 40	58	4	22	56	2	22	56	16	56	61	—	4	104	102.5	118
MXQ20L- 50	42	6	Note)	Note)	3	48	48	18	72	71	—	4	122	120.5	136
MXQ20L- 75	55	6	17	56	3	73	56	23	100	96	126	8	155	153.5	169
MXQ20L-100	50	8	18	56	4	74	112	25	155	121	183	8	212	210.5	226
MXQ20L-125	55	8	37	59	4	96	118	18	190	146	211	8	240	238.5	254
MXQ20L-150	62	8	56	62	4	118	124	21	215	171	239	8	268	266.5	282

Note) Refer to the bottom view of MXQ20L-50.

With shock absorber (ø20): MXQ20L-□□BS/BT/B

Stroke Adjustable Range (mm)

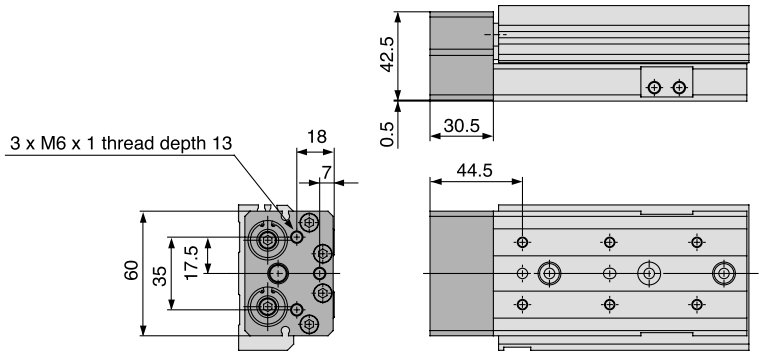
Extension end	Retraction end
35	35



∗ Other dimensions are the same as basic style.

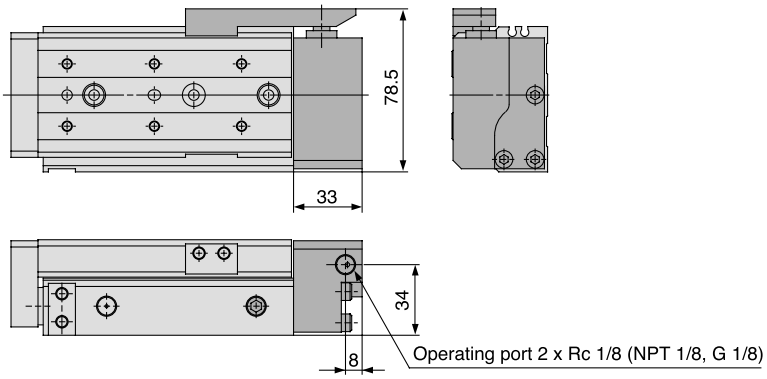
Note) Note that the top of the shock absorber unit will be higher than that of the table.

With buffer (ø20): MXQ20L-□□F



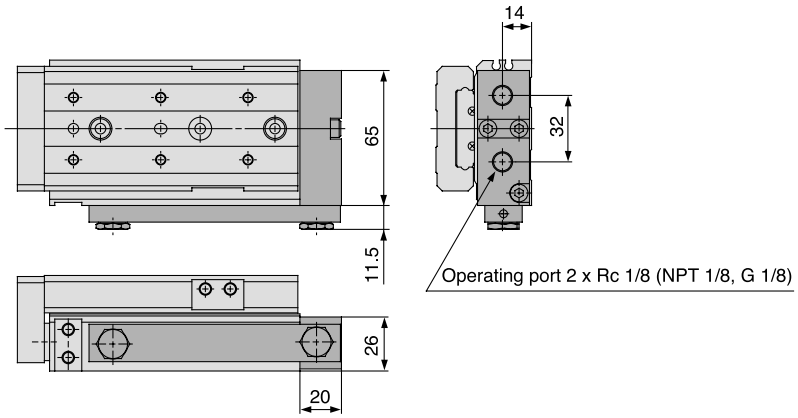
∗ Other dimensions are the same as basic style.

With end lock (ø20): MXQ20L-□□R



∗ Other dimensions are the same as basic style.

Axial piping type (ø20): MXQ20L-□□P

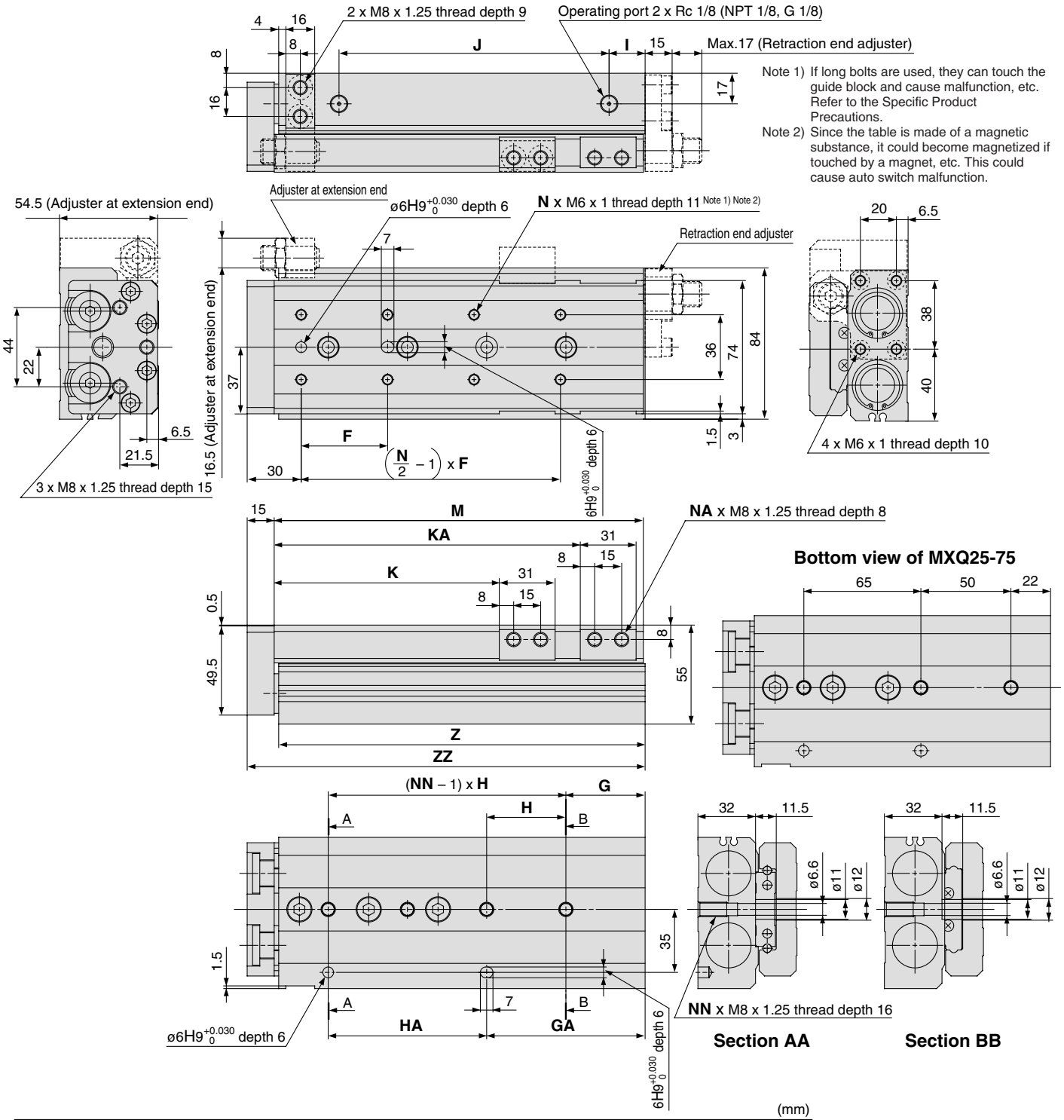


∗ Other dimensions are the same as basic style.

Dimensions: MXQ25

∗ For detailed dimensions about the stroke adjuster, refer to the option for the stroke adjuster.
Rubber stopper (Refer to page 122.)
Metal stopper (Refer to page 125.)

