MINI STAGE 2008.08

GMT

MINI STAGE

GMT

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ANAB ACCREDITED

ISO 9001：2000

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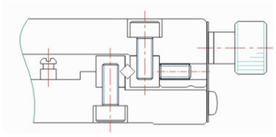
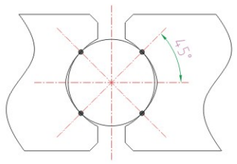
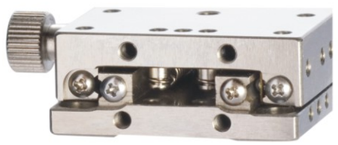
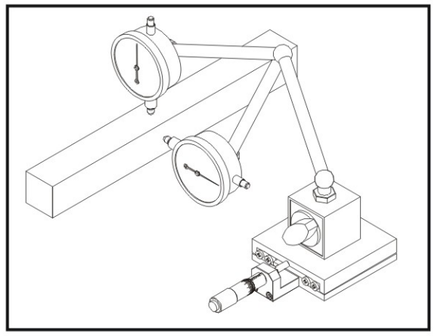
◎On the basis of the execution of the best service and product innovation, GMT hereby would have this declaration of retaining the right for engineering change. If any drawings or articles revised and added in the catalogs, there would be no extra further notice. To get most up-to-day information, please contact our agent or sales while necessary.

Slide way of Mini stage characters explanation

Slide way	Structure	Characteristic	Application	Moving accuracy	Load capacity	Rigidity
Crossed roller	 	◆ Composed of moving rails with 2 V-groove surfaces harden finish, ground precisely, and roller bearings which are connective and take turns moving in 90 degrees to meet requirement of high parallism and high flatness. In structure, V-groove and crossed roller acquire movement in high accuracy and capacity by linear transmission to act a high precision movement and load capacity performance.	This applied to precise movement device in high accuracy and high capacity, optical instruments in precise gauging and fine tuning, various machine tools, gauging instruments, precise positioning and quantitative movment…etc.	◎	◎	◎
Linear ball	 	◆ Slide way and body is in one unit, and Gothic arc-groove ground precisely to meet requirement of high parallism and high flatness. Gothic arc-groove formed by dual arc-grooves individually on upper and lower rails of body. Ball moving in single groove is structured by 2 points - contact, and total 4 contact points in dual arc-groove to form strong rail construction. In case of rails of SUS- STAGE is to set ball assembly in arc-groove to save traditional adjustment and revision time. In addition, without adjustment screw would save accuracy problem and maintenance time caused by loosen screw, and cheaper as well.	This applied to precise posistioning device in high accuracy and mid-capacity, product and design integrated system, optical experiment precise transportion, and fine tuning mechanism application.	◎	○	○
Dovetail type	 	◆ Dovetail plane- pinion and rack (Main material: Brass or aluminum alloy) GMT supply proper models suitable for equipped to various modules such as small, rough-vibrate, large size for installation. Driven-adjustment mode is rack and pinion. Apply to higher working frequency, requirement of faster movement and larger stroke. ◆ Screw-driven plane (main meterial: brass) Prepared by easy-carry standard and slide type fit for inner set mode. Driven adjustment mode is screw shaft mode. Apply to lower frequency, fine tuning environment.	This applied to optical instruments and equipments, sampler, detecting device, semi-conductor manufacturing equipment, test machine, micorscope, transiting machine, machinig center, medical instrument, printer and others.	△	○	◎

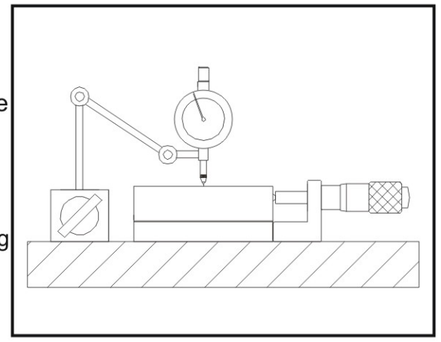
Straightness (refer to JIS B 6191-1993)

In linear motion units, geometric staight line decides positions in order from datum point to same direction, differences between length variation in those positions and datum is as measured value. To connect datum and final testing point, the max. difference of geometric line is called " Straightness".



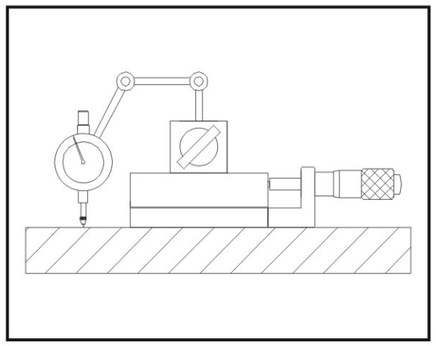
Yawing and pitching (refer to JIS B 6191-1993)

Linear motion parts would occur slanting in transmitting, and slanting proportion would cause deflection in linear transmission. Position is decided by same direction from datum point in order, and maximum angular gap measured from horizontal direction of each position corresponding to the datum is called yawing (deviation).
Same situation to have the maximum angular gap from vertical direction of each position corresponding to the datum called pitching.



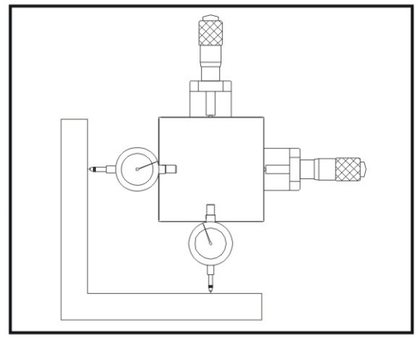
Parallelism (refer to JIS B 6191-1993)

Parallelism of plane, and slanting proportion between parallel interval to mechanism parts, and degrees between center place of manual stage movement and base plate is called parallelism. Parallelism measurement is to fix micrometer on the plate, and operate manual stage with clamping device to measure the maximum of 4 corner errors.



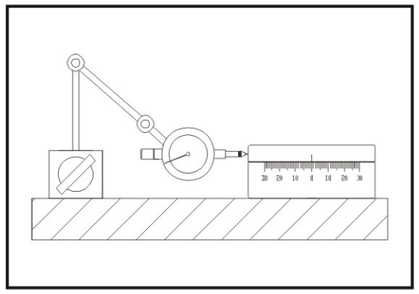
XY Vertical value (refer to JIS B 7440-1987)

Vertical value between 2 axes also for one line of geometric line in transmission datum and one in its corresponding right angle. In the other direction(Opposite), to take slanting proportion in linear transmission, reference point of X-axis stage, and geometric line of final tested position as datum axes. X-axis stage as for datum axis, maximum of parallel errors from its vertical geometric line in opposition to datum position of Y-axis stage to final texted position is called XY vertical value.



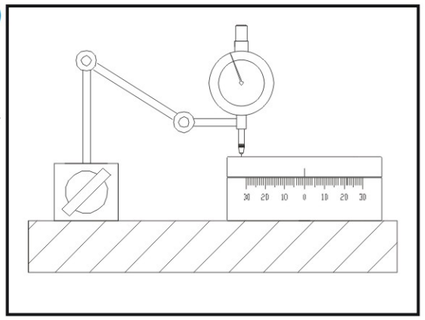
Concentricity (refer to JIS B 6191-1993,B 6194-1997)

Difference of datum circle and geometric circle. All points in line in same plane of 2 concentric circles, radius difference of 2 concentric circles is in case of smallest radial interval difference. Opposite to geometric circle,measured difference is called concentricity. Fix rotating stage on the plate, and put micrometer around stage. Have it to rotate one circle(360°) to proceed measuring. Concentricity is half of top value shown in micrometer.

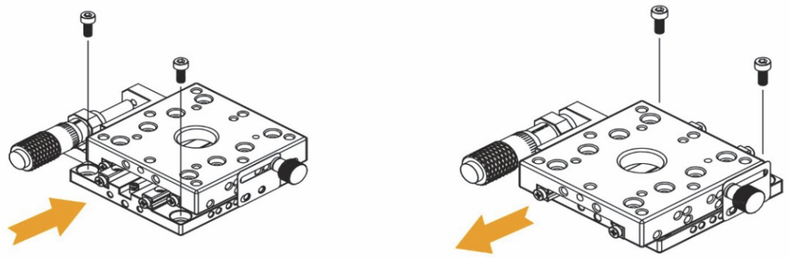


Plane travel amplitude (refer to JIS B 6191-1993)

Rotate as center of single axis, in the period of plane turning, max. slanting value of deviation of vertical plane to datum axis back to stage vertically is called plane travel amplitude. Take micrometer fixed on the plate to contact upper edge of rotating stage(rotating one circle 360), and proceed measuring. Top value shown in micrometer is called Plane-pulsating.

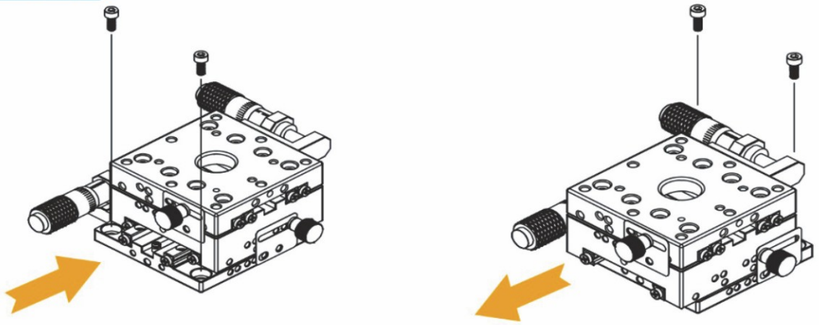


Single axis



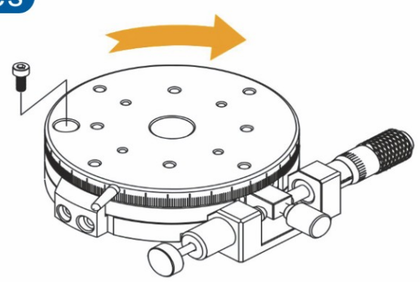
◆ Move upper plate back and forth, and secure the screw on the base plate and work piece with tight confirmation.

Dual-axes



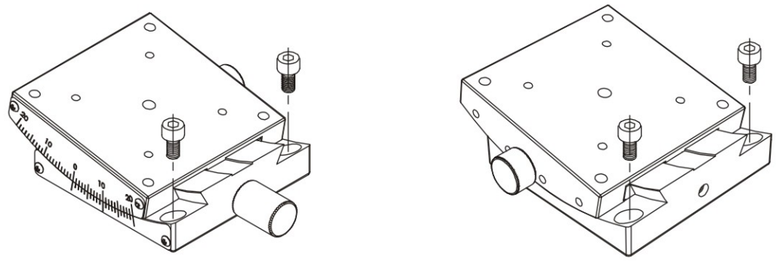
◆ Scew security same as single axis.

θ axes



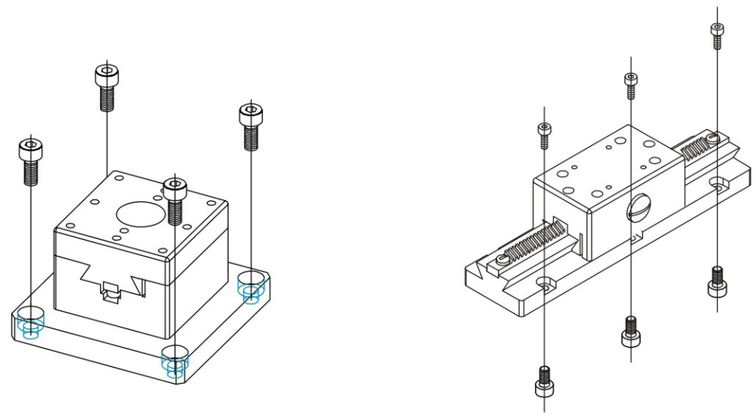
◆ Move upper plate by rotating, and take the screw through it.
◆ Proceed taking screws through base plate in order and finding matched holes at same time.
◆ Lock the stage on the work piece with tight confirmation.

Goniometer stage



◆ Rotate knob clockwise to move plat to the other side. (Please operate before loosing safety knob), to adjust locked screw into half-secured status.
◆ Next on, pleas rotate knob anticlockwise to move plat to the other side, and secure the screw on base plate and work piece with tight confirmation.

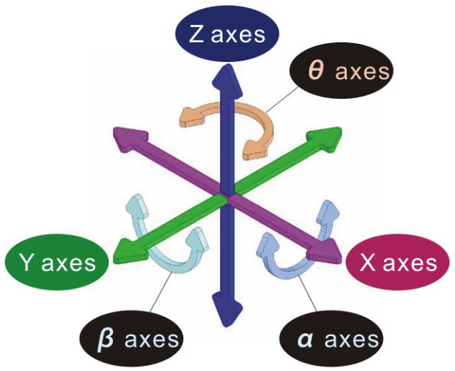
Other stages

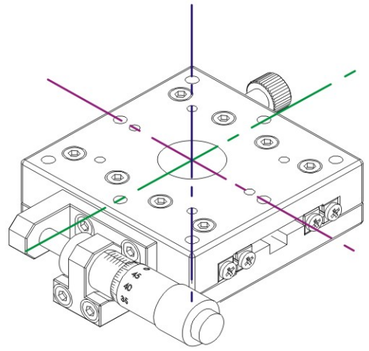


◆ Considering easy installation fit for other device, threaded hole pattern is made to meet requirement of securing from upper or lower direction, and this provides more options for installation.

◆ Axes defination

About defination of moving axis and rotating axis, **GMT** defines as chart below.
X axis, Y axis are in parallel direction: Z axis in vertical direction;
Rotating around X, Y, Z axes are called ***α*** axis**,** ***β*** axis**,** ***θ*** axis **individually**,



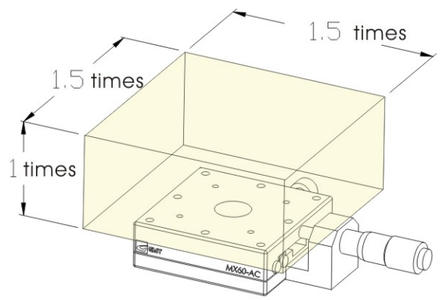


◆ Temperaure of environment

Please operate stages in regular range of temperature as listed.
Please contact **GMT** if products in larger range required.

Stages classification	Working temperature
Stainless steel stage	-20°C ~120°C
Stainless steel slide	
Others	-20°C ~70°C

◆ Volume-loaded limit recommendation



◆Basic declaration

Diagrams of representative explanation in catalogs are sampled in **GMT** products series. Products compared to diagrammatic examples in same series may have some difference in shape due to different mechanism design and spec, but basic operation remark are all the same.

◆Notice

Please read notices as follows before operation, this would have **GMT** series performed as best motion accuracy and usage life.

◆Operation principles

1. **GMT** porduct series are all composed of parts in high accuracy, please avoid environment of extreme high temperature, extreme low temperature, huge temperature variation, exposed to sun light, high humidity, high dust, high vibration, high shock and easy-dewed…etc.

2. To maintain motion accuracy and usage life of products in all series, please check allowable capacity of the product before operation. Don't overload out of rated capacity.

3. Besides allowable capacity limit, please avoid taking gravity of loaed object over the edge of the stage.

4. All kinds of rolling mechanisms set in the product need proper clean and lubricated maintenance in the period of operating, depending on situations of operation, and use appropriate lubricant.

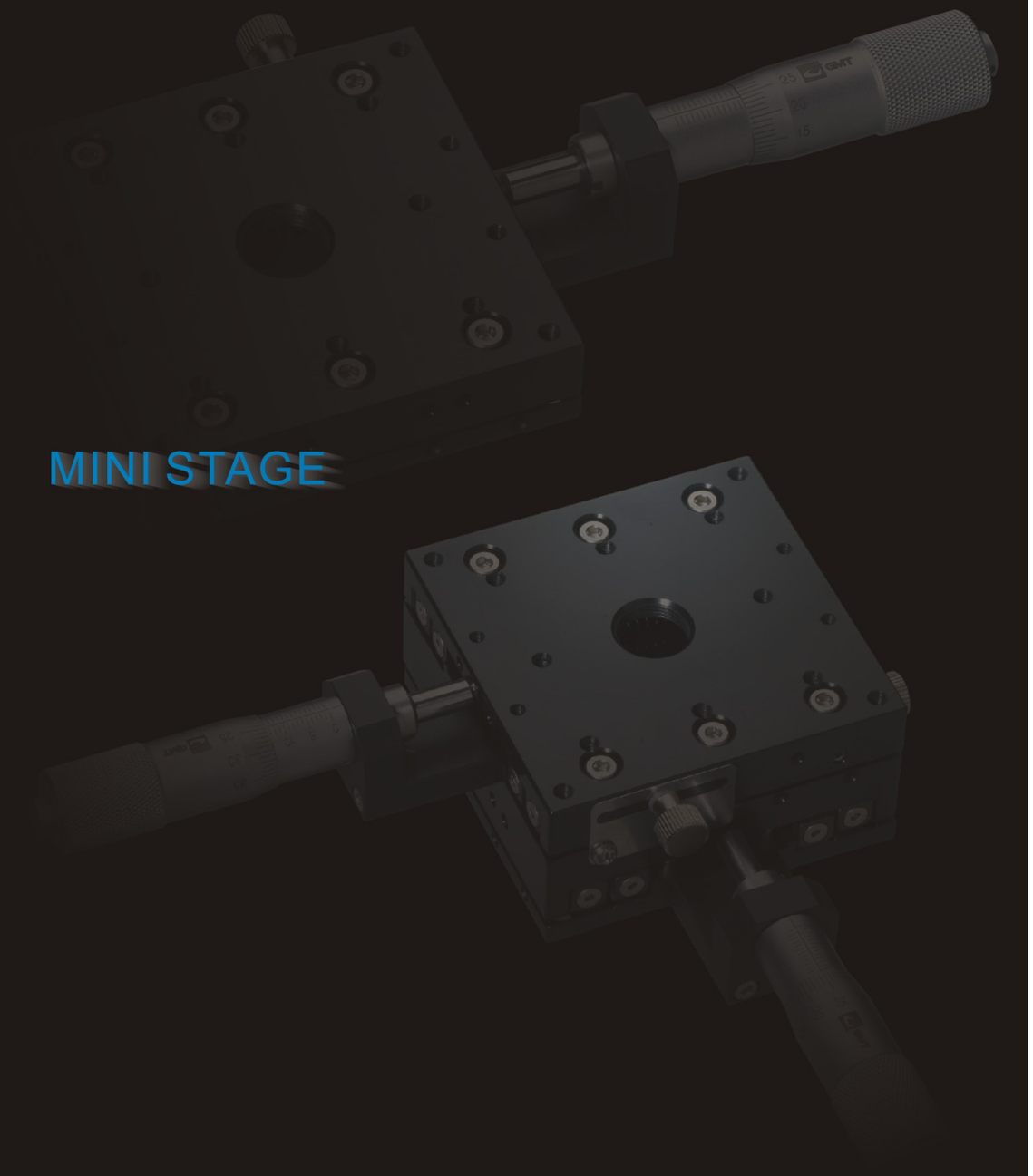
5. All kinds of rolling mechanisms set in the product are adjusted and leveled by engineers before shipment, please don't try any adjustment if not trained or authorized.

