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KOGANEI

ACTUATORS GENERAL CATALOG



alpha series

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MT SLIDE TABLES

Discontinued



Caution

Before use, be sure to read the "Safety Precautions" on p. 57.

More precision



alpha series

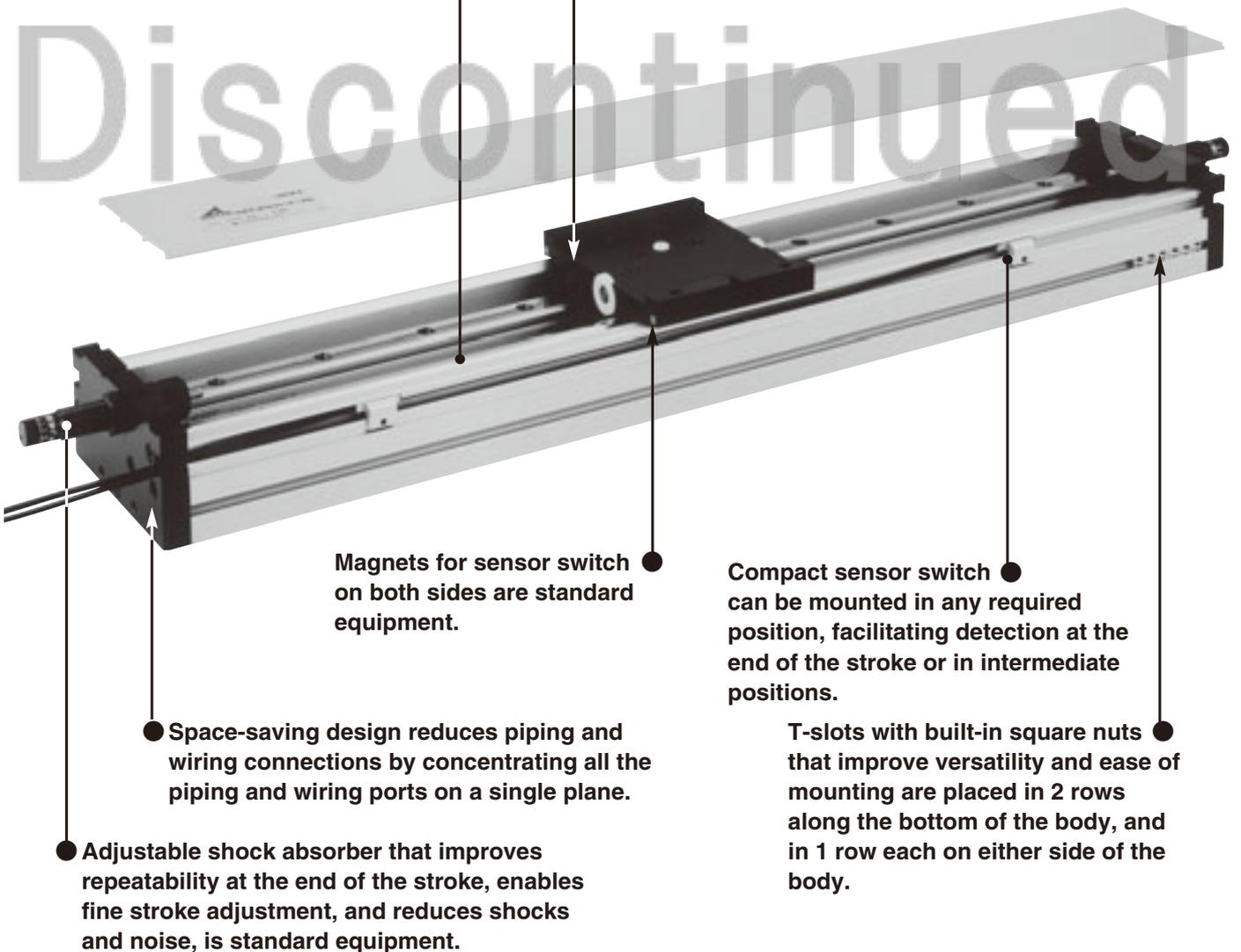
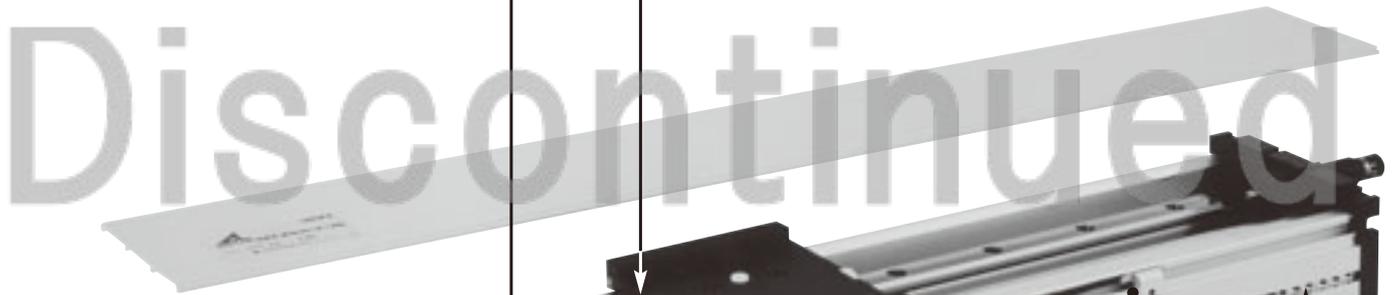
We have added advanced positioning precision and high rigidity to the pneumatic actuator.