Basic style

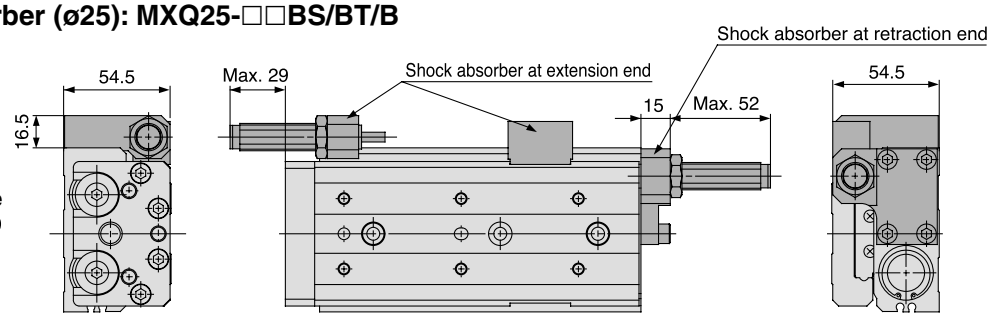


(mm)

Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ25- 10	55	4	23	55	2	23	55	16	56	35	—	4	107	105.5	123
MXQ25- 20	46	4	23	55	2	23	55	16	56	45	—	4	107	105.5	123
MXQ25- 30	55	4	23	55	2	23	55	16	56	55	—	4	107	105.5	123
MXQ25- 40	65	4	23	65	2	23	65	16	66	65	—	4	117	115.5	133
MXQ25- 50	75	4	32	80	2	32	80	16	90	75	—	4	141	139.5	157
MXQ25- 75	60	6	—Note)	—Note)	3	72	65	31	100	100	—	4	166	164.5	182
MXQ25-100	48	8	44	44	4	88	88	20	150	125	170	8	205	203.5	221
MXQ25-125	60	8	31	66	4	97	132	18	205	150	223	8	258	256.5	274
MXQ25-150	65	8	56	66	4	122	132	18	230	175	248	8	283	281.5	299

Note) Refer to the bottom view of MXQ25-75.

With shock absorber (ø25): MXQ25-□□BS/BT/B

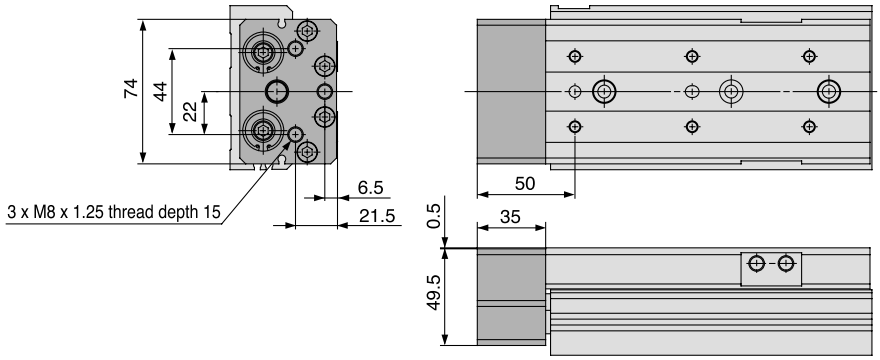


Stroke Adjustable Range
(mm)

Extension end	Retraction end
35	35

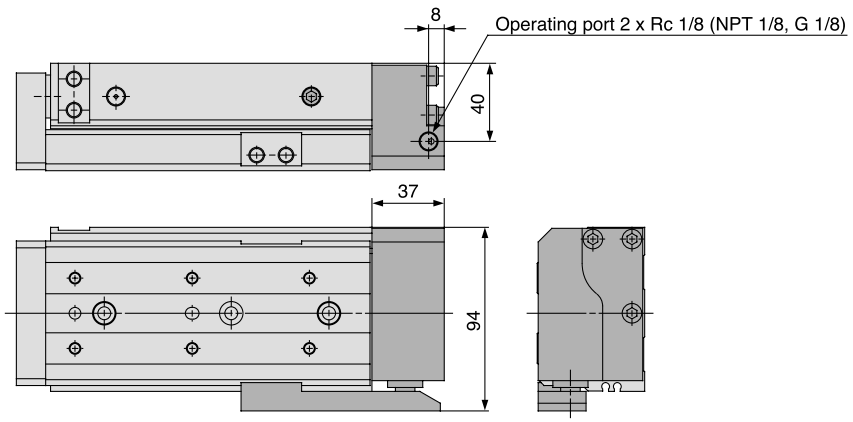
∗ Other dimensions are the same as basic style.

With buffer (ø25): MXQ25-□□F



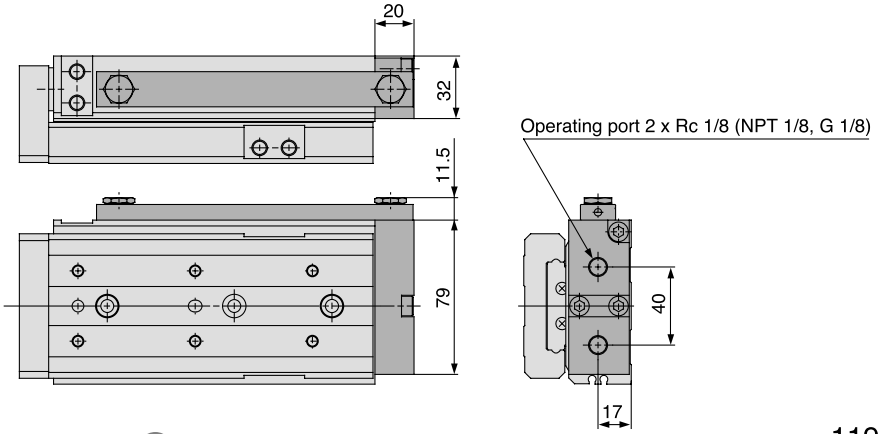
∗ Other dimensions are the same as basic style.

With end lock (ø25): MXQ25-□□R



∗ Other dimensions are the same as basic style.

Axial piping type (ø25): MXQ25-□□P

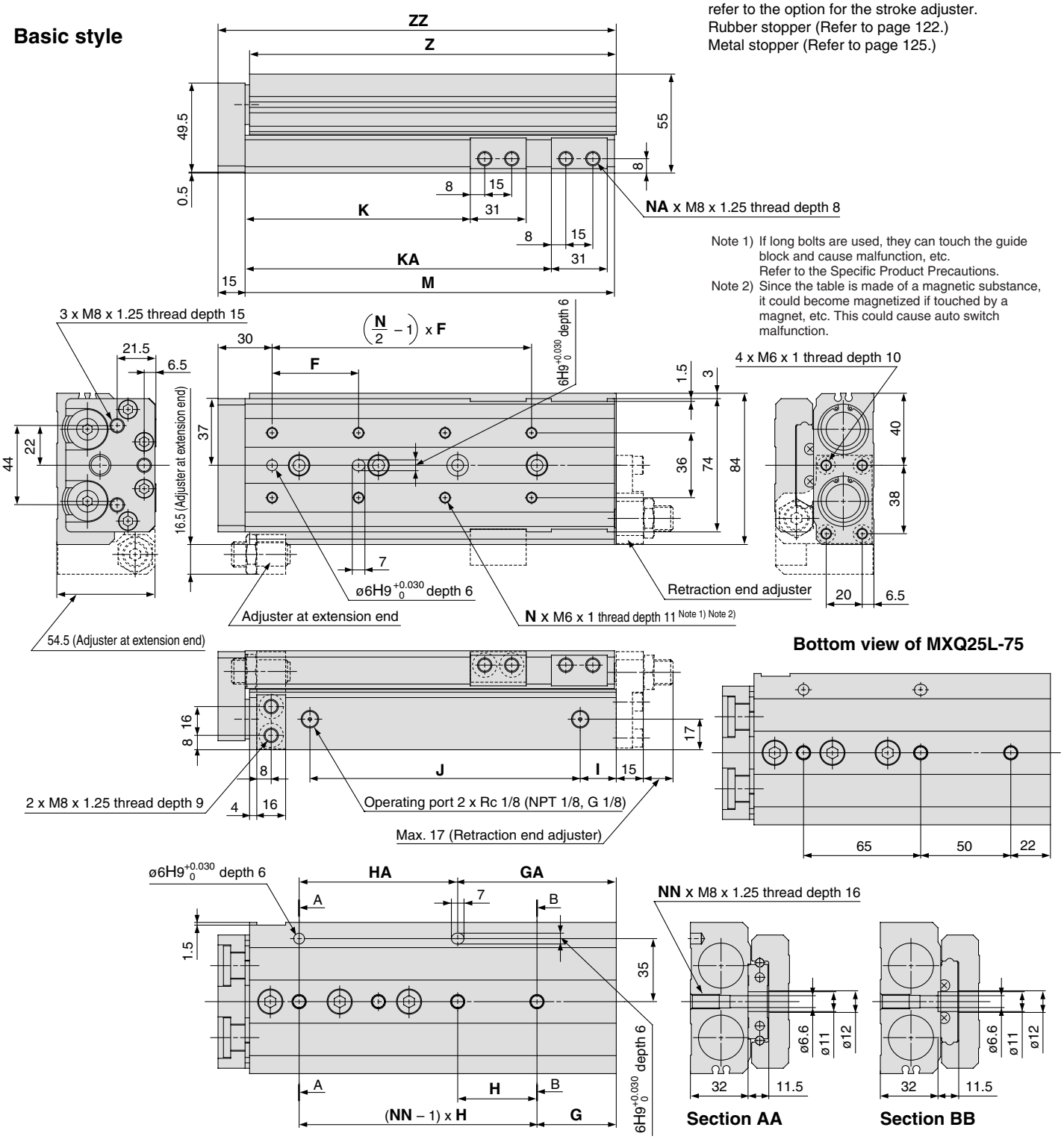


∗ Other dimensions are the same as basic style.