6. Please use right lock unit, tools and wrench torque while processing products in positioning security and connecting security.

7. For accessories of GMT product series or related information, GMT sales could offer best consultation.

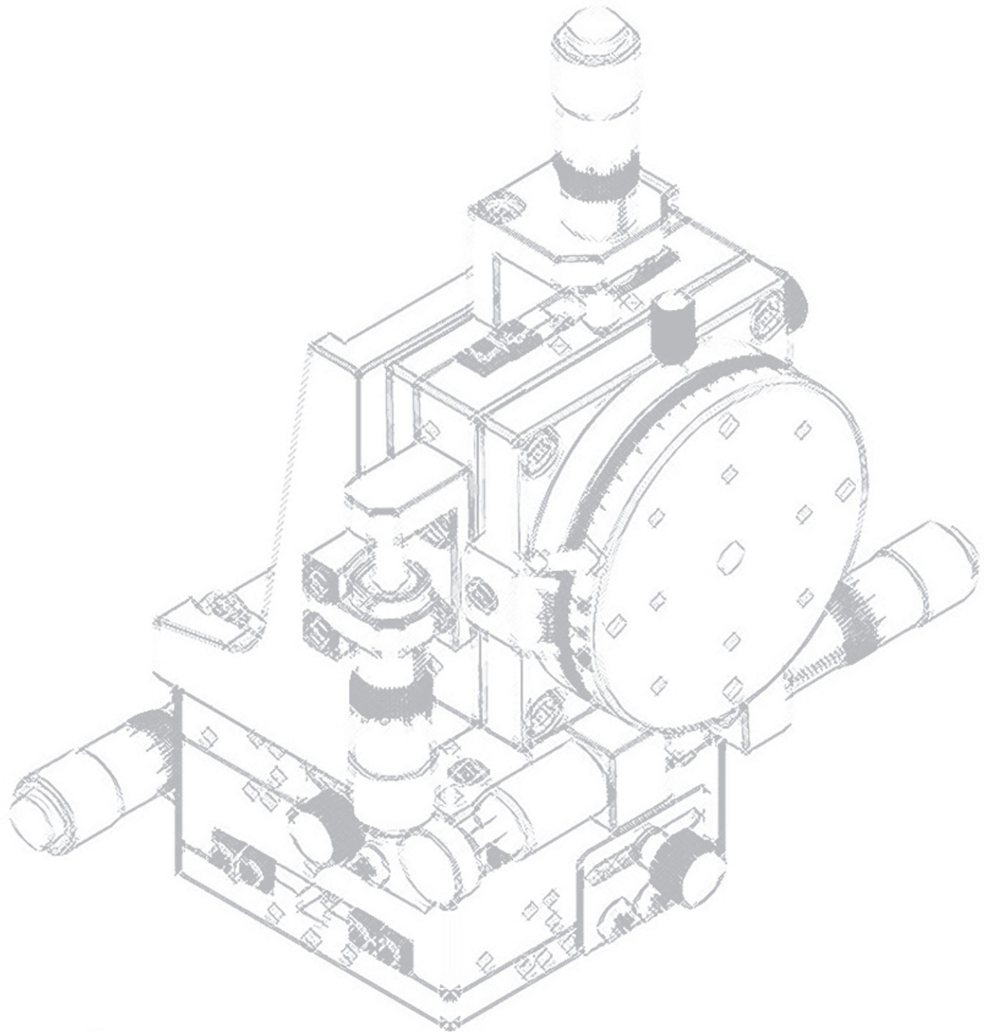
8. Special purpose application or other spec, GMT also provide custom-made service.

MINI STAGE



M Y 60 - A C - 1 5

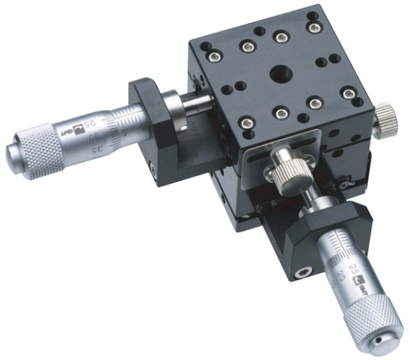
M	Y	60	A	Specification options		
				C	1	5
Trans-mission	Axis	Nominal dimension	Material	Feed position	Slide way	Feeding specification
M: Manual	X: Single axis	Different specifications decided by axis	A : Aluminum alloy	S : Side	1.Crossed roller	5. Standard micrometer
A: Automatic	Y: Dual axes		S : Stainless steel	SR S : Side R : Right hand	2.Linear ball	6. Rough micrometer (2 steps)
	R: θ axis			SZ S : Side Z : Multiple combination	3.Brass rotation bearing	7. Digital micrometer
				SRZ S : Side R : Right hand Z : Multiple combination	4.Crossed roller bearing	8. Feed screw type
				C : Center		
				CR C : Center R : Right hand		
				CZ C : Center Z : Multiple combination		
				CRZ C : Center R : Right hand Z : Multiple combination		
				L : Left side		
				R : Right side		



MX40-AC

MX40-AS

MY40-AC



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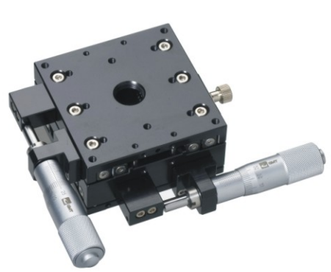

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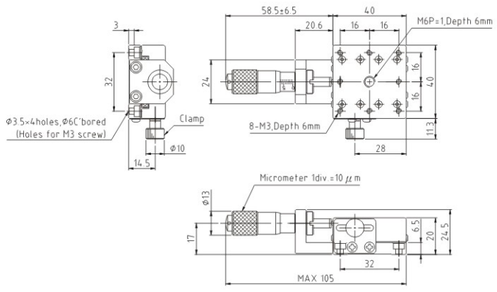

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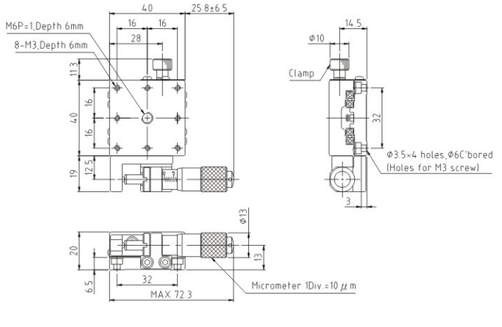

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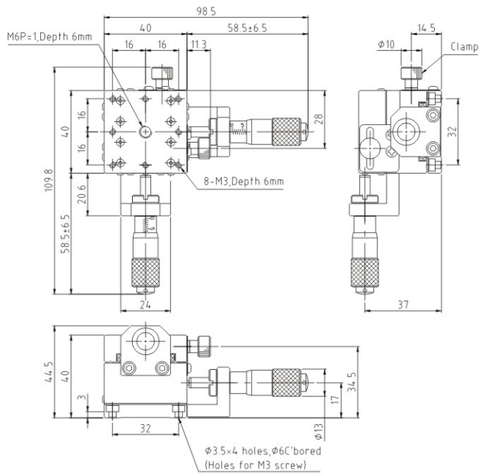

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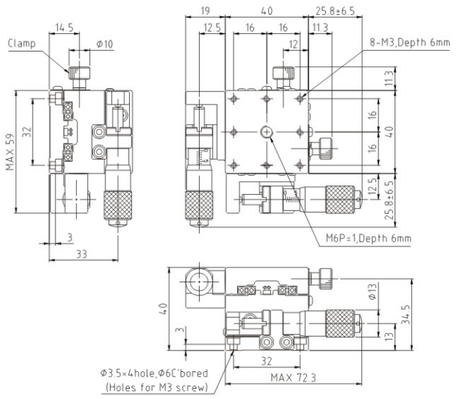


Specification

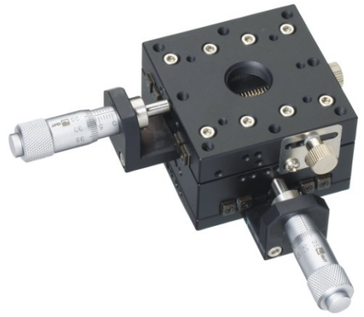
Unit：mm

Model no.	Table size	Axis	Feed position	Travel stroke	Micrometer minimum reading	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MX40-AC	40*40	X axis	Center	±6.5	10 μm	5 μm	2.0	0.14	Aluminum alloy	Black anodized
MX40-AS			Side							
MY40-AC		XY axes	Center				1.8	0.3		
MY40-AS			Side							

MX60-AC

MX60-AS

MY60-AC



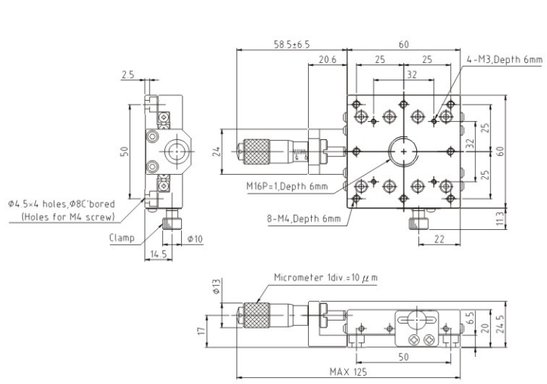
MY60-AS

Specification

Unit：mm

Model no.	Table size	Axis	Feed position	Travel stroke	Micrometer minimum reading	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MX60-AC	60*60	X axis	Center	±6.5	10 μm	5 μm	5.0	0.25	Aluminum alloy	Black anodized
MX60-AS			Side							
MY60-AC		XY axes	Center				4.5	0.52		
MY60-AS			Side							

MX60-AC



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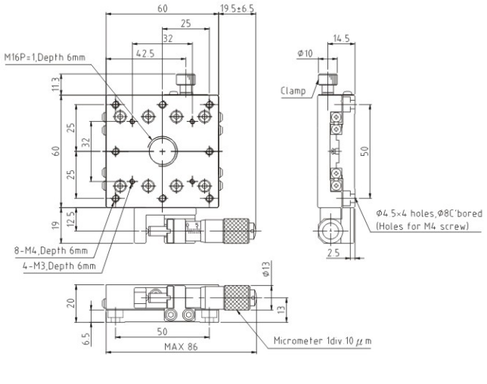

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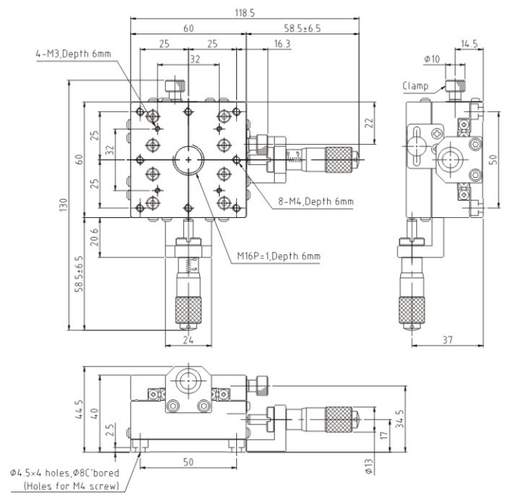

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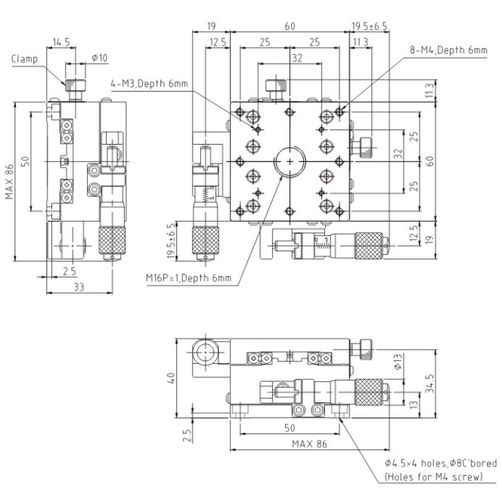
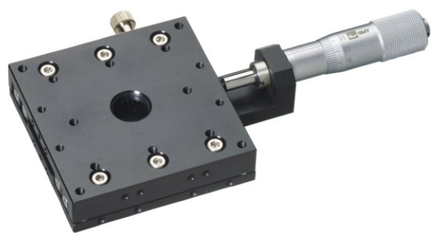


MX80-AC



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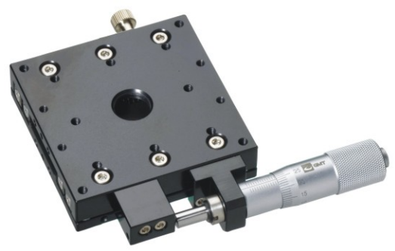

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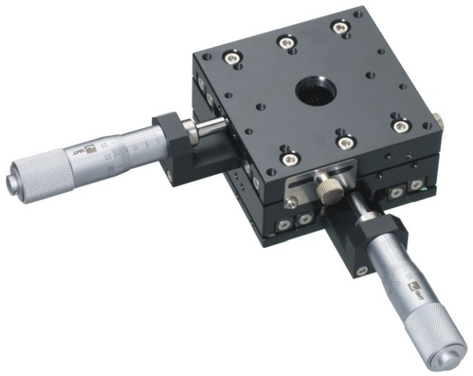

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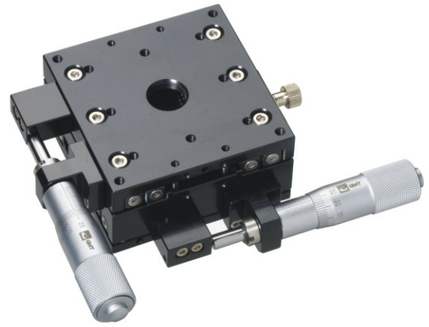
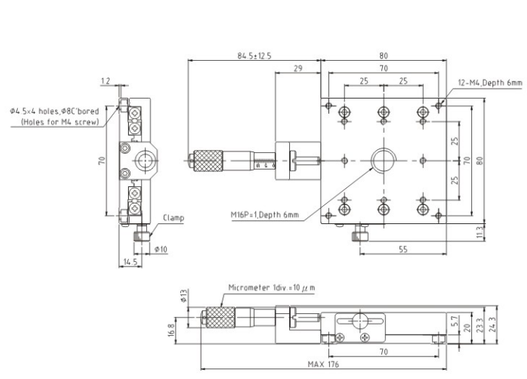


Specification

Unit：mm

Model no.	Table size	Axis	Feed position	Travel stroke	Micrometer minimum reading	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MX80-AC	80*80	X axis	Center	±12.5	10 μm	5 μm	10	0.5	Aluminum alloy	Black anodized
MX80-AS			Side							
MY80-AC		XY axes	Center				9.5	1		
MY80-AS			Side							

MX80-AC



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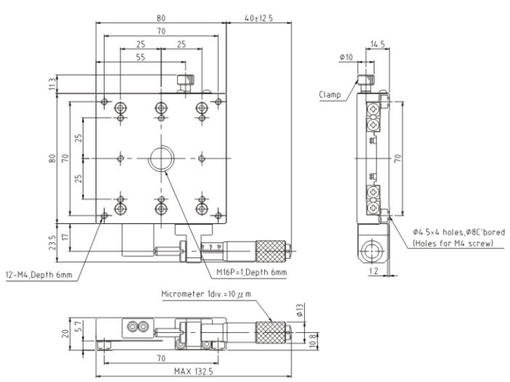
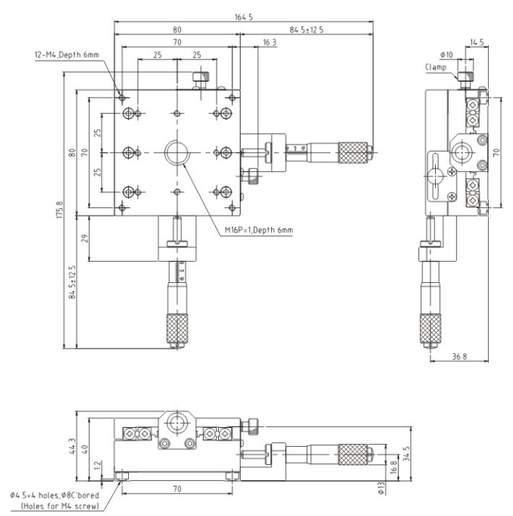
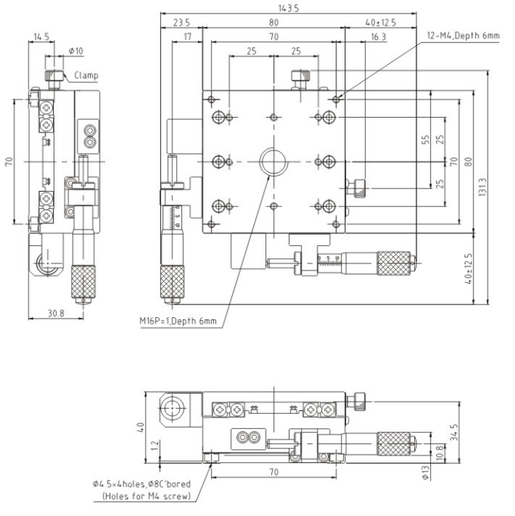