The Koganei Alpha Series further enhances the drive module concept, supporting superior applications and labor savings in FA line design and manufacturing with higher performance.

MT SLIDE TABLES

Magnet type rodless cylinders use high retaining force magnets for assurance in operations.

Linear guide ensures excellent linearity and heavy load capacity.



Magnets for sensor switch on both sides are standard equipment.

Compact sensor switch can be mounted in any required position, facilitating detection at the end of the stroke or in intermediate positions.

Space-saving design reduces piping and wiring connections by concentrating all the piping and wiring ports on a single plane.

T-slots with built-in square nuts that improve versatility and ease of mounting are placed in 2 rows along the bottom of the body, and in 1 row each on either side of the body.

Adjustable shock absorber that improves repeatability at the end of the stroke, enables fine stroke adjustment, and reduces shocks and noise, is standard equipment.



The Alpha Series MT slide table installs a high retaining force magnet type rodless cylinder and linear guide within a slim, thin-type body. This high-performance actuator offers superior positioning accuracy, linearity, and heavy load capacity.

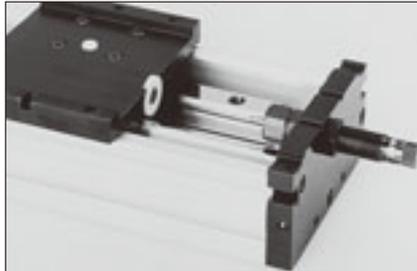
Cylinder offers reliability, high-speed operation, and longer strokes.

The actuator uses a high retaining force magnet type rodless cylinder. Standard type offers long strokes of up to 1200mm (with bore size of $\phi 25$ [0.984in.]). Moreover, a fast operating speed range of 200~800mm/s [7.9~31.5in./sec.] brings about a highly effective system with faster tact time.



Adjustable shock absorber enables high-speed operation and is standard equipment.

The repeatability at the end of the stroke has been further improved, and an adjustable shock absorber that greatly reduces shocks and noise is standard equipment.



Concentrated placement of piping and wiring offers space-saving design.

The air piping connection port and the wiring outlet for the sensor switch are concentrated on a single plane for compact piping and wiring that allows rational space-saving equipment design.



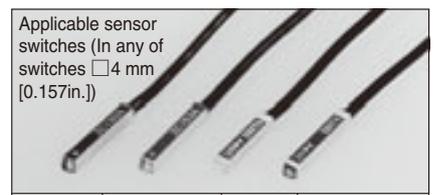
High precision linear guide offers heavy load capacity and high linearity.

High precision linear guide is installed within a thin and compact body. Responds to large loads and bending moment to assure high linearity.



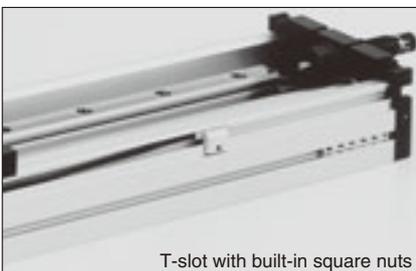
Instantly and easily responds to more flexible and accurate drive controls.

Because built-in magnets for sensor switch are standard, mounting sensor switches is all that is needed to enable detection at the end of the stroke or intermediate position.



Applicable sensor switches (In any of switches $\square 4$ mm [0.157in.])

