

Air Slide Table Series MXQ

ø6, ø8, ø12, ø16, ø20, ø25

Cylinder with built-in guide rail and table
Uses a recirculating linear guide for high rigidity and high precision.
Air slide table for precise assembly applications

High precision and compact

MXQ compared with MXS

(mm)

Model	Accuracy		Dimensions		
	Parallelism	Height tolerance	Width	Height	Length
MXQ12-30	0.035	0.08	46	30	86
MXS12-30	0.2	0.2	50	32	80

Improved against loads

About 3 times stronger against unexpected excessive external forces compared with MXS series

Standardized symmetric style

Available for all options

Ample options for stroke adjustment

Pin holes for positioning

Improved repeatability of work mounting

Work mounting tap

Improved strength

End plate is made of extra duralumin. (Except the buffer style)

Dual rod

Double the output of previous cylinder

Recirculating linear ball bearing

Widened main body of linear guide block is made of martensitic stainless steel

Through hole for body mounting

Mounting groove for auto switch

Auto switch is mounted in recessed groove for added protection and convenience.

Built-in table and guide rail

Made of martensitic stainless steel

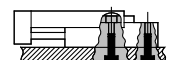
Pin holes for positioning

Improved repeatability of body mounting

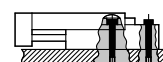
Body mounting tap

Mounting from 3 direction available

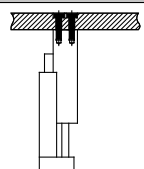
① Lateral mounting (Body tap)



② Lateral mounting (Through hole)



③ Vertical mounting (Body tap)



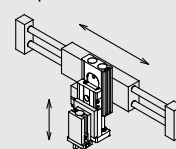
Wide variety of options

Adjuster option and functional option are available in combination.

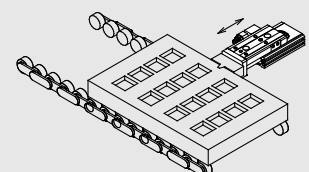
Symmetric Style	Adjuster options	Functional options
	With stroke adjuster 	With buffer
	With shock absorber 	With end lock
		Axial piping

Applications

For Z axis of pick and place



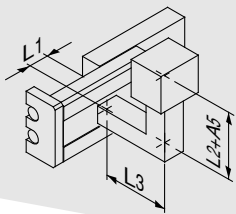
For positioning of pallet on a conveyor



EMC-MXQ-A-UK

Series MXQ

How to Select

Selection Procedure	Formula and Data	Selection Example				
1 Operating conditions List the operating conditions according to mounting position and work form.	Model used Type of cushion Mounting position of work Mounting direction Average speed V_a (mm/s) Applied load W (N): Fig 1 Overhang L_n (mm): Fig 2	 Cylinder: MXQ16-50 Cushion: Robber stopper Mounting on work table Mounting: Horizontal well Average speed : $V_a=300$[mm/s] Applied load: $W=10$[N] $L_1=10$mm $L_2=30$mm $L_3=30$mm				
2 Kinetic energy Calculate kinetic energy E(J) of load. Calculate allowable kinetic energy E_a(J). Check that kinetic energy of load does not exceed allowable kinetic energy.	$E = \frac{1}{2} W \left(\frac{V}{1000} \right)^2$ Collision Speed=$1.4 V_a$ $\square$ Correction coefficient $E_a = K E_{max}$ Work mounting coefficient K: Fig 3 Max. allowable kinetic energy E_{max}: Table 1 Kinetic energy(E) $\leq$ Allowable kinetic energy(E_a)	$E = \frac{1}{2} 1 \left(\frac{420}{1000} \right)^2 = 0.088$ $V = 1.4 \times 300 = 420$ $E_a = 1 \times 0.11 = 0.11$ Possible to use by $E = 0.088 \leq E_a = 0.11$				
3 Load rate						
3-1 Load rate of applied load Calculate allowable applied load W_a(N). Calculate load rate of applied load $\square_1$.	$W_a = K \square W_{max}$ Work mounting coefficient K: Fig 3 Allowable applied load coefficient B: Graph 1 Max. allowable applied load W_{max}: Table 2 $\square_1 = W/W_a$	$W_a = 1 \times 1 \times 4 = 4$ $K = 1$ $\square = 1$ $W_{max} = 4$ $\square_1 = 1/4 = 0.25$				
3-2 Load rate of static moment Calculate static moment M(Nm). Calculate allowable static moment M_a(Nm). Calculate Load rate of static moment $\square_2$.	$M = W \times (L_n + A_n) / 1000$ Correction value for center position distance of moment A_n: Table 3 $M_a = K \square M_{max}$ Work mounting coefficient K: Fig 3 Allowable moment coefficient $\square$: Graph 2 Max. allowable moment M_{max}: Table 4 $\square_2 = M/M_a$	<table><tr><th>Yaw</th><th>Roll</th></tr><tr><td>Examine for M_y $M_y = 1 \times 9.8(10+30)/1000$ $= 0.39$ $A_3 = 30$ $M_{ay} = 1 \times 1 \times 18 = 18$ $M_{ymax} = 18$ $K = 1$ $\square = 1$ $\square_2 = 0.39/18 = 0.022$</td><td>Examine for M_r $M_r = 1 \times 9.8(30+10.5)/1000$ $= 0.39$ $A_6 = 10.5$ $M_{ar} = 36$ $M_{rmax} = 36$ $K = 1$ $\square = 1$ $\square_2 = 0.39/36 = 0.011$</td></tr></table>	Yaw	Roll	Examine for M_y $M_y = 1 \times 9.8(10+30)/1000$ $= 0.39$ $A_3 = 30$ $M_{ay} = 1 \times 1 \times 18 = 18$ $M_{ymax} = 18$ $K = 1$ $\square = 1$ $\square_2 = 0.39/18 = 0.022$	Examine for M_r $M_r = 1 \times 9.8(30+10.5)/1000$ $= 0.39$ $A_6 = 10.5$ $M_{ar} = 36$ $M_{rmax} = 36$ $K = 1$ $\square = 1$ $\square_2 = 0.39/36 = 0.011$
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3-3 Load rate of dynamic moment Calculate dynamic moment Me(Nm). Calculate allowable dynamic moment Me_a(Nm). Calculate load rate of dynamic moment $\square_3$.	$Me = 1/3 W_e \times 9.8 \frac{(L_n + A_n)}{1000}$ Load equivalent to collision $W_e = \square W V$ $\square$: Damper coefficient Rubber stopper without adjuster=4/100 Shock absorber=1/100 Metal stopper=16/100 Correction value for center position distance of moment A_n: Table 3 $Me_a = K \square M_{max}$ Work mounting coefficient K: Fig 3 Allowable moment coefficient $\square$: Graph 2 Max. allowable moment M_{max}: Table 4 $\square_3 = Me/Me_a$	<table><tr><th>Pitch</th><td>Examine for M_{ep} $M_{ep} = 1/3 \times 16.8 \times 9.8 \times \frac{(30+10.5)}{1000} = 2.2$ $W_e = 4/100 \times 1 \times 420 = 16.8$ $A_2 = 10.5$ $M_{ep} = 1 \times 0.7 \times 18 = 12.6$ $K = 1$ $\square = 0.7$ $M_{pmax} = 18$ $\square_3 = 2.2/12.6 = 0.1$</td></tr><tr><th>Yaw</th><td>Examine for M_{ey} $M_{ey} = 1/3 \times 16.8 \times 9.8 \times \frac{(30+24.5)}{1000} = 3.0$ $W_e = 16.8$ $A_4 = 24.5$ $M_{ey} = 12.6$(Same value as M_{ep}) $\square_3 = 3.0/12.6 = 0.24$</td></tr></table>	Pitch	Examine for M_{ep} $M_{ep} = 1/3 \times 16.8 \times 9.8 \times \frac{(30+10.5)}{1000} = 2.2$ $W_e = 4/100 \times 1 \times 420 = 16.8$ $A_2 = 10.5$ $M_{ep} = 1 \times 0.7 \times 18 = 12.6$ $K = 1$ $\square = 0.7$ $M_{pmax} = 18$ $\square_3 = 2.2/12.6 = 0.1$	Yaw	Examine for M_{ey} $M_{ey} = 1/3 \times 16.8 \times 9.8 \times \frac{(30+24.5)}{1000} = 3.0$ $W_e = 16.8$ $A_4 = 24.5$ $M_{ey} = 12.6$ (Same value as M_{ep}) $\square_3 = 3.0/12.6 = 0.24$
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3-4 Sum of load rate It is possible to use when the sum of load rates does not exceed 1.	$\square_1 + \square_2 + \dots + \square_n \leq 1$	$\square_1 + \square_2 + \square_3 + \square_4 = 0.25 + 0.022 + 0.011 + 0.17 + 0.24 = 0.693 \leq 1$ And it is possible to use.				

How to Select **Series MXQ**

Fig.1 Applied Load: W(kg)

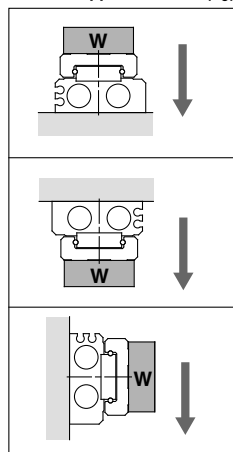
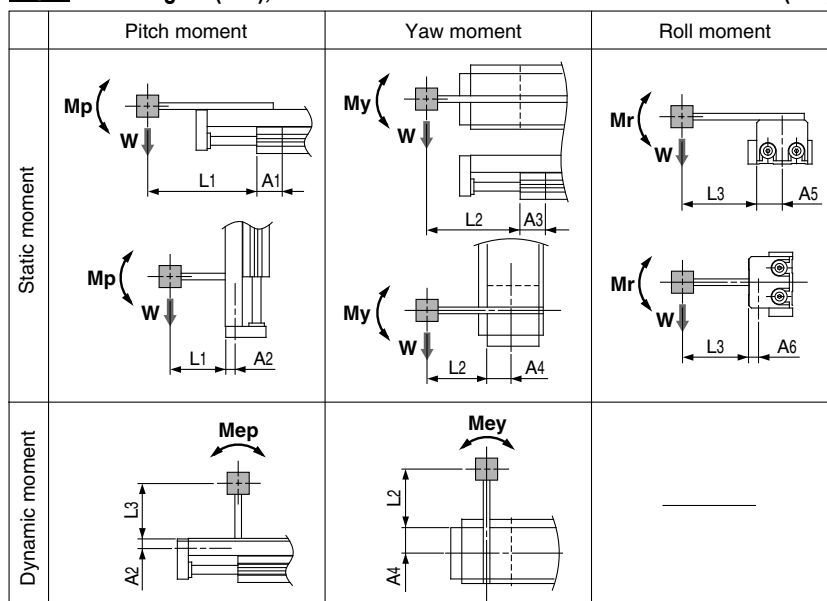


Fig.2 Overhang: Ln(mm), Corrected Value for Centre Distance of Moment: An(mm)



Note) Static moment: Moment by gravity
Dynamic moment: Moment by impact of collision against stopper

Fig.3 Work Mounting Coefficient: K

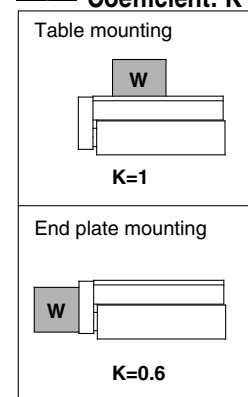


Table 1 Allowable Kinetic Energy: Emax(J)

Model	Allowable kinetic energy			
	Without adjuster	Adjuster options		
		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 Max. operating speed for metal stopper is 200mm/s.

Table 2 Maximum Allowable Applied Load: Wmax(kg)

Model	Max. allowable applied load
MXQ 6	0.6
MXQ 8	1
MXQ12	2
MXQ16	4
MXQ20	6
MXQ25	9

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

Model	Corrected value for center position distance of moment (Refer to Graph 2)												
	A1, A3									A2	A4	A5	A6
	Stroke (mm)												
	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) No differences of corrected value according to stroke for A2, A4, A5 and A6

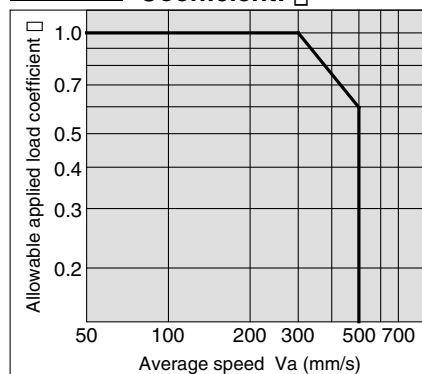
Table 4 Maximum Allowable Moment: Mmax(Nm)

Model	Pitch/Yaw moment: Mpmx/Mymx										Roll moment: Mrmx									
	Stroke (mm)										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	75	75
MXQ25	32	32	32	32	52	52	78	140	140	81	81	81	81	110	110	130	130	130	130	130

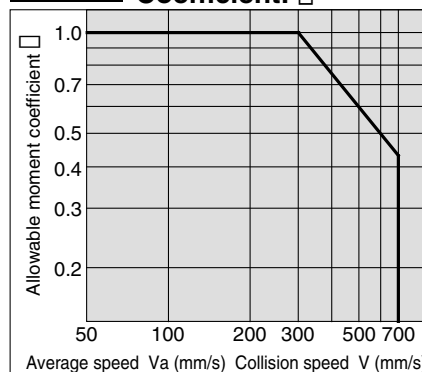
Symbol

Symbol	Definition	Unit	Symbol	Definition	Unit
An (n=1 to 6)	Correction value for center position distance of moment	mm	Va	Average speed	mm/s
E	Kinetic energy	J	W	Applied load	kg
Emax	Allowable kinetic energy	J	Wa	Allowable applied load	kg
Ln (n=1 to 3)	Overhang	mm	We	Load equivalent to collision	kg
M (Mp, My, Mr)	Static moment (Pitch, Yaw, Roll)	Nm	Wmax	Max. allowable applied load	kg
Ma (Map, May, Mar)	Allowable static moment (Pitch, Yaw, Roll)	Nm	□	Load rate	—
Me (Mep, Mey)	Dynamic moment (Pitch, Yaw)	Nm	□	Applied load coefficient	—
Mea (Meap, Meay)	Allowable dynamic moment (Pitch, Yaw)	Nm	□	Moment coefficient	—
Mmax (Mpmx, Mymx, Mrmx)	Maximum allowable moment (Pitch, Yaw, Roll)	Nm	K	Mounting work coefficient	—
V	Collision speed	mm/s			

Graph 1 Allowable Applied Load Coefficient: □



Graph 2 Allowable Moment Coefficient: □



Note) Use average speed when calculating static moment.
Use collision speed when calculating kinetic moment.

Series MXQ

ø6, ø8, ø12, ø16, ø20, ø25

How to Order

MXQ 12 **50** **AS** **FR** **M9BW**

Port thread type

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

Symmetric type

—	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

Functional option

—	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) With end lock is not available in MXQ6 series.

Number of auto switches

—	2 pcs.
S	1 pc.
n	"n" pcs.

Auto switch

—	Without auto switch (Built-in magnet)
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* For the applicable auto switch model, refer to the table below.
* For the applicable auto switch to buffer, refer to page 8. It requires to order separately.

Adjuster option

—	Without adjuster
AS	Extension end rubber stopper
AT	Retraction end rubber stopper
A	Double end rubber stopper
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 rubber stopper + Retraction end absorber
ASCT	Extension end rubber stopper + Retraction end metal stopper
BSAT ⁽¹⁾	Extension end absorber + Retraction end rubber stopper
BSCT ⁽¹⁾	Extension end absorber + Retraction end metal stopper
CSAT	Extension end metal stopper + Retraction end rubber stopper
CSBT ⁽¹⁾	Extension end metal stopper + Retraction end absorber

Note 1) With shock absorber is not available in MXQ6 series.

Option Combinations

Adjuster option	Functional option	—	F	R	P	FR	FP
—	—	○	○	○	○	○	○
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

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

Note 1) With shock absorber is not available in MXQ6 series.

○ : Available, x : Not available

Applicable Auto Switch/Refer to our website: www.smc.eu for the detailed specifications of auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)				Pre-wired connector	Applicable load		
					DC	AC	Perpendicular	In-line	0.5 (—)	1 (M)	3 (L)	5 (Z)				
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			M9BV				M9B	●	●	●	○	○			
	3-wire (NPN)			M9NWV				M9NW	●	●	●	○	○			
	3-wire (PNP)			M9PWV				M9PW	●	●	●	○	○			
	2-wire			M9BWV				M9BW	●	●	●	○	○			
	3-wire (NPN)			M9NAV*1				M9NA*1	○	○	●	○	○			
	3-wire (PNP)			M9PAV*1				M9PA*1	○	○	●	○	○			
	2-wire			M9BAV*1				M9BA*1	○	○	●	○	○			
	Reed switch			—				Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V		
2-wire		24 V	12 V		100 V	A93V	A93			●	●	●	●	○*2	—	Relay, PLC
					100 V or less	A90V	A90			●	●	●	●	○*2	IC circuit	

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

*2 The load voltage used is 24 VDC.

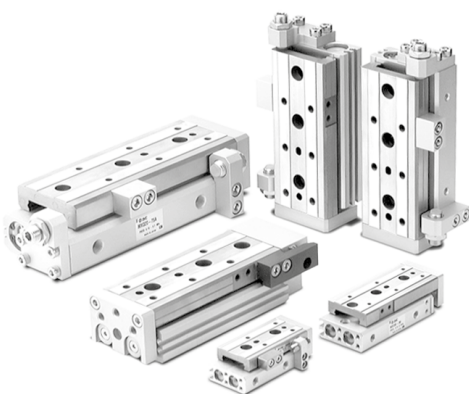
* Lead wire length symbols: 0.5 m — (Example) M9NW 3 m L (Example) M9NWL
1 m M (Example) M9NWM 5 m Z (Example) M9NWZ

* Auto switches marked with "○" are produced upon receipt of order.

* Since there are other applicable auto switches than listed, refer to page 340 for details.

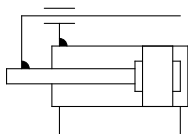
* For details about auto switches with pre-wired connector, refer to our website: www.smc.eu.

* Auto switches are shipped together (not assembled).



Symbol

Rubber bumper



Made to Order: Individual Specifications
(For details, refer to pages 40 to 42.)

Symbol	Specifications
-X7	PTFE grease
-X9	Grease for food processing equipment
-X11	Adjusting bolt, long specification (Adjustment range: 15 mm)
-X12	Adjusting bolt, long specification (Adjustment range: 25 mm)
-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 seal
-X42	Anti-corrosive specifications for guide unit
-X2578	Adjuster side mounting type

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

Specifications

Bore size (mm)	6	8	12	16	20	25
Piping port	M5				Rc(PT)1/8	
Fluid used	Air					
Action	Double acting					
Operating pressure	0.15 to 0.7MPa					
Proof pressure	1.05MPa					
Ambient and fluid temperature	-10 to 60°C					
Operating speed range	50 to 500mm/s (Adjuster option/Metal stopper: 50 to 200mm/s)					
Cushion	Rubber bumper (Standard, Adjuster option/Rubber stopper) Shock absorber (Adjuster option/Shock absorber) None (Adjuster option/Metal stopper)					
Lubrication	Not required					
Auto switch	Reed switch (2 wire, 3 wire) Solid state switch (2 wire, 3 wire) 2 colour indication solid state switch (2 wire, 3 wire)					
Tolerance of stroke length	+ ¹ ₀ mm					

Options

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

*Refer to page 7 and 8 for the detailed specifications of adjustment and function options.

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

Moisture Control Tube IDK Series



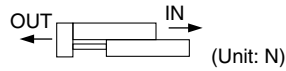
When operating an actuator with a small diameter and a short stroke at a high frequency, the dew condensation (water droplet) may occur inside the piping depending on the conditions.

Simply connecting the moisture control tube to the actuator will prevent dew condensation from occurring. For details, refer to the **Web Catalogue**.

Series MXQ

Theoretical Force

Introducing dual rods,
double the output of previous cylinder



Bore size (mm)	Rod size (mm)	Action direction	Piston area (mm ²)	Operating pressure (MPa)					
				0.2	0.3	0.4	0.5	0.6	0.7
6	3	OUT	57	11	17	23	29	34	40
		IN	42	8	13	17	21	25	29
8	4	OUT	101	20	30	40	51	61	71
		IN	75	15	23	30	38	45	53
12	6	OUT	226	45	68	90	113	136	158
		IN	170	34	51	68	85	102	119
16	8	OUT	402	80	121	161	201	241	281
		IN	302	60	91	121	151	181	211
20	10	OUT	628	126	188	251	314	377	440
		IN	471	94	141	188	236	283	330
25	12	OUT	982	196	295	393	491	589	687
		IN	756	151	227	302	378	454	529

Note) Theoretical force (N)=Pressure (MPa) X piston area(mm²)

Weight

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

Option Specifications

Stroke Adjustable Range by Adjuster Options (Both are the same for front and back ends)

Style	Stroke adjustable range
Rubber stopper	0 to 5mm
With shock absorber	Refer to the dimensions on p.2-217
Metal stopper	0 to 5mm

□Wide range adjusters for rubber stopper and metal stopper are available as optional specification.