Dimensions: MXQ25L/Symmetric Type

* For detailed dimensions about the stroke adjuster, refer to the option for the stroke adjuster.
Rubber stopper (Refer to page 122.)
Metal stopper (Refer to page 125.)

Basic style



Note 1) If long bolts are used, they can touch the guide block and cause malfunction, etc.
Refer to the Specific Product Precautions.
Note 2) Since the table is made of a magnetic substance, it could become magnetized if touched by a magnet, etc. This could cause auto switch malfunction.

(mm)

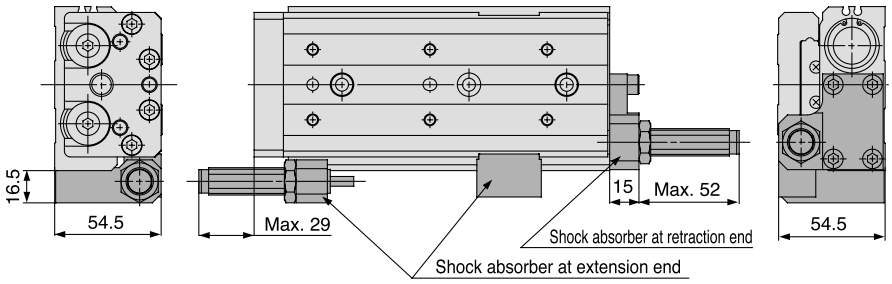
Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ25L- 10	55	4	23	55	2	23	55	16	56	35	—	4	107	105.5	123
MXQ25L- 20	46	4	23	55	2	23	55	16	56	45	—	4	107	105.5	123
MXQ25L- 30	55	4	23	55	2	23	55	16	56	55	—	4	107	105.5	123
MXQ25L- 40	65	4	23	65	2	23	65	16	66	65	—	4	117	115.5	133
MXQ25L- 50	75	4	32	80	2	32	80	16	90	75	—	4	141	139.5	157
MXQ25L- 75	60	6	Note)	Note)	3	72	65	31	100	100	—	4	166	164.5	182
MXQ25L-100	48	8	44	44	4	88	88	20	150	125	170	8	205	203.5	221
MXQ25L-125	60	8	31	66	4	97	132	18	205	150	223	8	258	256.5	274
MXQ25L-150	65	8	56	66	4	122	132	18	230	175	248	8	283	281.5	299

Note) Refer to the bottom view of MXQ25L-75.

With shock absorber (ø25): MXQ25L-□□BS/BT/B

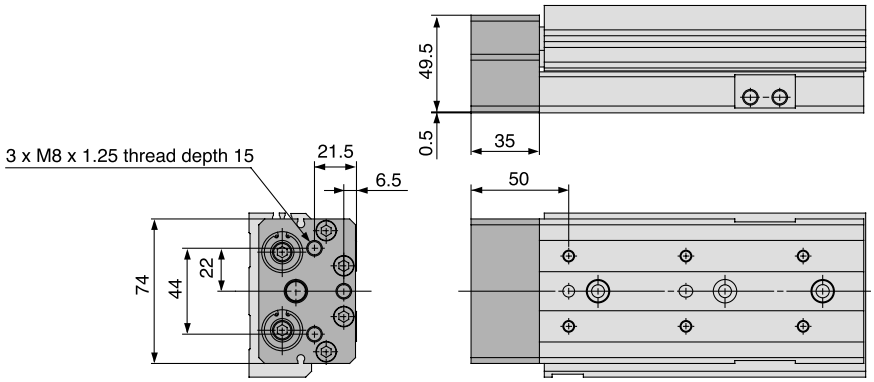
Stroke Adjustable Range
(mm)

Extension end	Retraction end
35	35



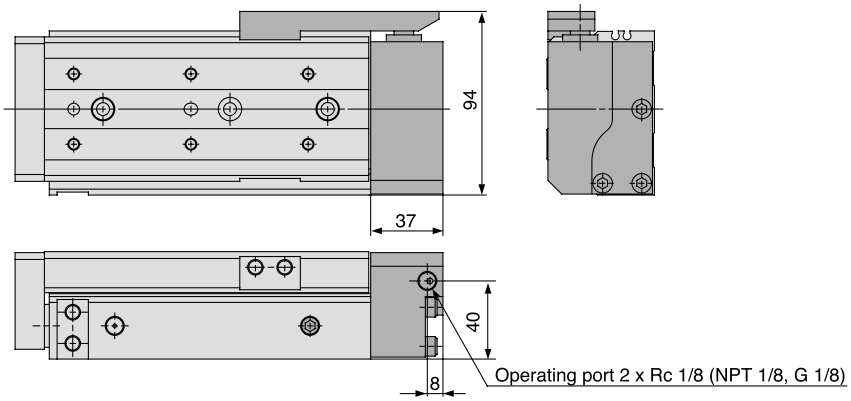
∗ Other dimensions are the same as basic style.

With buffer (ø25): MXQ25L-□□F



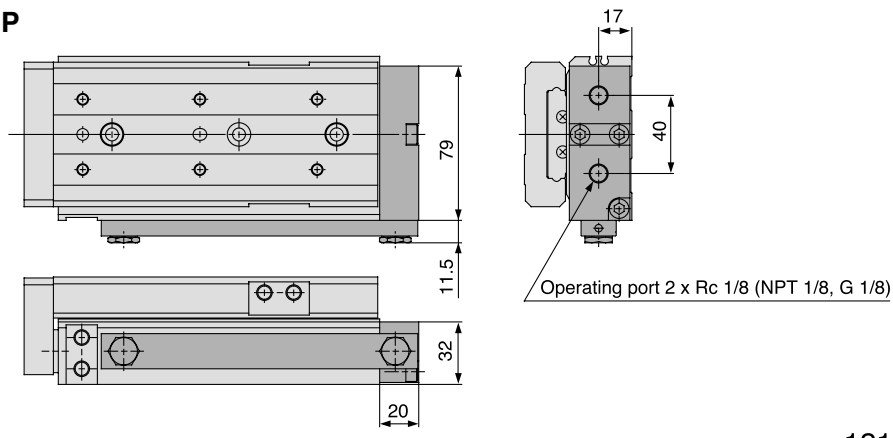
∗ Other dimensions are the same as basic style.

With end lock (ø25): MXQ25L-□□R



∗ Other dimensions are the same as basic style.

Axial piping type (ø25): MXQ25L-□□P



∗ Other dimensions are the same as basic style.