MY80-AC



MY80-AS



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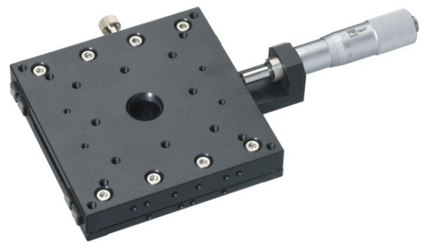

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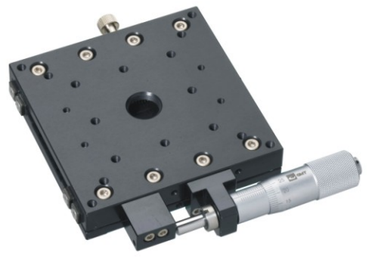
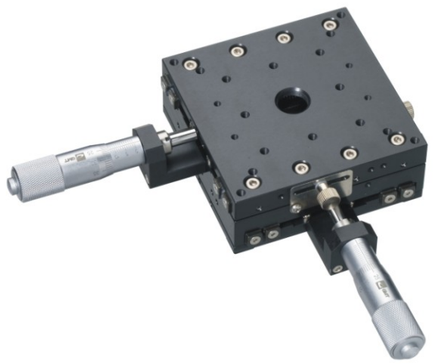
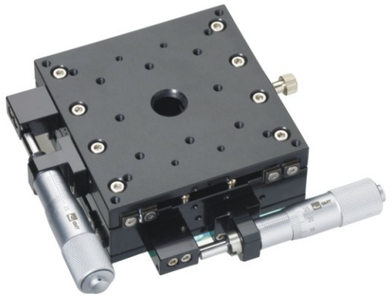


MY100-AC



MY100-AS

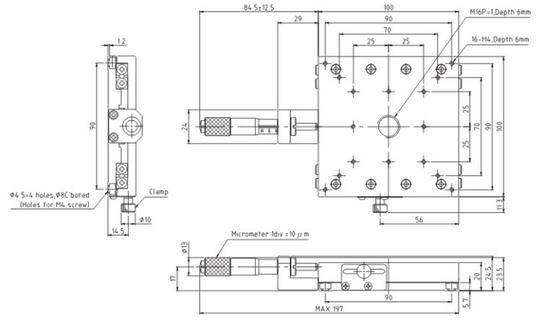


Specification

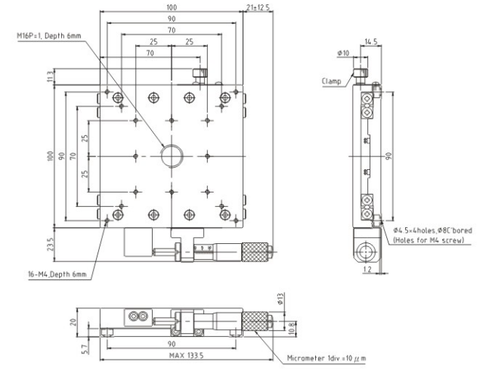
Unit：mm

Model no.	Table size	Axis	Feed position	Travel stroke	Micrometer minimum reading	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MX100-AC	100*100	X axis	Center	±12.5	10 μm	5 μm	15	0.7	Aluminum alloy	Black anodized
MX100-AS			Side							
MY100-AC		XY axes	Center				14.3	1.4		
MY100-AS			Side							

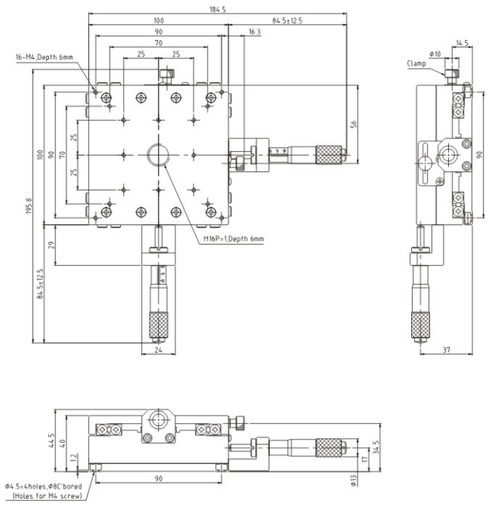
MX100-AC



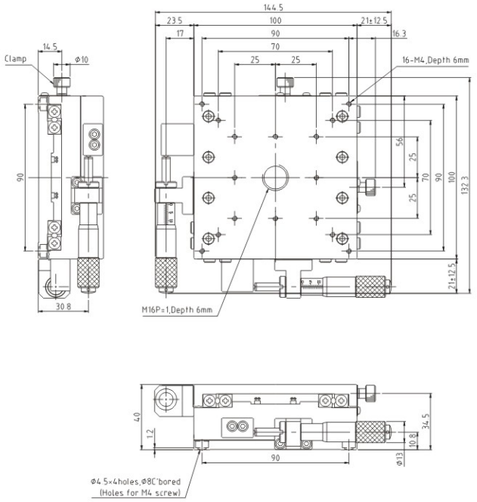
MX100-AS



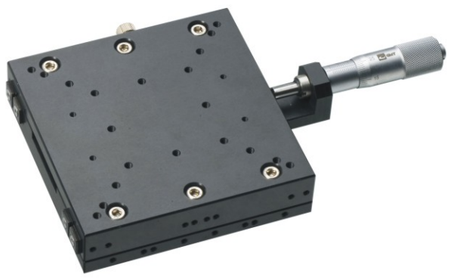
MY100-AC



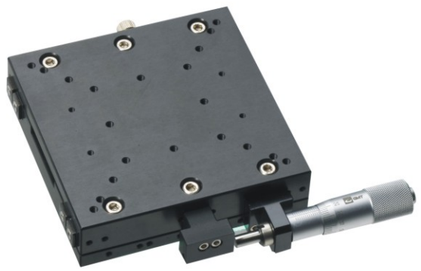
MY100-AS



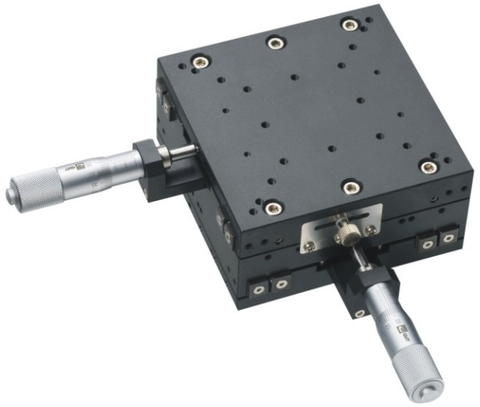
MX120-AC



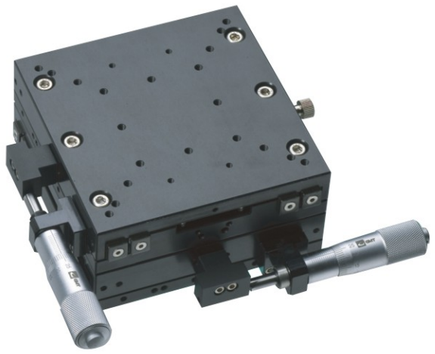
MX120-AS



MY120-AC



MY120-AS

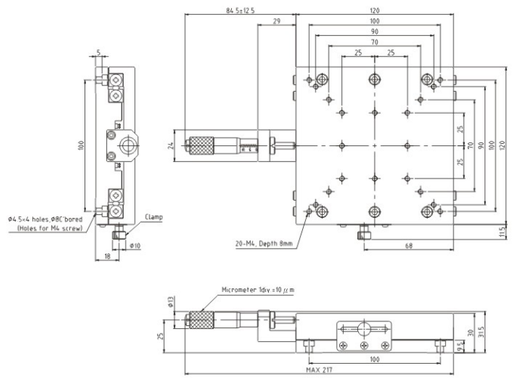


Specification

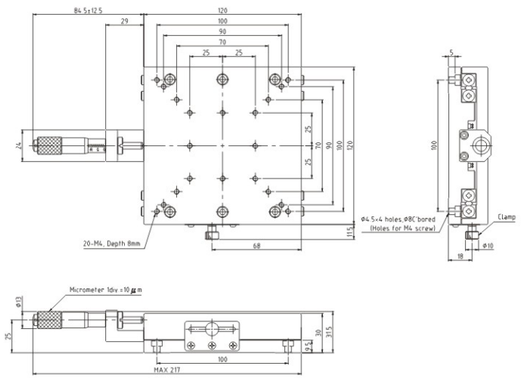
Unit：mm

Model no.	Table size	Axis	Feed position	Travel stroke	Micrometer minimum reading	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MX-120AC	120*120	X axis	Center	±12.5	10 μm	5 μm	20	1.6	Aluminum alloy	Black anodized
MX-120AS			Side							
MY-120AC		XY axes	Center				18.4	3.2		
MY-120AS			Side							

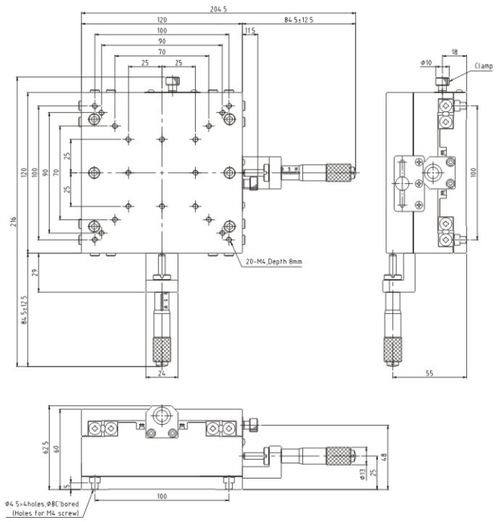
MX120-AC



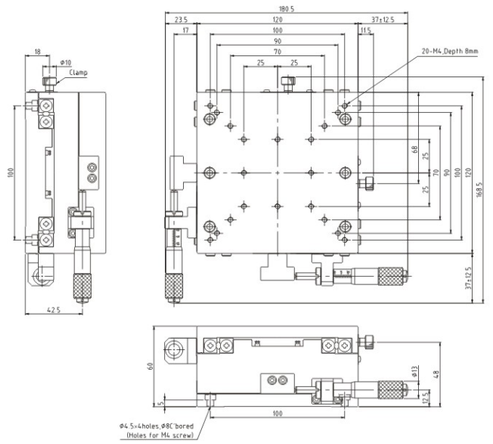
MX120-AS

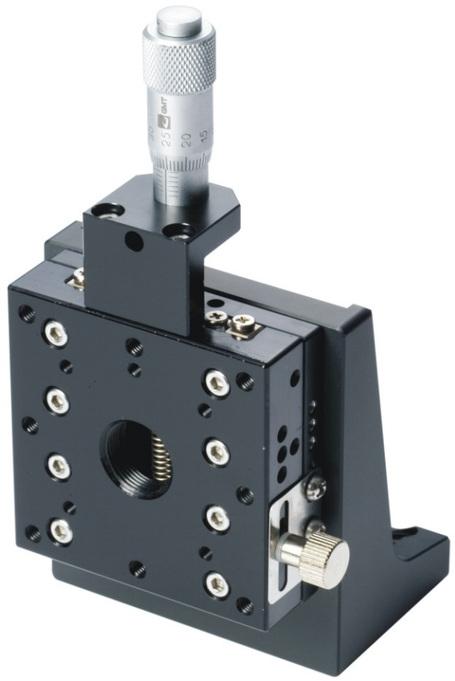


MY120-AC



MY120-AS





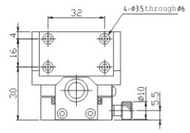
Specification

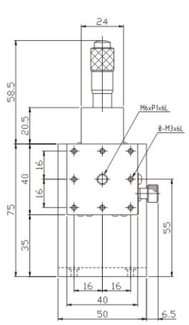
Unit：mm

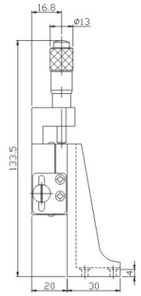
Model no.	Table size	Travel stroke	Micrometer minimum reading	Movement accuracy			Load capacity (kgf)	Weight (kg)	Material	Surface finish
				Straightness	Vertical yawing	Parallel yawing				
MZL40-ACR	40*40	±6.5	10 μm	5 μm	25”	15”	1.0	0.2	Aluminum alloy	Black anodized
MZL60-ACR	60*60						2.0	0.45		
MZL80-ACR	80*80	±12.5					5.0	0.8		

★Connecting board spec please refer to P64/ P65

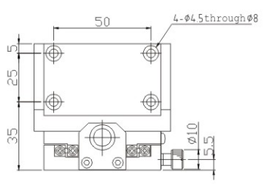
MZL40-ACR

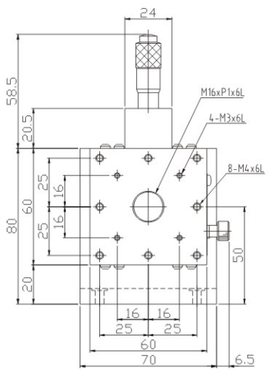


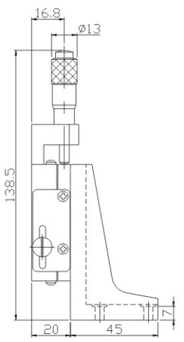




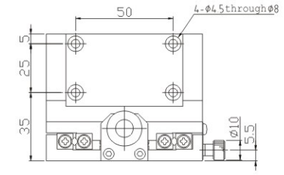
MZL60-ACR

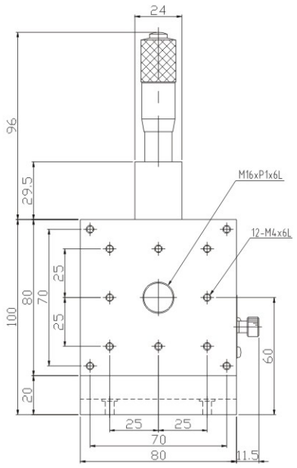


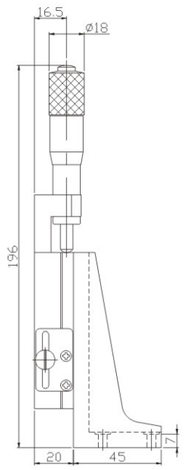




MZL80-ACR

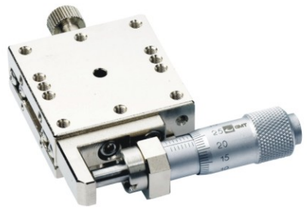




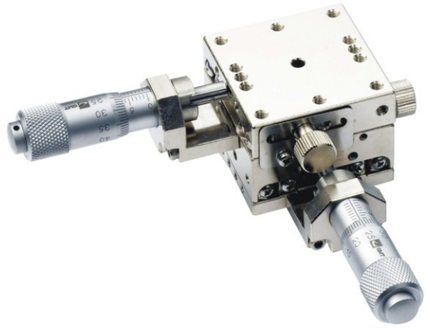


MX40-SC

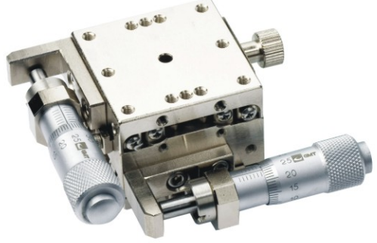
MX40-SS



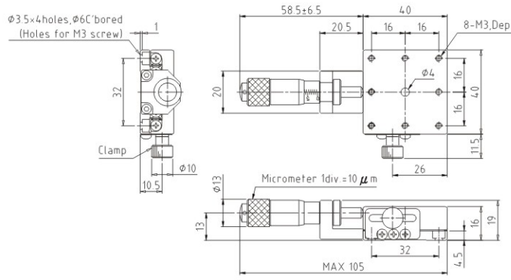
MY40-SC



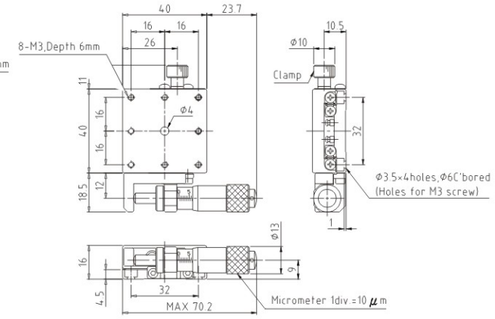
MY40-SS



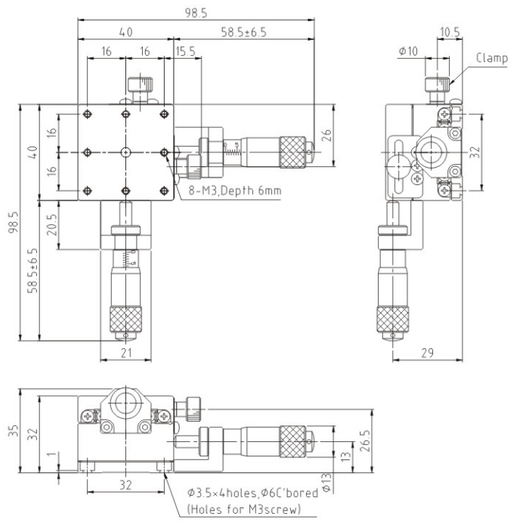
MX40-SC



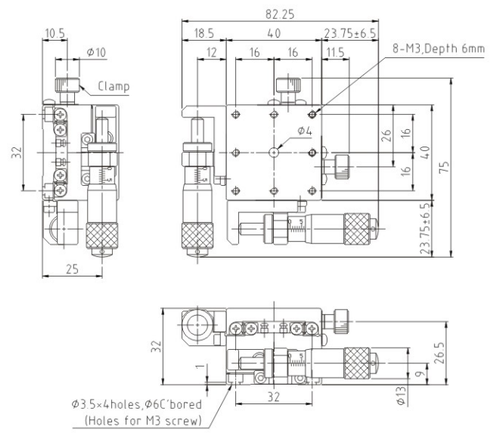
MX40-SS



MY40-SC



MY40-SS



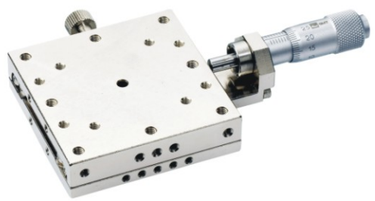
Specification

Unit：mm

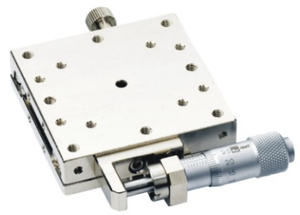
Model no.	Table size	Axis	Feed position	Travel stroke	Micrometer minimum reading	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MX40-SC	40*40	X axis	Center	±6.5	10 μm	5 μm	10	0.23	SUS440C	Electroless Nickel plating
MX40-SS			Side							
MY40-SC		XY axes	Center				9.7	0.46		
MY40-SS			Side							

★Transmission rails are linear ball slide ways.