How to Order Stroke Adjuster(Accessory Parts)

MXQ—AS 12 L—X11

Adjuster options

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

Symmetric

—	Standard
L	Symmetric

Adjustable range

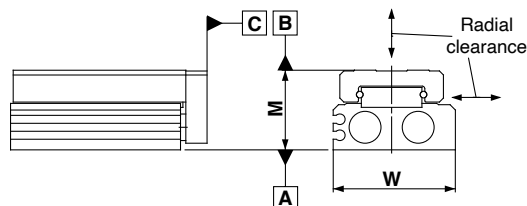
—	5mm	Standard
-X11	15mm	Option
-X12	25mm	

Bore size

6	ø6
8	ø8
12	ø12
16	ø16
20	ø20
25	ø25

Note 1) “-X12” (adjustable range : 25mm) is not adjustable for series MXQ6.
 Note 2) “-X11” and “-X12” are not available with shock absorber.
 Note 3) Shock absorber is not available for series MXQ6.
 Note 4) “-X11” and “-X12” are not available as the built-in style.
 Note 5) Refer to p.37 and 39 for the dimensions.

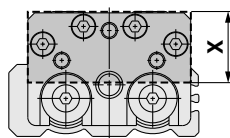
Table Accuracy (Reference Values)



Model	MXQ6	MXQ8	MXQ12	MXQ16	MXQ20	MXQ25
B side parallelism to A side	Refer to Table 1					
B side travelling parallelism to A side	Refer to Fig.1					
C side parallelism to A side	0.05mm*2					
Dimension tolerance of M	0.08mm (0.1mm)*1					
Dimension tolerance of W	0.1mm					
Radial clearance (mm)	-4 to 0	-4 to 0	-6 to 0	-10 to 0	-12 to 0	-14 to 0

*1) 0.1mm for stroke 75mm or more

*2) Perpendicularity range.



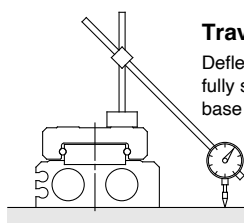
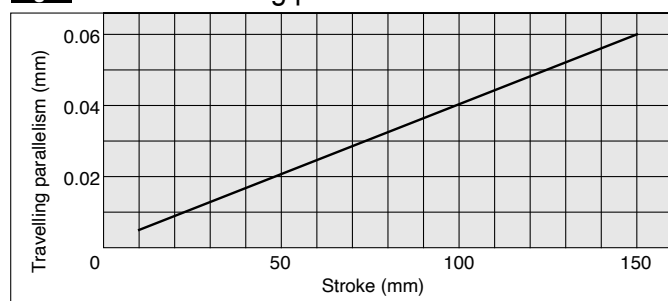
Model	X
MXQ 6	13
MXQ 8	15
MXQ12	18
MXQ16	21
MXQ20	25
MXQ25	28

Table 1 B side parallelism to A side

(Unit: 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

Fig. 1 B side travelling parallelism to A side



Travelling Parallelism

Deflection on the dial gauge when the table is fully stroked while its body is fixed to standard base surface.

Shock Absorber Specifications

Shock absorber model	RB0805	RB0806	RB1007	RB1411	RB1412
Applicable slide table	MXQ8	MXQ12	MXQ16	MXQ20	MXQ25
Max. absorbing energy (J)	0.98	2.94	5.88	14.7	19.6
Absorbed stroke (mm)	5	6	7	11	12
Max. collision speed (mm/s)	50 to 500				
Max. used frequency (cycle/min)	80	80	70	45	45
Max. thrust tolerance (N)	245	245	422	814	814
Ambient temperature range	-10 to 60C				
Spring force (N)	Expanded	1.96	1.96	4.22	6.86
	Compressed	3.83	4.22	6.86	15.30
Weight (g)	15	15	25	65	65

With End Lock Specifications

Model	MXQ8	MXQ12	MXQ16	MXQ20	MXQ25
Bore size (mm)	8	12	16	20	25
Operating speed range	50 to 500mm/s				
Holding force (N)	25	60	110	160	250

Note) Refer to p. 2-183 for cautions when handling end locks.

With Buffer Mechanism Specifications

Model	MXQ6	MXQ8	MXQ12	MXQ16	MXQ20	MXQ25
Bore size (mm)	6	8	12	16	20	25
Operating speed range	50 to 500mm/s (50 to 300mm/s for horizontal use)					
Buffer stroke (mm)	5			10		
Buffer stroke load (N)	At 0 stroke	3	5	10	13	17
	At max.stroke	6	8	13	17	25

Note 1) Refer to p. 46 for cautions when handling buffer functions.

Note 2) When adjusting stroke with extension stroke end adjuster, the buffer stroke is shortened by the adjusted length.

Auto Switch Applied for Buffer Section

Style	Model No.	Specifications	Electrical entry
Solid state switch	D-M9BV	2 wire with light	Perpendicular
	D-M9NV	3 wire W/ light, Output style: NPN	
	D-M9PV	3 wire W/ light, Output style: PNP	

Please order separately for auto switch with buffer mechanism from above model.



With buffer mechanism



With end lock

Series MXQ

Table Deflection (for reference)

Table deflection by pitch moment

Table pitch deflection due to static pitch moment applied at arrow for fully extended stroke of side table

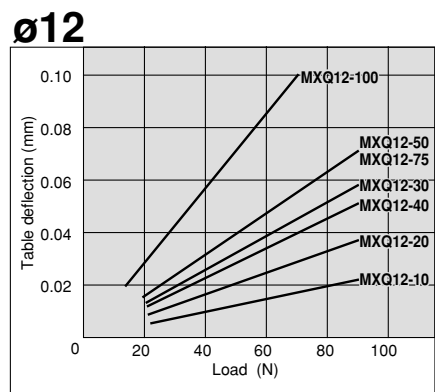
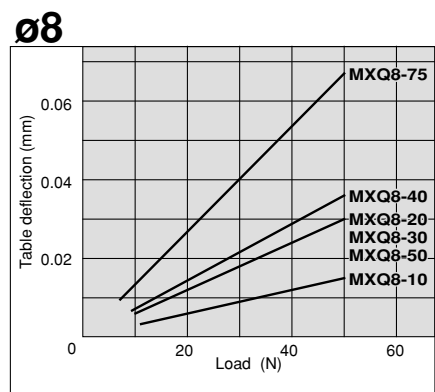
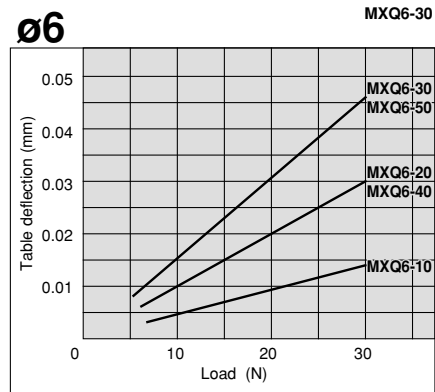


Table deflection by yaw moment

Table yaw deflection due to static yaw moment applied at arrow for fully extended stroke of side table.

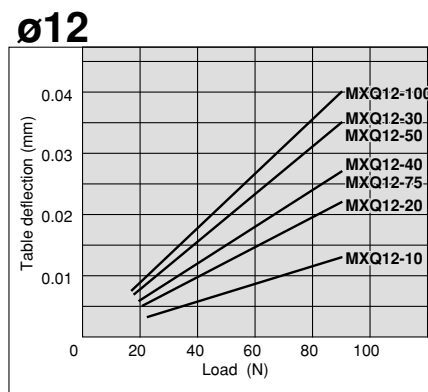
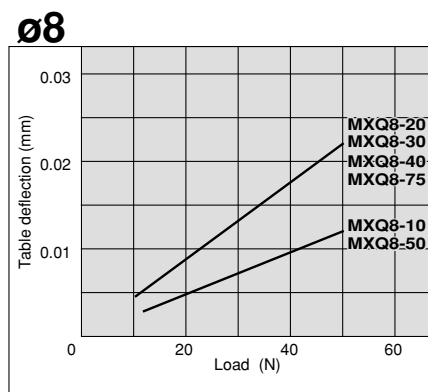
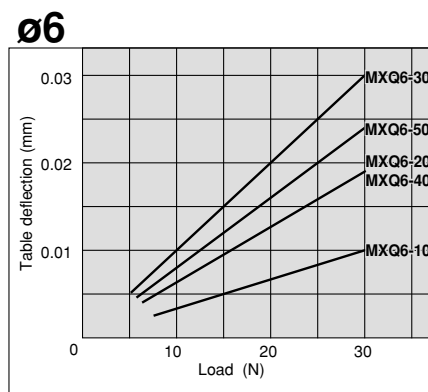
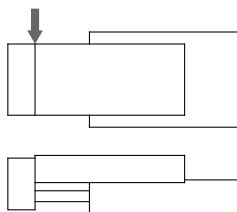


Table deflection by roll moment

Table roll deflection arrow A due to static roll moment applied at arrow F when Lr = (see table) and table is retracted.

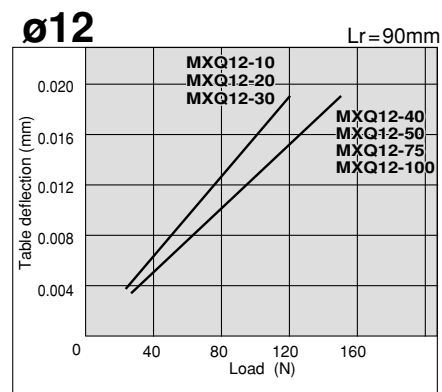
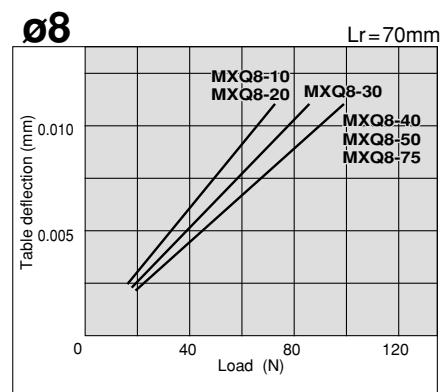
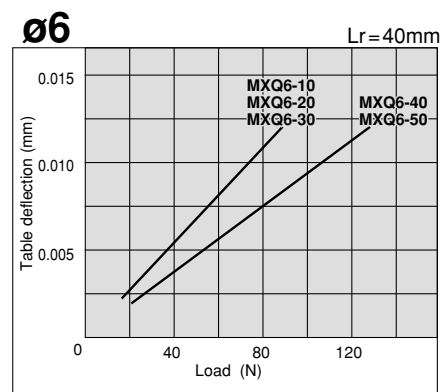
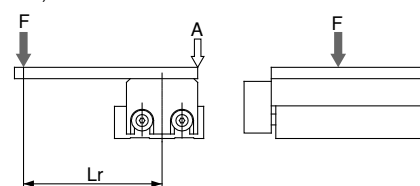
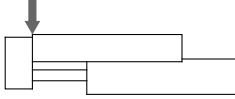
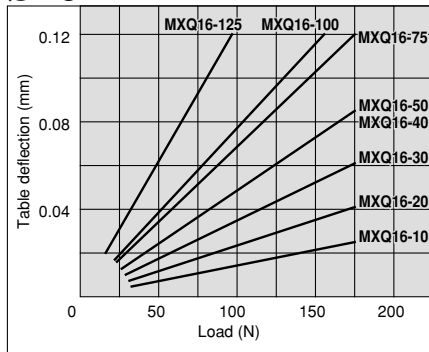


Table deflection by pitch moment

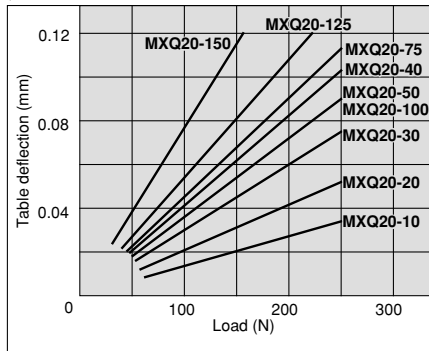
Table pitch deflection due to static pitch moment applied at arrow for fully extended stroke of side table.



ø16



ø20



ø25

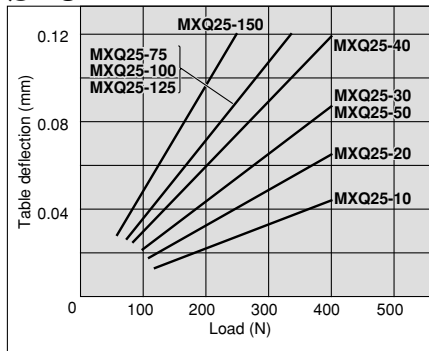
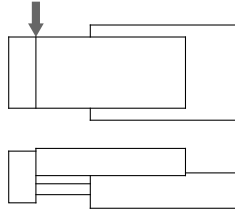
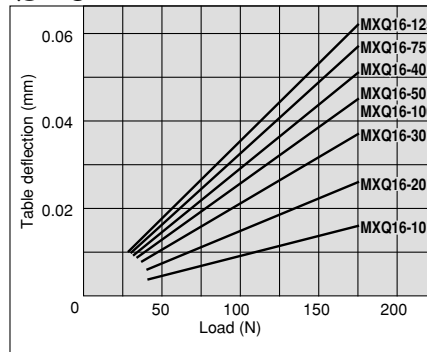


Table deflection by yaw moment

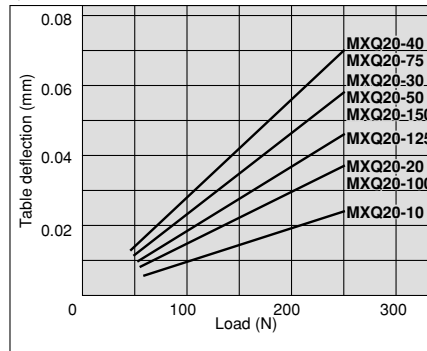
Table yaw deflection due to static yaw moment applied at arrow for fully extended stroke of side table.



ø16



ø20



ø25

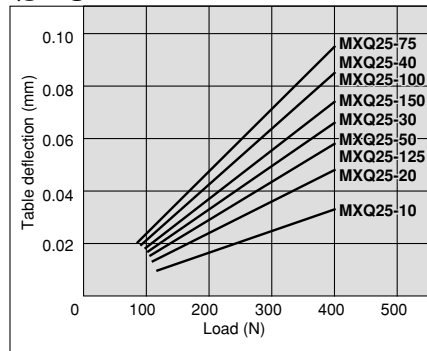
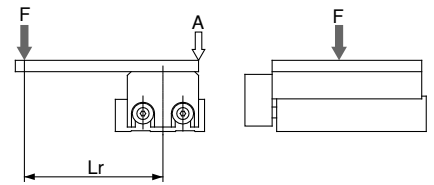
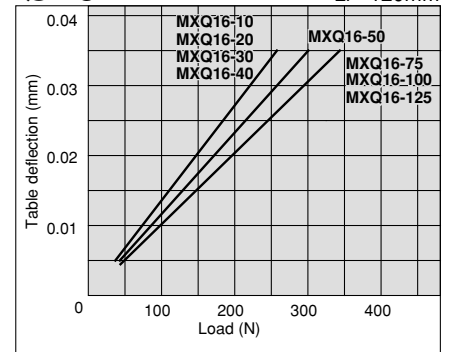


Table deflection by roll moment

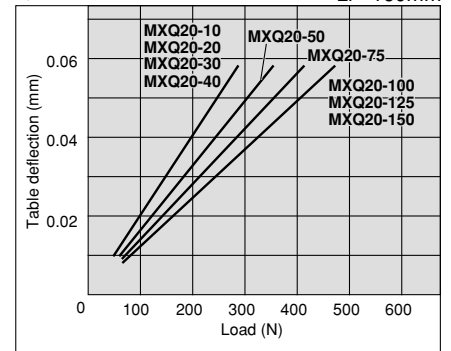
Table roll deflection arrow A due to static roll moment applied at arrow F when Lr=(see table) and table is retracted.



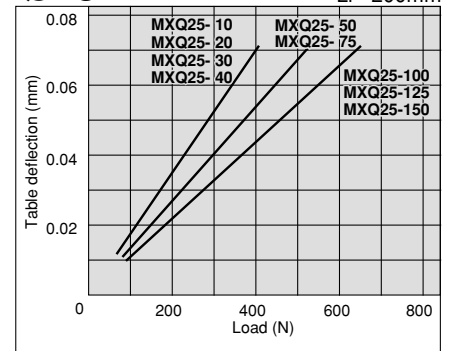
ø16



ø20

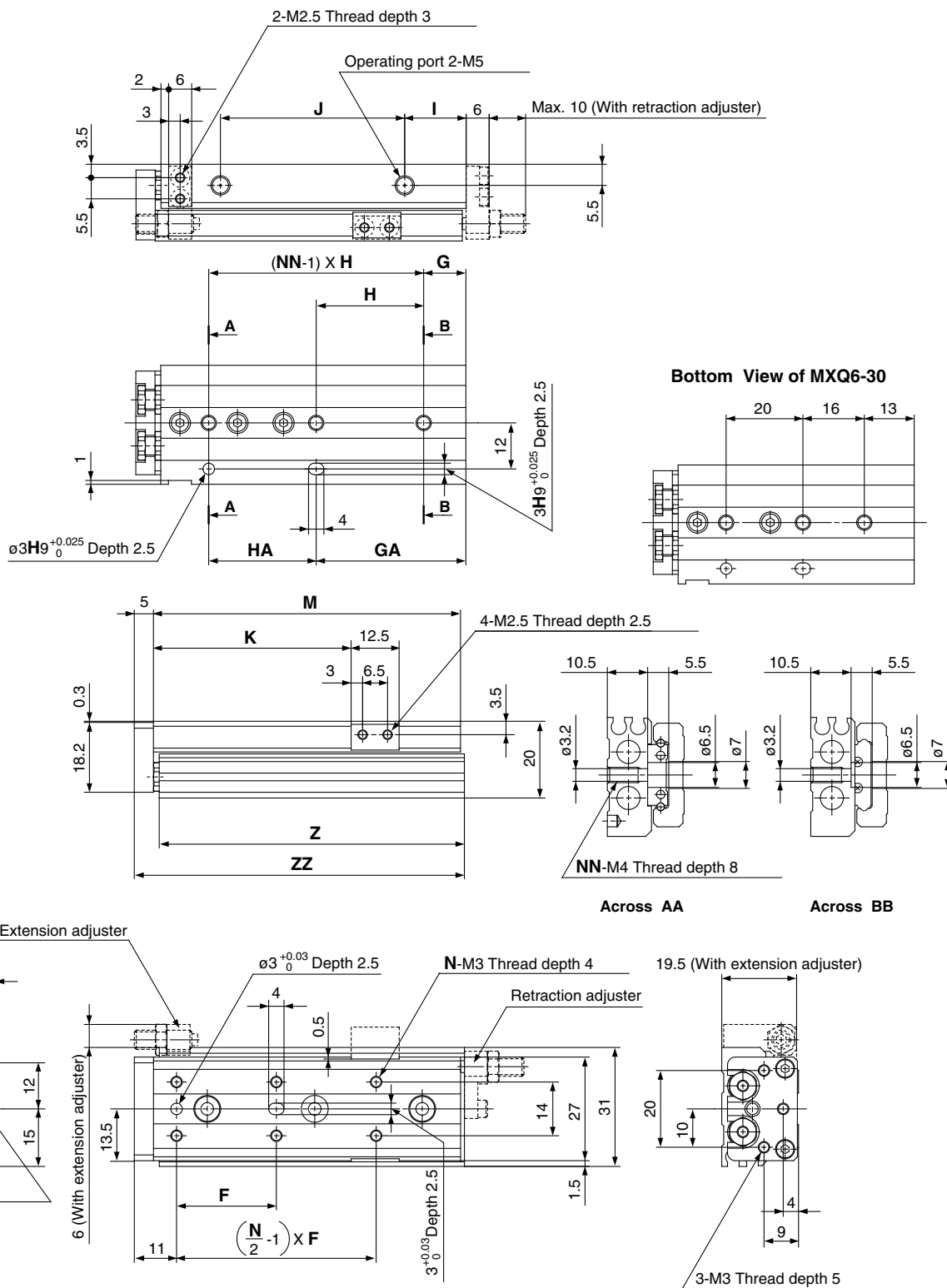


ø25



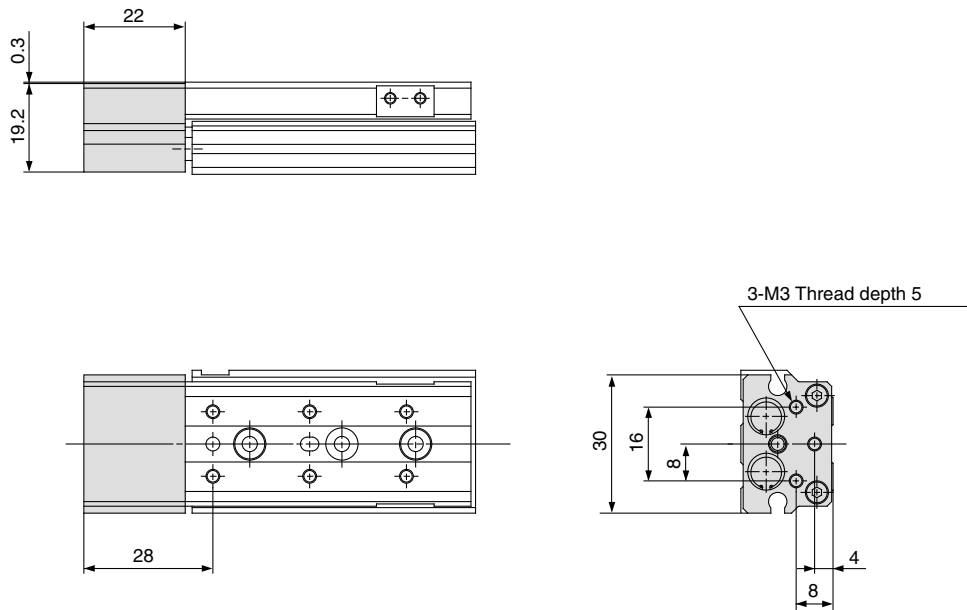
Basic style

Refer to adjuster options for dimensions of the stroke adjuster.
Rubber stopper: p.37
Metal stopper: p.39



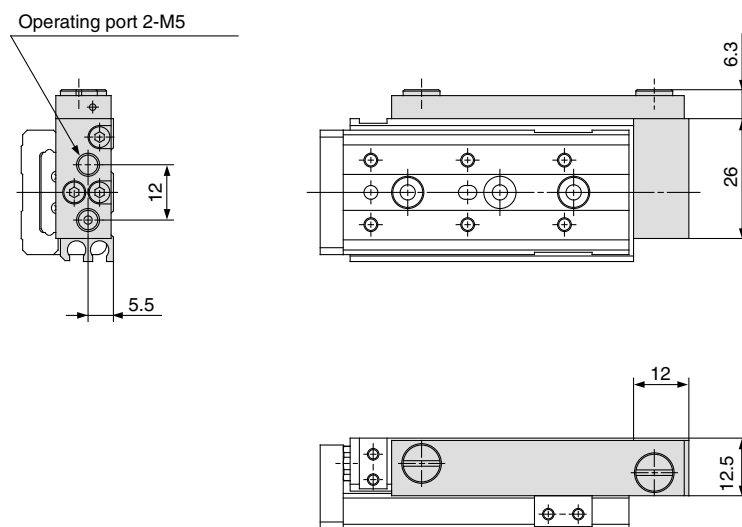
Model	F	N	G	H	NN	GA	HA	I	J	K	M	Z	ZZ
MXQ6-10	22	4	6	23	2	13	16	9	17	21.5	42	41.5	48
MXQ6-20	25	4	13	26	2	13	26	9	27	31.5	52	51.5	58
MXQ6-30	21	6	—	—	3	29	20	9	37	41.5	62	61.5	68
MXQ6-40	26	6	11	28	3	39	28	16	48	51.5	80	79.5	86
MXQ6-50	27	6	21	28	3	49	28	9	65	61.5	90	89.5	96

With buffer (ø6) MXQ6-□□F



□ Dimensions not indicated are the same as basic style.