External Dimensions of Adjuster

Rubber Stopper (AS/AT)

Extension End

Body mounting section

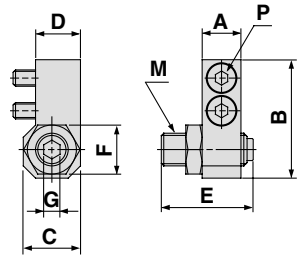
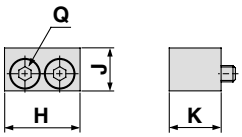


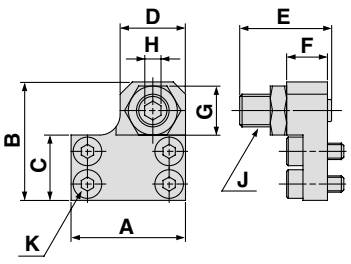
Table mounting section



Applicable size	Model	Stroke adjustment range (mm)	Body mounting section									Table mounting section			
			A	B	C	D	E	F	G	M	P *1)	H	J	K	Q *1)
MXQ 6 (L)	MXQ-AS 6 (L)	5	6	19	8	7	16.5	7	2.5	M5 x 0.8	M2.5 x 6	12.5	6	8.3	M2.5 x 8
	MXQ-AS 6 (L)-X11	15					26.5								
MXQ 8 (L)	MXQ-AS 8 (L)	5	7	22	9	7.5	19.5	8	3	M6 x 1	M3 x 8	14.6	7	9.8	M3 x 10
	MXQ-AS 8(L)-X11	15					29.5								
	MXQ-AS 8 (L)-X12	25					39.5								
MXQ12 (L)	MXQ-AS12 (L)	5	9.5	29	14	11	23.5	12	4	M8 x 1	M4 x 12	18.5	10.5	12.7	M4 x 12
	MXQ-AS12 (L)-X11	15					33.5								
	MXQ-AS12 (L)-X12	25					43.5								
MXQ16 (L)	MXQ-AS16 (L)	5	11	36	17	13.5	24.5	14	5	M10 x 1	M5 x 16	21	13	15	M5 x 16
	MXQ-AS16 (L)-X11	15					34.5								
	MXQ-AS16 (L)-X12	25					44.5								
MXQ20 (L)	MXQ-AS20 (L)	5	13	45	20	16	27.5	17	6	M12 x 1.25	M6 x 16	25	16	18	M6 x 16
	MXQ-AS20 (L)-X11	15					37.5								
	MXQ-AS20 (L)-X12	25					47.5								
MXQ25 (L)	MXQ-AS25 (L)	5	16	54	22	18	32.5	19	6	M14 x 1.5	M8 x 18	31	17	20	M8 x 18
	MXQ-AS25 (L)-X11	15					42.5								
	MXQ-AS25 (L)-X12	25					52.5								

*1) Size of hexagon socket head cap screw
*2) It is also available in the symmetric type.
For “How to Order”, refer to page 94.
Dimensions are the same as standard type.

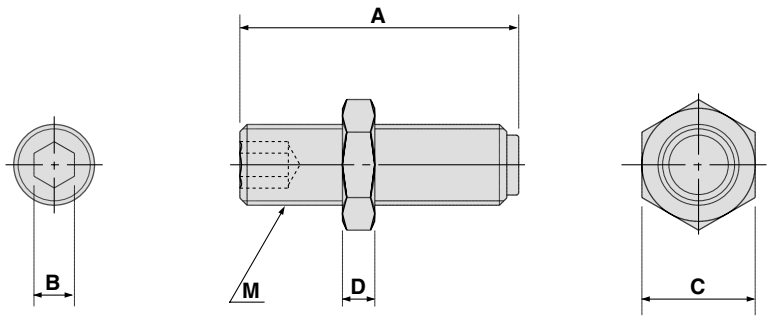
Retraction End



Applicable size	Model	Stroke adjustment range (mm)	A	B	C	D	E	F	G	H	J	K *1)
MXQ 6 (L)	MXQ-AT 6 (L)	5	17.5	19	10.5	8	16.5	6	7	2.5	M5 x 0.8	M2.5 x 6
	MXQ-AT 6 (L)-X11	15					26.5					
MXQ 8 (L)	MXQ-AT 8 (L)	5	21	22	12.5	10	19.5	8	8	3	M6 x 1	M3 x 8
	MXQ-AT 8 (L)-X11	15					29.5					
	MXQ-AT 8 (L)-X12	25					39.5					
MXQ12 (L)	MXQ-AT12 (L)	5	28	29	16	16	23.5	10	12	4	M8 x 1	M4 x 10
	MXQ-AT12 (L)-X11	15					33.5					
	MXQ-AT12 (L)-X12	25					43.5					
MXQ16 (L)	MXQ-AT16 (L)	5	33.5	35.5	20	17	24.5	12	14	5	M10 x 1	M5 x 12
	MXQ-AT16 (L)-X11	15					34.5					
	MXQ-AT16 (L)-X12	25					44.5					
MXQ20 (L)	MXQ-AT20 (L)	5	41	44.5	25	23	27.5	13	17	6	M12 x 1.25	M5 x 14
	MXQ-AT20 (L)-X11	15					37.5					
	MXQ-AT20 (L)-X12	25					47.5					
MXQ25 (L)	MXQ-AT25 (L)	5	49	53.5	31	28	32.5	15	19	6	M14 x 1.5	M6 x 18
	MXQ-AT25 (L)-X11	15					42.5					
	MXQ-AT25 (L)-X12	25					52.5					

*1) Size of hexagon socket head cap screw
*2) It is also available in the symmetric type.
For “How to Order”, refer to page 94.
Dimensions are the same as standard type.

Dimensions of Adjusting Bolt/Rubber Stopper



Applicable size	Model	Stroke adjustment range (mm)	A	B	C	D	M
MXQ 6 (L)	MXQ-A627	5	16.5	2.5	7	3	M5 x 0.8
	MXQ-A627-X11	15	26.5				
MXQ 8 (L)	MXQ-A827	5	19.5	3	8	3.5	M6 x 1
	MXQ-A827-X11	15	29.5				
	MXQ-A827-X12	25	39.5				
MXQ12 (L)	MXQ-A1227	5	23.5	4	12	4	M8 x 1
	MXQ-A1227-X11	15	33.5				
	MXQ-A1227-X12	25	43.5				
MXQ16 (L)	MXQ-A1627	5	24.5	5	14	4	M10 x 1
	MXQ-A1627-X11	15	34.5				
	MXQ-A1627-X12	25	44.5				
MXQ20 (L)	MXQ-A2027	5	27.5	6	17	5	M12 x 1.25
	MXQ-A2027-X11	15	37.5				
	MXQ-A2027-X12	25	47.5				
MXQ25 (L)	MXQ-A2527	5	32.5	6	19	6	M14 x 1.5
	MXQ-A2527-X11	15	42.5				
	MXQ-A2527-X12	25	52.5				

How to Order Adjusting Bolt/Rubber Stopper

MXQ — 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

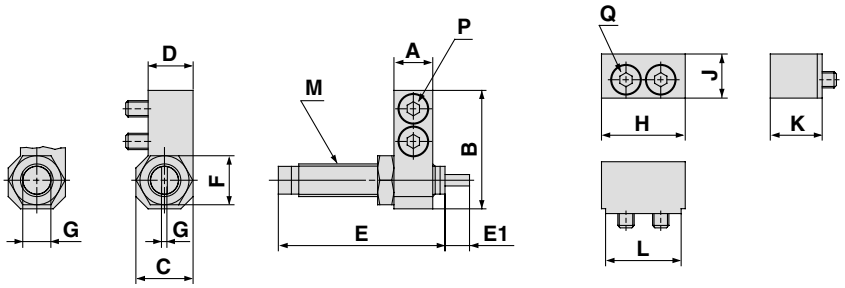
∗ -X12 (adjusting range: 25 mm) is not available in Series MXQ6.
∗ For dimensions, refer to the figure above.
∗ Symmetric type is also the same.

External Dimensions of Adjuster

With Shock Absorber (BS/BT)

Extension End

Body mounting section **Table mounting section**

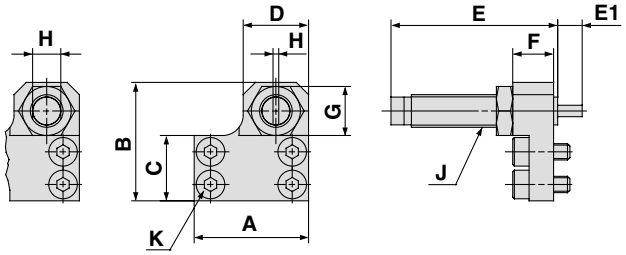


MXQ-BS20 (L) **MXQ-BS 8 (L)**
MXQ-BS25 (L) **MXQ-BS12 (L)**
MXQ-BS16 (L)

Applicable size	Model	Stroke adjustment range (mm)	Body mounting section										Table mounting section				
			A	B	C	D	E	E1	F	G	M	P *1)	H	J	K	L	Q *1)
MXQ 8 (L)	MXQ-BS 8 (L)	20	7	24.5	14	12.5	40.8	5	12	1.4	M8 x 1	M3 x 12	16.6	8	12	14.6	M3 x 12
MXQ12 (L)	MXQ-BS12 (L)	18	9.5	29	14	11	40.8	6	12	1.4	M8 x 1	M4 x 12	20.5	11	13	18.5	M4 x 12
MXQ16 (L)	MXQ-BS16 (L)	22	11	36	17	13.5	46.7	7	14	1.4	M10 x 1	M5 x 16	23	13.5	16	21	M5 x 16
MXQ20 (L)	MXQ-BS20 (L)	35	13	46	22	17.5	67.3	11	19	12	M14 x 1.5	M6 x 18	27	17	22	25	M6 x 20
MXQ25 (L)	MXQ-BS25 (L)	35	16	54	22	18	67.3	12	19	12	M14 x 1.5	M8 x 18	33	19	22	31	M8 x 20

∗1) Size of hexagon socket head cap screw
∗2) It is also available in the symmetric type.
For “How to Order”, refer to page 94.
Dimensions are the same as standard type.