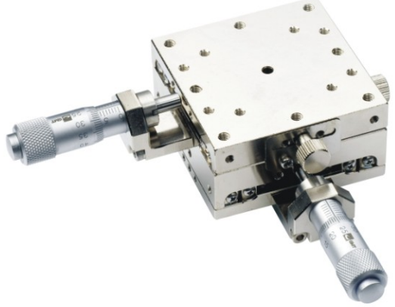
MX60-SC



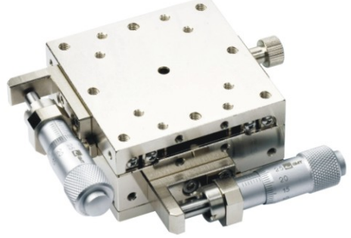
MX60-SS



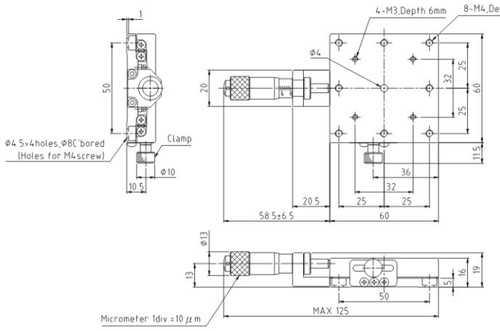
MY60-SC



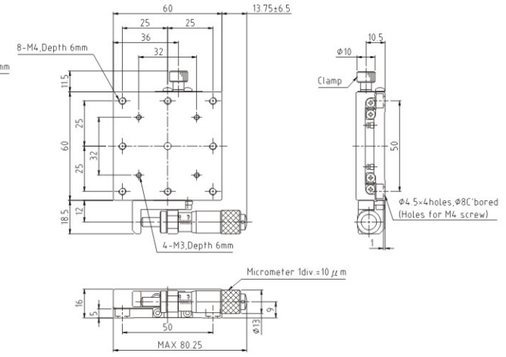
MY60-SS



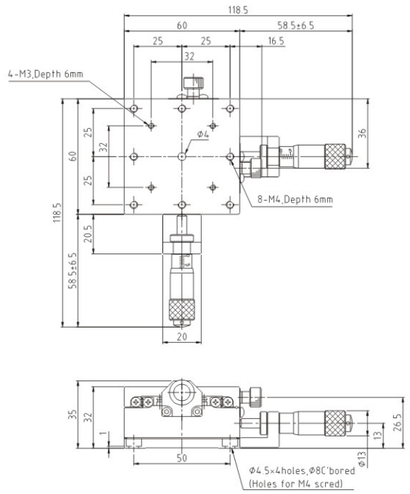
MX60-SC



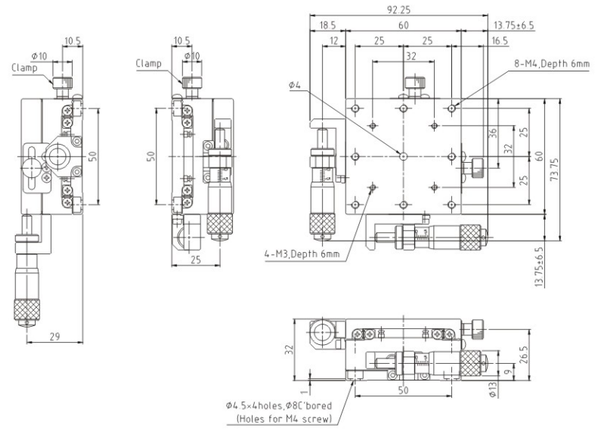
MX60-SS



MY60-SC



MY60-SS



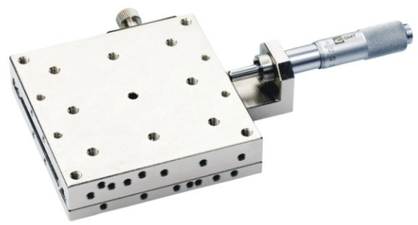
Specification

Unit：mm

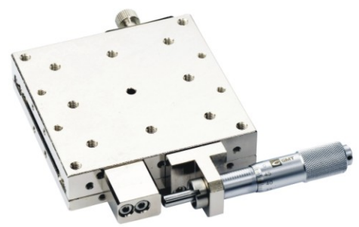
Model no.	Table size	Axis	Feed position	Travel stroke	Micrometer minimum reading	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MX60-SC	60*60	X axis	Center	±6.5	10 μm	5 μm	20	0.4	SUS440C	Electroless Nickel plating
MX60-SS			Side							
MY60-SC		XY axes	Center				19.6	0.8		
MY60-SS			Side							

★Transmission rails are linear ball slide ways.

MX80-SC



MX80-SS



MY80-SC

MY80-SS

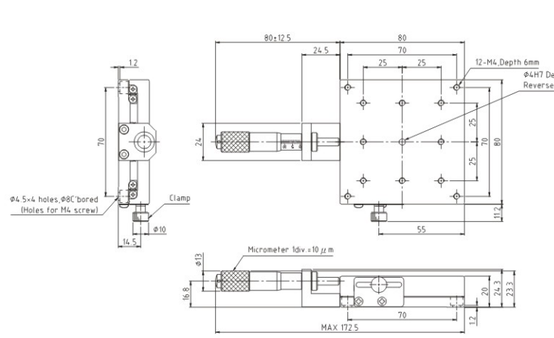
Specification

Unit：mm

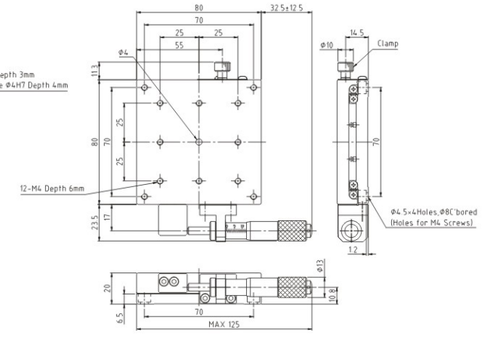
Model no.	Table size	Axis	Feed position	Travel stroke	Micrometer minimum reading	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MX80-SC	80*80	X axis	Center	±12.5	10 μm	5 μm	27	0.9	SUS440C	Electroless Nickel plating
MX80-SS			Side							
MY80-SC		XY axes	Center				26.1	1.8		
MY80-SS			Side							

★Transmission rails are linear ball slide ways.

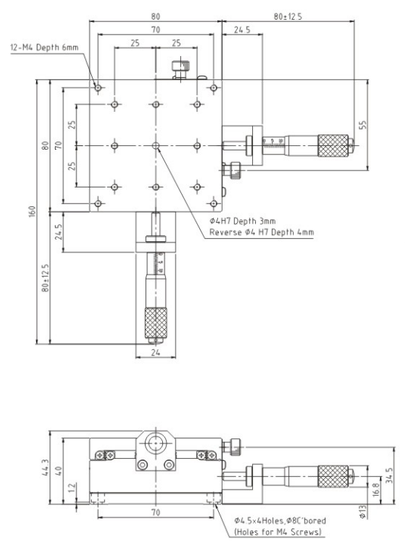
MX80-SC



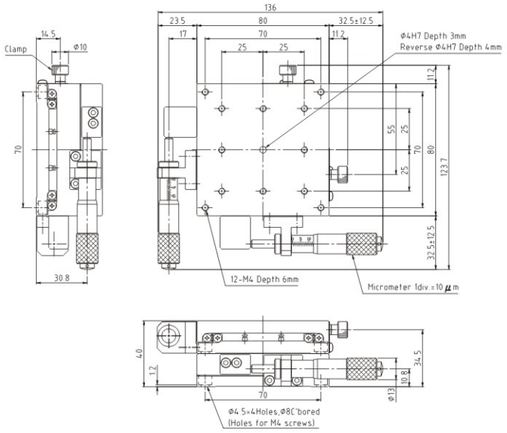
MX80-SS



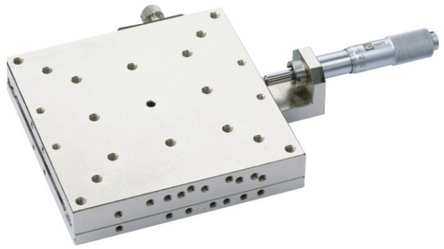
MY80-SC



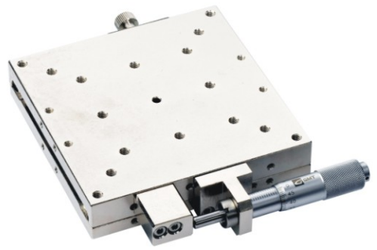
MY80-SS



MX100-SC



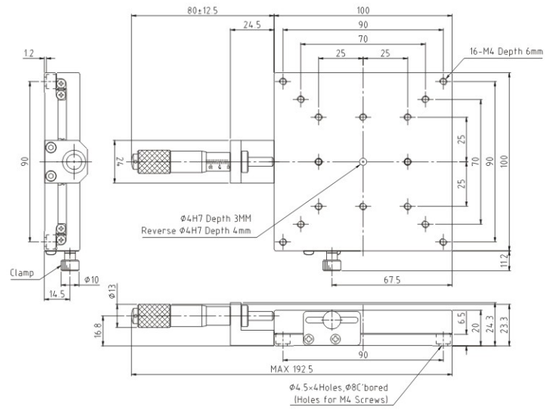
MX100-SS



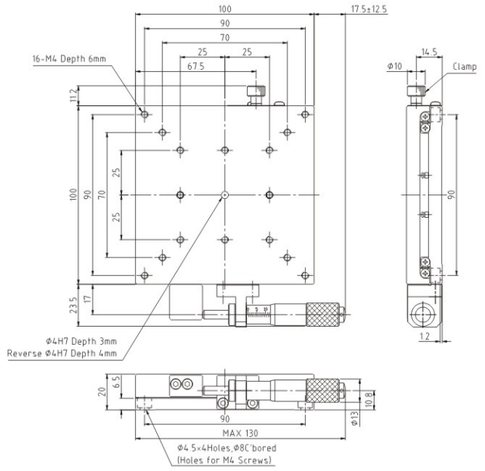
MY100-SC

MY100-SS

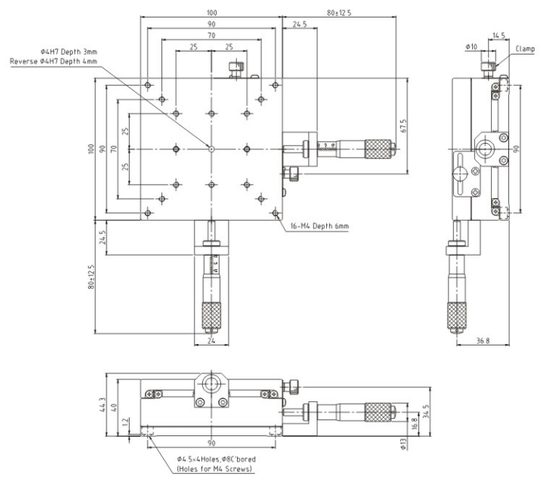
MX100-SC



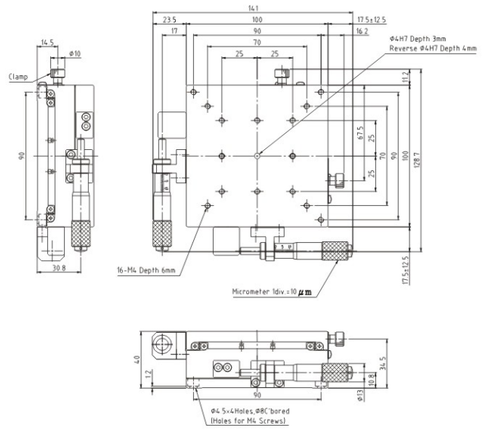
MX100-SS



MY100-SC



MY100-SS



Specification

Unit：mm

Model no.	Table size	Axis	Feed position	Travel stroke	Micrometer minimum reading	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MX100-SC	100*100	X axis	Center	±12.5	10 μm	5 μm	35	1.33	SUS440C	Electroless Nickel plating
MX100-SS			Side							
MY100-SC		XY axes	Center				33.6	2.66		
MY100-SS			Side							

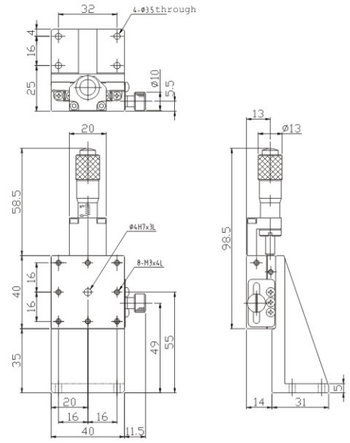
★Transmission rails are linear ball slide ways.

Specification

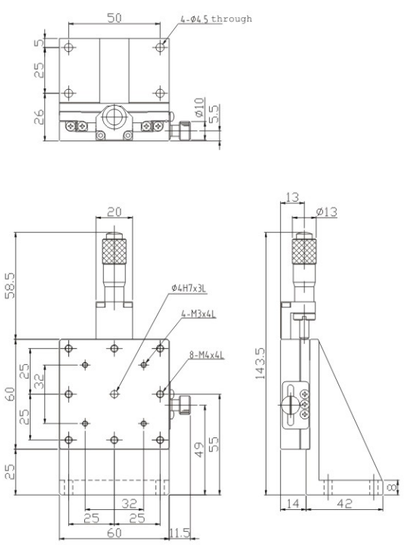
Unit：mm

Model no.	Table size	Travel stroke	Micrometer minimum reading	Movement accuracy			Load capacity (kgf)	Weight (kg)	Material	Surface finish
				Straightness	Vertical yawing	Parallel yawing				
MZL40-SCR	40*40	±6.5	10 μm	5 μm	25”	15”	5.0	0.32	SUS440C	Electroless Nickel plating
MZL60-SCR	60*60							0.58		
MZL80-SCR	80*80	±12.5						1.2		

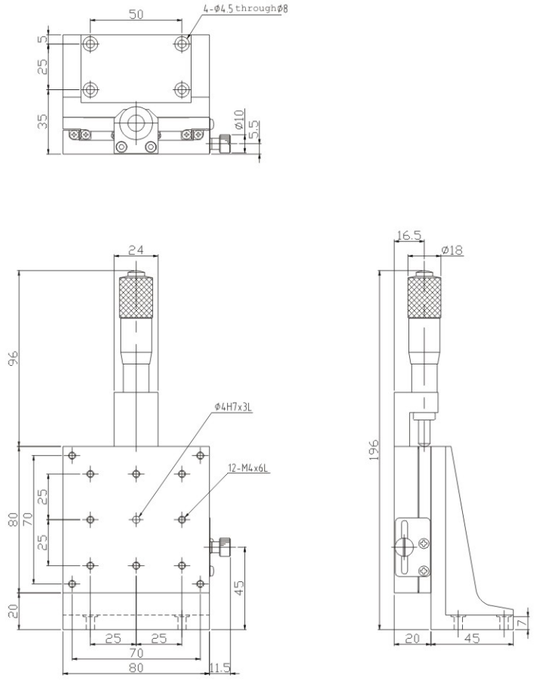
MZL40-SCR



MZL60-SCR



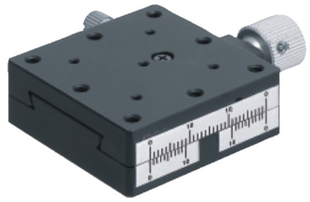
MZL80-SCR

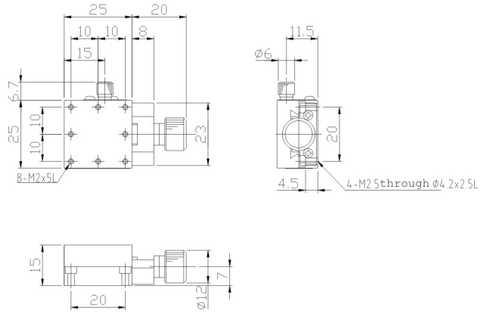


M C 2 A - 60

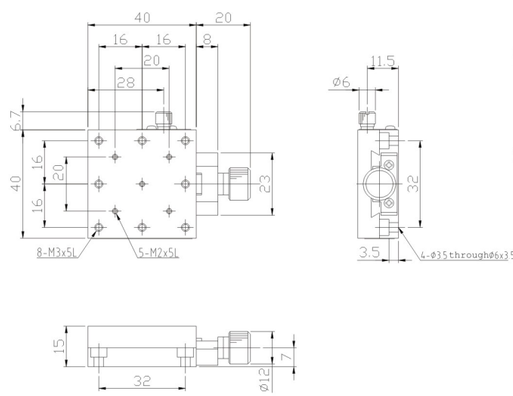
M	C	2	A	□
Transmission	Stage type	Axis	Slide way	Stage dimension
M：Manual	C：Dovetail	1 : X axis	A : Feed screw type	As option in catalog
A：Automatic	T：Tilt stage	2 : XY axes	B : Rack and pinion type	
	M：Magnetic	3 : Z axis	C : Rack and pinion type / Long stroke	
	Z：Horizontal Z axis	4 : X axis +L plate	D : Rack and pinion type / Simple type	
		5 : XZ axes		