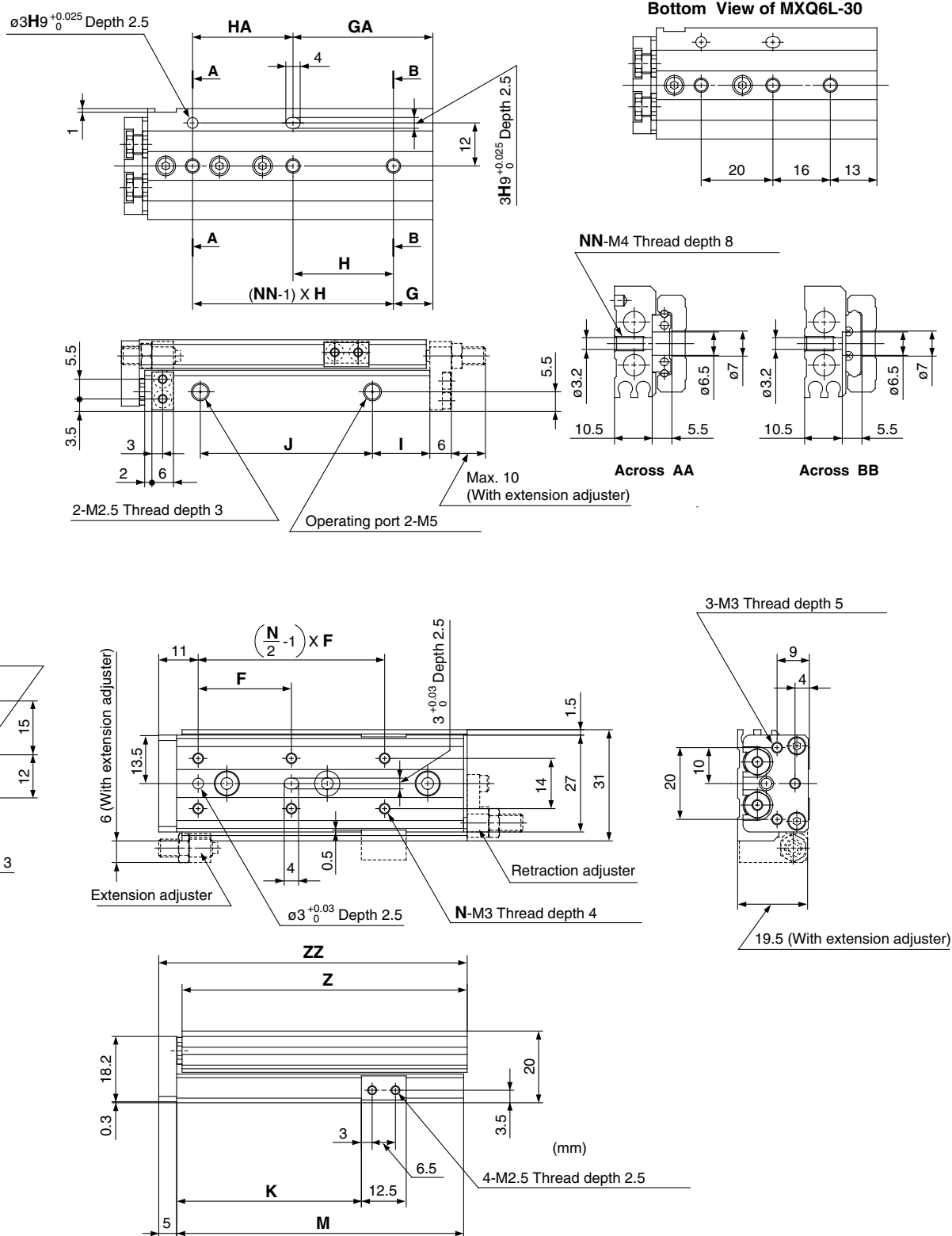
Axial piping (ø6) MXQ6-□□P



□ Dimensions not indicated are the same as basic style.

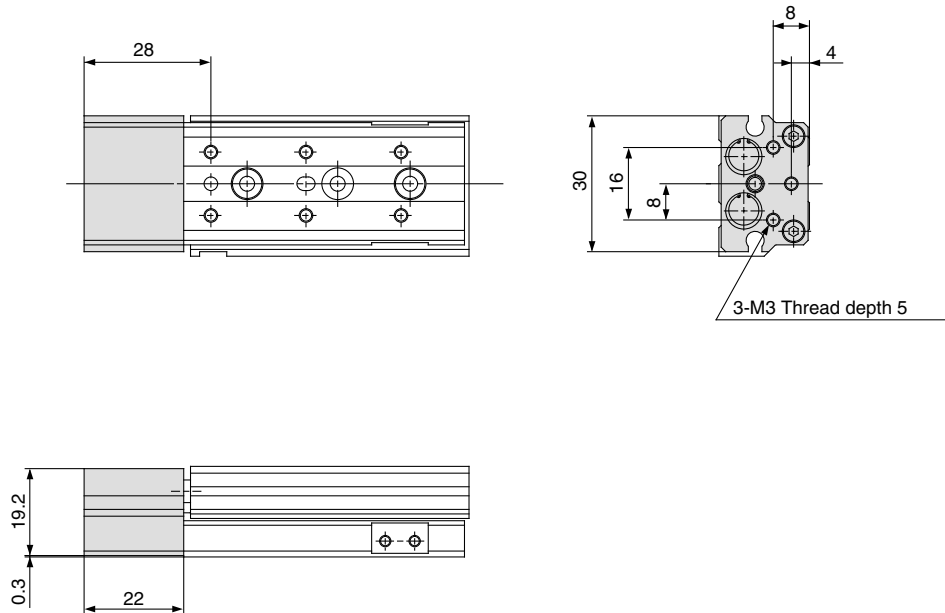
Refer to adjuster options for dimensions of the stroke adjuster.
 Rubber stopper: p.37
 Metal stopper: p.39

Basic style



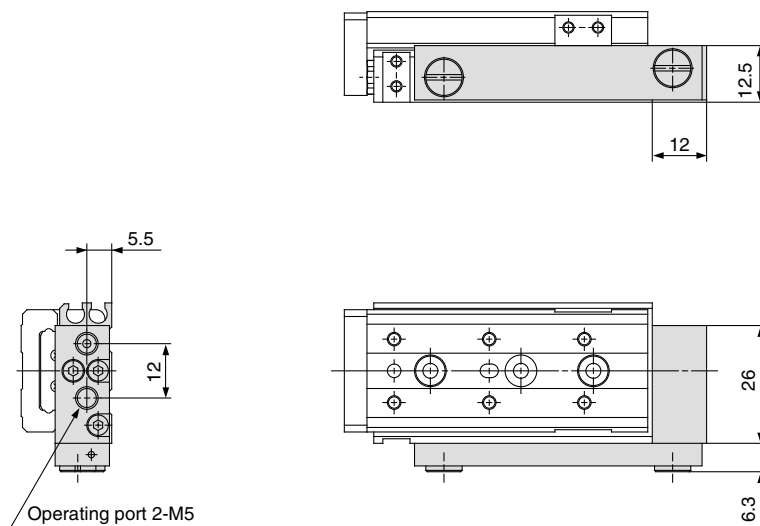
Model	F	N	G	H	NN	GA	HA	I	J	K	M	Z	ZZ
MXQ6L-10	22	4	6	23	2	13	16	9	17	21.5	42	41.5	48
MXQ6L-20	25	4	13	26	2	13	26	9	27	31.5	52	51.5	58
MXQ6L-30	21	6	—	—	3	29	20	9	37	41.5	62	61.5	68
MXQ6L-40	26	6	11	28	3	39	28	16	48	51.5	80	79.5	86
MXQ6L-50	27	6	21	28	3	49	28	9	65	61.5	90	89.5	96

With buffer (ø6) MXQ6L-□□F



□ Dimensions not indicated are the same as basic style.

Axial piping (ø6) MXQ6L-□□P



□ Dimensions not indicated are the same as basic style.

Dimensions MXQ 8

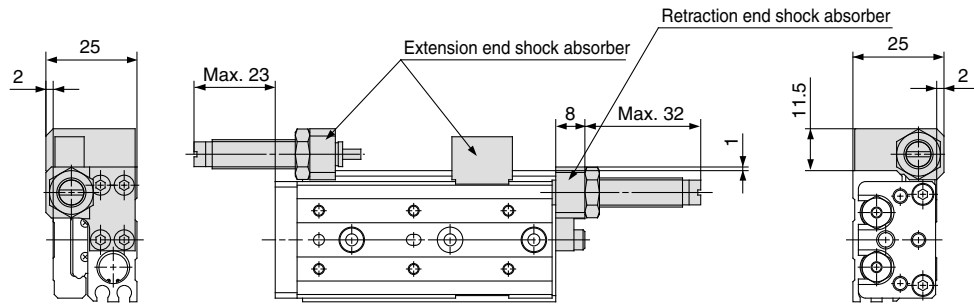
Refer to adjuster option for the dimensions of the stroke adjuster.
 Rubber stopper: p.37
 Metal stopper: p.39



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

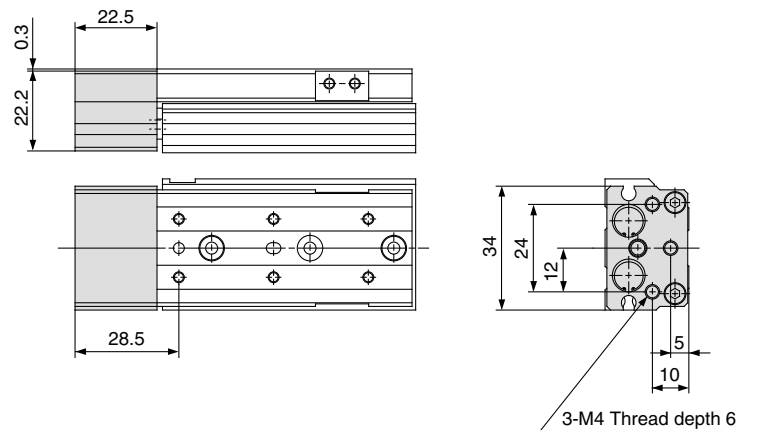
Adjustable Range of Stroke (Unit: mm)

Extension End	Retraction End
20	20



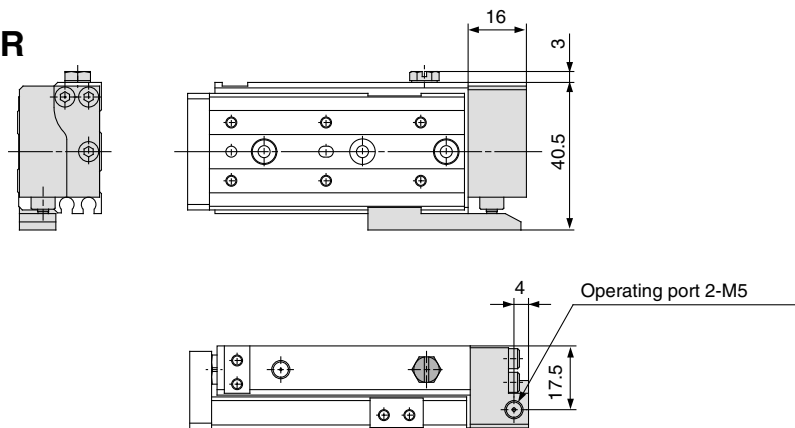
□ Dimensions not indicated are the same as basic style.

With buffer (ø8) MXQ8-□□F



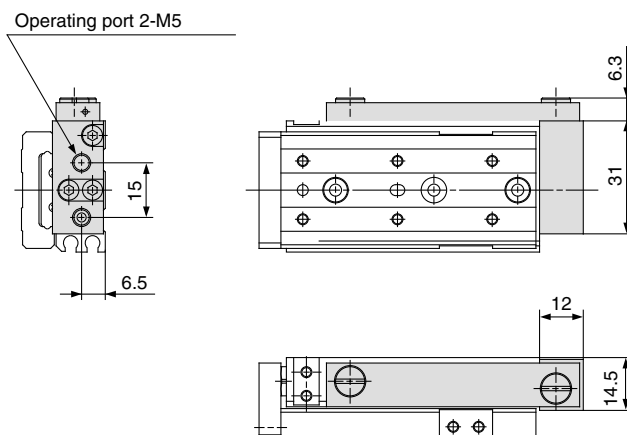
□ Dimensions not indicated are the same as basic style.

With end lock (ø8) MXQ8-□□R



□ Dimensions not indicated are the same as basic style.

Axial piping (ø8) MXQ8-□□P



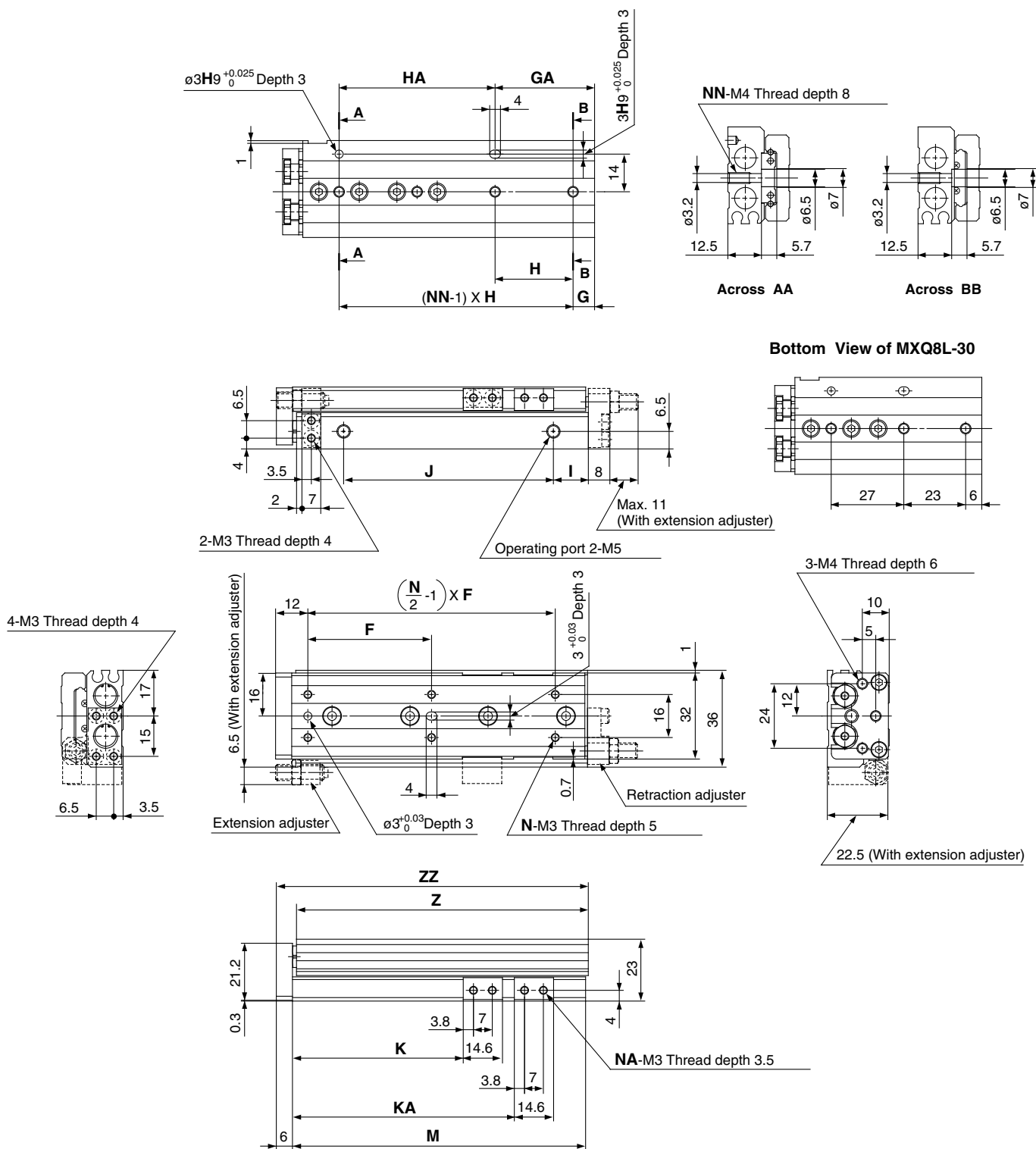
Dimensions not indicated are the same as basic style.

Series MXQ

Dimensions MXQ 8L/Symmetric Style

Refer to adjuster option for the dimensions of the stroke adjuster.
Rubber stopper: P.37
Metal stopper: P.39

Basic style

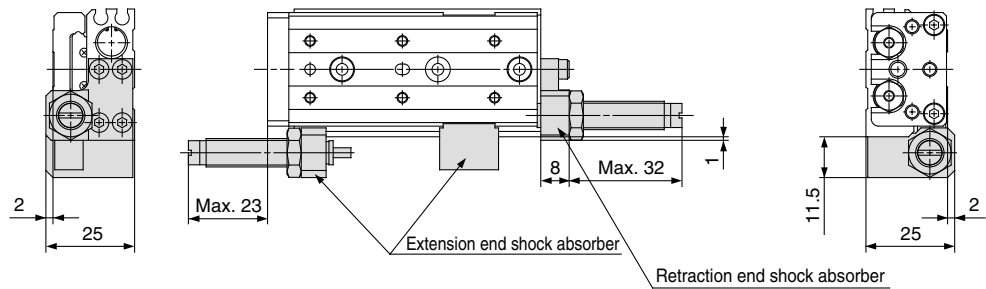


Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ8L-10	25	4	7	25	2	13	19	11	17	23.5	—	4	46	45.5	53
MXQ8L-20	25	4	14	28	2	14	28	10	28	33.5	—	4	56	55.5	63
MXQ8L-30	26	6	—	—	3	29	27	12	40	43.5	—	4	70	69.5	77
MXQ8L-40	32	6	8	31	3	39	31	14	52	53.5	—	4	84	83.5	91
MXQ8L-50	46	6	8	29	4	37	58	13	78	63.5	82.5	8	109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

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

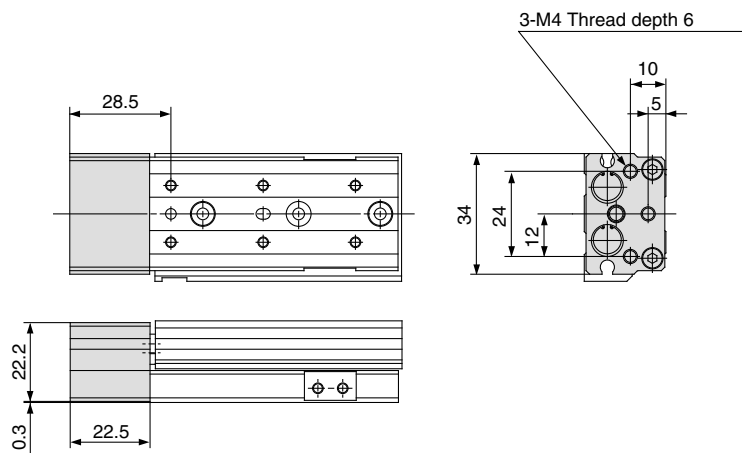
Adjustable Range of Stroke (Unit: mm)

Extension End	Retraction End
20	20



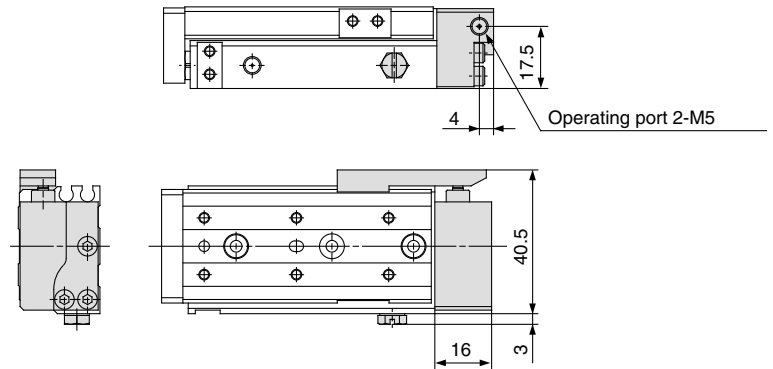
□ Dimensions not indicated are the same as basic style.