Retraction End



MXQ-BT20 (L) **MXQ-BT 8 (L)**
MXQ-BT25 (L) **MXQ-BT12 (L)**
MXQ-BT16 (L)

Applicable size	Model	Stroke adjustment range (mm)	A	B	C	D	E	E1	F	G	H	J	K *1)
MXQ 8 (L)	MXQ-BT 8 (L)	20	23	24.5	12.5	14	40.8	5	8	12	1.4	M8 x 1	M3 x 8
MXQ12 (L)	MXQ-BT12 (L)	18	28	29	16	16	40.8	6	10	12	1.4	M8 x 1	M4 x 10
MXQ16 (L)	MXQ-BT16 (L)	22	33.5	35.5	20	17	46.7	7	12	14	1.4	M10 x 1	M5 x 12
MXQ20 (L)	MXQ-BT20 (L)	35	43	46	26	25	67.3	11	13	19	12	M14 x 1.5	M5 x 14
MXQ25 (L)	MXQ-BT25 (L)	35	49	53.5	31	28	67.3	12	15	19	12	M14 x 1.5	M6 x 18

∗1) Size of hexagon socket head cap screw
∗2) It is also available in the symmetric type.
For “How to Order”, refer to page 94.
Dimensions are the same as standard type.

External Dimensions of Adjuster

Metal Stopper (CS/CT)

Extension End

Body mounting section

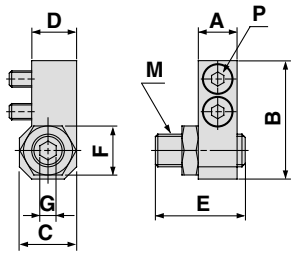
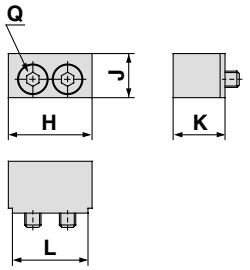


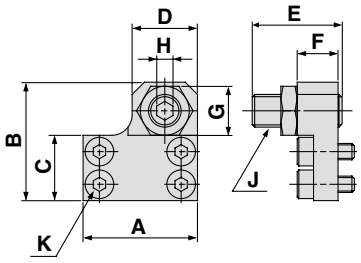
Table mounting section



Applicable size	Model	Stroke adjustment range (mm)	Body mounting section									Table mounting section				
			A	B	C	D	E	F	G	M	P *1)	H	J	K	L	Q *1)
MXQ 6 (L)	MXQ-CS 6 (L)	5	6	19	8	7	15.5	7	2.5	M5 x 0.8	M2.5 x 6	14.5	7	8.3	12.5	M2.5 x 8
	MXQ-CS 6 (L)-X11	15					25.5									
MXQ 8 (L)	MXQ-CS 8 (L)	5	7	22	9	7.5	18	8	3	M6 x 1	M3 x 8	16.6	8	9.8	14.6	M3 x 10
	MXQ-CS 8 (L)-X11	15					28									
	MXQ-CS 8 (L)-X12	25					38									
MXQ12 (L)	MXQ-CS12 (L)	5	9.5	29	14	11	22	12	4	M8 x 1	M4 x 12	20.5	11	13	18.5	M4 x 12
	MXQ-CS12 (L)-X11	15					32									
	MXQ-CS12 (L)-X12	25					42									
MXQ16 (L)	MXQ-CS16 (L)	5	11	36	17	13.5	23	14	5	M10 x 1	M5 x 16	23	13.5	16	21	M5 x 16
	MXQ-CS16 (L)-X11	15					33									
	MXQ-CS16 (L)-X12	25					43									
MXQ20 (L)	MXQ-CS20 (L)	5	13	45	20	16	27	17	6	M12 x 1.25	M6 x 16	27	17	22	25	M6 x 20
	MXQ-CS20 (L)-X11	15					37									
	MXQ-CS20 (L)-X12	25					47									
MXQ25 (L)	MXQ-CS25 (L)	5	16	54	22	18	30	19	6	M14 x 1.5	M8 x 18	33	19	22	31	M8 x 20
	MXQ-CS25 (L)-X11	15					40									
	MXQ-CS25 (L)-X12	25					50									

∗1) Size of hexagon socket head cap screw
∗2) It is also available in the symmetric type.
For "How to Order", refer to page 94.
Dimensions are the same as standard type.

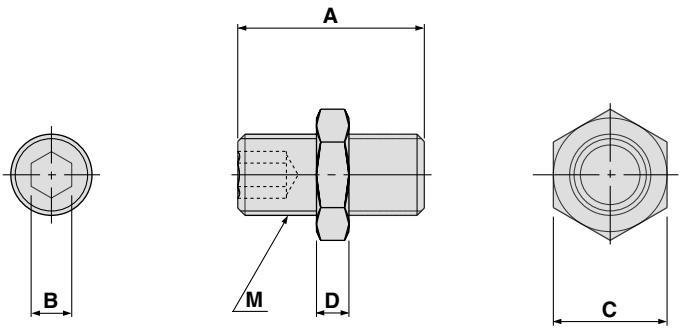
Retraction End



Applicable size	Model	Stroke adjustment range (mm)	A	B	C	D	E	F	G	H	J	K *1)
MXQ 6 (L)	MXQ-CT 6 (L)	5	17.5	19	10.5	8	15.5	6	7	2.5	M5 x 0.8	M2.5 x 6
	MXQ-CT 6 (L)-X11	15					25.5					
MXQ 8 (L)	MXQ-CT 8 (L)	5	21	22	12.5	10	18	8	8	3	M6 x 1	M3 x 8
	MXQ-CT 8 (L)-X11	15					28					
	MXQ-CT 8 (L)-X12	25					38					
MXQ12 (L)	MXQ-CT12 (L)	5	28	29	16	16	22	10	12	4	M8 x 1	M4 x 10
	MXQ-CT12 (L)-X11	15					32					
	MXQ-CT12 (L)-X12	25					42					
MXQ16 (L)	MXQ-CT16 (L)	5	33.5	35.5	20	17	23	12	14	5	M10 x 1	M5 x 12
	MXQ-CT16 (L)-X11	15					33					
	MXQ-CT16 (L)-X12	25					43					
MXQ20 (L)	MXQ-CT20 (L)	5	41	44.5	25	23	27	13	17	6	M12 x 1.25	M5 x 14
	MXQ-CT20 (L)-X11	15					37					
	MXQ-CT20 (L)-X12	25					47					
MXQ25 (L)	MXQ-CT25 (L)	5	49	53.5	31	28	30	15	19	6	M14 x 1.5	M6 x 18
	MXQ-CT25 (L)-X11	15					40					
	MXQ-CT25 (L)-X12	25					50					

∗1) Size of hexagon socket head cap screw
∗2) It is also available in the symmetric type.
For "How to Order", refer to page 94.
Dimensions are the same as standard type.

Dimensions of Adjusting Bolt/Metal Stopper



Applicable size	Model	Stroke adjustment range (mm)	A	B	C	D	M
MXQ 6 (L)	MXQ-A638	5	15.5	2.5	7	3	M5 x 0.8
	MXQ-A638-X11	15	25.5				
MXQ 8 (L)	MXQ-A838	5	18	3	8	3.5	M6 x 1
	MXQ-A838-X11	15	28				
	MXQ-A838-X12	25	38				
MXQ12 (L)	MXQ-A1238	5	22	4	12	4	M8 x 1
	MXQ-A1238-X11	15	32				
	MXQ-A1238-X12	25	42				
MXQ16 (L)	MXQ-A1638	5	23	5	14	4	M10 x 1
	MXQ-A1638-X11	15	33				
	MXQ-A1638-X12	25	43				
MXQ20 (L)	MXQ-A2038	5	27	6	17	5	M12 x 1.25
	MXQ-A2038-X11	15	37				
	MXQ-A2038-X12	25	47				
MXQ25 (L)	MXQ-A2538	5	30	6	19	6	M14 x 1.5
	MXQ-A2538-X11	15	40				
	MXQ-A2538-X12	25	50				

How to Order Adjusting Bolt/Metal Stopper

MXQ — A [12] 38 — [X11]