MC1A-25

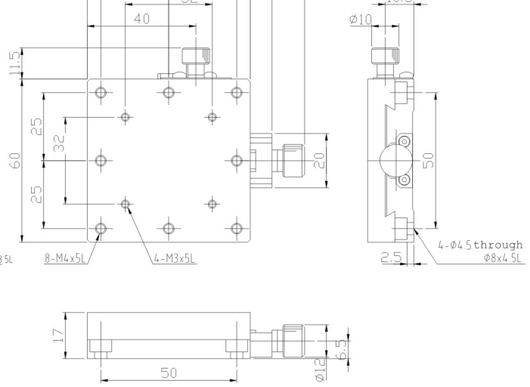




MC1A-40



MC1A-60



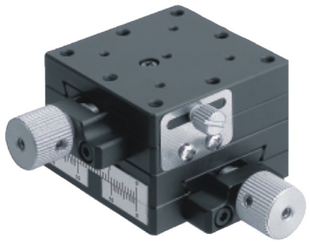
◆Specification

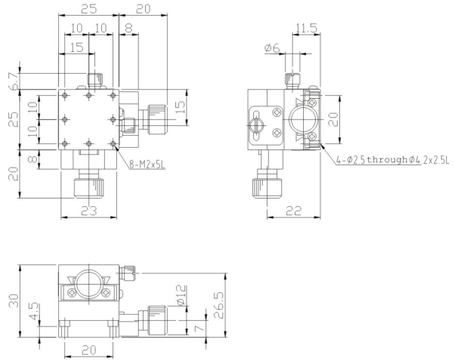
Unit：mm

Model no.	Stage size	Travel stroke	Minimum reading (Vernier)	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MC1A-25	25*25	±3	0.1mm/Vernier	30 μm	3.0	0.07	Stage body: Brass Feed knob: Aluminum	Black fluororesin finished
MC1A-40	40*40	±7			3.0	0.19		
MC1A-60	60*60	±9			4.0	0.6		

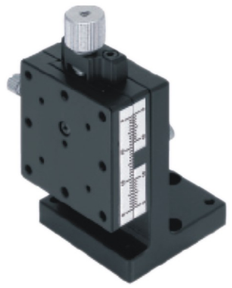
※Distance of one revolution is 0.5 mm

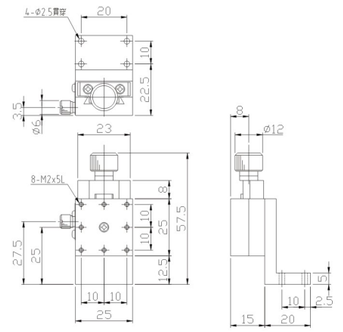
MC2A-25





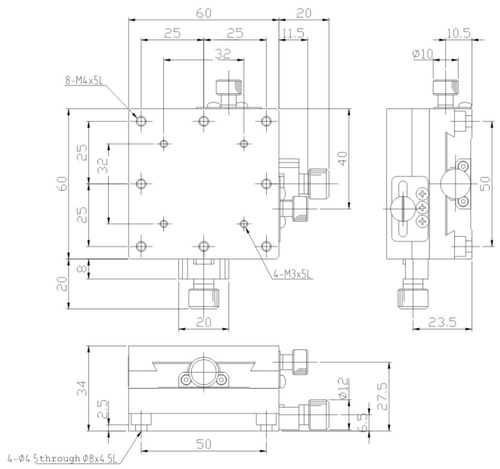
MC4A-25



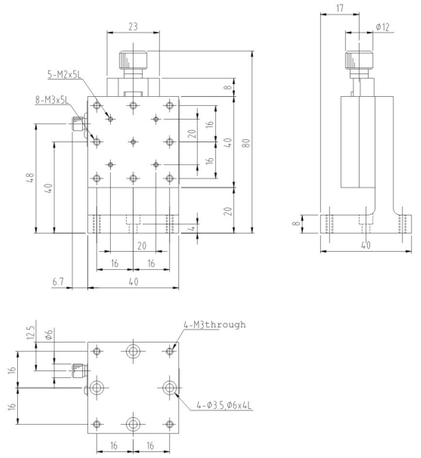


MC2A-40

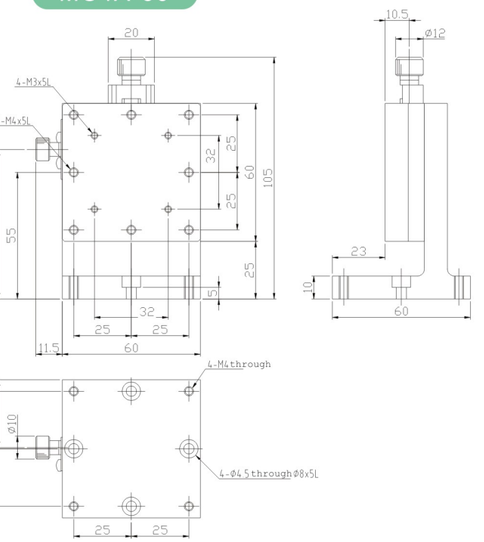
MC2A-60



MC4A-40



MC4A-60



◆Specification

Unit：mm

Model no.	Stage size	Travel stroke	Minimum reading (Vernier)	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MC2A-25	25*25	±3	0.1mm/Vernier	30 μm	2.9	0.15	Stage body: Brass Feed knob: Aluminum	Black fluororesin finished
MC2A-40	40*40	±7			2.8	0.38		
MC2A-60	60*60	±9			3.4	1.2		

※Distance of one revolution is 0.5 mm

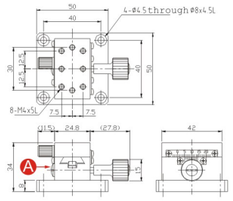
◆Specification

Unit：mm

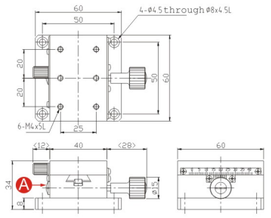
Model no.	Stage size	Travel stroke	Minimum reading (Vernier)	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MC4A-25	25*25	±3	0.1mm/Vernier	30 μm	1.0	0.09	Stage body: Brass Feed knob: Aluminum	Black fluororesin finished
MC4A-40	40*40	±7			1.0	0.26		
MC4A-60	60*60	±9			2.0	0.75		

※Distance of one revolution is 0.5 mm

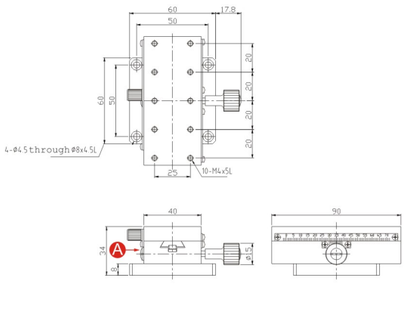
MC1B-40



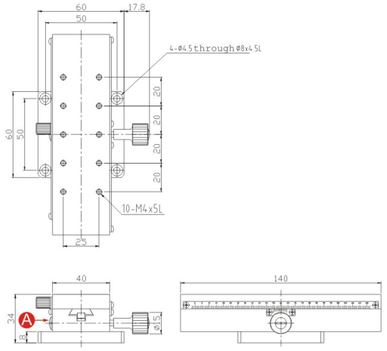
MC1B-60



MC1B-90



MC1B-140



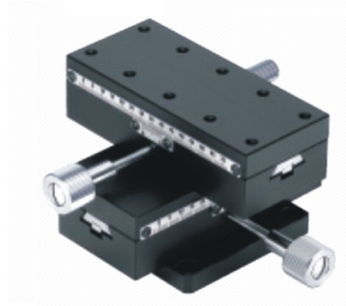
★ Use slotted-driver to lock Ⓐ clockwise to moderate sliding, rotating anticlockwise to accerate sliding smoothly.

Specification

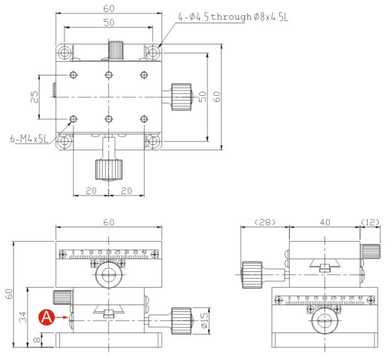
Unit：mm

Model no.	Stage size	Travel stroke	Minimum reading (Vernier)	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MC1B-40	24.8*42	±12	0.1mm/Vernier	30 μm	3.0	0.17	Aluminum alloy	Black anodized
MC1B-60	40*60	±21			4.0	0.29		
MC1B-90	40*90	±35				0.40		
MC1B-140	40*140	±60				0.56		

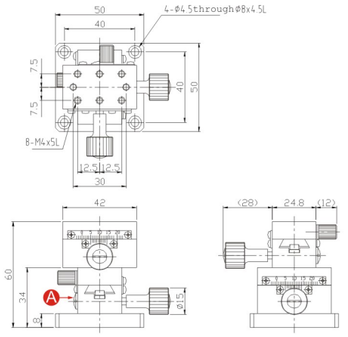
※Distance of one revolution is 18 mm



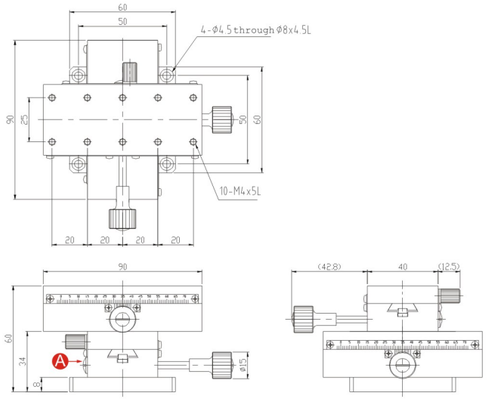
MC2B-60



MC2B-40



MC2B-90



★ Use slotted-driver to lock Ⓐ clockwise to moderate sliding, rotating anticlockwise to accerate sliding smoothly.

Specification

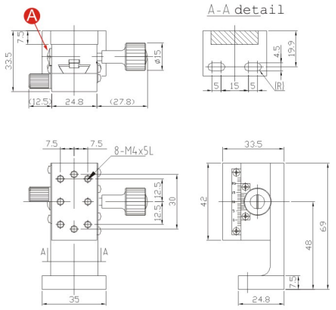
Unit：mm

Model no.	Stage size	Travel stroke	Minimum reading (Vernier)	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MC2B-40	24.8*42	±12	0.1mm/Vernier	30 μm	2.5	0.29	Aluminum alloy	Black anodized
MC2B-60	40*60	±21			3.5	0.51		
MC2B-90	40*90	±35				0.73		

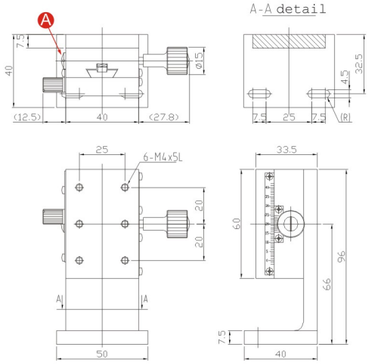
※Distance of one revolution is 18 mm

Dovetail stage
Rack and pinion

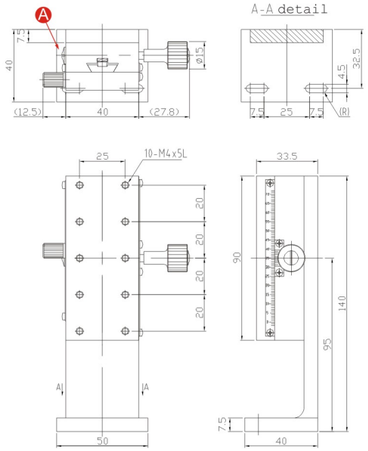
MC4B-40



MC4B-60



MC4B-90



★ Use slotted-driver to lock Ⓐ clockwise to moderate sliding, rotating anticlockwise to accerate sliding smoothly.

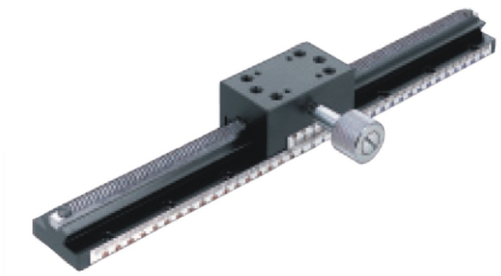
Specification

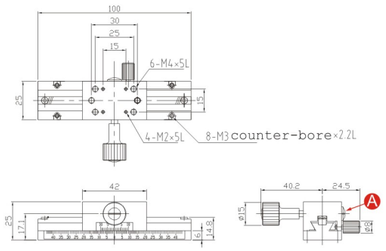
Unit：mm

Model no.	Stage size	Travel stroke	Minimum reading (Vernier)	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MC4B-40	24.8*42	±12	0.1mm/Vernier	30 μm	1.5	0.17	Aluminum alloy	Black anodized
MC4B-60	40*60	±21			2.0	0.33		
MC4B-90	40*90	±35				0.45		

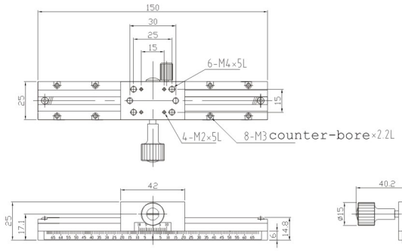
※Distance of one revolution is 18 mm

MC1C-100

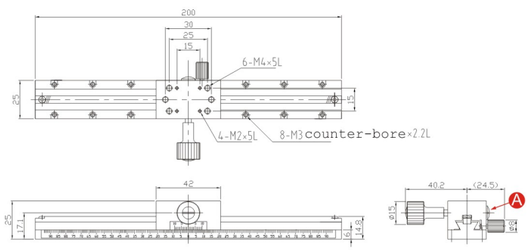




MC1C-150



MC1C-200



※Outer assembly used by M2 screw, inner assembly used by M3 screw.

※If chart scale is L100, different from L150, L200.

★ Use slotted-driver to lock Ⓐ clockwise to moderate sliding, rotating anticlockwise to accerate sliding smoothly.

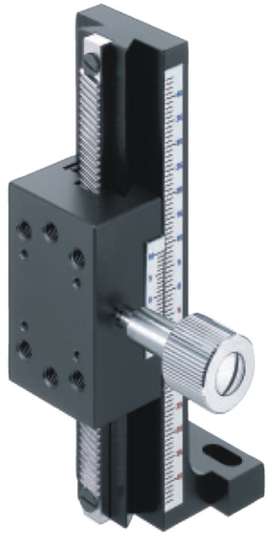
Specification

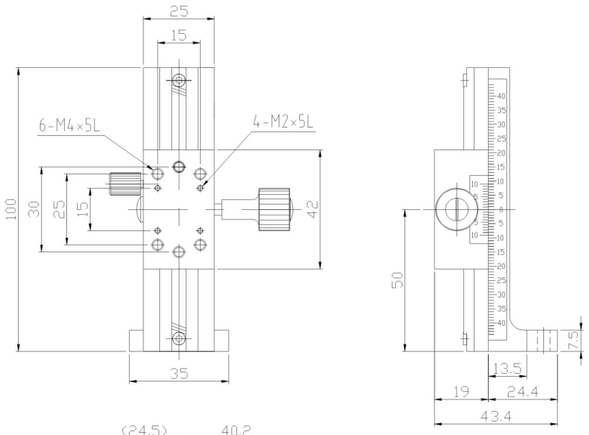
Unit：mm

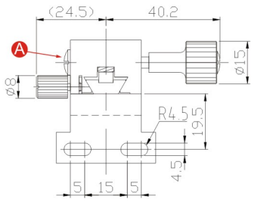
Model no.	Stage size	Travel stroke	Minimum reading (Vernier)	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MC1C-100	100	±40	0.1mm/Vernier	30 μm	3.0	0.14	Aluminum alloy	Black anodized
MC1C-150	150	±65		40 μm		0.17		
MC1C-200	200	±90		50 μm		0.21		

※Distance of one revolution is 18 mm

MC4C-100







★ Available combined with MC1B(P.000), MC2B(P.000), MC1C.

★ Use slotted-driver to lock Ⓐ clockwise to moderate sliding, rotating anticlockwise to accerate sliding smoothly.

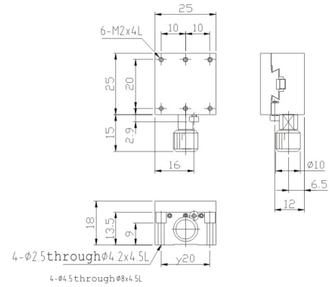
Specification

Unit：mm

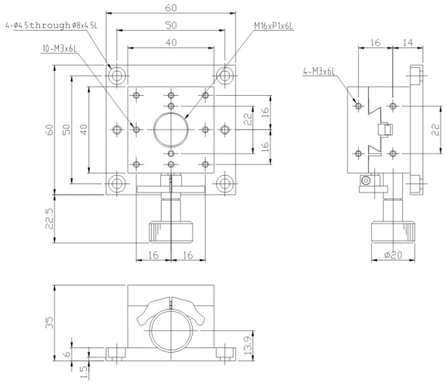
Model no.	Stage size	Travel stroke	Minimum reading (Vernier)	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MC4C-100	100	±40	0.1mm/Vernier	30 μm	1.5	0.16	Aluminum alloy	Black anodized

※Distance of one revolution is 18 mm

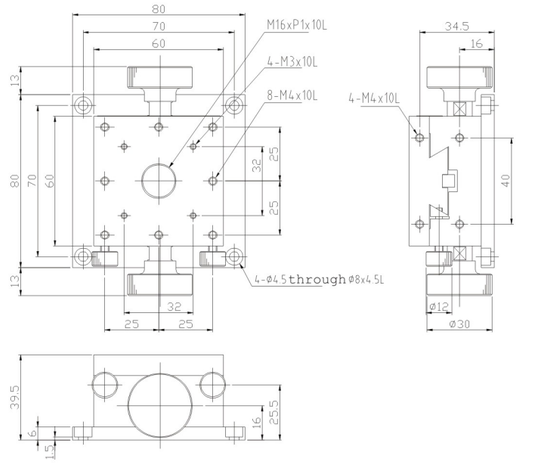
MC1D-25



MC1D-40



MC1D-60

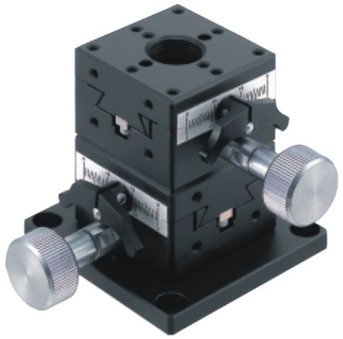


★ Scale of MC1D-25、MC1D-60 is opposite to fixed mounting plane.