With buffer (ø8) MXQ8L-□□F



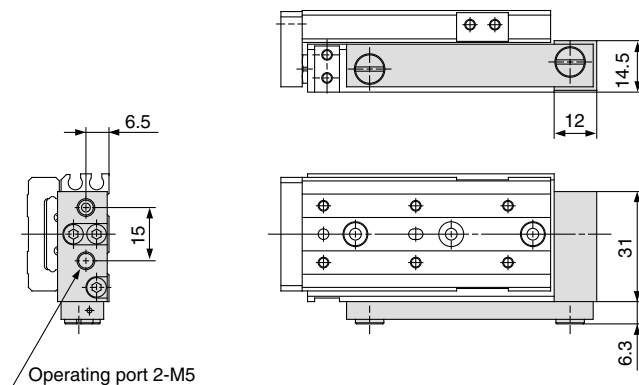
Dimensions not indicated are the same as basic style.

With end lock (ø8) MXQ8L-□□R



□ Dimensions not indicated are the same as basic style.

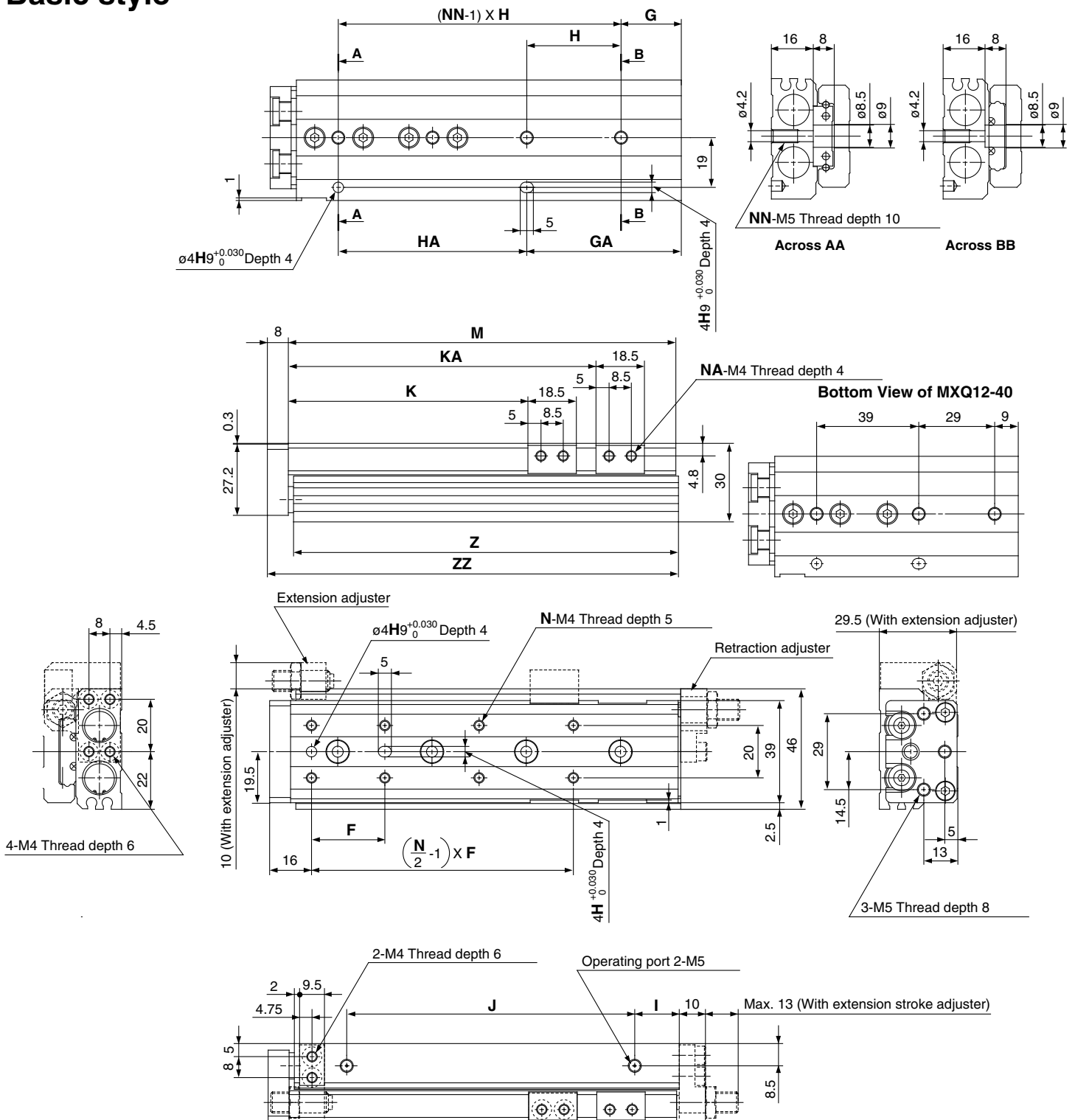
Axial piping (ø8) MXQ8L-□□P



□ Dimensions not indicated are the same as basic style.

Basic style

Refer to adjuster option for the dimensions of the stroke adjuster.
Rubber stopper: P.37
Metal stopper: P.39



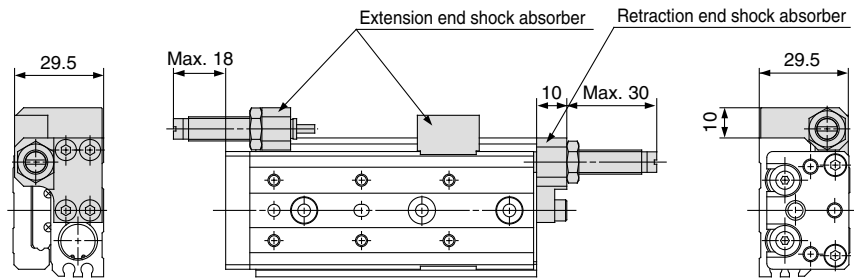
(mm)

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	—	—	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

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

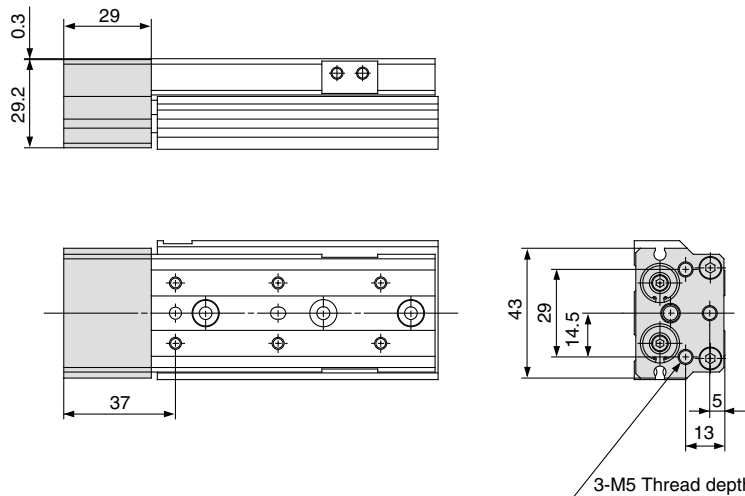
Adjustable Range of Stroke
(Unit: mm)

Extension End	Retraction End
18	18



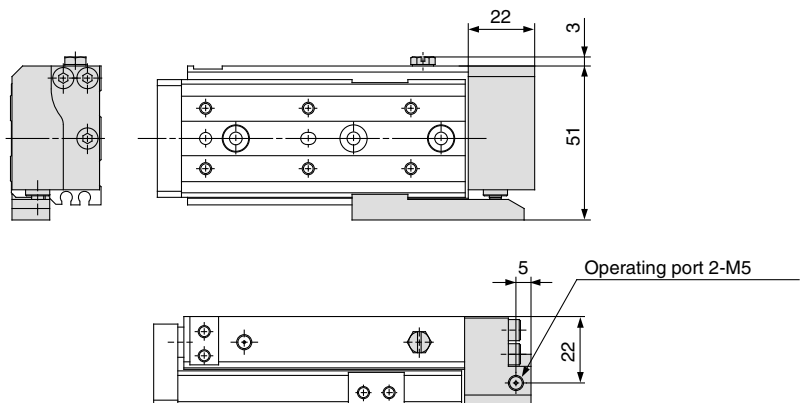
□ Dimensions not indicated are the same as basic style.

With buffer(ø12) MXQ12-□□F



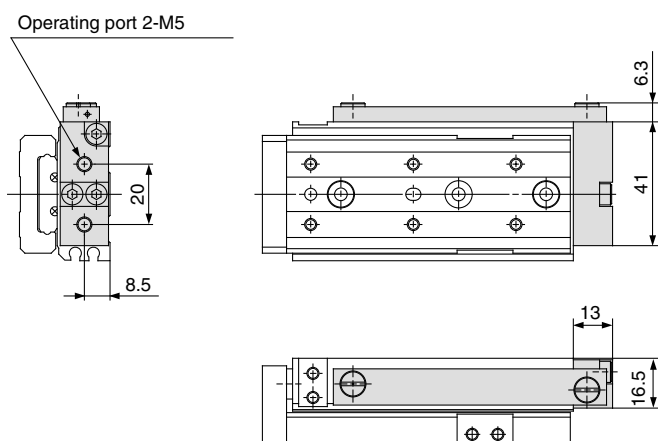
□ Dimensions not indicated are the same as basic style.

With end lock(ø12) MXQ12-□□R



□ Dimensions not indicated are the same as basic style.

Axial piping(ø12) MXQ12-□□P



□ Dimensions not indicated are the same as basic style.

Dimensions MXQ **12L**/Symmetric Style

Refer to adjuster option for the dimension of stroke adjuster.
 Rubber stopper: P.37
 Metal stopper:P.39

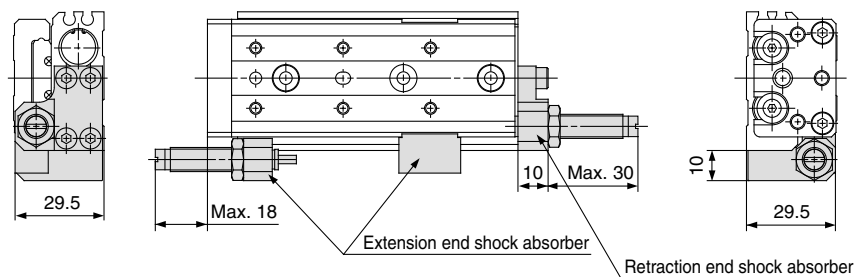


															(mm)
Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ12L- 10	28	4	18	32	2	18	32	12	34	26.5	—	4	67	66	76
MXQ12L- 20	28	4	18	32	2	18	32	12	34	36.5	—	4	67	66	76
MXQ12L- 30	38	4	20	40	2	20	40	14	42	46.5	—	4	77	76	86
MXQ12L- 40	34	6	—	—	3	38	39	15	58	56.5	—	4	94	93	103
MXQ12L- 50	34	6	9	39	3	48	39	13	70	66.5	—	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

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

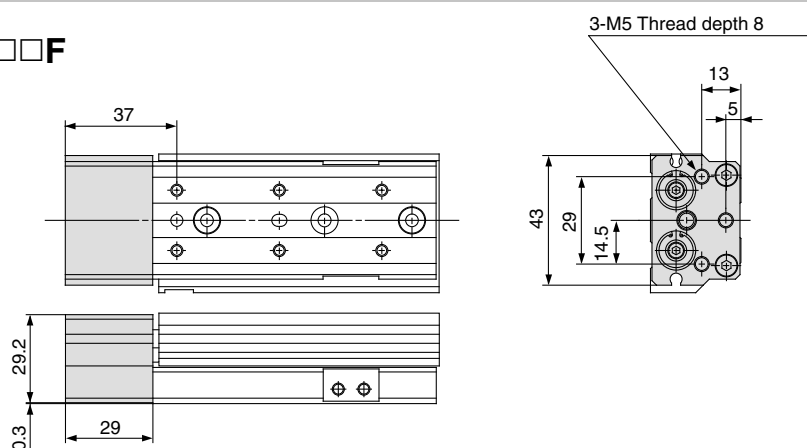
Adjustable Range of Stroke
(Unit: mm)

Extension End	Retraction End
18	18



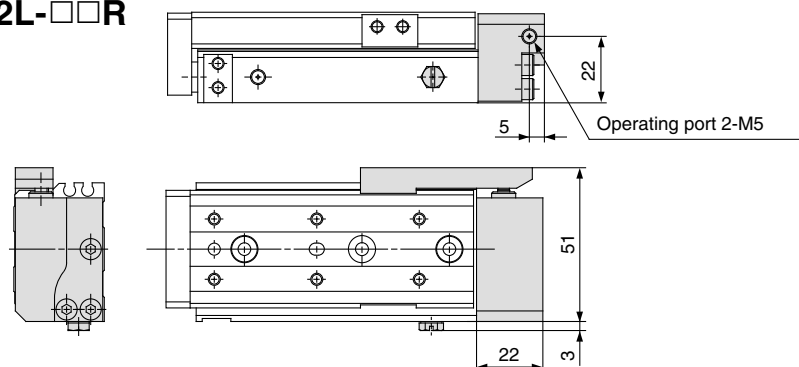
□ Dimensions not indicated are the same as basic style.

With buffer(ø12) MXQ12L-□□F



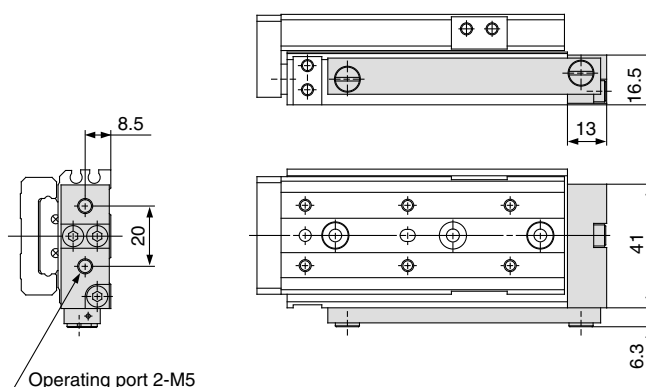
□ Dimensions not indicated are the same as basic style.

With end lock(ø12) MXQ12L-□□R



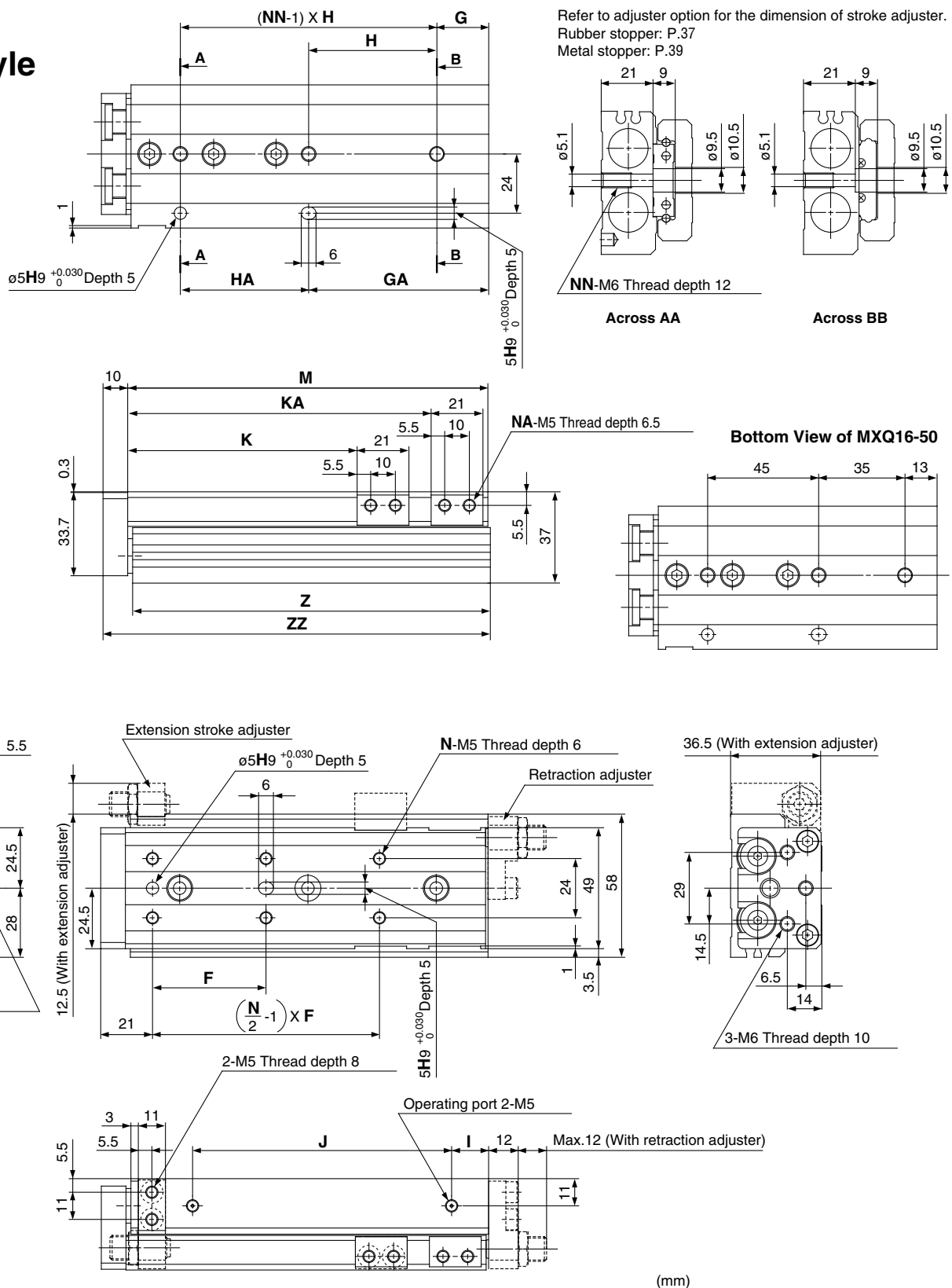
□ Dimensions not indicated are the same as basic style.

Axial piping(ø12) MXQ12L-□□P



□ Dimensions not indicated are the same as basic style.

Basic style



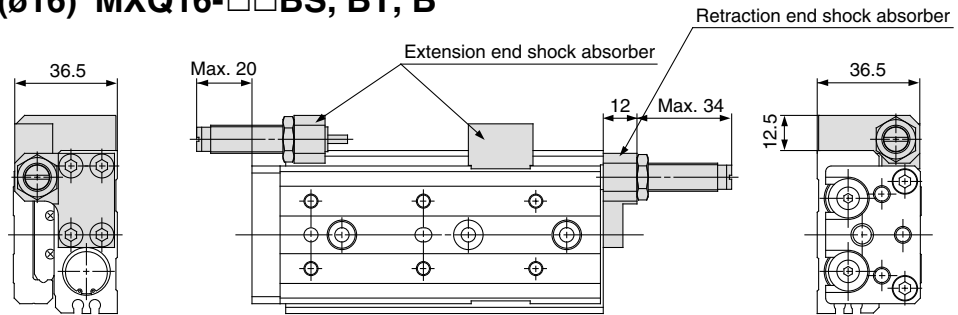
(mm)

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	—	—	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

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

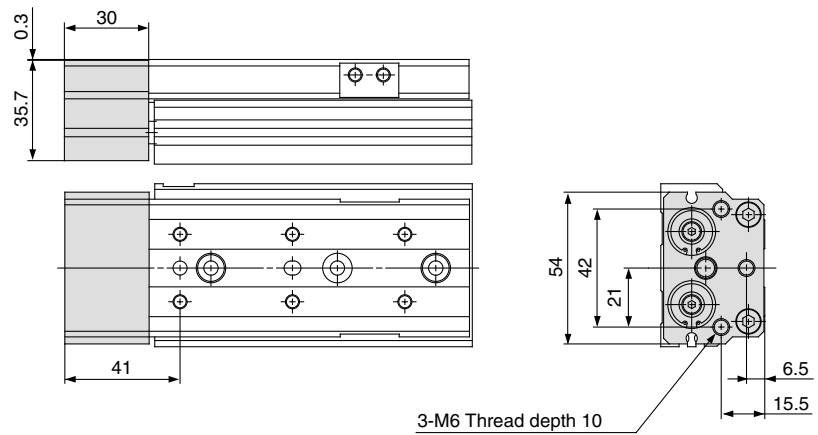
Adjustable Range of Stroke (Unit: mm)

Extension End	Retraction End
22	22



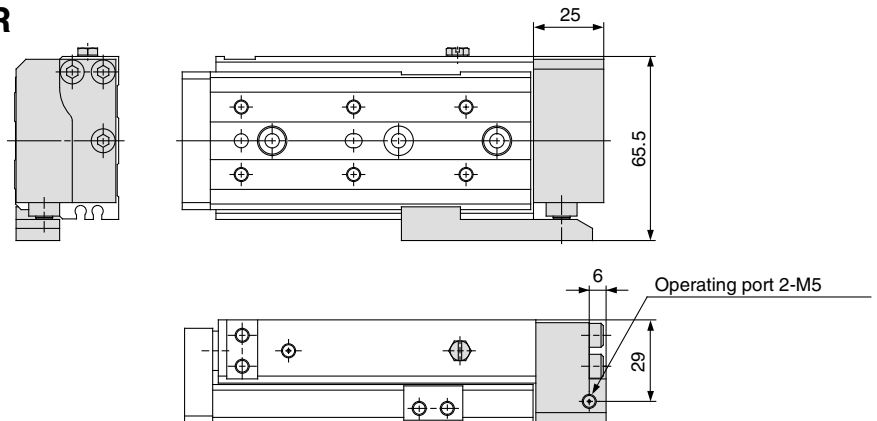
□ Dimensions not indicated are the same as basic style.