Applicable bore size

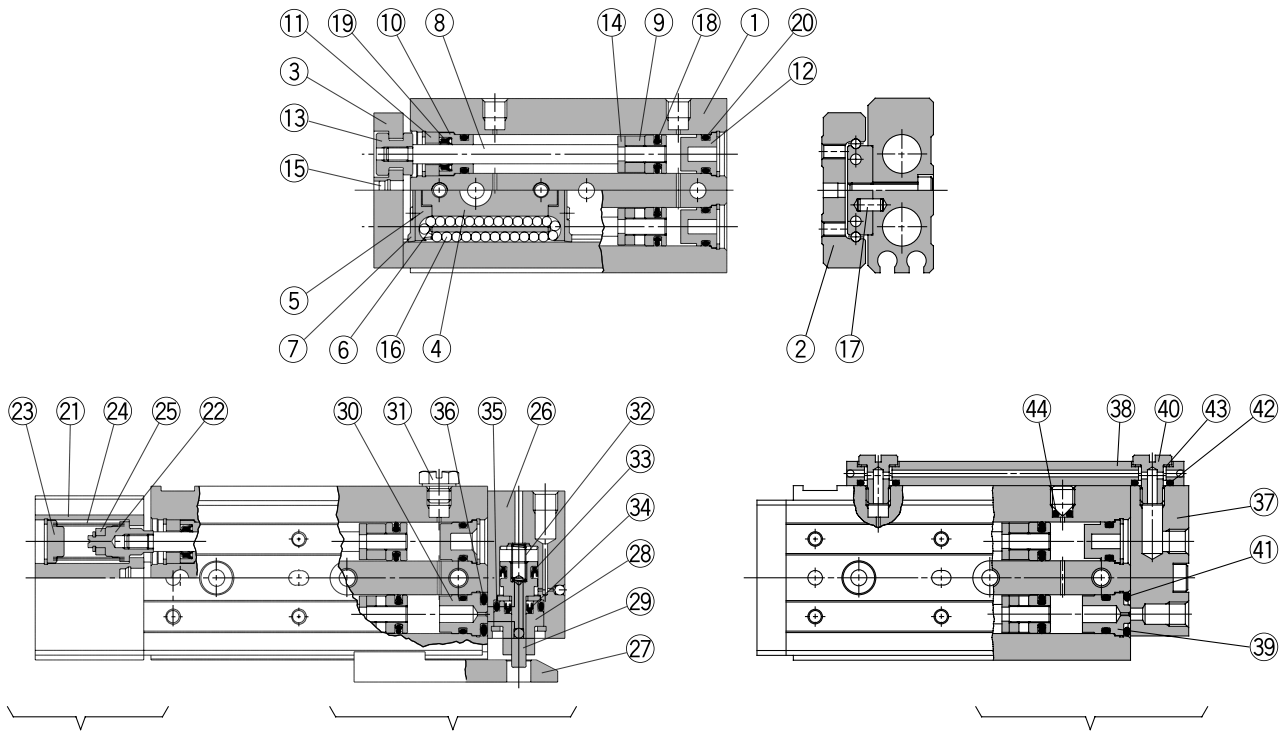
MXQ 6	ø6
MXQ 8	ø8
MXQ12	ø12
MXQ16	ø16
MXQ20	ø20
MXQ25	ø25

Adjustment range

Nil	5 mm
-X11	15 mm
-X12	25 mm

∗ -X12 (adjusting range: 25 mm) is not available in Series MXQ6.
∗ For dimensions, refer to the figure above.
∗ Symmetric type is also the same.

Construction



Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum alloy	Hard anodized
2	**Table**	Stainless steel	Heat treated, Electroless nickel plated
3	**End plate**	Aluminum alloy	Hard anodized
4	**Guide block**	Stainless steel	Heat treated
5	**Cover**	Synthetic resin	
6	**Return guide**	Synthetic resin	
7	**Scraper**	Stainless steel, NBR	
8	**Rod**	Stainless steel	
9	**Piston assembly**	—	With magnet on one side
10	**Rod cover**	Aluminum alloy	Anodized
11	**Seal support**	Brass	Electroless nickel plated
12	**Head cap**	Synthetic resin	
13	**Floating bushing**	Stainless steel	
14	**Rod bumper**	Polyurethane	
15	**End bumper**	Polyurethane	
16	**Steel balls**	High carbon chrome bearing steel	
17	**Parallel pin**	Stainless steel	
18	**Piston seal**	NBR	
19	**Rod seal**	NBR	
20	**O-ring**	NBR	

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	**Blanking plug**	Brass	Electroless nickel plated
32	**Return spring**	Stainless steel	
33	**Piston seal**	NBR	
34	**Rod seal**	NBR	
35	**O-ring**	NBR	
36	**O-ring**	NBR	

Component Parts: Axial Piping Type

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

∗ Seal kit includes these seals to provide as a set. Order the seal kit, based on each bore size.

Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Contents
6	MXQ 6-PS	Set of nos. above ⑱ to ⑳ (1 set)
8	MXQ 8-PS	
12	MXQ12-PS	
16	MXQ16-PS	
20	MXQ20-PS	
25	MXQ25-PS	

Replacement Parts: Seal Kit for with End Lock

Bore size (mm)	Kit no.	Contents
8	MXQ 8R-PS	Set of nos. above ⑱ to ⑳ ㉝ to ㊱
12	MXQ12R-PS	
16	MXQ16R-PS	
20	MXQ20R-PS	
25	MXQ25R-PS	

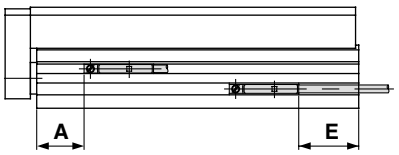
Replacement Parts: Seal Kit for Axial Piping Type

Bore size (mm)	Kit no.	Contents
6	MXQ 6P-PS	Set of nos. above ⑱ to ⑳, ㊶ to ㊹
8	MXQ 8P-PS	
12	MXQ12P-PS	
16	MXQ16P-PS	Set of nos. above ⑱ to ⑳, ㊶ to ㊸
20	MXQ20P-PS	
25	MXQ25P-PS	

Replacement Parts: Grease Pack

Applied section	Grease pack part no.
Guide	GR-S-005 (5g) GR-S-010 (10g) GR-S-020 (20g) GR-S-050 (50g)
Cylinder	GR-L-005 (5g) GR-L-010 (10g) GR-L-020 (20g) GR-L-050 (50g)

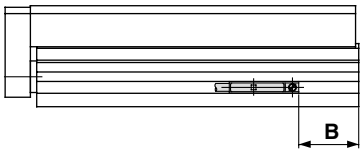
Auto Switch Proper Mounting Position (Detection at Stroke End)



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
MXQ6	6	5.5	5.5	5.5	13.5	13.5	—	—	—	—	3.5 (1)	3.5 (1)	3.5 (1)	11.5 (9)	11.5 (9)	—	—	—	—
MXQ8	7.5	8	8	12	16	31	32	—	—	—	6 (3.5)	6 (3.5)	10 (7.5)	14 (11.5)	29 (26.5)	30 (27.5)	—	—	—
MXQ12	11.5	24.5	14.5	14.5	21.5	21.5	40.5	40.5	—	—	22.5 (20)	12.5 (10)	12.5 (10)	19.5 (17)	19.5 (17)	38.5 (36)	38.5 (36)	—	—
MXQ16	16.5	30.5	20.5	20.5	20.5	26.5	33.5	51.5	51.5	—	28.5 (26)	18.5 (16)	18.5 (16)	18.5 (16)	24.5 (22)	31.5 (29)	49.5 (47)	49.5 (47)	—
MXQ20	19	43.5	33.5	23.5	33.5	31.5	39.5	71.5	74.5	77.5	41.5 (39)	31.5 (29)	21.5 (19)	31.5 (29)	29.5 (27)	37.5 (35)	69.5 (67)	72.5 (70)	77.5 (75)
MXQ25	22	52.5	42.5	32.5	32.5	46.5	46.5	60.5	88.5	88.5	50.5 (48)	40.5 (38)	30.5 (28)	30.5 (28)	44.5 (42)	44.5 (42)	58.5 (56)	86.5 (84)	77.5 (75)

∗ ( ): Denotes D-A93.