Model	Type	Indicator lamp	Voltage
ZC130 <input type="checkbox"/>	Solid state type	Available	DC10~28V
ZC153 <input type="checkbox"/>	Solid state type	Available	DC4.5~28V
CS5T <input type="checkbox"/>	Reed switch type	Not available	DC5~28V AC85~115V
CS11T <input type="checkbox"/>	Reed switch type	Available	DC10~28V



T-slot with built-in square nuts

MT SLIDE TABLES

Specifications

Model		AMT10	AMT16	AMT25
Item				
Bore size	mm [in.]	10 [0.394]	16 [0.630]	25 [0.984]
Operation type		Double acting type		
Media		Air		
Operating pressure range	MPa [psi.]	0.2~0.7 [29~102]		
Proof pressure	MPa [psi.]	1.03 [149]		
Operating temperature range	°C [°F]	0~60 [32~140]		
Operating speed range	mm/s [in./sec.]	200~800 [7.9~31.5]		
Cushion		With shock absorbers (Both sides)		
Lubrication	Cylinder portion	Not required (If lubrication is required, use Turbine Oil Class 1 [ISO VG32] or equivalent.)		
	Guide portion	Required (Lithium soap-based grease) ^{Note1}		
Repeatability	mm [in.]	±0.05 [±0.002]		
Parallelism ^{Note2}	mm [in.]	0.2 [0.008]		
Stroke adjusting range (To the specified strokes)	mm [in.]	-48~+2 [-1.890~+0.079]	-38~+2 [-1.496~+0.079]	-42~+2 [-1.654~+0.079]
Maximum load capacity ^{Note3}	N [lbf.]	49.0 [11.0]	98.1 [22.1]	245.2 [55.1]
Port size		M5×0.8	Rc1/8	

Notes: 1. Apply lithium soap-based grease on the raceway surface of the track rail every 6 months or every 300km [186mi.] of traveling distance.

2. This is the parallelism between the table's upper surface and the bottom surface of the body. It is not the same as the traveling parallelism.

3. For the relationship between mass and piston speed, see the shock absorber capacity graph on p.1000.

Shock Absorber Specifications

Model		KSHM5×8	KSHM6×10	KSHM8×10
Item				
Applicable cylinder		AMT10	AMT16	AMT25
Maximum absorption	J [ft·lbf]	1.5 [1.11]	2.9 [2.14]	5.9 [4.35]
Absorbing stroke	mm [in.]	8 [0.315]	10 [0.394]	10 [0.394]
Maximum impact speed	mm/s [in./sec.]	1000 [39.4]		
Maximum operating frequency	cycle/min	30		
Spring return force (At the retracted position)	N [lbf.]	5.59 [1.257]	9.22 [2.073]	15.69 [3.527]
Angle variation		3° or less		
Operating temperature range	°C [°F]	0~60 [32~140]		

Remark: The above models can be ordered separately by using the order codes.

Bore Size and Stroke

Bore size	Standard strokes
10	200, 250, 300, 350, 400, 450, 500
16	200, 250, 300, 350, 400, 450, 500, 550, 600, 800, 1000
25	200, 250, 300, 350, 400, 450, 500, 550, 600, 800, 1000, 1200

Mass

● Mass of slide table

g [oz.]

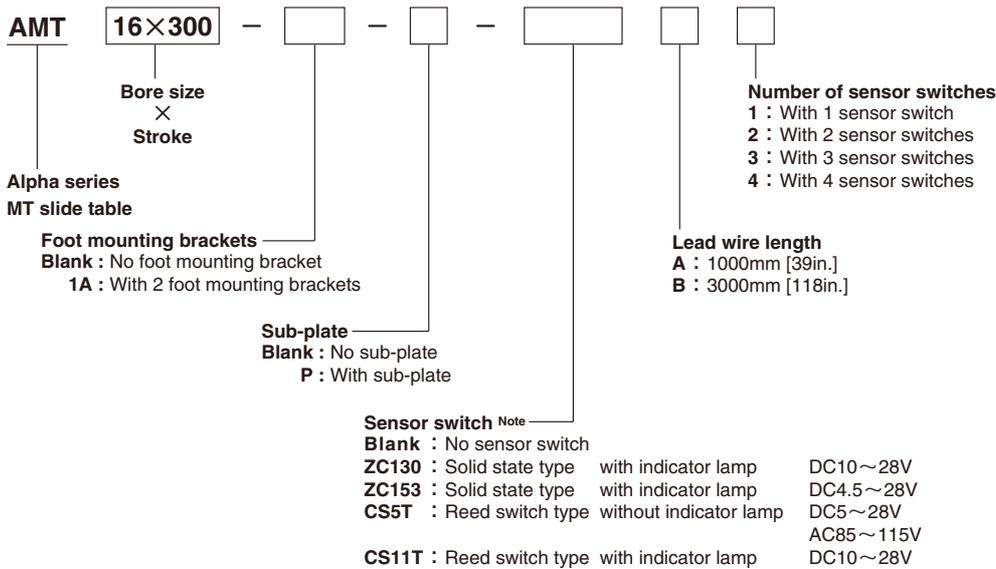
Stroke mm	200	250	300	350	400	450	500	550	600	800	1000	1200
Bore size mm												
10	1780 [62.79]	1990 [70.19]	2210 [77.95]	2420 [85.36]	2640 [93.12]	2850 [100.53]	3070 [108.29]	—	—	—	—	—
16	2670 [94.18]	2960 [104.41]	3200 [112.87]	3460 [122.05]	3730 [131.57]	3990 [140.74]	4260 [150.26]	4520 [159.44]	4790 [168.96]	5850 [206.35]	6910 [243.74]	—
25	5540 [195.41]	5950 [209.88]	6390 [225.40]	6810 [240.21]	7240 [255.38]	7660 [270.19]	8090 [285.36]	8510 [300.18]	8940 [315.34]	10640 [375.31]	12340 [435.27]	14080 [496.65]