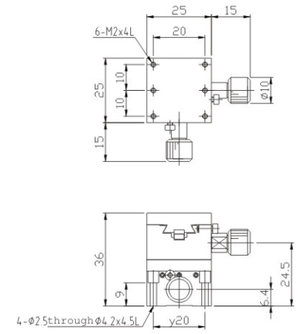
Specification

Unit：mm

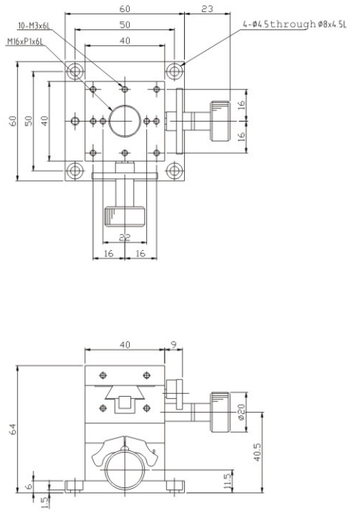
Model no.	Stage size	Travel stroke	Distance of one revolution	Minimum reading (Vernier)	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MC1D-25	25*25	± 5	17	0.1mm/Vernier	20 μm	3.0	0.09	Brass	Black fluororesin
MC1D-40	40*40	±10	20		20 μm		0.21	Aluminum alloy	Black anodized
MC1D-60	60*60	±20	18		30 μm	4.0	0.64		



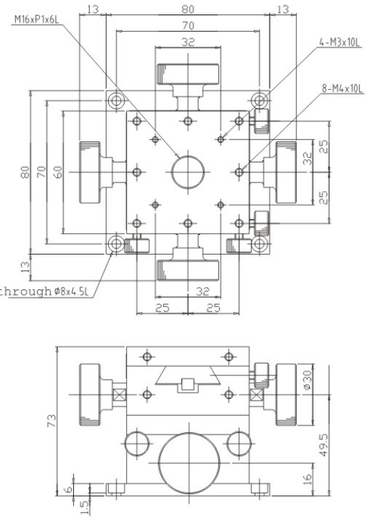
MC2D-25

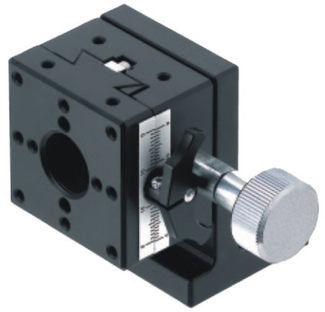


MC2D-40

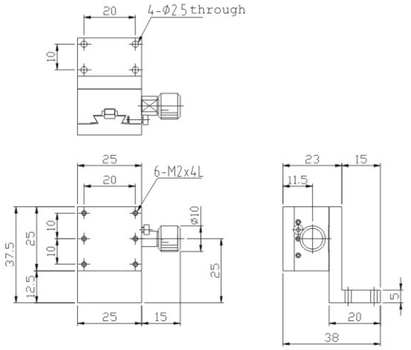


MC2D-60



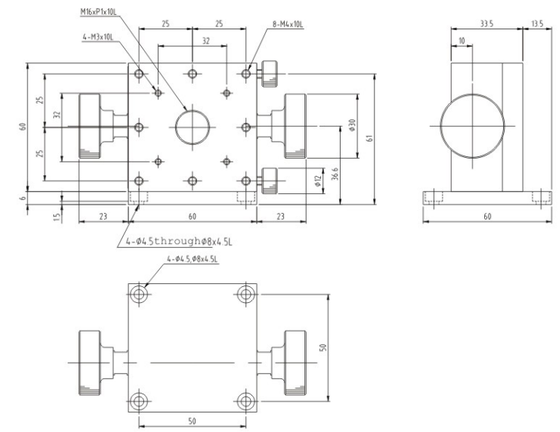


MC4D-25



MC4D-40

MC4D-60



★ Scale of MC4D-25 is opposite to fixed mounting plane.

Specification

Unit：mm

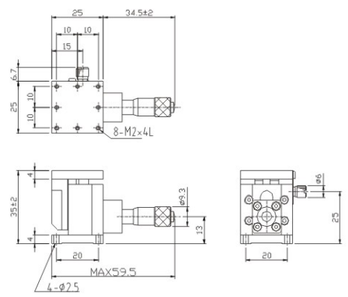
Model no.	Stage size	Travel stroke	Distance of one revolution	Minimum reading (Vernier)	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MC2D-25	25*25	± 5	17	0.1mm/Vernier	20 μm	2.9	0.18	Brass	Black fluororesin
MC2D-40	40*40	±10	20		20 μm	2.8	0.37	Aluminum alloy	Black anodized
MC2D-60	60*60	±20	18		30 μm	3.0	1.19		

Specification

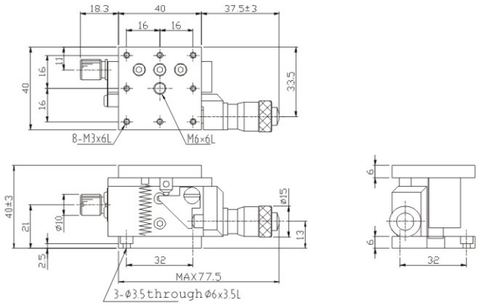
Unit：mm

Model no.	Stage size	Travel stroke	Distance of one revolution	Minimum reading (Vernier)	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MC4D-25	25*25	± 5	17	0.1mm/Vernier	20 μm	0.7	0.11	Brass	Black fluororesin
MC4D-40	40*40	±10	20		20 μm	1.5	0.23	Aluminum alloy	Black anodized
MC4D-60	60*60	±20	18		30 μm	2.0	0.60		

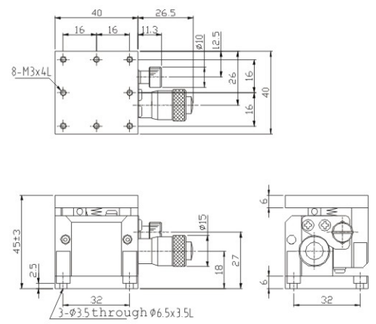
MZA-25



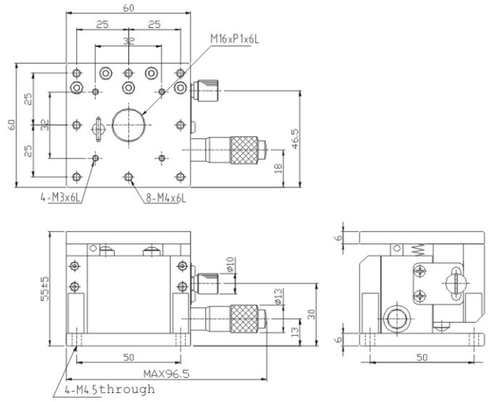
MZA-40



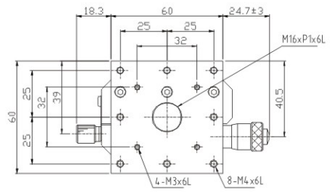
MZA-40H



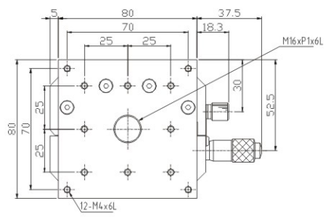
MZA-60

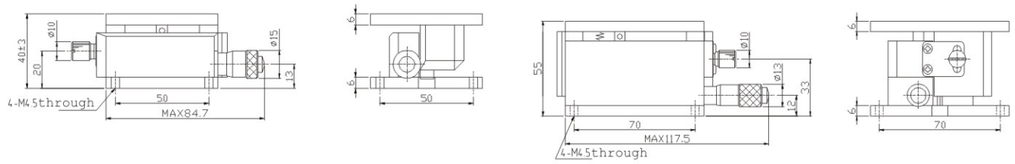


MZA-60L



MZA-80



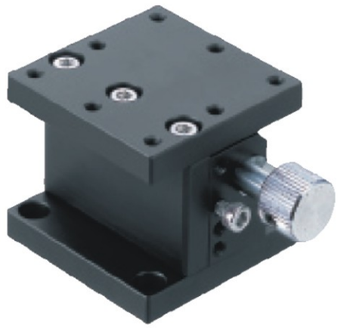


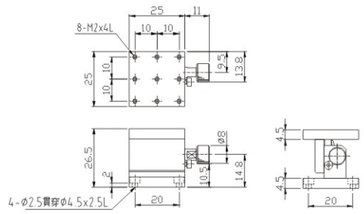
◆Specification

Unit：mm

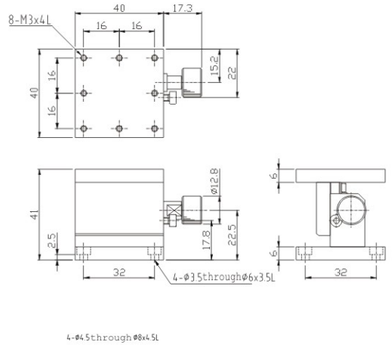
Model no.	Stage size	Travel stroke	Micrometer Minimum reading	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MZA-25	25*25	±2.0	10 μm	3 μm	1.0	0.06	Aluminum alloy	Black anodized
MZA-40	40*40	±3.0			1.0	0.2		
MZA-40H	40*40	±3.0			2.0	0.2		
MZA-60L	60*60	±3.0			2.0	0.3		
MZA-60	60*60	±5.0			4.0	0.6		
MZA-80	80*80				3.0	1.0		

MC3B-25

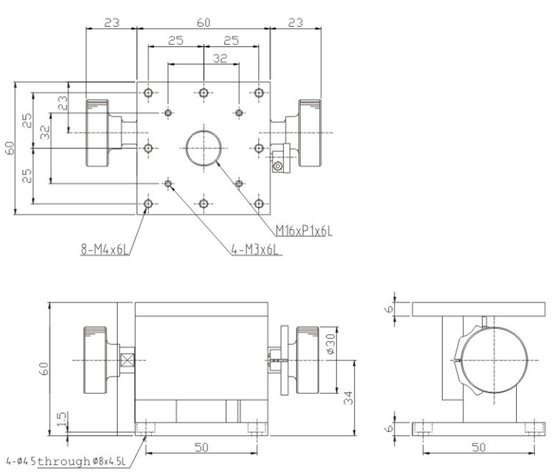




MC3B-40



MC3B-60



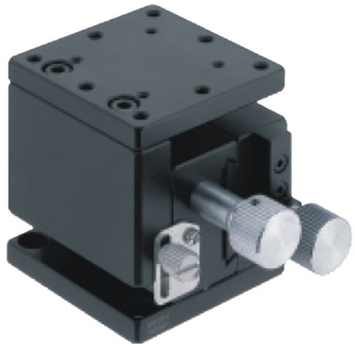
★ Scale is opposite to fixed mounting plane.

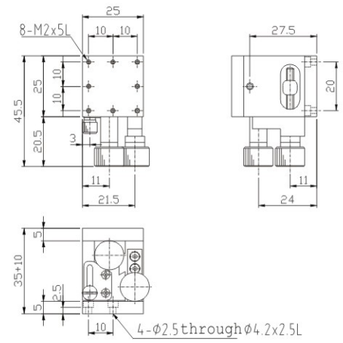
◆Specification

Unit：mm

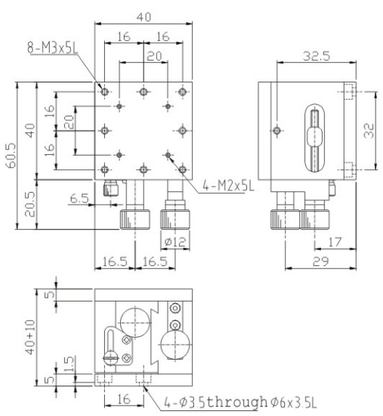
Model no.	Stage size	Travel stroke	Distance of one revolution	Minimum reading (Vernier)	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MC3B-25	25*25	±2.5	≒ 8	0.1mm/Vernier	30 μm	0.7	0.08	Brass	Black fluororesin
MC3B-40	40*40	± 5	≒13			1.0	0.12	Aluminum alloy	Black anodized
MC3B-60	60*60	±10	≒18			1.5	0.47		

MC5B-25

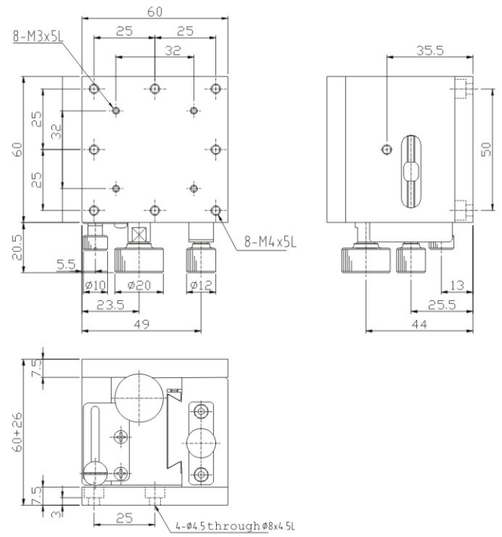




MC5B-40



MC5B-60



◆Specification

Unit：mm

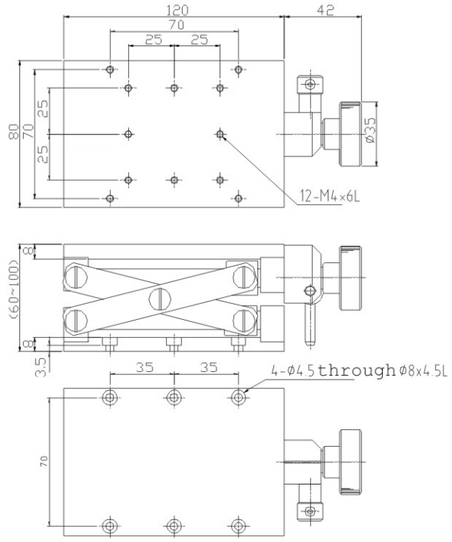
Model no.	Stage size	Travel stroke	Distance of one revolution	Movement accuracy straightness	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MC5B-25	25*25	X :± 5 Z :+10	X：0.5 Z：≒14	30 μm	1.0	0.17	Brass	Black fluororesin
MC5B-40	40*40	X :± 7 Z :+10	X：0.5 Z：≒14			0.51		
MC5B-60	60*60	X :±10 Z :+25	X：0.5 Z：≒20			0.62	Aluminum alloy	Black anodized

Specification

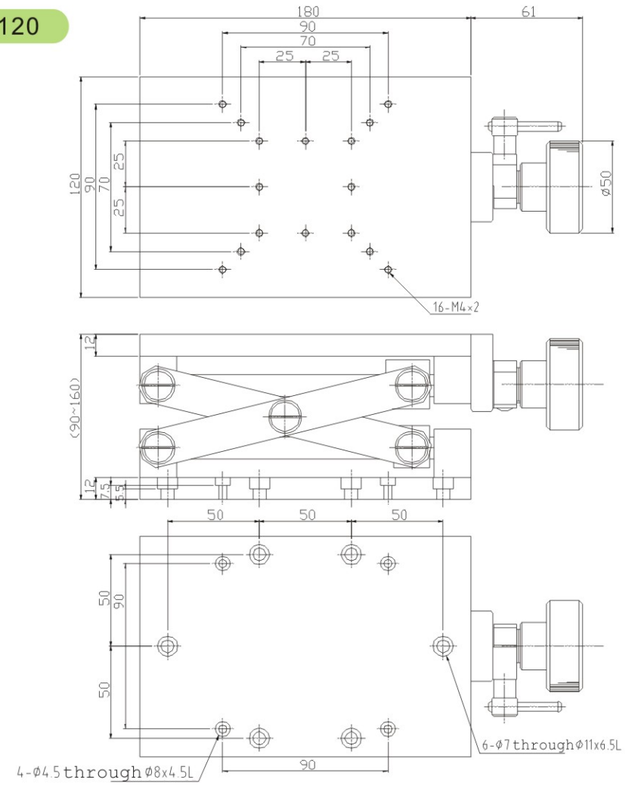
Unit：mm

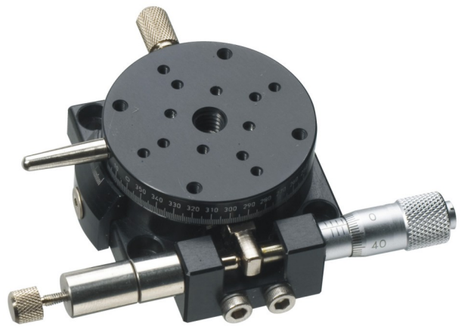
Model no.	Stage size	Travel stroke	Distance of one revolution	Parallelism	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MZF-80	80*120	40	2	200 μm	7.0	1.25	Aluminum alloy	Black anodized
MZF-120	120*180	70	3		10.0	3.5		

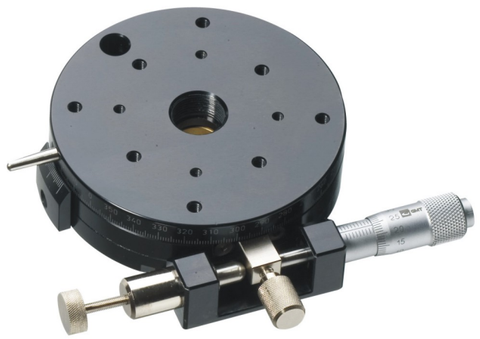
MZF-80



MZF-120







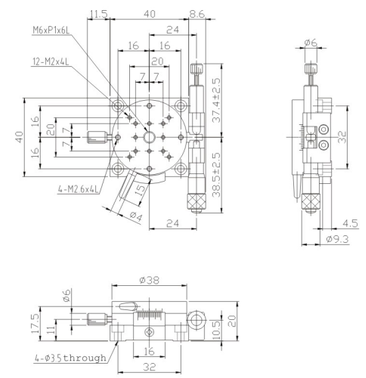
◆Specification

Unit：mm

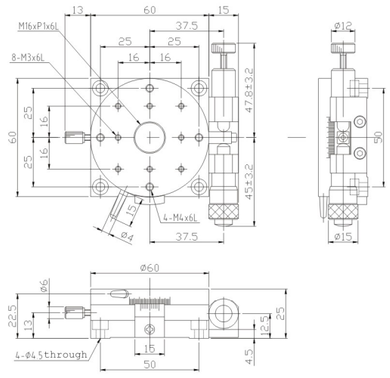
Model no.	Stage size	Distance	Rotating movement accuracy	Micrometer Minimum reading	Offset (Eccentric)	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MR38-AL	Ø38	Coarse 360° Fine ±5°	0.02	≒1'26"/Vernier	0.05	1.0	0.09	Aluminum alloy	Black anodized
MR60-AL	Ø60			≒55"/Vernier		3.0	0.28		
MR85-AL	Ø85			≒43"/Vernier		4.0	0.48		
MR110-AL	Ø110			≒34"/Vernier		5.0	0.75		