With buffer(ø16) MXQ16-□□F



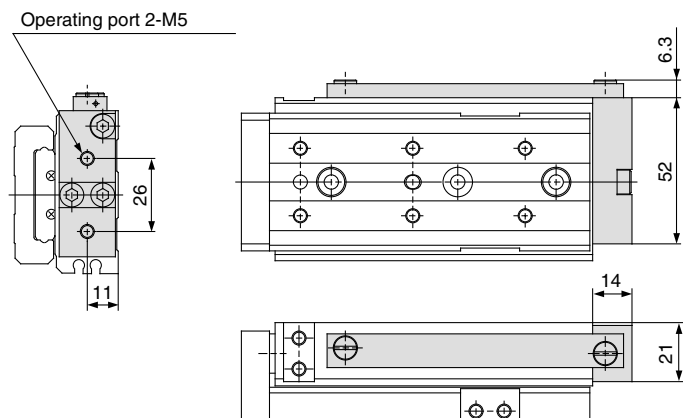
□ Dimensions not indicated are the same as basic style.

With end lock(ø16) MXQ16-□□R



□ Dimensions not indicated are the same as basic style.

Axial piping(ø16) MXQ16-□□P



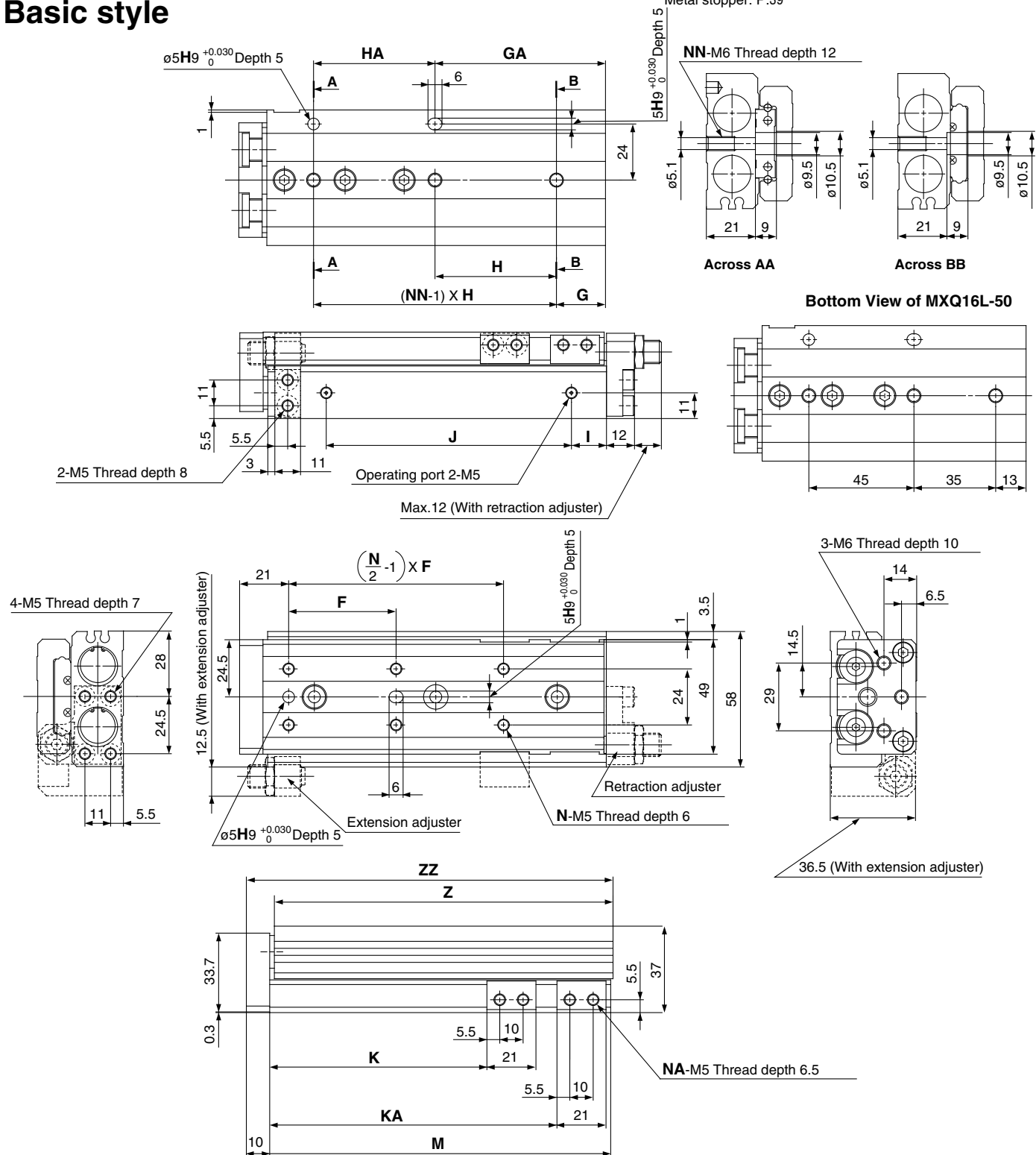
□ Dimensions not indicated are the same as basic style.

Series MXQ

Dimensions MXQ 16L/Symmetric Style

Basic style

Refer to adjuster option for the dimension of stroke adjuster.
Rubber stopper: P.37
Metal stopper: P.39

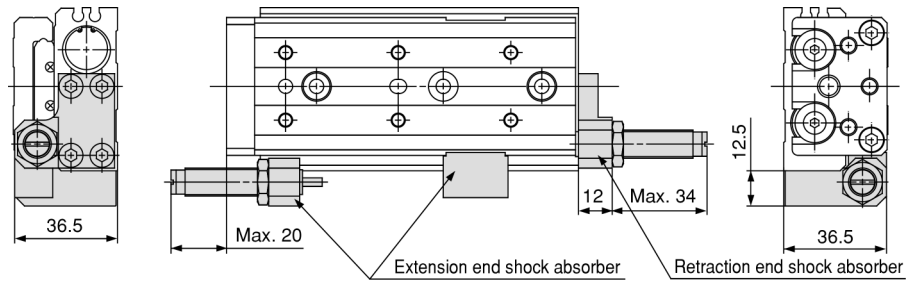


Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ16L- 10	38	4	18	39	2	18	39	12	40	28	—	4	78	77	89
MXQ16L- 20	38	4	18	39	2	18	39	12	40	38	—	4	78	77	89
MXQ16L- 30	48	4	19	48	2	19	48	12	50	48	—	4	88	87	99
MXQ16L- 40	58	4	19	58	2	19	58	12	60	58	—	4	98	97	109
MXQ16L- 50	40	6	—	—	3	48	45	20	68	68	91	8	114	113	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

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

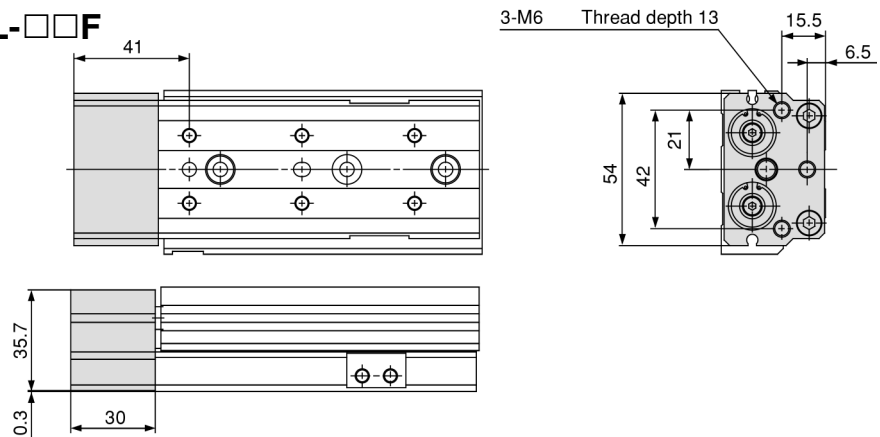
Adjustable Range of Stroke (Unit: mm)

Extension End	Retraction End
22	22



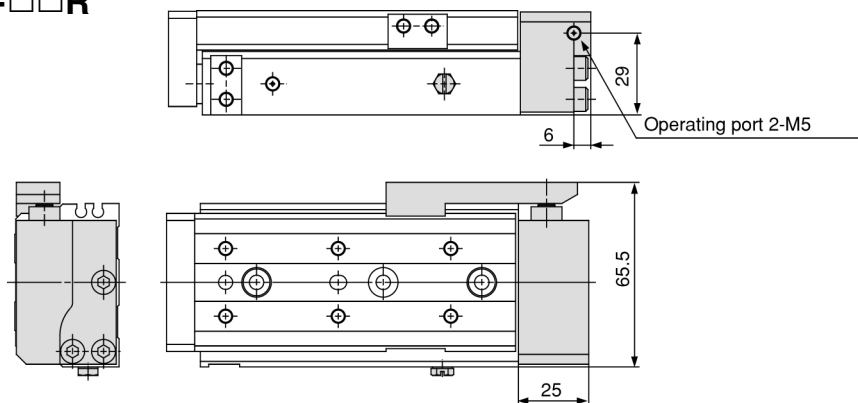
□ Dimensions not indicated are the same as basic style.

With buffer(ø16) MXQ16L-□□F



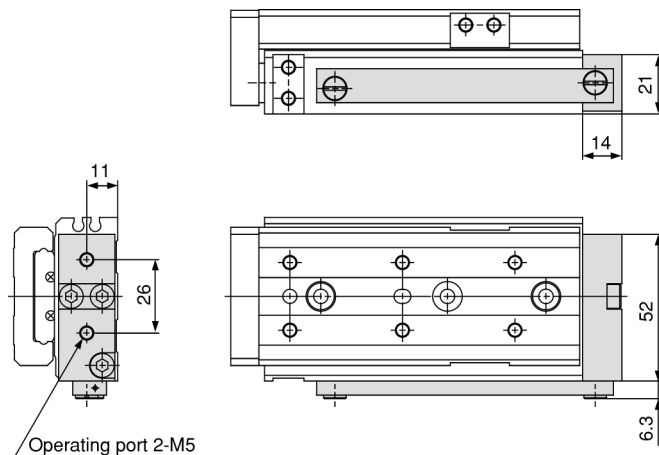
□ Dimensions not indicated are the same as basic style.

With end lock(ø16) MXQ16L-□□R



□ Dimensions not indicated are the same as basic style.

Axial piping(ø16) MXQ16L-□□P

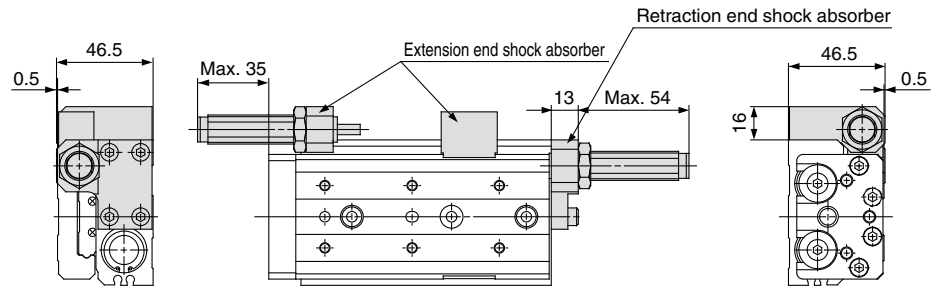


□ Dimensions not indicated are the same as basic style.

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

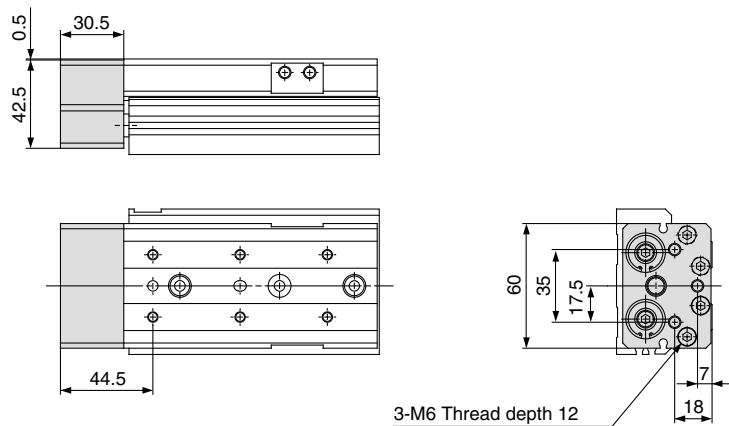
Adjustable Range of Stroke (Unit: mm)

Extension End	Retraction End
35	35



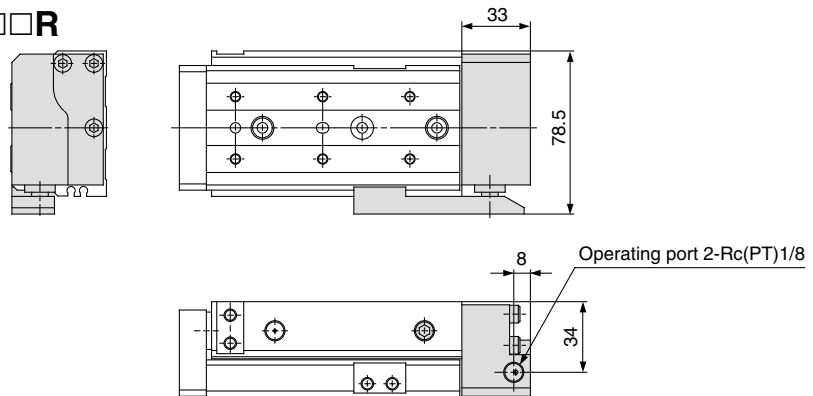
□ Dimensions not indicated are the same as basic style.

With buffer(ø20) MXQ20-□□F



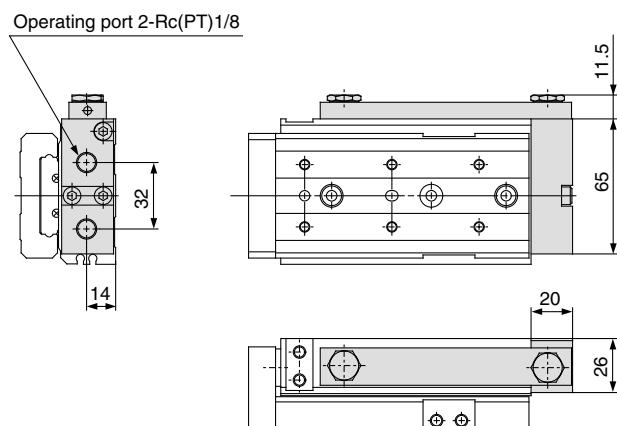
□ Dimensions not indicated are the same as basic style.

With end lock(ø20) MXQ20-□□R



□ Dimensions not indicated are the same as basic style.

Axial piping(ø20) MXQ20-□□P

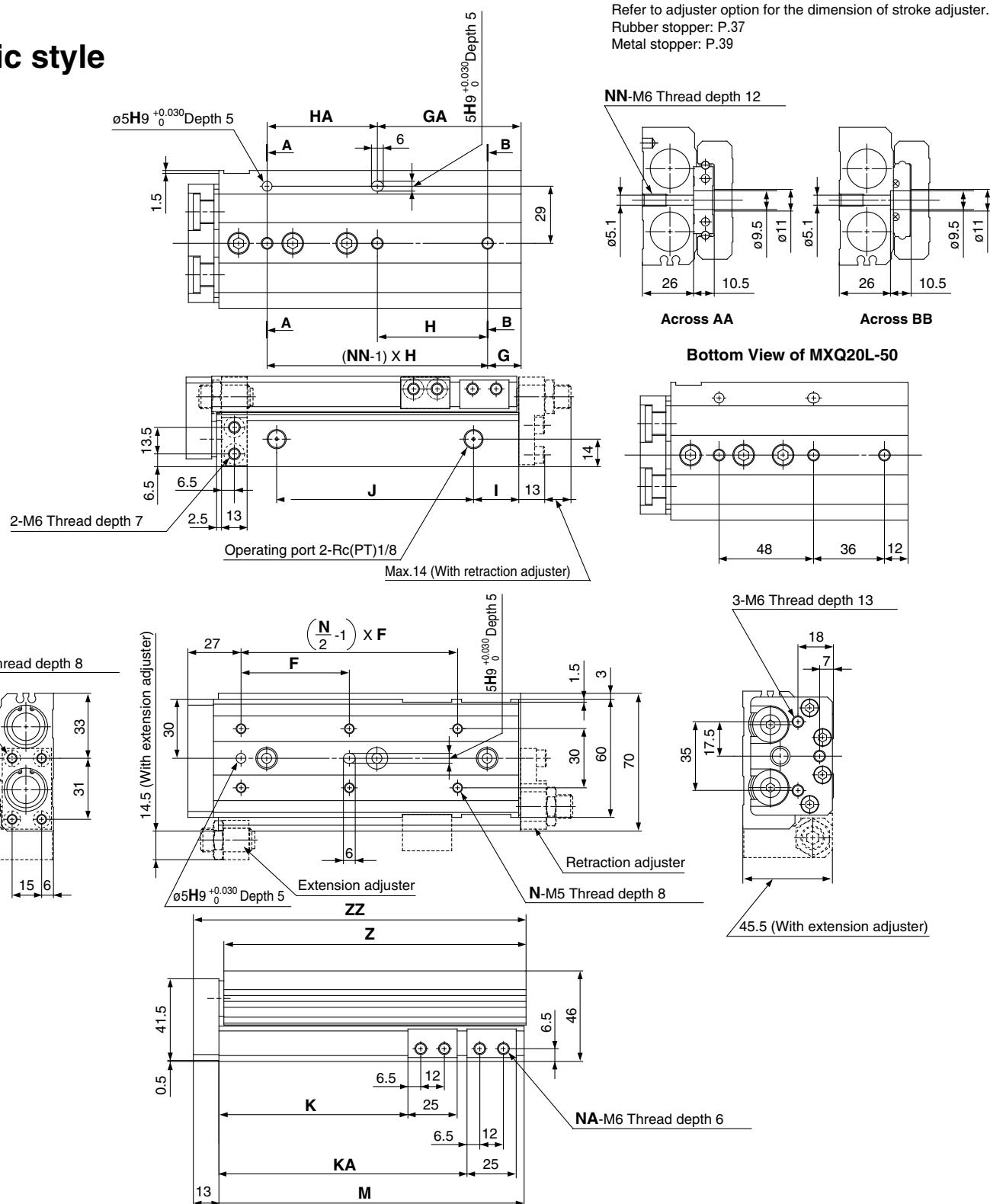


□ Dimensions not indicated are the same as basic style.

Series MXQ

Dimensions MXQ 20L/Symmetric Style

Basic style



Refer to adjuster option for the dimension of stroke adjuster.
 Rubber stopper: P.37
 Metal stopper: P.39

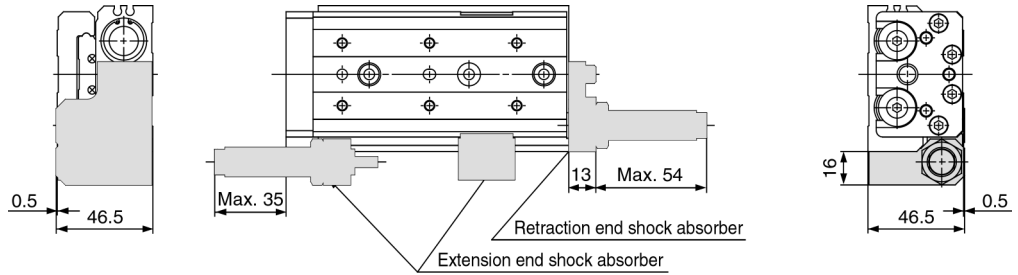
Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ20L- 10	45	4	22	46	2	18	50	16	46	31	—	4	94	92.5	108
MXQ20L- 20	40	4	22	46	2	18	50	16	46	41	—	4	94	92.5	108
MXQ20L- 30	48	4	22	46	2	18	50	16	46	51	—	4	94	92.5	108
MXQ20L- 40	58	4	22	56	2	22	56	16	56	61	—	4	104	102.5	118
MXQ20L- 50	42	6	—	—	3	48	48	18	72	71	—	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

(mm)

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

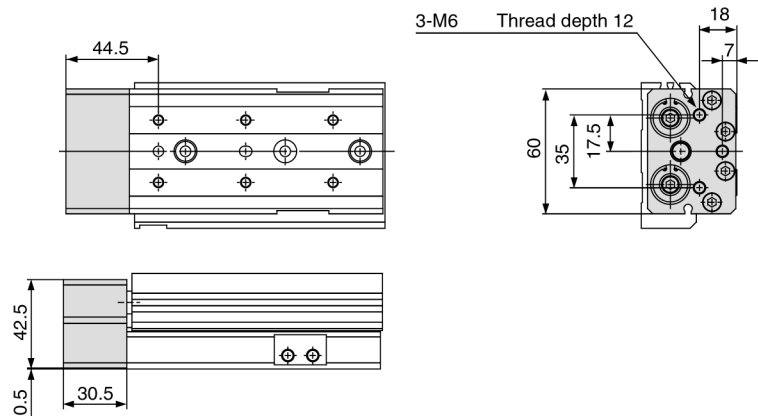
Adjustable Range of Stroke
(Unit: mm)

Extension End	Retraction End
35	35



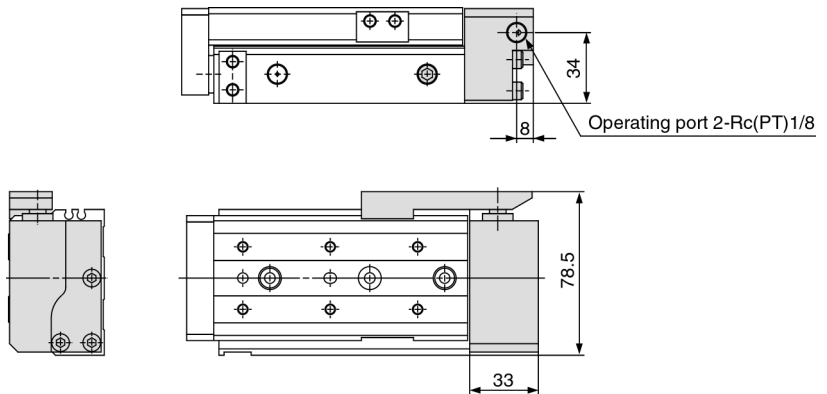
□ Dimensions not indicated are the same as basic style.