● Additional mass of options

g [oz.]

Bore size mm [in.]	Foot mounting brackets (2 pcs.)	Sub-plate	Sensor switch (1 pc.)
			ZC130□, ZC153□, CS5T□, CS11T□
10 [0.394]	34 [1.20]	110 [3.88]	20 [0.71]
16 [0.630]	55 [1.94]	212 [7.48]	20 [0.71]
25 [0.984]	115 [4.06]	404 [14.25]	20 [0.71]

Order Codes

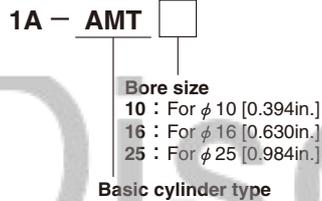


Note: Mount the sensor switch so that the surface showing the model marking faces down.

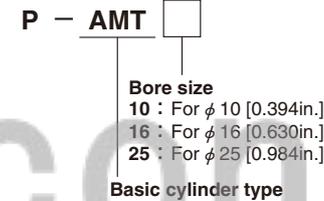
● For details of sensor switches, see p.1544.

Order codes for options only

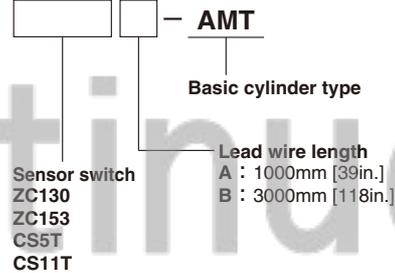
Foot mounting bracket



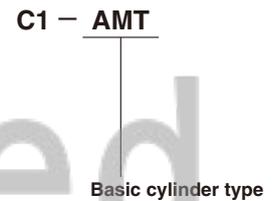
Sub-plate



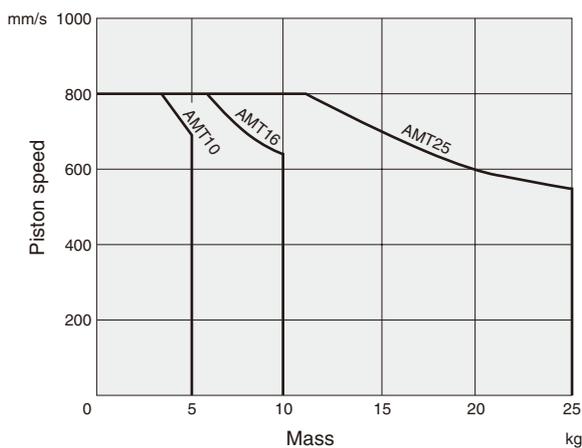
Sensor switch (with holder)



Sensor holder only

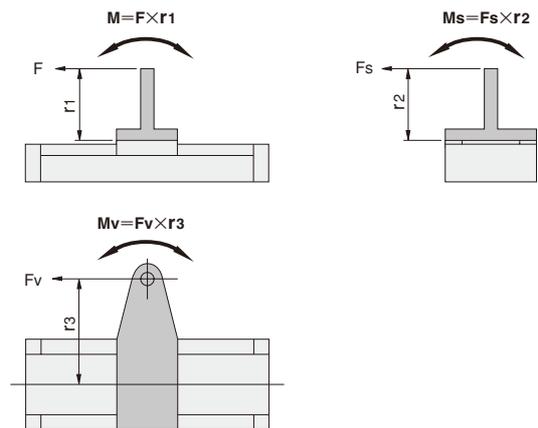


Shock Absorber Capacity Graph



1mm/s = 0.0394in./sec.
1kg = 2.205lb.