★The transmission of MR series is brass bush rotary system.
【Remark】Optional of right side feed direction available. Ex：MR□□-AR

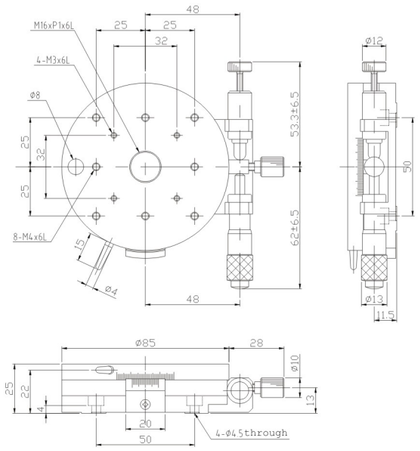
MR38-AL



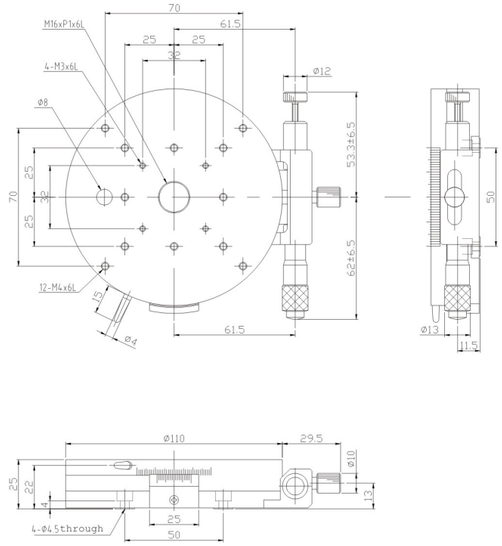
MR60-AL



MR85-AL

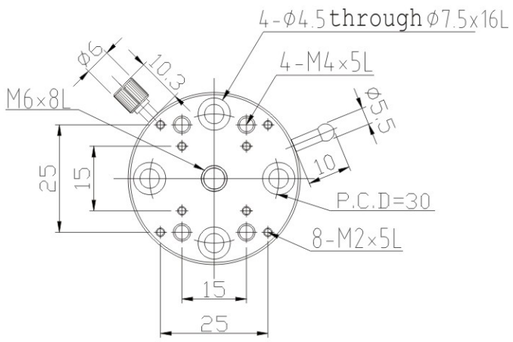


MR110-AL

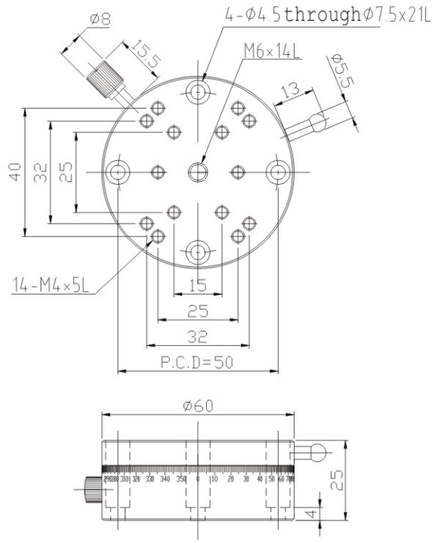


- Generally connective to MC1B(P.40)、MC2B(P.41)、MC4B(P.42)、MC1C(P.43) each other.
- For MRE-60-AL, ASAP60 is vequired necessarily.

MRE40-AL



MRE60-AL

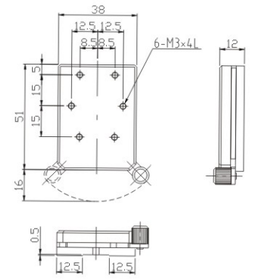


Specification

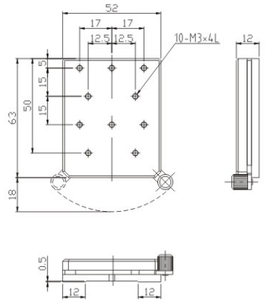
Unit：mm

Model no.	Stage size	Distance	Vernier minimum reading	Offset (Eccentric)	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MRE40-AL	Ø40	Coarse 360°	2°	0.05	5.0	0.14	Aluminum alloy	Black anodized
MRE60-AL	Ø60		1°		7.0	0.2		

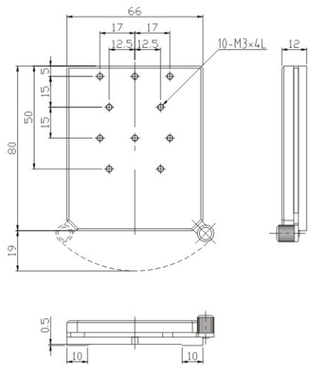
MMT-38



MMT-52



MMT-66



Specification

Unit：mm

Model no.	Table size	Holding force (kgf)	Parallelism	Weight (kg)	Material	Surface finish
MMT-38	12*38*53	1.0	0.015	0.3	Aluminum alloy	Black anodized
MMT-52	12*52*63	3.3	0.02	0.6		
MMT-66	12*66*80	3.8	0.02	1.2		

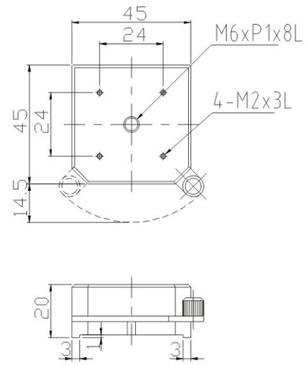
★Mounting holes not matched with SPEC, customized size is acceptable additionally.

Specification

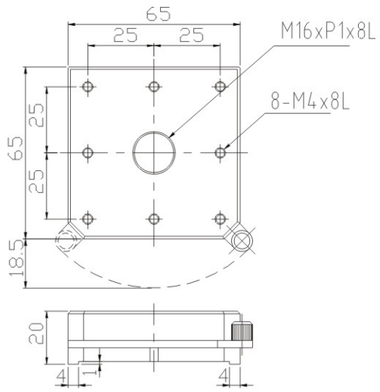
Unit：mm

Model no.	Table size	Holding force (kgf)	Parallelism	Weight (kg)	Material	Surface finish
MMS-45	20*45*45	17.0	0.015	0.3	Aluminum alloy	Black anodized
MMS-65	20*65*65	20.0	0.02	0.6		
MMS-90	20*90*90	25.0	0.02	1.2		
MMS-125	20*125*125	100.0	0.02	2.8		

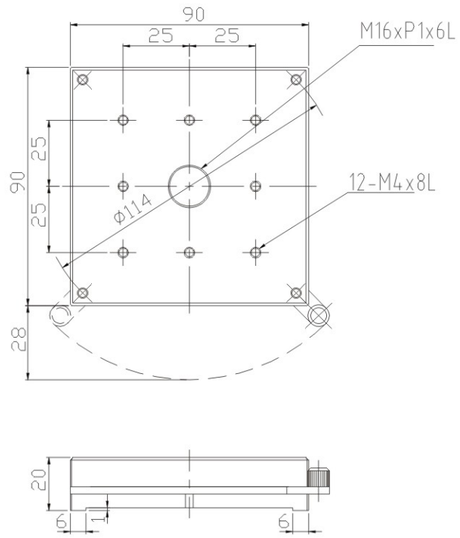
MMS-45



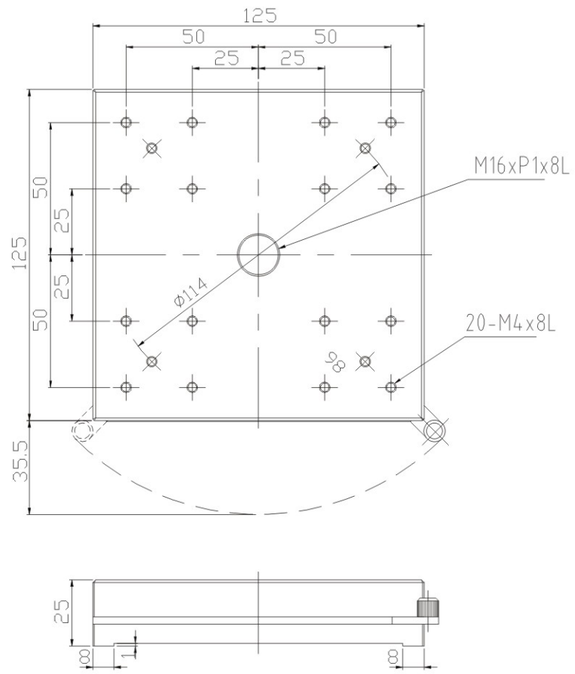
MMS-65

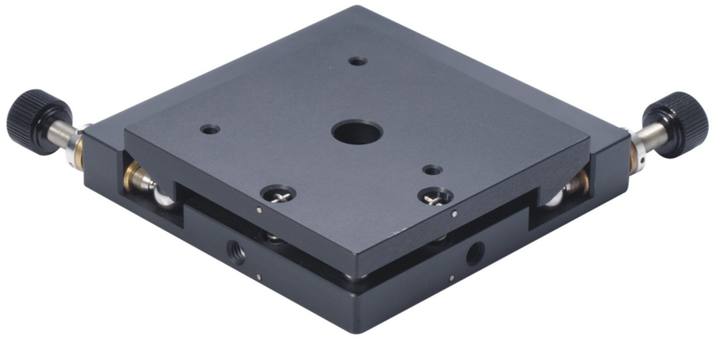


MMS-90

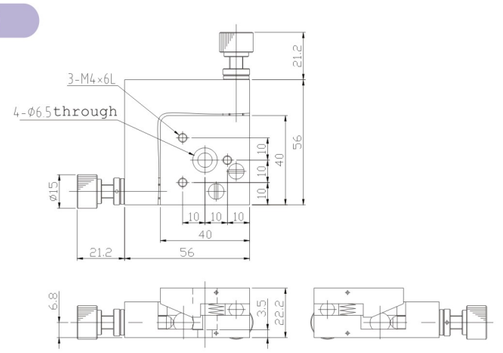


MMS-125

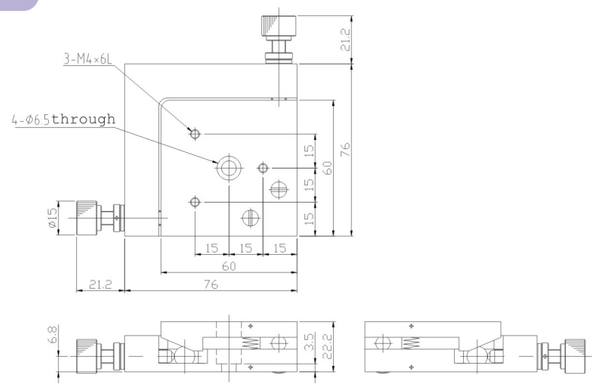




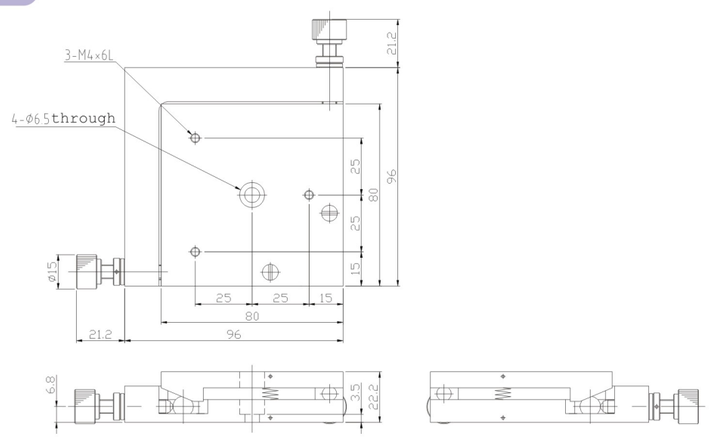
MTB-40



MTB-60



MTB-80



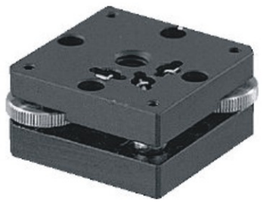
◆Specification

Unit：mm

Model no.	Stage size	Traevl axis	Distance of one revolution	Travel distance	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MTB-40	40*40	α & β	0° 18' 9''	±2°	2.0	0.03	Aluminum alloy	Black anodized
MTB-60	60*60		0° 9' 15''		4.0	0.15		
MTB-80	80*80		0° 5' 51''		5.0	0.4		

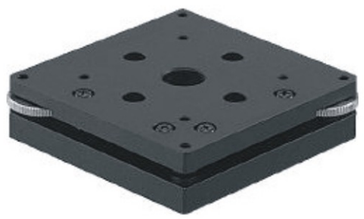
★If mounting holes are not matched with SPEC, custom-made size is acceptable additionally.

MTS-30



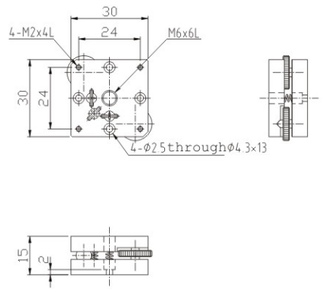
MTS-60

MTS-90

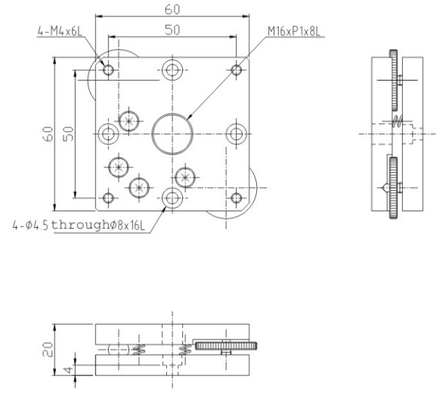


MTS-125

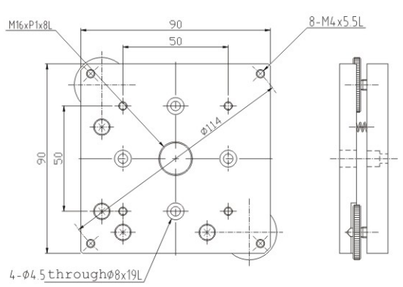
MTS-30



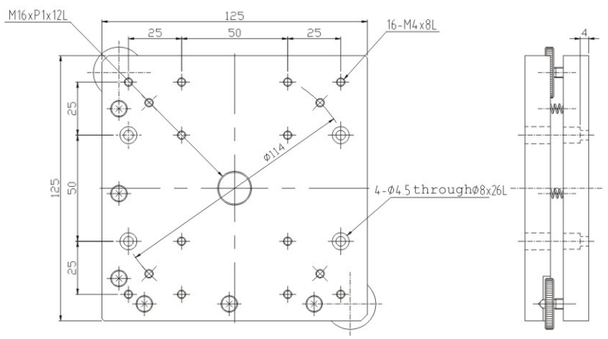
MTS-60



MTS-90



MTS-125

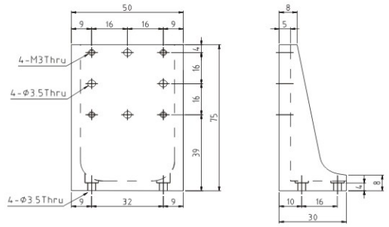


Specification

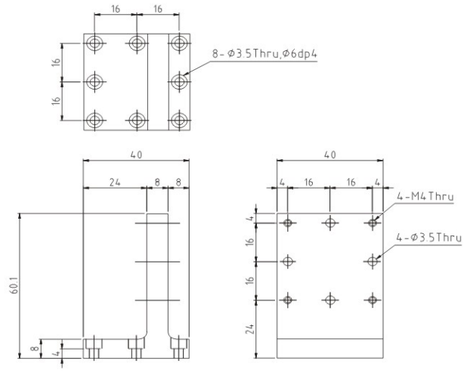
Unit：mm

Model no.	Stage size	Travel stroke	Distance of one revolution	Travel distance	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MTS-30	30*30	α & β	≒ 1°25'	±2°	2.0	0.03	Aluminum alloy	Black anodized
MTS-60	60*60		≒ 0°40'		4.0	0.15		
MTS-90	90*90		≒ 0°24'		5.0	0.4		
MTS-125	125*125		≒ 0°15'		5.0	1.0		

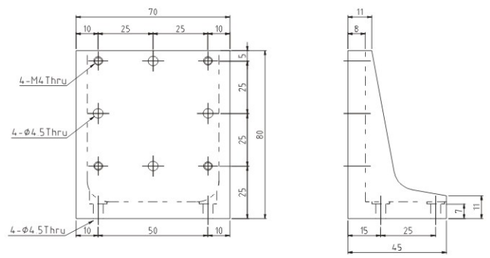
AZB40-1



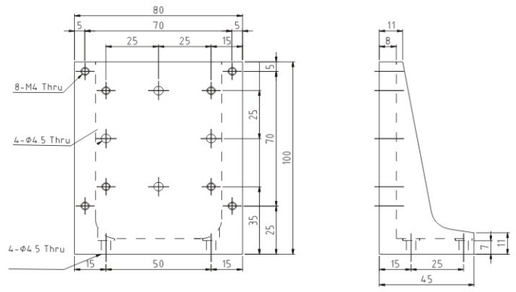
AZB40-2



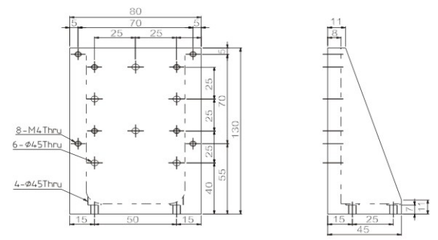
AZB60-1



AZB80-1



AZB80-2



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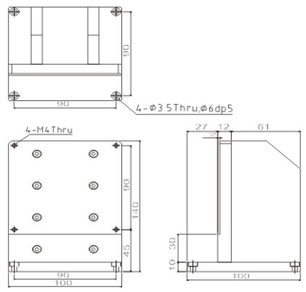
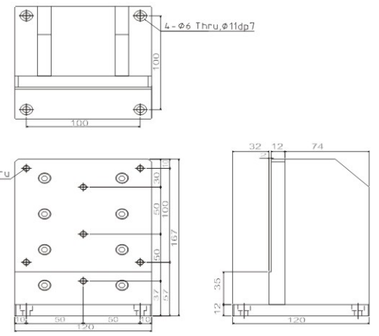