With buffer(ø20) MXQ20L-□□F



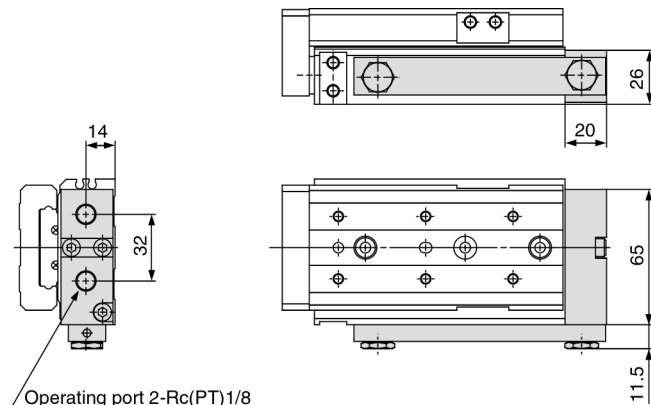
□ Dimensions not indicated are the same as basic style.

With end lock(ø20) MXQ20L-□□R



□ Dimensions not indicated are the same as basic style.

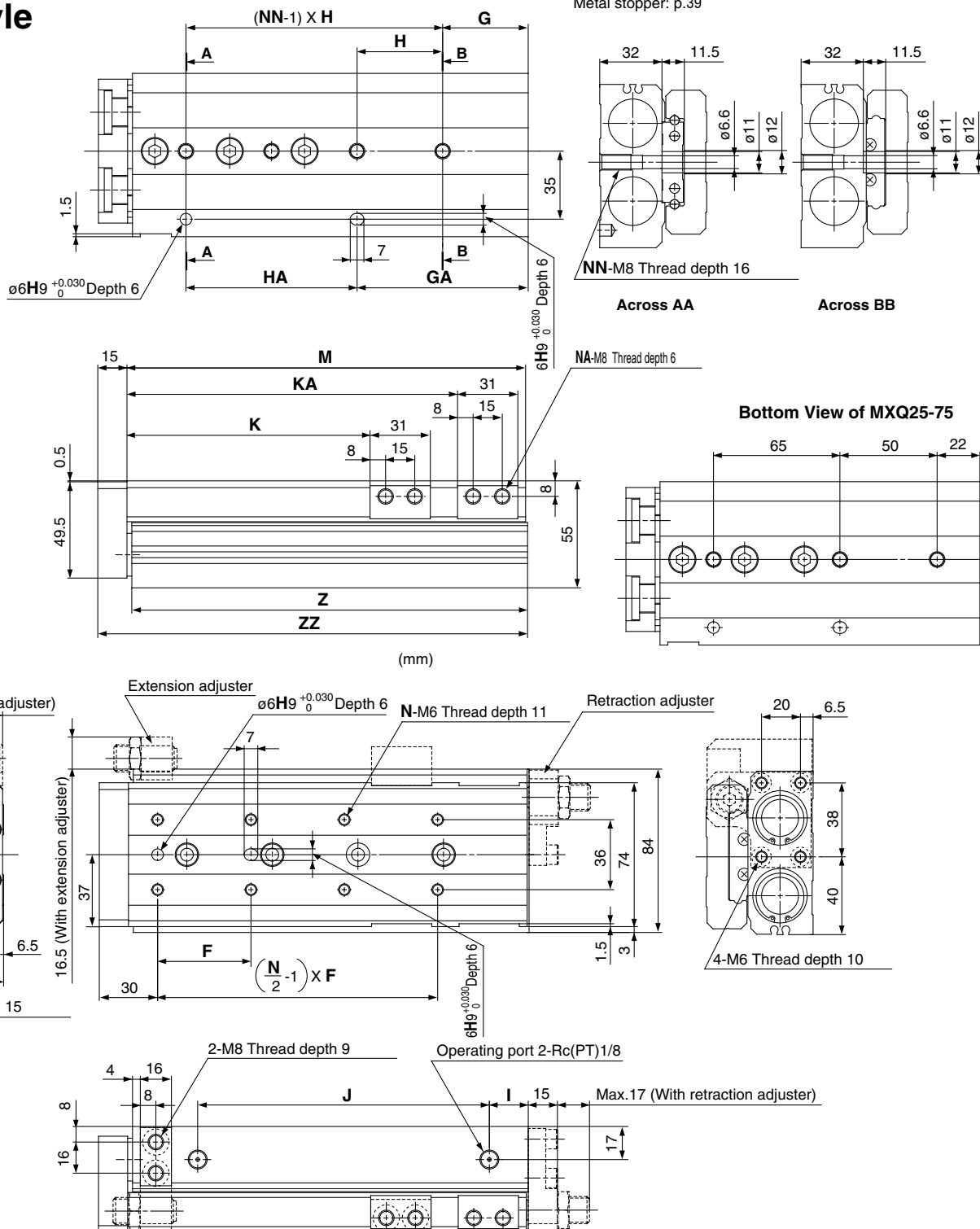
Axial piping(ø20) MXQ20L-□□P



□ Dimensions not indicated are the same as basic style.

Refer to adjuster option for the dimension of stroke adjuster.
Rubber stopper: p.37
Metal stopper: p.39

Basic style

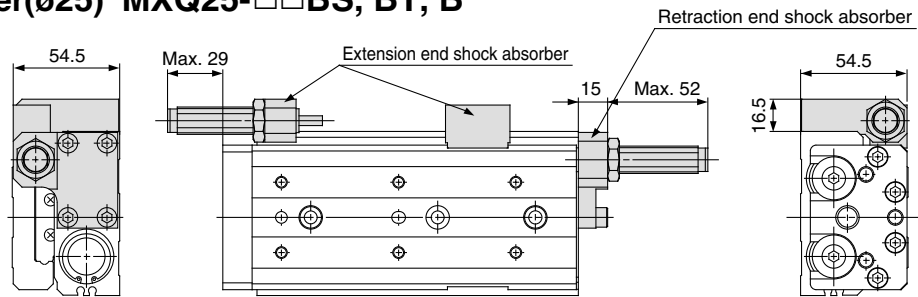


Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ25- 10	55	4	23	55	2	23	55	16	56	35	—	4	107	105.5	123
MXQ25- 20	46	4	23	55	2	23	55	16	56	45	—	4	107	105.5	123
MXQ25- 30	55	4	23	55	2	23	55	16	56	55	—	4	107	105.5	123
MXQ25- 40	65	4	23	65	2	23	65	16	66	65	—	4	117	115.5	133
MXQ25- 50	75	4	32	80	2	32	80	16	90	75	—	4	141	139.5	157
MXQ25- 75	60	6	—	—	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

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

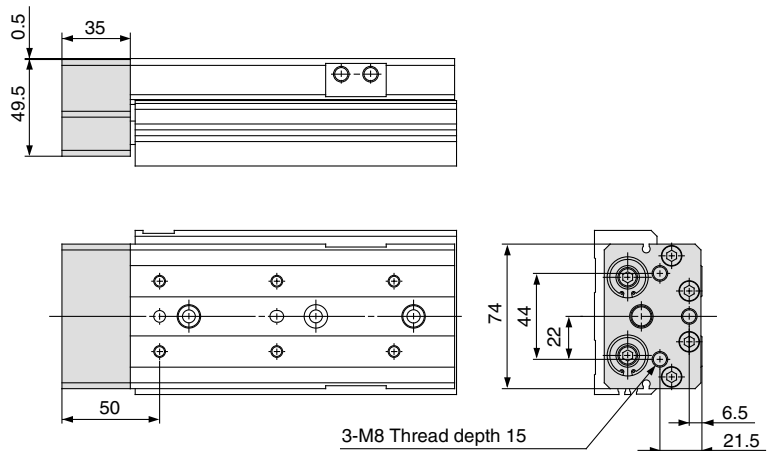
Adjustable Range of Stroke (Unit: mm)

Extension End	Retraction End
35	35



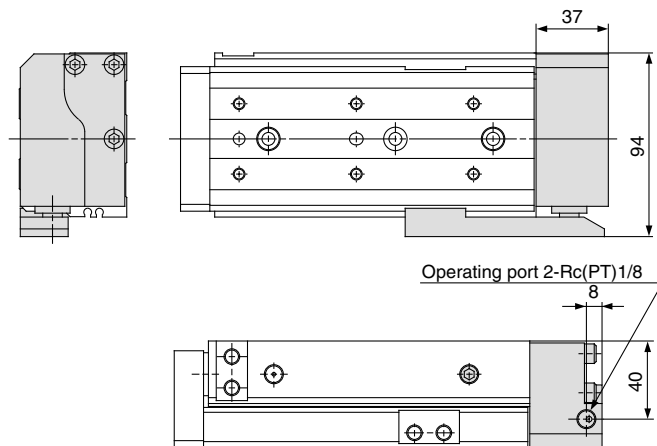
□ Dimensions not indicated are the same as basic style.

With buffer(ø25) MXQ25-□□F



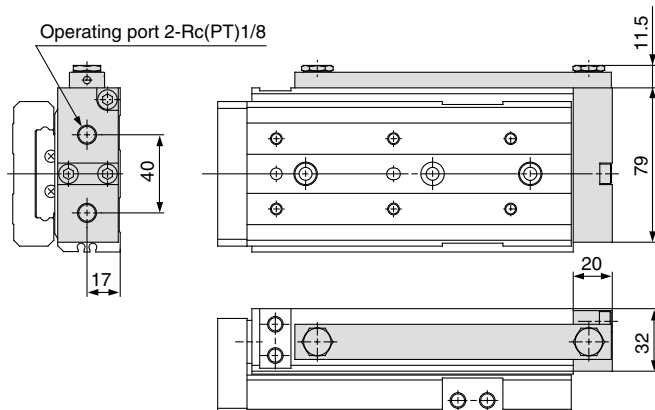
□ Dimensions not indicated are the same as basic style.

With end lock(ø25) MXQ25-□□R



□ Dimensions not indicated are the same as basic style.

Axial piping(ø25) MXQ25-□□P



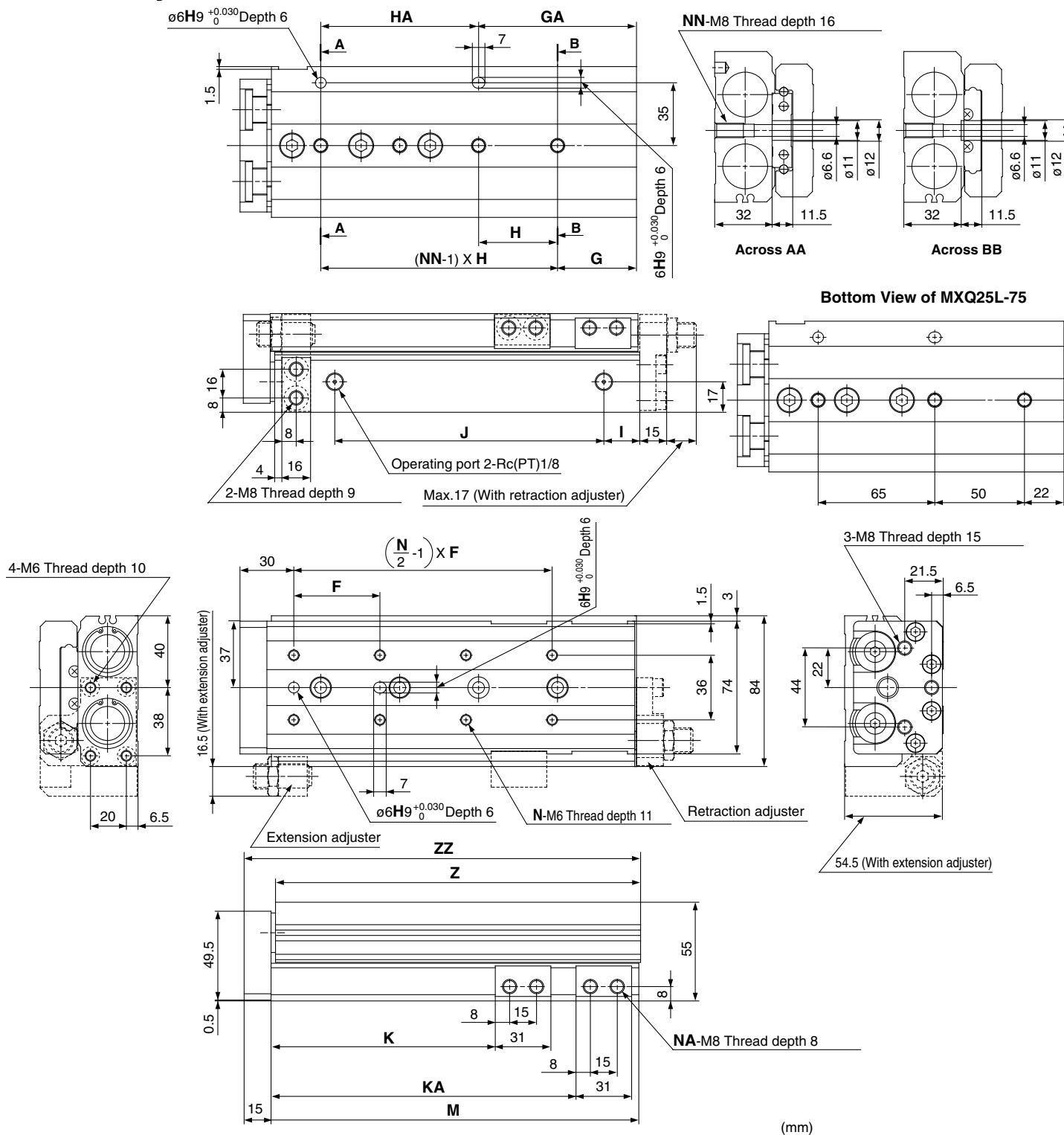
□ Dimensions not indicated are the same as basic style.

Series MXQ

Dimensions MXQ 25L/Symmetric Style

Basic style

Refer to adjuster option for the dimension of stroke adjuster.
Rubber stopper: p.37
Metal stopper: p.39

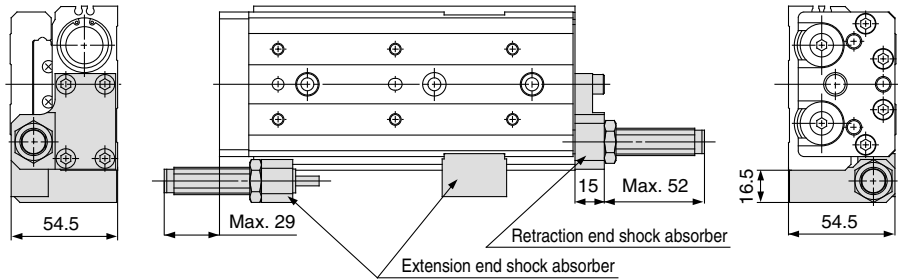


Model	F	N	G	H	NN	GA	HA	I	J	K	KA	NA	M	Z	ZZ
MXQ25L- 10	55	4	23	55	2	23	55	16	56	35	—	4	107	105.5	123
MXQ25L- 20	46	4	23	55	2	23	55	16	56	45	—	4	107	105.5	123
MXQ25L- 30	55	4	23	55	2	23	55	16	56	55	—	4	107	105.5	123
MXQ25L- 40	65	4	23	65	2	23	65	16	66	65	—	4	117	115.5	133
MXQ25L- 50	75	4	32	80	2	32	80	16	90	75	—	4	141	139.5	157
MXQ25L- 75	60	6	—	—	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

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

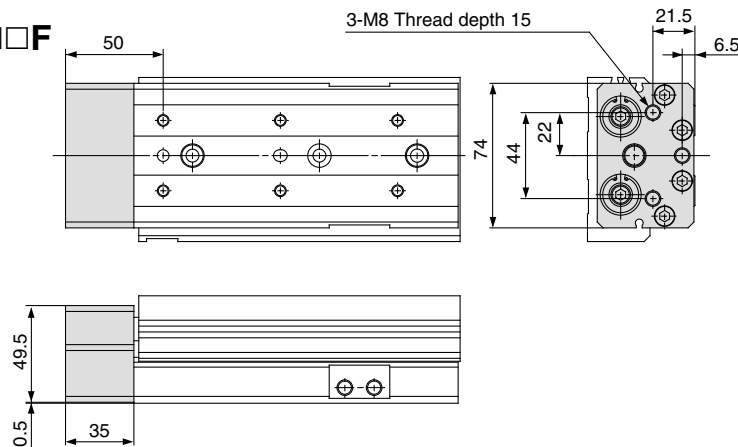
Adjustable Range of Stroke
(Unit: mm)

Extension End	Retraction End
35	35



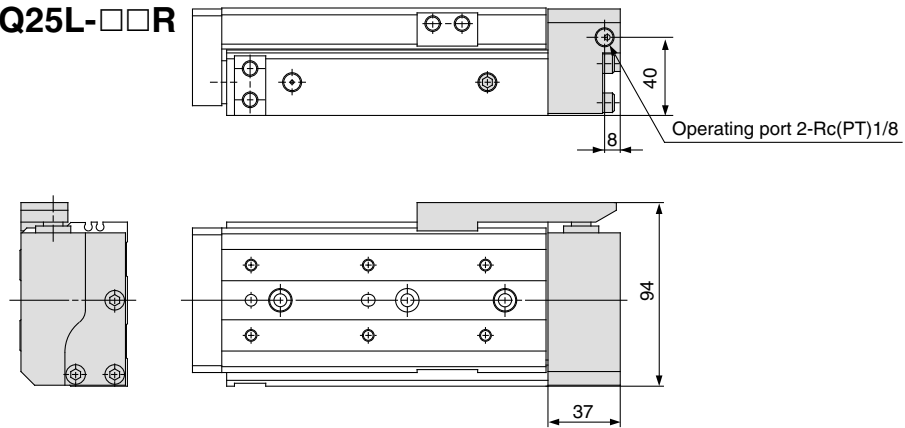
□ Dimensions not indicated are the same as basic style.

With buffer(ø25) MXQ25L-□□F



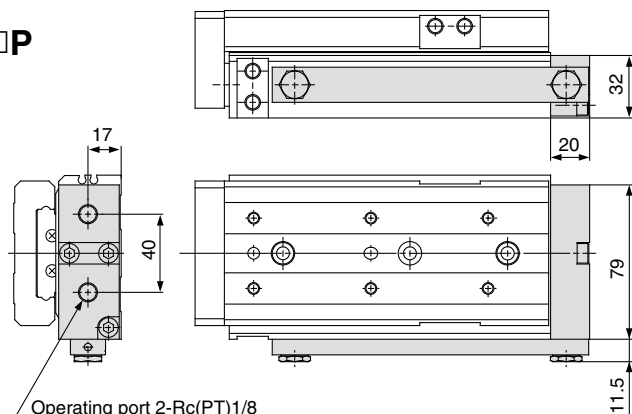
□ Dimensions not indicated are the same as basic style.

With end lock(ø25) MXQ25L-□□R



□ Dimensions not indicated are the same as basic style.

Axial piping(ø25) MXQ25L-□□P



□ Dimensions not indicated are the same as basic style.