Allowable Bending Moment

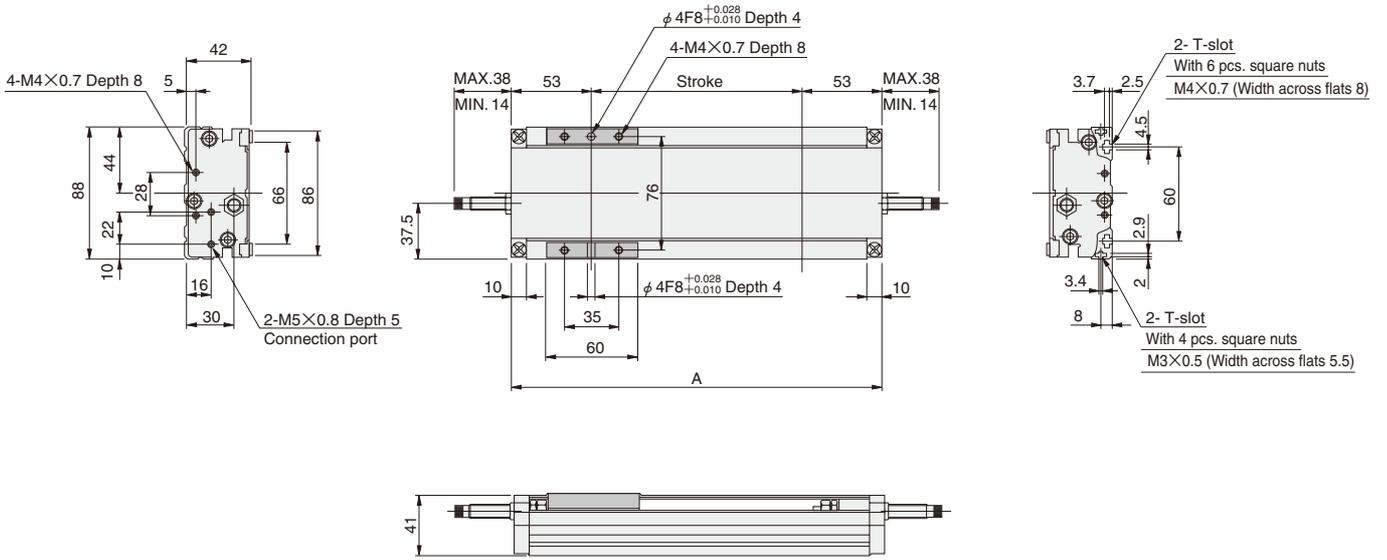


Bore size mm [in.]	Maximum pitching moment M N·m [ft·lbf]	Maximum rolling moment M _s N·m [ft·lbf]	Maximum yawing moment M _v N·m [ft·lbf]
10 [0.394]	2.94 [2.17]	2.94 [2.17]	2.94 [2.17]
16 [0.630]	6.86 [5.06]	4.90 [3.61]	6.86 [5.06]
25 [0.984]	24.52 [18.09]	14.71 [10.85]	24.52 [18.09]

Dimensions of AMT10 (mm)

● ϕ 10 ● Maximum load capacity 49.0N [11.0lbf.] (With shock absorbers)

● Drawings show specification strokes.



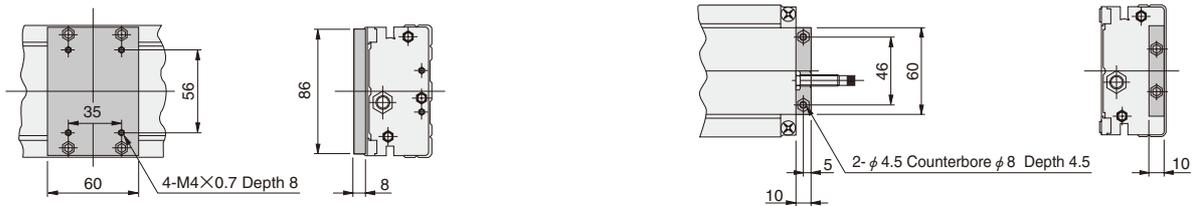
Stroke	Code	A
200	306	
250	356	
300	406	
350	456	
400	506	
450	556	
500	606	