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

Model	A	B Stroke									E Stroke								
		10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150
MXQ6	10	9.5	9.5	9.5	17.5	17.5	—	—	—	—	–0.5	–0.5	–0.5	7.5	7.5	—	—	—	—
MXQ8	11.5	12	12	16	20	35	36	—	—	—	2	2	6	10	25	26	—	—	—
MXQ12	15.5	28.5	18.5	18.5	25.5	25.5	44.5	44.5	—	—	18.5	8.5	8.5	15.5	15.5	34.5	34.5	—	—
MXQ16	20.5	34.5	24.5	24.5	24.5	30.5	37.5	55.5	55.5	—	24.5	14.5	14.5	14.5	20.5	27.5	45.5	45.5	—
MXQ20	23	47.5	37.5	27.5	37.5	35.5	43.5	75.5	78.5	81.5	37.5	27.5	17.5	27.5	25.5	33.5	65.5	68.5	73.5
MXQ25	27	56.5	46.5	36.5	36.5	50.5	50.5	64.5	92.5	92.5	46.5	36.5	26.5	26.5	40.5	40.5	54.5	82.5	73.5

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

Model	A	B Stroke									E Stroke								
		10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150
MXQ6	10	9.5	9.5	9.5	17.5	17.5	—	—	—	—	1.5	1.5	1.5	9.5	9.5	—	—	—	—
MXQ8	11.5	12	12	16	20	35	36	—	—	—	4	4	8	12	27	28	—	—	—
MXQ12	15.5	28.5	18.5	18.5	25.5	25.5	44.5	44.5	—	—	20.5	10.5	10.5	17.5	17.5	36.5	36.5	—	—
MXQ16	20.5	34.5	24.5	24.5	24.5	30.5	37.5	55.5	55.5	—	26.5	16.5	16.5	16.5	22.5	29.5	47.5	47.5	—
MXQ20	23	47.5	37.5	27.5	37.5	35.5	43.5	75.5	78.5	81.5	39.5	29.5	19.5	29.5	27.5	35.5	67.5	70.5	75.5
MXQ25	27	56.5	46.5	36.5	36.5	50.5	50.5	64.5	92.5	92.5	48.5	38.5	28.5	28.5	42.5	42.5	56.5	84.5	75.5

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

Auto Switch Mounting

⚠ Caution

Auto Switch Mounting Tool

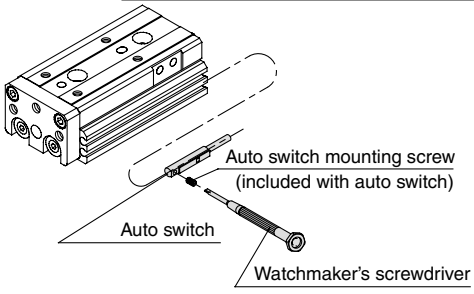
- When tightening the auto switch mounting screw (included with auto switch), use a watchmaker's screwdriver with a handle about 5 to 6 mm in diameter.

Tightening Torque

Tightening Torque of Auto Switch Mounting Screw

(N•m)

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



Operating Range

Operating range

(mm)

Auto switch model	Applicable bore size					
	6	**8**	**12**	**16**	**20**	**25**
D-A9, A9□V	4.5	5	6	7	8	9
D-M9□, M9□V **D-M9□W, M9□WV**	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-F9G/F9H types) and solid state auto switch D-F8 are also available. Refer to pages 1745 and 1746 for details.

Series MXQ
Specific Product Precautions 1

Be sure to read before handling. Refer to front matters 42 and 43 for Safety Instructions and pages 3 to 11 for Actuator and Auto Switch Precautions.

Selection

⚠ Caution

1. Operate loads within the range of the operating limits.
Select the model considering maximum allowable load and allowable moment. Refer to pages 90 and 91 for the details. 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 a 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.

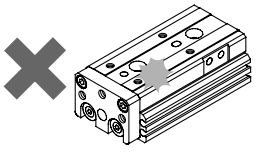
3. Do not use it in such a way that excessive external force or impact force could work on it.
This could result in damage.

Mounting

⚠ Caution

1. Do not scratch or dent the mounting side of the body, table or end plate.
This can cause loss of parallelism in the mounting surfaces, vibration in the guide unit and increased operating resistance, etc.

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



Mounting

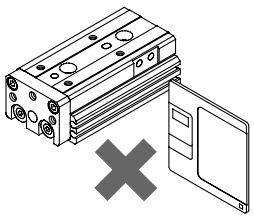
3. Do not apply excessive power and load when work is mounted.
If the external force more than the allowable moment were applied, looseness of the guide unit or increased operating resistance could take place.

4. Flatness of mounting surface should be less than 0.02 mm.
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 stroke adjuster. Install a cover as a safety measure if there are instances to be near the slide table during operation.

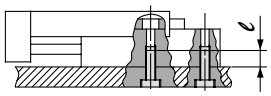
7. Keep away from objects which are influenced by magnets.
As the body magnets are built-in, do not allow close contact with magnetic disks, magnetic cards or magnetic tapes. Data may be erased.



8. Do not touch a magnet to the table section.
Since the table is made from the magnetic substance, it could turn to be magnetized if it stuck by a magnet, etc. That could cause auto switches, etc. to malfunction.

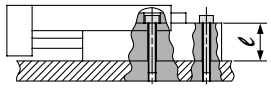
9. When mounting the body, use screws with appropriate length and do not exceed the maximum tightening torque.
Tightening with a torque above the limit could malfunction. Whereas tightening insufficiently could result in misalignment or come to a drop.

1. Lateral Mounting (Body tapped)



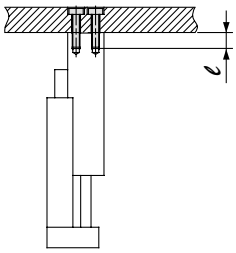
Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (ℓ mm)
MXQ 6 (L)	M4 x 0.7	2.1	8
MXQ 8 (L)	M4 x 0.7	2.1	8
MXQ12 (L)	M5 x 0.8	4.4	10
MXQ16 (L)	M6 x 1	7.4	12
MXQ20 (L)	M6 x 1	7.4	12
MXQ25 (L)	M8 x 1.25	18.0	16

2. Lateral Mounting (Body through-hole)



Model	Bolt	Maximum tightening torque (N·m)	ℓ mm
MXQ 6 (L)	M3 x 0.5	1.2	10.5
MXQ 8 (L)	M3 x 0.5	1.2	12.5
MXQ12 (L)	M4 x 0.7	2.8	16
MXQ16 (L)	M5 x 0.8	5.7	21
MXQ20 (L)	M5 x 0.8	5.7	26
MXQ25 (L)	M6 x 1	10.0	32

3. Vertical Mounting (Body tapped)



Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (ℓ mm)
MXQ 6 (L)	M2.5 x 0.45	0.5	4
MXQ 8 (L)	M3 x 0.5	0.9	4
MXQ12 (L)	M4 x 0.7	2.1	6
MXQ16 (L)	M5 x 0.8	4.4	7
MXQ20 (L)	M5 x 0.8	4.4	8
MXQ25 (L)	M6 x 1	7.4	10

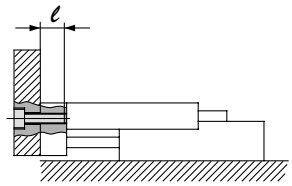
Series MXQ
Specific Product Precautions 2

Be sure to read before handling. Refer to front matters 42 and 43 for Safety Instructions and pages 3 to 11 for Actuator and Auto Switch Precautions.

Mounting

⚠ Caution

1. Front Mounting

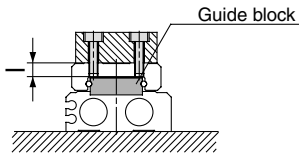


⚠ Caution

To prevent the workpiece holding bolts from touching the end plate, use bolts that are 0.5 mm or more shorter than the maximum screw-in depth. If long bolts are used, they can touch the end plate and cause malfunction, etc.

Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (ℓ mm)
MXQ 6 (L)	M3 x 0.5	0.9	5
MXQ 8 (L)	M4 x 0.7	2.1	6
MXQ12 (L)	M5 x 0.8	4.4	8
MXQ16 (L)	M6 x 1	7.4	10
MXQ20 (L)	M6 x 1	7.4	13
MXQ25 (L)	M8 x 1.25	18.0	15

2. Top Mounting



⚠ Caution

To prevent the workpiece holding bolts from touching the guide block, use bolts that are 0.5 mm or more shorter than the maximum screw-in depth. If long bolts are used, they can touch the guide block and cause malfunction, etc.

Model	Bolt	Maximum tightening torque (N·m)	Maximum screw-in depth (ℓ mm)
MXQ 6 (L)	M3 x 0.5	1.2	4
MXQ 8 (L)	M3 x 0.5	1.2	4.8
MXQ12 (L)	M4 x 0.7	2.8	6
MXQ16 (L)	M5 x 0.8	5.7	7
MXQ20 (L)	M5 x 0.8	5.7	9.5
MXQ25 (L)	M6 x 1	10.0	11.5

10. 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 the environment, where the product could be exposed to the liquid such as cutting oil, etc.