Series MXQ

Adjuster Dimensions

Rubber stopper(AS, AT)

Extension End

Body mounting

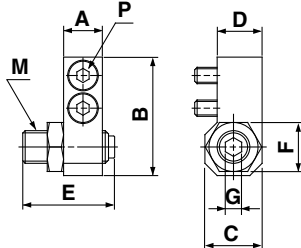
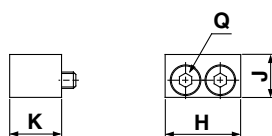


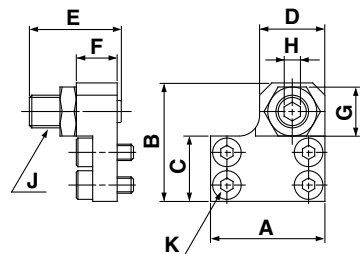
Table mounting



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

Note 1) Size of hexagon head cap screw

Retraction End



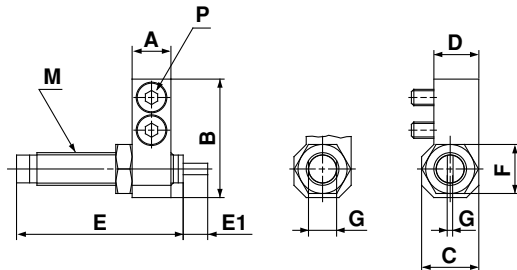
Size	Model	Adjusting stroke range (mm)	A	B	C	D	E	F	G	H	J	K ⁽¹⁾
MXQ 6	MXQ-AT 6	5	17.5	19	10.5	8	16.5	6	7	2.5	M5	M2.5 X 6
	MXQ-AT 6-X11	15					26.5					
MXQ 8	MXQ-AT 8	5	21	22	12.5	10	19.5	8	8	3	M6	M3 X 8
	MXQ-AT 8-X11	15					29.5					
	MXQ-AT 8-X12	25					39.5					
MXQ12	MXQ-AT12	5	28	29	16	16	23.5	10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

Note 1) Size of hexagon head cap screw

With Shock Adsorber(BS, BT)

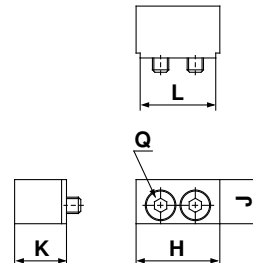
Extension End

Body mounting



MXQ-BS20 MXQ-BS 8
MXQ-BS25 MXQ-BS12
MXQ-BS16

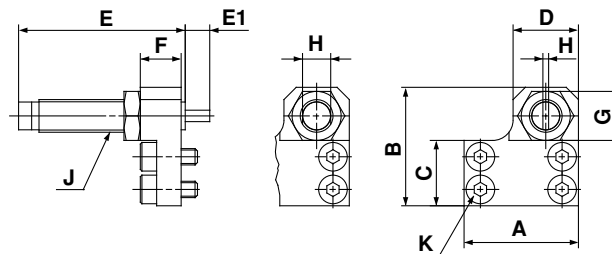
Table mounting



Size	Model	Adjusting stroke range (mm)	Body Mounting										Table Mounting				
			A	B	C	D	E	E1	F	G	M	P ⁽¹⁾	H	J	K	L	Q ⁽¹⁾
MXQ 8	MXQ-BS 8	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	MXQ-BS12	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	MXQ-BS16	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	MXQ-BS20	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	MXQ-BS25	35	16	54	22	18	67.3	12	19	12	M14 X 1.5	M8 X 18	33	19	22	31	M8 X 20

Note 1) Size of hexagon socket head cap screws

Retraction End



MXQ-BT20
MXQ-BT25

MXQ-BT 8
MXQ-BT12
MXQ-BT16

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

Note 1) Size of hexagon socket head cap screws

Series MXQ

Adjuster Dimensions

Metal Stopper(CS, CT)

Extension End

Body mounting

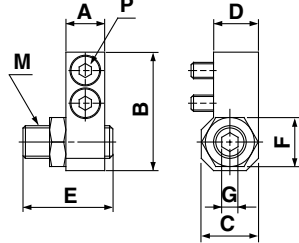
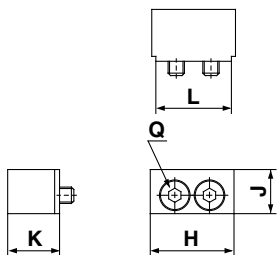


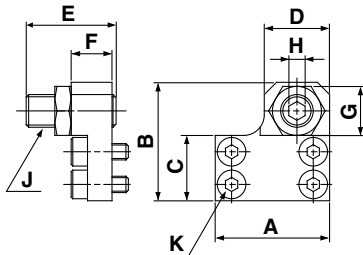
Table mounting



Size	Model	Adjusting stroke range (mm)	Body mounting										Table mounting				
			A	B	C	D	E	F	G	M	P ⁽¹⁾	H	J	K	L	Q ⁽¹⁾	
MXQ 6	MXQ-CS 6	5	6	19	8	7	15.5	7	2.5	M5	M2.5 X 6	14.5	7	8.3	12.5	M2.5 X 8	
	MXQ-CS 6-X11	15					25.5										
MXQ 8	MXQ-CS 8	5	7	22	9	7.5	18	8	3	M6	M3 X 8	16.6	8	9.8	14.6	M3 X 10	
	MXQ-CS 8-X11	15					28										
	MXQ-CS 8-X12	25					38										
MXQ12	MXQ-CS12	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-X11	15					32										
	MXQ-CS12-X12	25					42										
MXQ16	MXQ-CS16	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-X11	15					33										
	MXQ-CS16-X12	25					43										
MXQ20	MXQ-CS20	5	13	45	20	16	27	17	6	M12 X 1.25	M6 X 16	27	17	22	25	M6 X 20	
	MXQ-CS20-X11	15					37										
	MXQ-CS20-X12	25					47										
MXQ25	MXQ-CS25	5	16	54	22	18	30	19	6	M14 X 1.5	M8 X 18	33	19	22	31	M8 X 20	
	MXQ-CS25-X11	15					40										
	MXQ-CS25-X12	25					50										

Note 1) Size of hexagon socket head cap screws

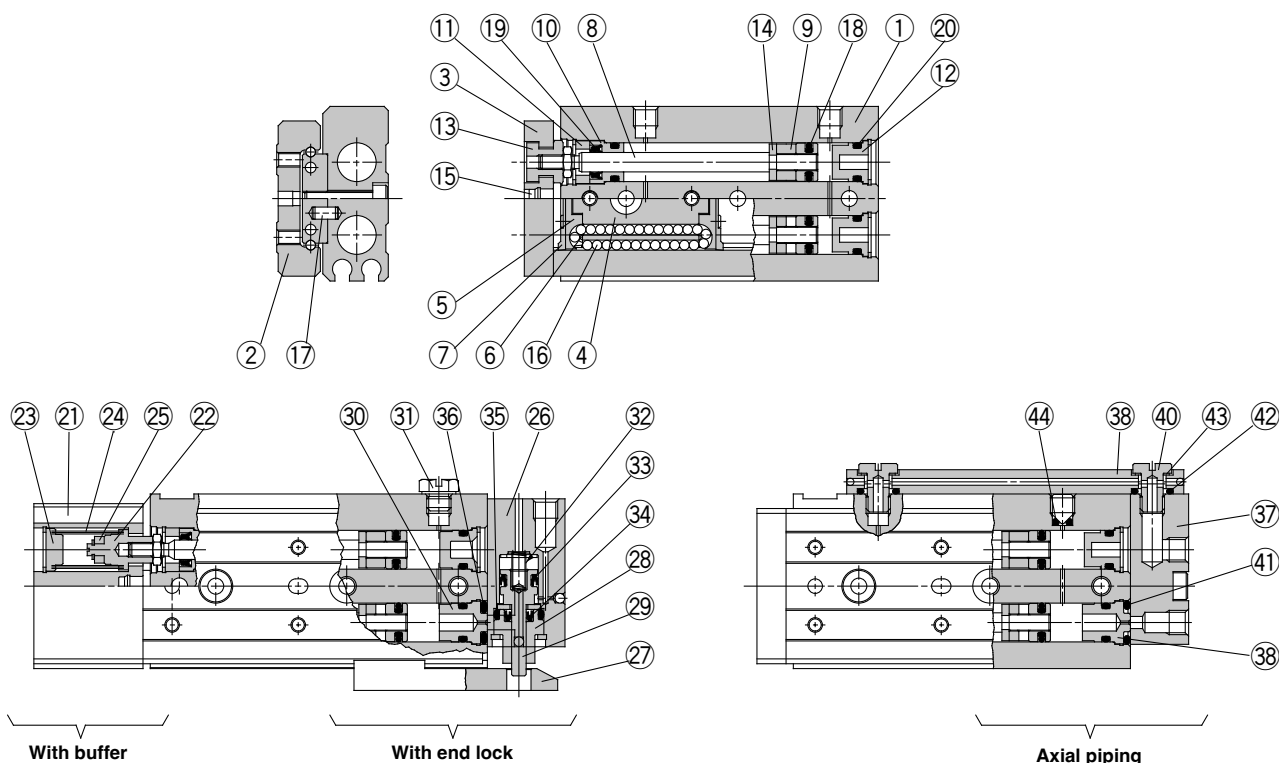
Retraction End



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

Note 1) Size of hexagon socket head cap screws

Construction



Component Parts

No.	Description	Material	Note
①	Body	Aluminum alloy	Hard anodized
②	Table	Stainless steel	Heat treatment
③	End plate	Aluminum alloy	Hard anodized
④	Guide block	Stainless steel	Heat treatment
⑤	Cover	Synthetic resin	
⑥	Return guide	Synthetic resin	
⑦	Scraper	Stainless steel, NBR	
⑧	Rod	Stainless steel	
⑨	Piston assembly		With one side magnet
⑩	Rod cover	Aluminum alloy	Anodized
⑪	Seal support	Aluminum alloy	Anodized
⑫	Head cap	Synthetic resin	
⑬	Floating bush	Stainless steel	
⑭	Rod damper	Polyurethane	
⑮	End damper	Polyurethane	
⑯	Steel ball	Chromium 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 alumite treatment
㉒	Spring collar	Stainless steel	
㉓	Head cap	Stainless steel	
㉔	Spring	Stainless steel	
㉕	Magnet	Rare earth	

Replacement Parts: Seal Kits

Bore size (mm)	Kit No.	Contents
6	MXQ 6-PS	Parts ⑱ to ㉒ from above
8	MXQ 8-PS	
12	MXQ12-PS	
16	MXQ16-PS	
20	MXQ20-PS	
25	MXQ25-PS	

Replacement Parts (Seal kits with end lock)

Bore size (mm)	Kit No.	Contents
8	MXQ 8R-PS	Parts ⑱ to ㉒ and ㉓ to ㉕ from above
12	MXQ12R-PS	
16	MXQ16R-PS	
20	MXQ20R-PS	
25	MXQ25R-PS	

Replacement Parts (Seal kits for axial piping)

Bore size (mm)	Kit No.	Contents
6	MXQ 6P-PS	Parts ⑱ to ㉒ and ㉓ to ㉕ from above
8	MXQ 8P-PS	
12	MXQ12P-PS	
16	MXQ16P-PS	
20	MXQ20P-PS	
25	MXQ25P-PS	

Component Parts/With end lock

No.	Description	Material	Note
㉖	Body for lock	Aluminum alloy	Hard anodized
㉗	Table support	Carbon steel	Anticorrosive treatment
㉘	Rod cover	Aluminum alloy	
㉙	Piston rod	Stainless steel	
㉚	Bush	Aluminum alloy	Chromate treatment
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

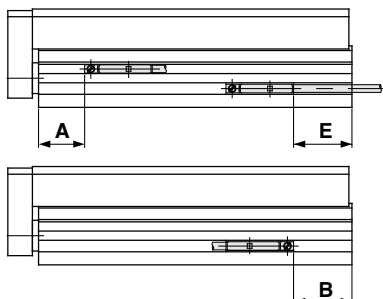
No.	Description	Material	Note
㉞	Plate for axial piping	Aluminum alloy	Hard anodized
㊱	Pipe	Aluminum alloy	Hard anodized
㊲	Bush	Aluminum alloy	Chromate treatment
㊳	Stud	Brass	Electroless nickel plated
㊴	O ring	NBR	
㊵	O ring	NBR	
㊶	Gasket	NBR, Stainless steel	
㊷	O ring	NBR	



* Seal kits consist of items in the list below, and can be ordered using the kit number for each respective cylinder bore size.

Auto Switch Mounting

Auto Switch Proper Mounting Position (Detection at Stroke End)



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

Model	A	B										E									
		Stroke										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	23.5	31.5	39.5	71.5	74.5	77.5	41.5 (39)	31.5 (29)	21.5 (19)	21.5 (19)	29.5 (27)	37.5 (35)	69.5 (67)	72.5 (70)	75.5 (73)	—	—
MXQ25	22	53.5	43.5	33.5	33.5	47.5	47.5	61.5	89.5	89.5	51.5 (49)	41.5 (39)	31.5 (29)	31.5 (29)	45.5 (43)	45.5 (43)	59.5 (57)	87.5 (85)	87.5 (85)	—	—

* (): Denotes D-A93.

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

Model	A	B										E									
		Stroke										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	27.5	35.5	43.5	75.5	78.5	81.5	37.5	27.5	17.5	17.5	25.5	33.5	65.5	68.5	71.5	—	—
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	82.5	—	—

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

Model	A	B										E									
		Stroke										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	—	—	—	—	—	—	—
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	27.5	35.5	43.5	75.5	78.5	81.5	39.5	29.5	19.5	19.5	27.5	35.5	67.5	70.5	73.5	—	—
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	84.5	—	—

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

Auto Switch Mounting

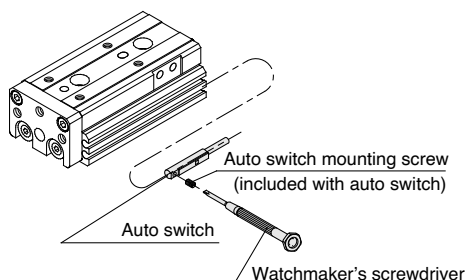
Caution Auto Switch Mounting Tool

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



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	2.5	2.5	3	4	4.5	5
D-M9□W, M9□WV						
D-M9□A, M9□AV						

* Since the operating range is provided as a guideline including hysteresis, it cannot be guaranteed (assuming approximately ±30 % dispersion). It may vary substantially depending on an ambient environment.

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

* Normally closed (NC = b contact) solid state auto switches (D-M9□E(V) types) and solid state auto switch D-F8 are also available.
Refer to our website www.smc.eu for details.

Series MXQ

Made to Order: Individual Specifications

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



1 PTFE Grease Symbol -X7

MXQ Standard model no. — X7
● PTFE grease

PTFE grease is used for all parts that grease is applied.
* For the type with a shock absorber, standard grease is used on the shock absorber part.

Specifications

Type	PTFE grease
Bore size (mm)	6, 8, 12, 16, 20, 25

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

⚠ Warning Precautions

Be aware that smoking cigarettes, etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

2 Grease for Food Processing Equipment Symbol -X9

MXQ Standard model no. — X9
● Grease for food processing equipment

Grease for food processing equipment is used for all parts that grease is applied.
* For the type with a shock absorber, standard grease is used on the shock absorber part.

Specifications

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

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

⚠ Caution

1. Do not use in a food contact environment.
2. Do not use in a liquid splash environment, e.g. water, detergent, liquid chemicals.

<Not installable>

Food zone

An environment where food which will be sold as merchandise directly touches the cylinder's components

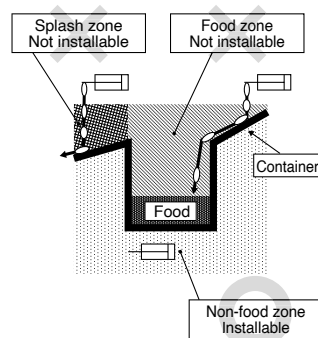
Splash zone

An environment where food which will not be sold as merchandise directly touches the cylinder's components

<Installable>

Non-food zone

An environment where there is no contact with food



3 Heat Treated Metal Stopper Bolt (Adjustment range: 5 mm) Symbol -X16

MXQ Standard model no. — X16
● Heat treated metal stopper bolt

To reduce wear on the metal stopper, heat treated chrome molybdenum steel (SCM435) is used for the stroke adjustment screw.

Specifications

Type	Heat treated metal stopper bolt
Bore size (mm)	6, 8, 12, 16, 20, 25
Speed range	50 to 200 mm/s
Cushion	None
Stroke adjustment	0 to 5 mm

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

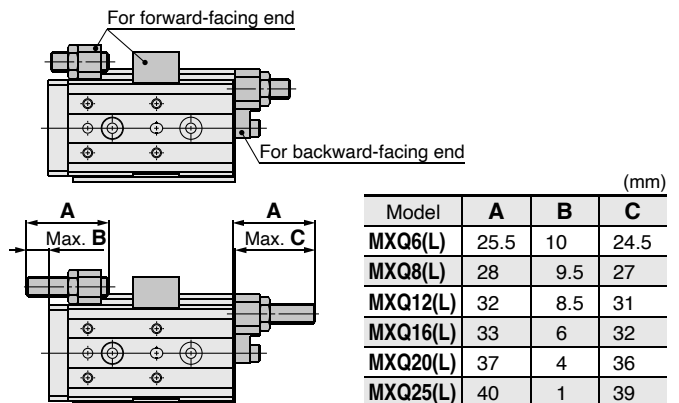
4 Heat Treated Metal Stopper Bolt (Adjustment range: 15 mm) Symbol -X17

MXQ Standard model no. — X17
● Heat treated metal stopper bolt (Adjustment range: 15 mm)

To reduce wear on the metal stopper, heat treated chrome molybdenum steel (SCM435) is used for the stroke adjustment screw.

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

Dimensions



Series MXQ

5 Heat Treated Metal Stopper Bolt (Adjustment range: 25 mm) **Symbol -X18**

MXQ Standard model no. — **X18**

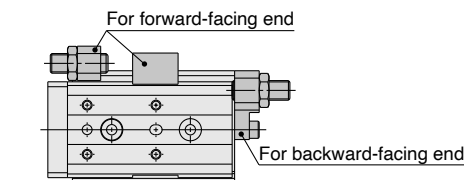
- Heat treated metal stopper bolt (Adjustment range: 25 mm)

* -X18 is not available for the MXQ6.

To reduce wear on the metal stopper, heat treated chrome molybdenum steel (SCM435) is used for the stroke adjustment screw.

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

Dimensions



	A	B	C
Max. B			
Max. C			
Model	A	B	C
MXQ8(L)	38	19.5	37
MXQ12(L)	42	18.5	41
MXQ16(L)	43	16	42
MXQ20(L)	47	14	46
MXQ25(L)	50	11	49

6 Without Built-in Auto Switch Magnet **Symbol -X33**

MXQ Standard model no. — **X33**

- Without built-in auto switch magnet

Auto switch magnet is not built in.

Specifications

Type	Without built-in auto switch magnet
Bore size (mm)	6, 8, 12, 16, 20, 25
Auto switch	Not mountable

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

7 Fluororubber Seal **Symbol -X39**

MXQ Standard model no. — **X39**

- Fluororubber seal

Change the materials for the piston seal, rod seal, O-rings and scrapers (rubber lined parts) to fluororubber.

Specifications

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

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

8 Anti-corrosive Specifications for Guide Unit **Symbol -X42**

MXQ Standard model no. — **X42**

- Anti-corrosive specifications for guide unit

Anti-corrosive treatment is applied to the table and guide block.

Specifications

Type	Anti-corrosive guide unit
Bore size (mm)	6, 8, 12, 16, 20, 25
Surface treatment	Special anti-corrosive treatment *2

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

*2 Special anti-corrosive treatment makes the table and the guide block black.

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

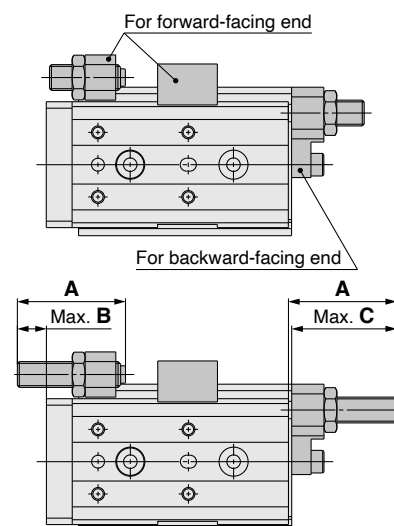
MXQ Standard model no. — **X11**

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

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

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

Dimensions



Rubber Stopper (AS, AT, A) (mm)

Model	A	B	C
MXQ6(L)	26.5	10	25.5
MXQ8(L)	29.5	10	28.5
MXQ12(L)	33.5	9	32.5
MXQ16(L)	34.5	6.5	33.5
MXQ20(L)	37.5	3.5	36.5
MXQ25(L)	42.5	2.5	41.5

Metal Stopper (CS, CT, C) (mm)

Model	A	B	C
MXQ6(L)	25.5	10	24.5
MXQ8(L)	28	9.5	27
MXQ12(L)	32	8.5	31
MXQ16(L)	33	6	32
MXQ20(L)	37	4	36
MXQ25(L)	40	1	39

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

MXQ Standard model no. — **X12**

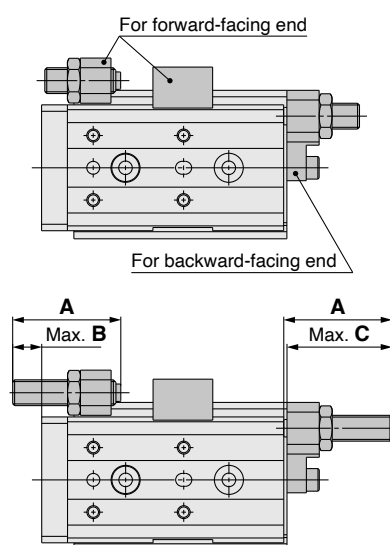
● Adjusting bolt, long specification
(Adjustment range: 25 mm)

* -X12 is not available for the MXQ6.

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

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

Dimensions



Rubber Stopper (AS, AT, A) (mm)

Model	A	B	C
MXQ8(L)	39.5	20	38.5
MXQ12(L)	43.5	19	42.5
MXQ16(L)	44.5	16.5	43.5
MXQ20(L)	47.5	13.5	46.5
MXQ25(L)	52.5	12.5	51.5

Metal Stopper (CS, CT, C) (mm)

Model	A	B	C
MXQ8(L)	38	19.5	37
MXQ12(L)	42	18.5	41
MXQ16(L)	43	16	42
MXQ20(L)	47	14	46
MXQ25(L)	50	11	49



Series MXQ/Precautions ①

Be sure to read before handling.