■ Sub-plate: -P



■ Foot mounting bracket: -1A

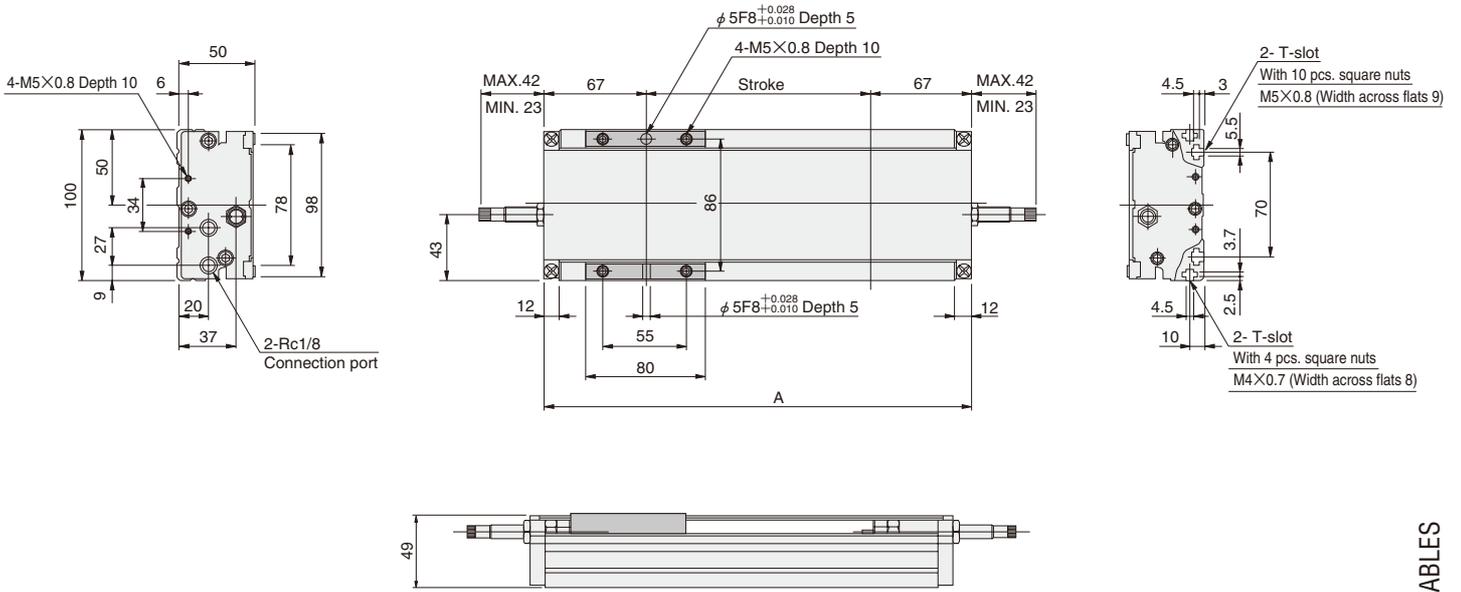


Dimensions of AMT16 (mm)

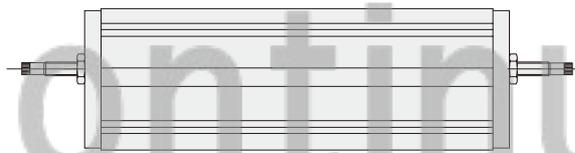
● ϕ 16 ● Maximum load capacity 98.1N [22.1lbf.] (With shock absorbers)



● Drawings show specification strokes.



Stroke	Code	A
200	334	
250	384	
300	434	
350	484	
400	534	
450	584	
500	634	
550	684	
600	734	
800	934	
1000	1134	