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

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

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

Please consult with SMC regarding use in this kind of environment.

3. Do not use in direct sunlight.

4. When there are heat sources in the surrounding area, block them off.

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

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

Please consult with SMC regarding use in this kind of environment, as this can cause damage and malfunction.

6. Use caution for the anti-corrosiveness of linear guide section.

Martensitic stainless steel is used for the table and guide block. But, use caution that anti-corrosiveness is inferior to the austenitic stainless steel. Especially, rust may be generated in an environment where waterdrops are likely to adhere due to condensation, etc.

Caution for 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.

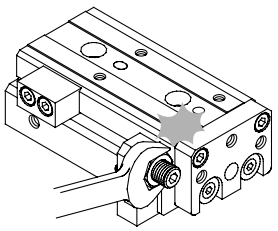
2. Follow the table for tightening torque of lock nuts.

Insufficient torque will cause a decrease in the positioning accuracy.

Model	Tightening torque (N·m)
MXQ 6 (L)	3.0
MXQ 8 (L)	5.0
MXQ12 (L)	12.5
MXQ16 (L)	25.0
MXQ20 (L)	43.0
MXQ25 (L)	69.0

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

This could result in looseness.



Specific Product Precautions 3

Be sure to read before handling. Refer to front matters 42 and 43 for Safety Instructions and pages 3 to 11 for Actuator and Auto Switch Precautions.

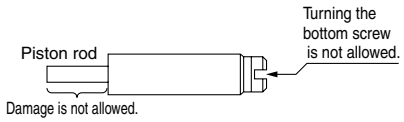
Caution on Adjuster Option

With Shock Absorber

⚠ Caution

1. Do not rotate the screw set 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 lead to return defect.



3. Shock absorber is considered a consumable component. When energy absorption is decreased, replace it.

Applicable size	Tightening torque (N•m)
MXQ 8 (L) MXQ12 (L)	1.67
MXQ16 (L)	3.14
MXQ20 (L) MXQ25 (L)	10.8

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
MXQ 8 (L)	RB0805
MXQ12 (L)	RB0806
MXQ16 (L)	RB1007
MXQ20 (L)	RB1411
MXQ25 (L)	RB1412

Caution on Mounting Adjuster Option

Rubber Stopper

⚠ Caution

1. Use caution that the length of the bolts for mounting on the body and the bolts for the table is different from each other in some models.
Stroke adjuster at extension end (AS) of MXQ6 and 8 has the different length of a hexagon socket head cap screw for mounting on the body and on the table. Use sufficient care for 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	Stroke adjuster at extension end (AS)				Stroke adjuster at retraction end (AT)	
	Body mounting section		Table mounting section			
	Thread size	Tightening torque (N·m)	Thread size	Tightening torque (N·m)	Thread size	Tightening torque (N·m)
MXQ 6 (L)	M2.5 x 6	0.5	M2.5 x 8	0.5	M2.5 x 6	0.5
MXQ 8 (L)	M3 x 8	0.9	M3 x 10	0.9	M3 x 8	0.9
MXQ12 (L)	M4 x 12	2.1	M4 x 12	2.1	M4 x 10	2.1
MXQ16 (L)	M5 x 16	4.4	M5 x 16	4.4	M5 x 12	4.4
MXQ20 (L)	M6 x 16	7.0	M6 x 16	7.0	M5 x 14	4.4
MXQ25 (L)	M8 x 18	18.0	M8 x 18	18.0	M6 x 18	7.0

Shock Absorber

⚠ Caution

1. Use caution that the length of the bolts for mounting on the body and the bolts for the table is different from each other in some models.
Shock absorber at extension end (BS) for MXQ20 and 25 has the different length of a hexagon socket head cap screw for mounting on the body and on the table. Use sufficient care for 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			
	Thread size	Tightening torque (N·m)	Thread size	Tightening torque (N·m)	Thread size	Tightening torque (N·m)
MXQ 8 (L)	M3 x 12	0.9	M3 x 12	0.9	M3 x 8	0.9
MXQ12 (L)	M4 x 12	2.1	M4 x 12	2.1	M4 x 10	2.1
MXQ16 (L)	M5 x 16	4.4	M5 x 16	4.4	M5 x 12	4.4
MXQ20 (L)	M6 x 18	7.0	M6 x 20	7.0	M5 x 14	4.4
MXQ25 (L)	M8 x 18	18.0	M8 x 20	18.0	M6 x 18	7.0

Metal Stopper

⚠ Caution

1. Use caution that the length of the bolts for mounting on the body and the bolts for the table is different from each other in some models.
Stroke adjuster at extension end (CS) of MXQ6, 8, 20 and 25 has the different length of a hexagon socket head cap screw for mounting on the body and on the table. Use sufficient care for 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	Stroke adjuster at extension end (CS)				Stroke adjuster at retraction end (CT)	
	Body mounting section		Table mounting section			
	Thread size	Tightening torque (N·m)	Thread size	Tightening torque (N·m)	Thread size	Tightening torque (N·m)
MXQ 6 (L)	M2.5 x 6	0.5	M2.5 x 8	0.5	M2.5 x 6	0.5
MXQ 8 (L)	M3 x 8	0.9	M3 x 10	0.9	M3 x 8	0.9
MXQ12 (L)	M4 x 12	2.1	M4 x 12	2.1	M4 x 10	2.1
MXQ16 (L)	M5 x 16	4.4	M5 x 16	4.4	M5 x 12	4.4
MXQ20 (L)	M6 x 16	7.0	M6 x 20	7.0	M5 x 14	4.4
MXQ25 (L)	M8 x 18	18.0	M8 x 20	18.0	M6 x 18	7.0

Series MXQ
Specific Product Precautions 4

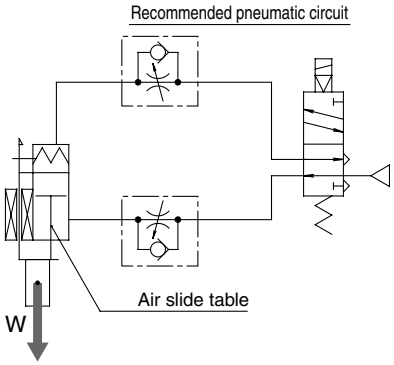
Be sure to read before handling. Refer to front matters 42 and 43 for Safety Instructions and pages 3 to 11 for Actuator and Auto Switch Precautions.

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.



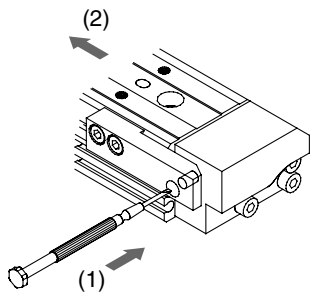
2. Be sure to use meter-out speed control valves.
If it is used in meter-in speed control or without a speed controller, it may result in malfunction.

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.

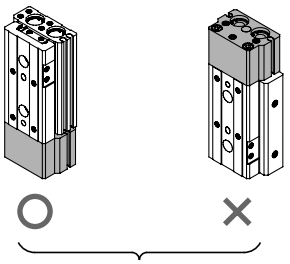
(1) Push down the lock piston pin.
(2) Slide the table forward.



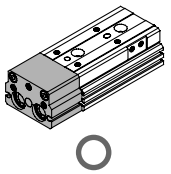
With Buffer Mechanism

⚠ Caution

1.It must be oriented as shown 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.

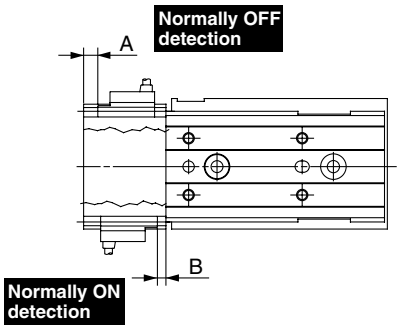


Vertical use



Horizontal use

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



∗ Adjust the auto switch position according to the load and the speed.

(mm)

Model	A	B
MXQ 6 (L)	2	3
MXQ 8 (L)	2.5	
MXQ12 (L)	4	
MXQ16 (L)	5	
MXQ20 (L)	5.5	
MXQ25 (L)	10	

Caution on Handling Symmetric Type

⚠ Caution

1. Maintain a minimum spacing of at least 3 mm if standard style and symmetric style are used side by side.
It malfunctions if standard style and symmetric style are used close side by side.