Selection

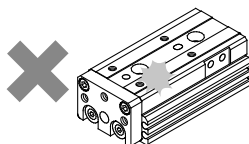
⚠ Caution

- ① **Do not apply a load beyond the range of the operation limits.**
Select the model by using the maximum allowable load and allowable moment. Refer to pages p. 3 for details. When an actuator is used beyond its operating limits, eccentric loads on the guide section will be in excess which results in shorter life span due to play or inaccuracy of guide section.
- ② **If a table is stopped at an intermediate position by an external stopper, avoid ejection.**
If ejection occurs, it causes damage. If a slide table is stopped at an intermediate position by an external stopper and then forwarded to the front, draw back the intermediate stopper after supplying pressure to allow the slide table to return to the back for an instant, then supply pressure to the opposite port to operate the slide table.
- ③ **Do not use in circumstances that excessive, external forces or impacts would be applied.**
These conditions could lead to malfunctions.

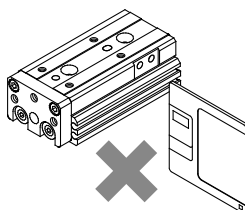
Mounting

⚠ Caution

- ① **Do not scratch or dent the mounting side of the body, table or end plate.**
Decreasing flatness on the mounting surface causes play in the guide section and increases sliding resistance.
- ② **Do not scratch or dent on the forward side of the rail or guide.**
It can generation play in the guide section and increase sliding resistance.

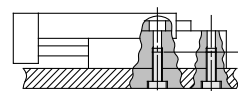


- ③ **Do not apply excessive impacts or moments when a work is mounted.**
If external load beyond the specified allowable moment is applied, it generates play in the guide section and increases sliding resistance.
- ④ **Flatness of mounting surface should be 0.02mm or less.**
Insufficient flatness of work piece of base to which an air slide table is mounted can generates play in the guide section and increase sliding resistance.
- ⑤ **When connecting with loads which has external support or external guide mechanism, select the connection and align properly.**
- ⑥ **Take care to prevent contact with objects such as a hand while an air slide table is in operation.**
A hand can be caught by an adjuster. Install a protection cover if anything could interfere during its operation.
- ⑦ **Do not bring into close contact with objects which would be influenced by magnetic fields.**
As an air slide table has magnets built-in, do not allow close contact with magnetic disks, magnetic cards or magnetic tapes. Data may be erased.



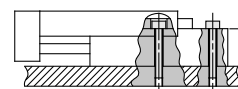
- ⑧ **When mounting an air slide table, screws of appropriate length should be used and tightened properly within the maximum tightening torque.**
If screws are tightened beyond designed limits, malfunction may occur. If they are tightened insufficiently, it may result in sliding or falling off from its position.

1. Lateral Mounting (Body tapped)



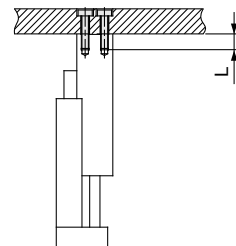
Model	Bolt	Tightening torque (N·m)	Maximum screw-in depth (L mm)
MXQ 6 (L)	M4 x 0.7	1.7 to 2.1	8
MXQ 8 (L)	M4 x 0.7	1.7 to 2.1	8
MXQ12 (L)	M5 x 0.8	3.5 to 4.4	10
MXQ16 (L)	M6 x 1	5.9 to 7.4	12
MXQ20 (L)	M6 x 1	5.9 to 7.4	12
MXQ25 (L)	M8 x 1.25	14.5 to 18.0	16

2. Lateral Mounting (Body through-hole)



Model	Bolt	Tightening torque (N·m)	L mm
MXQ 6 (L)	M3 x 0.5	1.0 to 1.2	10.5
MXQ 8 (L)	M3 x 0.5	1.0 to 1.2	12.5
MXQ12 (L)	M4 x 0.7	2.3 to 2.8	16
MXQ16 (L)	M5 x 0.8	4.6 to 5.7	21
MXQ20 (L)	M5 x 0.8	4.6 to 5.7	26
MXQ25 (L)	M6 x 1	8.0 to 10.0	32

3. Vertical Mounting (Body tapped)



Model	Bolt	Tightening torque (N·m)	Maximum screw-in depth (L mm)
MXQ 6 (L)	M2.5 x 0.45	0.4 to 0.5	4
MXQ 8 (L)	M3 x 0.5	0.7 to 0.9	4
MXQ12 (L)	M4 x 0.7	1.7 to 2.1	6
MXQ16 (L)	M5 x 0.8	3.5 to 4.4	7
MXQ20 (L)	M5 x 0.8	3.5 to 4.4	8
MXQ25 (L)	M6 x 1	5.9 to 7.4	10



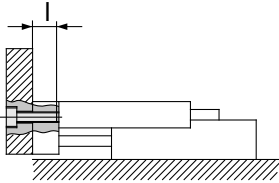
Series MXQ/Precautions ②

Be sure to read before handling.

Mounting

⚠ Caution

1. Front mounting

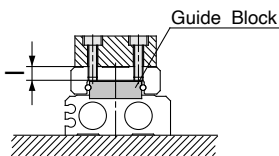


⚠ Caution

Use bolts at least 0.5mm shorter than maximum thread depth to prevent bolts from contacting the end plate. If the bolts are too long, they hit the end plate and may cause malfunctions.

Model	Bolt	Tightening torque (N·m)	Maximum screw-in depth (L mm)
MXQ 6 (L)	M3 x 0.5	0.7 to 0.9	4.5
MXQ 8 (L)	M4 x 0.7	1.7 to 2.1	5.5
MXQ12 (L)	M5 x 0.8	3.5 to 4.4	7.5
MXQ16 (L)	M6 x 1	5.9 to 7.4	9.5
MXQ20 (L)	M6 x 1	5.9 to 7.4	12.5
MXQ25 (L)	M8 x 1.25	14.5 to 18.0	14.5

2. Top mounting



⚠ Caution

Use bolts at least 0.5mm shorter than maximum thread depth to prevent bolts from contacting the guide block. If the bolts are too long, they hit the guide block and cause damage.

Model	Bolt	Tightening torque (N·m)	Maximum screw-in depth (L mm)
MXQ 6 (L)	M3 x 0.5	1.0 to 1.2	3.5
MXQ 8 (L)	M3 x 0.5	1.0 to 1.2	4.3
MXQ12 (L)	M4 x 0.7	2.3 to 2.8	5.5
MXQ16 (L)	M5 x 0.8	4.6 to 5.7	6.5
MXQ20 (L)	M5 x 0.8	4.6 to 5.7	9
MXQ25 (L)	M6 x 1	8.0 to 10.0	11

Environment

⚠ Caution

- ① **Do not use in an environment exposed directly to liquids such as cutting oil.**
If used in an environment exposed to cutting oil, coolant or oil mist, it generates play, increased sliding resistance of air leakage.
- ② **Do not use in an environment exposed directly to powder, dust or spatter etc.**
It generates play, increases sliding resistance or air leakage.
- ③ **Install a shade screen if exposed to the direct sun light.**
- ④ **Install a blocking cover if a heat source is in the area.**
The product temperature may rise above the range of usage limit by radiant heat if a heat source is in the area. Install a cover to block from heat source.
- ⑤ **Do not use in the area where there are vibrations or impacts.**
It results in damage or malfunction.
- ⑥ **Use caution for the anti-corrosiveness of linear guide section.**
Especially, rust may be generated in an environment where waterdrops are likely to adhere due to condensation, etc.

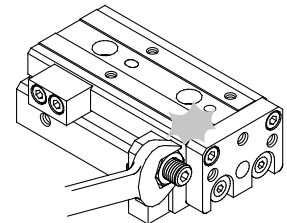
Caution in Handling Adjuster Options

Stroke Adjuster

⚠ Caution

- ① **Do not replace the bolts. Use only bolts included for this use.**
Improper attachment may generate play or damage by force of impacts, etc.
- ② **Follow the table for tightening torque of lock nuts.**
Insufficient tightening will cause deterioration of positioning accuracy.
- ③ **When stroke adjuster is adjusted, do not hit the table with the wrench.**
This could result in looseness.

Model	Tightening torque (N·m)
MXQ 6 (L)	2.7 to 3.0
MXQ 8 (L)	4.5 to 5.0
MXQ12 (L)	11.3 to 12.5
MXQ16 (L)	22.5 to 25.0
MXQ20 (L)	38.7 to 43.0
MXQ25 (L)	62.1 to 69.0





Series MXQ/Precautions ③

Be sure to read before handling.

Caution on Adjuster Option

With Shock Absorber

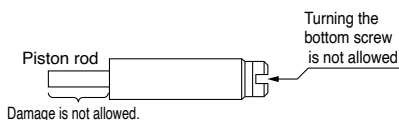
⚠ Caution

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)	1.50 to 1.67
MXQ16 (L)	2.82 to 3.14
MXQ20 (L) MXQ25 (L)	9.72 to 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)	RB0805N
MXQ12 (L)	RB0806N
MXQ16 (L)	RB1007N
MXQ20 (L)	RB1411N
MXQ25 (L)	RB1412N

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.

Rubber stopper 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	Rubber stopper at extension end (AS)				Rubber stopper 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	0.45 to 0.55	M2.5 x 8	0.45 to 0.55	M2.5 x 6	0.45 to 0.55
MXQ 8 (L)	M3 x 8	0.81 to 0.99	M3 x 10	0.81 to 0.99	M3 x 8	0.81 to 0.99
MXQ12 (L)	M4 x 12	1.89 to 2.31	M4 x 12	1.89 to 2.31	M4 x 10	1.89 to 2.31
MXQ16 (L)	M5 x 16	3.96 to 4.84	M5 x 16	3.96 to 4.84	M5 x 12	3.96 to 4.84
MXQ20 (L)	M6 x 16	6.3 to 7.7	M6 x 16	6.3 to 7.7	M5 x 14	3.96 to 4.84
MXQ25 (L)	M8 x 18	14.4 to 18.0	M8 x 18	14.4 to 18.0	M6 x 18	6.3 to 7.7

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	0.81 to 0.99	M3 x 12	0.81 to 0.99	M3 x 8	0.81 to 0.99
MXQ12 (L)	M4 x 12	1.89 to 2.31	M4 x 12	1.89 to 2.31	M4 x 10	1.89 to 2.31
MXQ16 (L)	M5 x 16	3.96 to 4.84	M5 x 16	3.96 to 4.84	M5 x 12	3.96 to 4.84
MXQ20 (L)	M6 x 18	6.3 to 7.7	M6 x 20	6.3 to 7.7	M5 x 14	3.96 to 4.84
MXQ25 (L)	M8 x 18	14.4 to 18.0	M8 x 20	14.4 to 18.0	M6 x 18	6.3 to 7.7

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.

Metal Stopper 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	Metal Stopper at extension end (CS)				Metal Stopper 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	0.45 to 0.55	M2.5 x 8	0.45 to 0.55	M2.5 x 6	0.45 to 0.55
MXQ 8 (L)	M3 x 8	0.81 to 0.99	M3 x 10	0.81 to 0.99	M3 x 8	0.81 to 0.99
MXQ12 (L)	M4 x 12	1.89 to 2.31	M4 x 12	1.89 to 2.31	M4 x 10	1.89 to 2.31
MXQ16 (L)	M5 x 16	3.96 to 4.84	M5 x 16	3.96 to 4.84	M5 x 12	3.96 to 4.84
MXQ20 (L)	M6 x 16	6.3 to 7.7	M6 x 20	6.3 to 7.7	M5 x 14	3.96 to 4.84
MXQ25 (L)	M8 x 18	14.4 to 18.0	M8 x 20	14.4 to 18.0	M6 x 18	6.3 to 7.7



Series MXQ/Precautions ④

Be sure to read before handling.

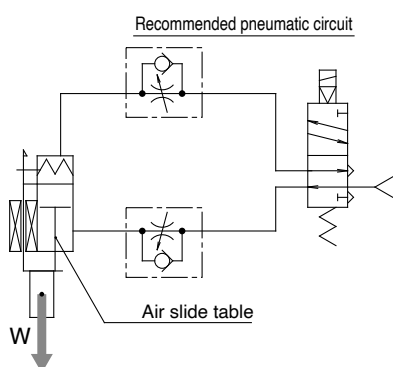
Caution on Handling Functional Option

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 centre 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.

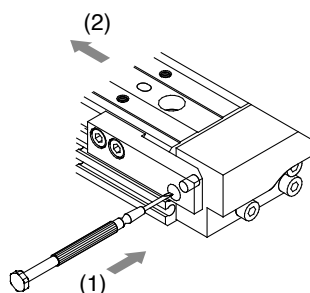
3. When releasing the end lock manually, be sure that air pressure is released.

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.

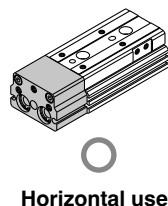
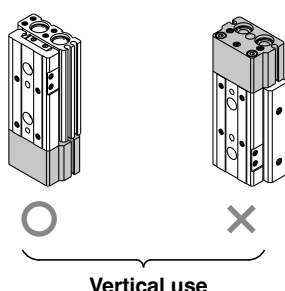


With Buffer Mechanism

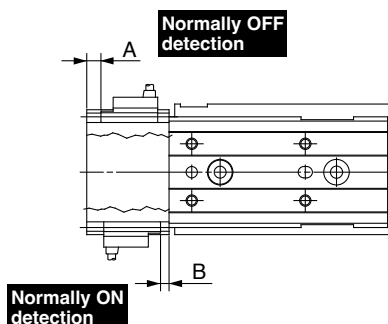
⚠ Caution

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.



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



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

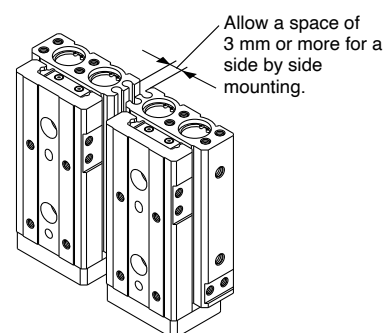
Model	(mm)	
	A	B
MXQ 6 (L)	2	3
MXQ 8 (L)	2.5	
MXQ12 (L)	4	
MXQ16 (L)	5	
MXQ20 (L)	5.5	
MXQ25 (L)	10	

Caution on Handling Symmetric Type

⚠ Caution

1. Maintain a minimum spacing of at least 3 mm if standard type and symmetric type are used side by side.

It malfunctions if standard type and symmetric type are used close side by side.



Other

⚠ Warning

1. Do not put hands or fingers between the end plate and body. Never put hands or fingers in the gap between the end plate and body when retracted. Doing so will result in injury to the hands, or fingers.
2. Be aware that smoking cigarettes, etc., after your hands have come into contact with the grease used in the cylinder section of this product can create a gas that is hazardous to

⚠ Caution

1. Do not disassemble or modify the product.
2. Performance stability

The piston speed in the specification table shows the average speed. The actual speed of this product may vary slightly during the stroke depending on the operating conditions, such as the change of load resistance and pressure.

Normas de seguridad

El objeto de estas normas de seguridad es evitar situaciones de riesgo y/o daño del equipo. Estas normas indican el nivel de riesgo potencial mediante las etiquetas "**Precaución**", "**Advertencia**" o "**Peligro**". Todas son importantes para la seguridad y deben de seguirse junto con las normas internacionales (ISO/IEC) ¹⁾ y otros reglamentos de seguridad.

Peligro:

Peligro indica un peligro con un alto nivel de riesgo que, si no se evita, podría causar lesiones graves o la muerte.

Advertencia:

Advertencia indica un peligro con un nivel medio de riesgo que, si no se evita, podría causar lesiones graves o la muerte.

Precaución:

Precaución indica un peligro con un bajo nivel de riesgo que, si no se evita, podría causar lesiones leves o moderadas.

- 1) ISO 4414: Energía en fluidos neumáticos – Normas generales y requisitos de seguridad para los sistemas y sus componentes.
ISO 4413: Energía en fluidos hidráulicos – Normas generales y requisitos de seguridad para los sistemas y sus componentes.
IEC 60204-1: Seguridad de las máquinas – Equipo eléctrico de las máquinas. (Parte 1: Requisitos generales).
ISO 10218-1: Robots y dispositivos robóticos - Requisitos de seguridad para robots industriales - Parte 1: Robots.
etc.

Advertencia

1. La compatibilidad del producto es responsabilidad de la persona que diseña el equipo o decide sus especificaciones.

Puesto que el producto aquí especificado puede utilizarse en diferentes condiciones de funcionamiento, su compatibilidad con un equipo determinado debe decidirla la persona que diseña el equipo o decide sus especificaciones basándose en los resultados de las pruebas y análisis necesarios. El rendimiento esperado del equipo y su garantía de seguridad son responsabilidad de la persona que ha determinado la compatibilidad del producto. Esta persona debe revisar de manera continua la adaptabilidad del equipo a todos los elementos especificados en el anterior catálogo con el objeto de considerar cualquier posibilidad de fallo del equipo.

2. La maquinaria y los equipos deben ser manejados sólo por personal cualificado.

El producto aquí descrito puede ser peligroso si no se maneja de manera adecuada. El montaje, funcionamiento y mantenimiento de máquinas o equipos, incluyendo nuestros productos, deben ser realizados por personal cualificado y experimentado.

3. No realice trabajos de mantenimiento en máquinas y equipos, ni intente cambiar componentes sin tomar las medidas de seguridad correspondientes.

1. La inspección y el mantenimiento del equipo no se deben efectuar hasta confirmar que se hayan tomado todas las medidas necesarias para evitar la caída y los movimientos inesperados de los objetos desplazados.
2. Antes de proceder con el desmontaje del producto, asegúrese de que se hayan tomado todas las medidas de seguridad descritas en el punto anterior. Corte la corriente de cualquier fuente de suministro. Lea detenidamente y comprenda las precauciones específicas de todos los productos correspondientes.
3. Antes de reiniciar el equipo, tome las medidas de seguridad necesarias para evitar un funcionamiento defectuoso o inesperado.

4. Nuestros productos deben utilizarse siguiendo las especificaciones técnicas indicadas en catálogo o manual. En caso contrario, la garantía del producto quedará invalidada. Contacte con SMC antes de utilizar el producto y preste especial atención a las medidas de seguridad si se prevé el uso del producto en alguna de las siguientes condiciones:

1. Las condiciones y entornos de funcionamiento están fuera de las especificaciones indicadas, o el producto se usa al aire libre o en un lugar expuesto a la luz directa del sol.
2. El producto se instala en equipos relacionados con energía nuclear, ferrocarriles, aeronáutica, equipos espaciales, navegación, automoción, sector militar, en aplicaciones que puedan tener efectos negativos en personas, propiedades o animales, tratamientos médicos, equipos en contacto con alimentación y bebidas, equipos de combustión, aparatos recreativos, equipos en contacto con alimentos y bebidas, circuitos de parada de emergencia, circuitos de embrague y freno en aplicaciones de prensa, equipos de seguridad, u otras aplicaciones inadecuadas para las características estándar descritas en el catálogo de productos y/o manuales de funcionamiento.
3. El producto se utiliza en un circuito interlock, disponga de un circuito de tipo interlock doble con protección mecánica para prevenir averías. Asimismo, compruebe de forma periódica que los dispositivos funcionan correctamente.

Precaución

Nuestros productos están desarrollados, diseñados y fabricados para ser utilizados en aplicaciones de control automático en industrias manufactureras. No están concebidos para ser usados en otro tipo de industrias.

Los productos de medición que SMC fabrica y comercializa no han sido certificados mediante pruebas de homologación de metrología (medición) conformes a las leyes de cada país.

Por lo tanto, los productos SMC no pueden usarse para actividades de metrología (medición) establecidas por las leyes de cada país.

Garantía limitada y exención de responsabilidades. Requisitos de conformidad

El producto utilizado está sujeto a una "Garantía limitada y exención de responsabilidades" y a "Requisitos de conformidad". Debe leerlos y aceptarlos antes de utilizar el producto.

Garantía limitada y exención de responsabilidades

1. El periodo de garantía del producto es de 1 año a partir de la puesta en servicio o de 1,5 años a partir de la fecha de entrega, aquello que suceda antes. ²⁾ Asimismo, el producto puede tener una vida útil, una distancia de funcionamiento o piezas de repuesto especificadas. Consulte con su distribuidor de ventas más cercano.
 2. Para cualquier fallo o daño que se produzca dentro del periodo de garantía, y si demuestra claramente que sea responsabilidad del producto, se suministrará un producto de sustitución o las piezas de repuesto necesarias. Esta garantía limitada se aplica únicamente a nuestro producto independiente, y no a ningún otro daño provocado por el fallo del producto.
 3. Antes de usar los productos SMC, lea y comprenda las condiciones de garantía y exención de responsabilidad descritas en el catálogo correspondiente a los productos específicos.
- 2) **Las ventosas están excluidas de esta garantía de 1 año.** Una ventosa es una pieza consumible, de modo que está garantizada durante un año a partir de la entrega. Asimismo, incluso dentro del periodo de garantía, el desgaste de un producto debido al uso de la ventosa o el fallo debido al deterioro del material elástico no está cubierto por la garantía limitada.

Requisitos de conformidad

1. Queda estrictamente prohibido el uso de productos SMC con equipos de producción destinados a la fabricación de armas de destrucción masiva o de cualquier otro tipo de armas.
2. La exportación de productos SMC de un país a otro está regulada por la legislación y reglamentación sobre seguridad relevante de los países involucrados en dicha transacción. Antes de enviar un producto SMC a otro país, asegúrese de que se conocen y cumplen todas las reglas locales sobre exportación.

Normas de seguridad

Lea detenidamente las "Precauciones en el manejo de productos SMC" (M-E03-3) antes del uso.

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