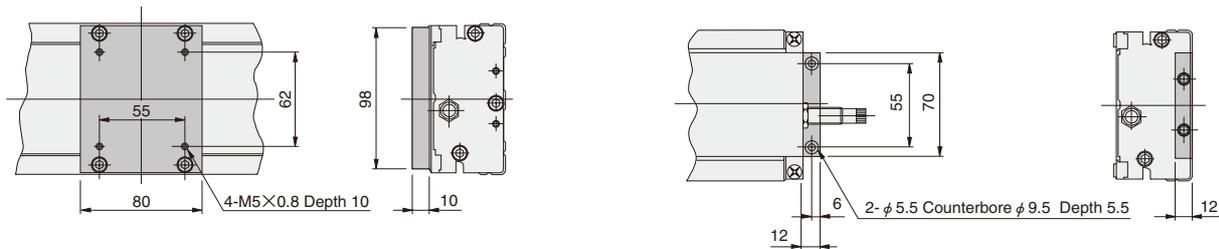
MT SLIDE TABLES

Discontinued

Sub-plate: -P



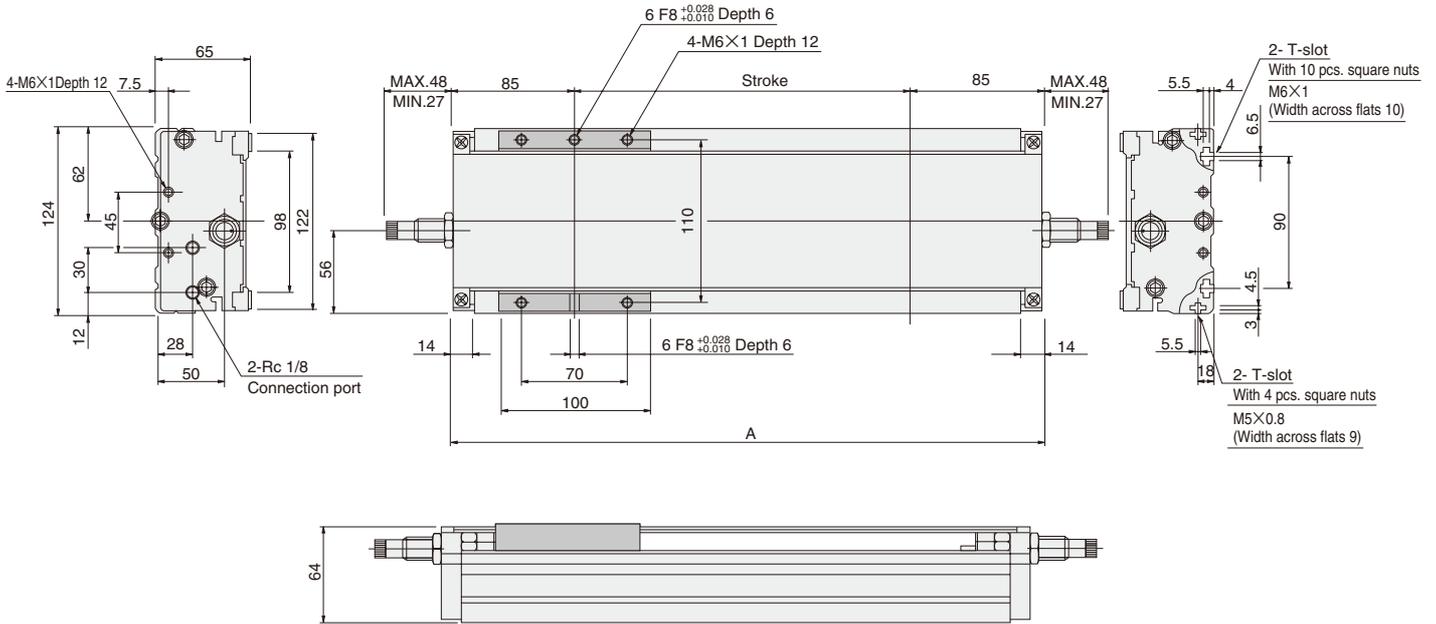
Foot mounting bracket: -1A



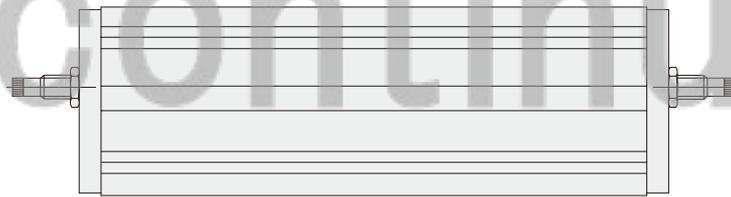
Dimensions of AMT25 (mm)

● $\phi 25$ ● Maximum load capacity 245.2N [55.1lbf.] (With shock absorbers)

● Drawings show specification strokes.



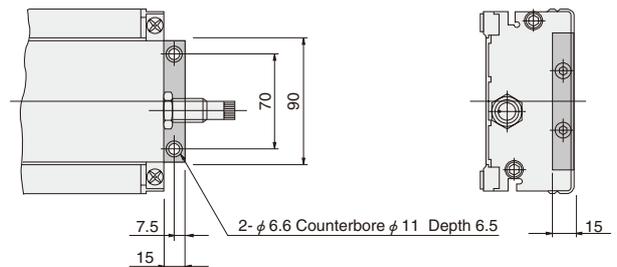
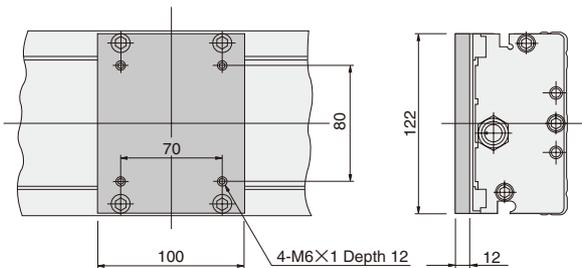
Stroke	Code	A
200		370
250		420
300		470
350		520
400		570
450		620
500		670
550		720
600		770
800		970
1000		1170
1200		1370



Sub-plate: -P



Foot mounting bracket: -1A



Handling Instructions and Precautions



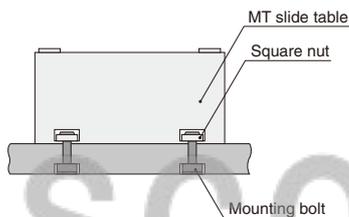
Mounting

Mounting

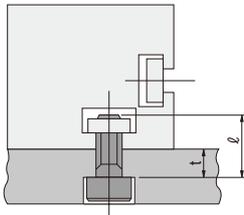
1. Because a rodless cylinder that uses strong magnets is built into the body of the MT slide table, avoid using it in locations exposed to cutting oil or dust that includes magnetic particles, and in ambient atmospheres that are full of dust.
2. Whenever external force greater than the retaining force of magnet on the magnet type rodless cylinder causes the slider and piston to misalign or separate, make the piston return to the end of the stroke and then apply force to restore the slider to its correct position.

Body mounting

1. To mount the body, use the square nuts in the 2 rows of T-slot on the bottom. Mounting is allowed in any direction.
2. Avoid using square nuts in T-slots on the sides of the body to mount.



3. For the screw length of the mounting bolt used with the square nut, the recommended lengths are shown below.



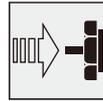
Screw length l mm [in.]

Model	AMT10	AMT16	AMT25
Locations			
Bottom	M4 t+6 [0.236]	M5 t+7 [0.276]	M6 t+9 [0.354]
Side	M3 t+5 [0.197]	M4 t+6 [0.236]	M5 t+7 [0.276]

4. The tightening torque for the mounting bolt should be as shown below.

Tightening torque N·cm [in·lbf]

Model	AMT10	AMT16	AMT25
Locations			
Bottom	137 [12.1] (M4)	265 [23.5] (M5)	441 [39.0] (M6)
Side	59 [5.2] (M3)	137 [12.1] (M4)	265 [23.5] (M5)



Shock absorber

Adjustment

1. Align white mark on the absorbing capacity adjusting knob to 2~3 on the scale.
2. If a residual shock appears at the end of the stroke, turn the adjusting knob towards 6 on the scale. Moreover, if it stops during mid-stroke or there are large shocks at impact, turn the adjusting knob towards 0 on the scale.
3. After completing adjustment, always tighten the lock screw to secure the adjusting knob in place.

Discontinued

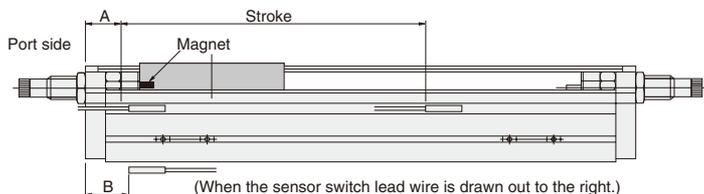
Handling Instructions and Precautions



Sensor switch

Mounting location of end of stroke detection sensor switch

When the sensor switch is mounted in the locations shown below (the figures in the table are reference values), the magnet comes to the maximum sensing location of the sensor switch at the end of the stroke.



mm [in.]

Sensor switch	AMT10		AMT16		AMT25	
	A	B	A	B	A	B
ZC130, ZC153	9.5 [0.374]	17.5 [0.689]	13.5 [0.531]	21.5 [0.846]	21.5 [0.846]	29.5 [1.161]
CS5T	11 [0.433]	19 [0.748]	15 [0.591]	23 [0.906]	23 [0.906]	31 [1.220]
CS11T	10.5 [0.413]	15.5 [0.610]	14.5 [0.571]	19.5 [0.768]	22.5 [0.886]	27.5 [1.083]

Caution: Mount the sensor switch so that the surface showing the model marking faces down.



General precautions

Piping

Always thoroughly blow off (use compressed air) the tubing before connecting it to the cylinder. Entering chips, sealing tape, rust, etc., generated during piping work could result in air leaks or other defective operation.

Atmosphere

1. If using in locations subject to dripping water, dripping oil, etc., or to large amounts of dust, use a cover to protect the unit.
2. The product cannot be used when the media or ambient atmosphere contains any of the substances listed below.
Organic solvents, phosphate ester type hydraulic oil, chlorine gas, or acids, etc.

Lubrication

The inside of the cylinder of this product can be used without lubrication, if lubrication is required, use Turbine Oil Class 1 (ISO VG32) or equivalent.

Avoid using spindle oil or machine oil.

Regular greasing is required for the cylinder's outer surface.

Apply the recommended grease every 300km [186mi.] of traveling distance.

Recommended grease: Lithium soap-based grease

Media

1. Use air for the media. For the use of any other media, consult us.
2. Air used for the cylinder should be clean air that contains no deteriorated compressor oil, etc. Install an air filter (filtration of a minimum 40 μm) near the cylinder or valve to remove collected liquid or dust. In addition, drain the air filter periodically.