AZB120-1

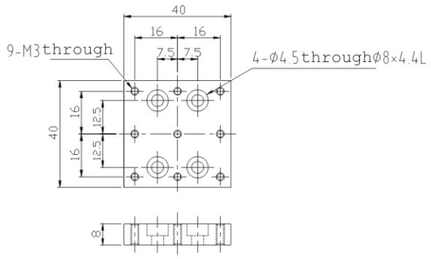


◆Specification

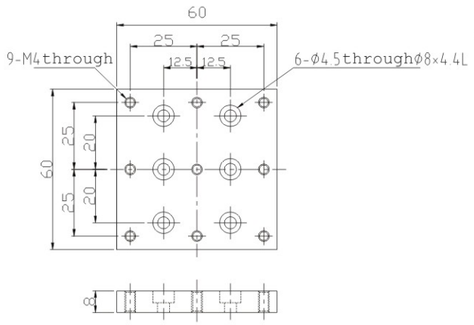
Unit：mm

Model no.		Fitted per feed position					Weight (kg)
Aluminum alloy + black anodized	S50C + Ni	CZ	SZ	SRZ	SR	S	
AZB40-1	AZB40-1-N	●			●	●	0.08
AZB40-2	AZB40-2-N		●	●			0.07
AZB60-1	AZB60-1-N	●	●	●	●	●	0.19
AZB80-1	AZB80-1-N	●	●	●			0.29
AZB80-2	AZB80-2-N				●	●	0.41
AZB100-1	AZB100-1-N	●	●	●	●	●	1.04
AZB120-1	AZB120-1-N	●	●	●	●	●	1.80

ASAP-40



ASAP-60



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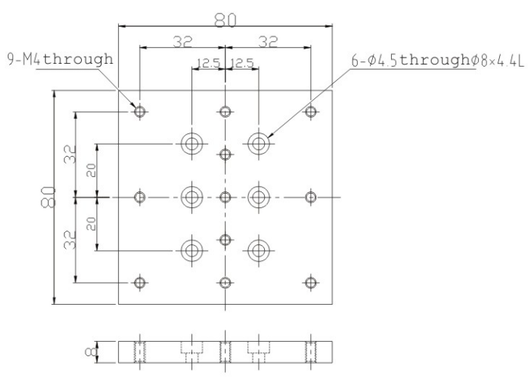
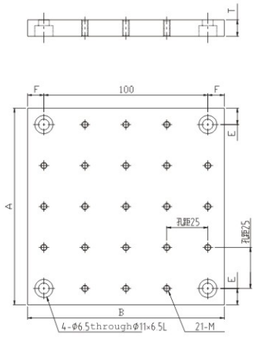


Specification

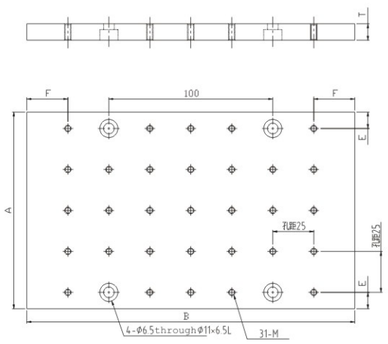
Unit：mm

Model no.	Dimensions	Material	Surface finish	Fitted model no. of **GMT** Mini stage
ASAP-40	40*40	Aluminum alloy	Black anodized	MC1B-40、MC2B-40、MC4B-40
ASAP-60	60*60			MC1B-60、MC1B-90、MC1B-140
ASAP-80	80*80			MC2B-60、MC2B-90、MC4B-60、MC4B-90

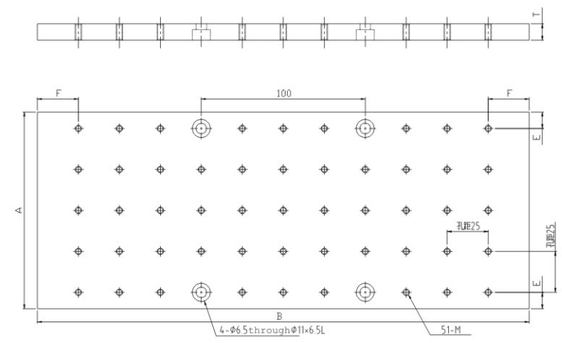
AIB-□-120-120



AIB-□-120-200



AIB-□-120-300



Specification

Thread hole sizes are for M4, M6. (Pitch = 25mm)

Unit：mm

Model no.		A	B	Hole numbers with thread	T	E	F	Material	Surface finish
M4 hole	M6 hole								
AIB-4-120-120	AIB-6-120-120	120	120	21	10	10	10	Aluminum alloy	Black anodized
AIB-4-120-200	AIB-6-120-200		200	31			25		
AIB-4-120-300	AIB-6-120-300		300	51					
AIB-4-150-150	AIB-6-150-150	150	150	21		25			
AIB-4-150-200	AIB-6-150-200		200	31					
AIB-4-150-300	AIB-6-150-300		300	51					
AIB-4-200-200	AIB-6-200-200	200	200	45					
AIB-4-200-300	AIB-6-200-300		300	73					

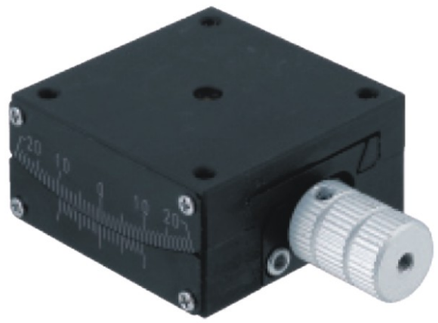
※Mounting hole processed additionally with M6 screw hole in distance of 100mm matrix to center of board.

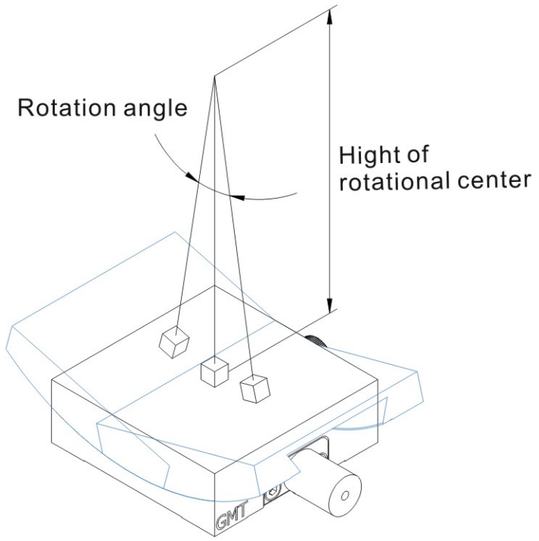
※To assemble mini stage, fiexed base, and secured on anti-vibration stage.

◆型號說明

M X G 4 - 60 V M

M	X	G	4	60	V	M
Transmission	Axis	Travel direction	Table size	Hight of rotational center	Slide way	Feeding specification
M : Manual A : Automatic	X : single axis Y : dual axes	G-(α & β)	4 : 40 6 : 60 8 : 80	Upon catalogue	V : V rail C : Dovetail	M : Micrometer S : Screw



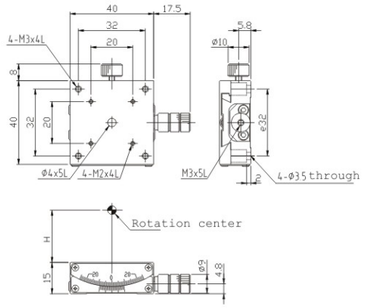


◆Specification

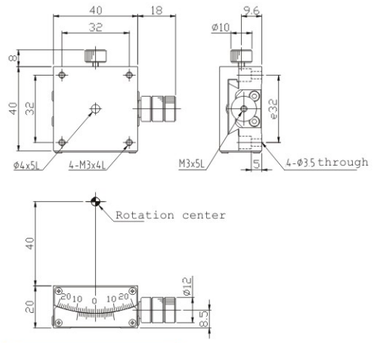
Unit : mm

Model no.	Table size	Hight of rotational center	Travel distance	Vernier minimum reading	Distance of one revolution	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MXG40-25CS	40*40	25	±20°	0.1° / Vernier	≒2.2°	3.0	0.18	Brass	Black fluororesin
MXG40-40CS		40	±15°		≒1.89°		0.24		
MXG40-60CS		60	±10°		≒1.33°				
MXG60-35CS	60*60	35	±25°		≒2.0°	6.0	0.69		
MXG60-60CS		60	±20°		≒1.3°		0.55		
MXG60-80CS		80	±15°		≒1.0°				

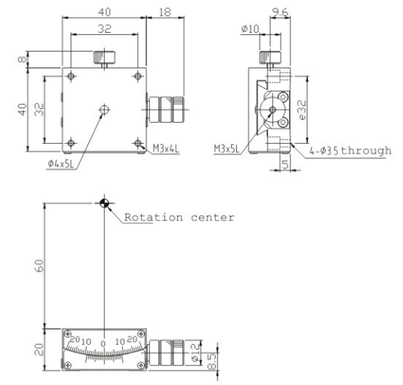
MXG40-25CS



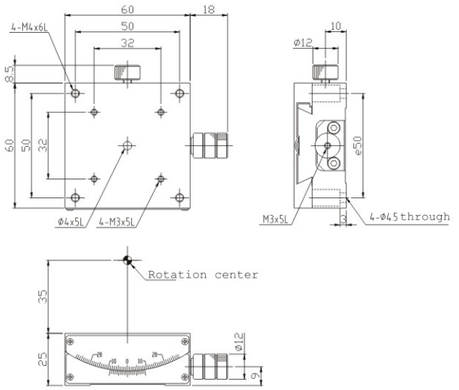
MXG40-40CS



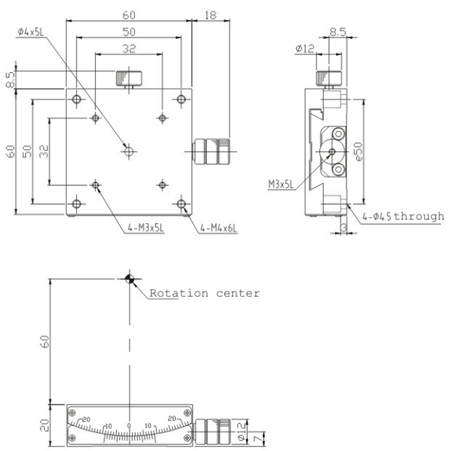
MXG40-60CS



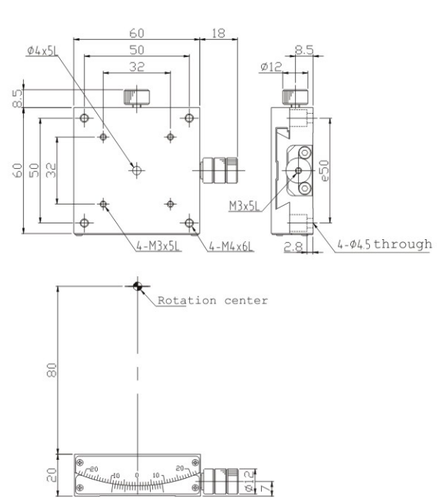
MXG60-35CS

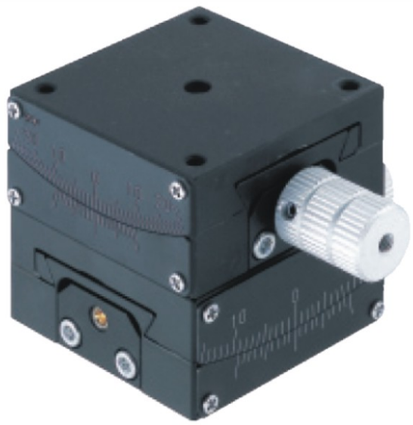


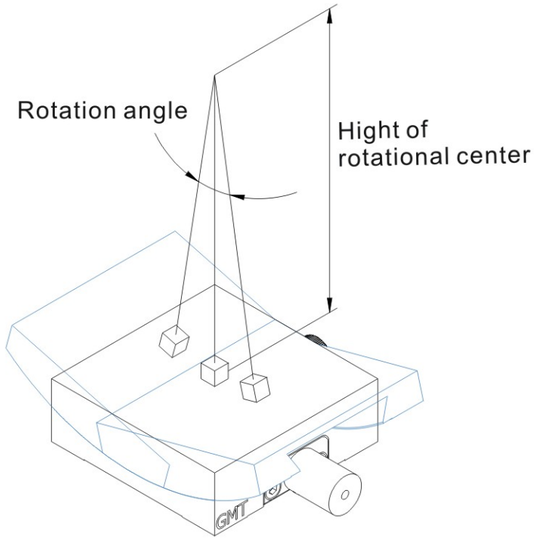
MXG60-60CS



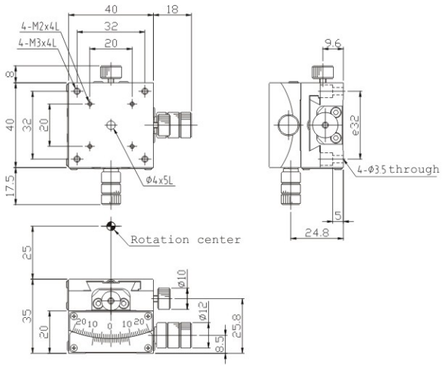
MXG60-80CS



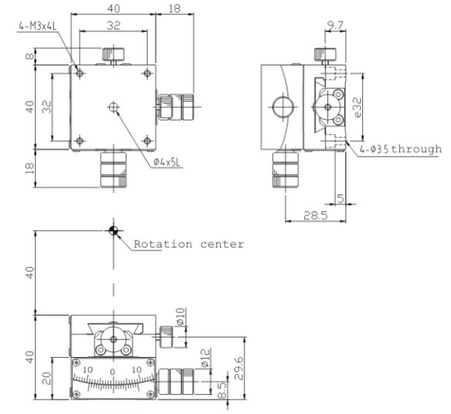




MYG40-25CS



MYG40-40CS



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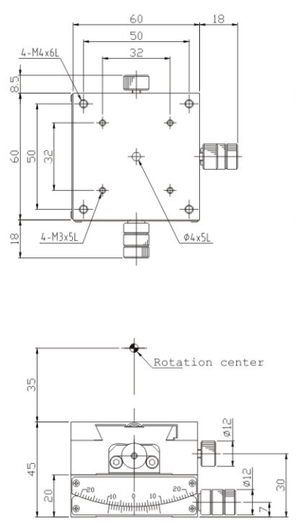
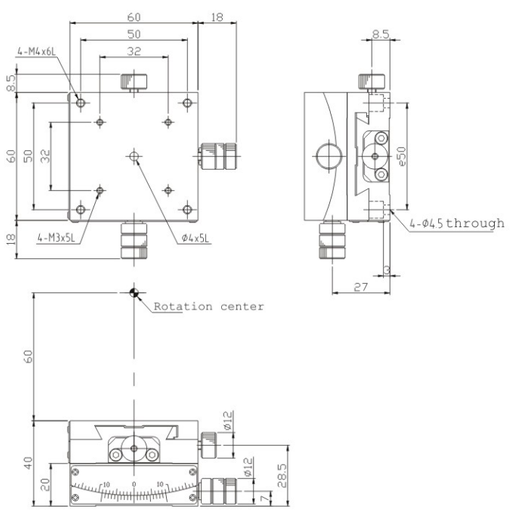


MYG60-60CS



Specification

Unit：mm

Model no.	Table size	Hight of rotational center	Travel distance	Vernier minimum reading	Distance of one revolution	Load capacity (kgf)	Weight (kg)	Material	Surface finish
MYG40-25CS	40*40	25	up ±25° down ±15°	0.1° / Vernier	上 ±2.0° 下 ±2.0°	27.4	0.48	Brass	Black fluororesin
MYG40-40CS		40	up ±15° down ±10°		上 ±1.9° 下 ±1.35°	26.4	0.49		
MYG60-35CS	60*60	35	up ±25° down ±20°		上 ±2.0° 下 ±1.3°	51.9	1.24		
MYG60-60CS		60	up ±25° down ±15°		上 ±1.3° 下 ±1.0°	52.9	1.10		

Micrometer

Indication

MHGS - F N - 13

Model no. Front shape Installation Travel stroke

GMT	Measurement range	Main pitch	Minimum resolution	Micrometer tolerance	Vernier	Front tip		Installation way	
Model no.	mm	mm	mm	μm		Flate	Round	Lock screw	Set screw
MHGS-FN-6.5	0~6.5	0.005	0.01	±2	Positive scale	●		●	
MHGS-FP-6.5						●			●
MHGS-SN-6.5							●	●	
MHGS-SP-6.5							●		●
MHGS-FN-13	0~13					●		●	
MHGS-FP-13						●			●
MHGS-SN-13							●	●	
MHGS-SP-13							●		●
MHGS-FN-25	0~25					●		●	
MHGS-FP-25						●			●
MHGS-SN-25							●	●	
MHGS-SP-25							●		●
MHGS-FN-50	0~50					●		●	
MHGS-FP-50						●			●
MHGS-SN-50							●	●	
MHGS-SP-50							●		●

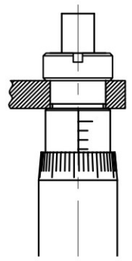
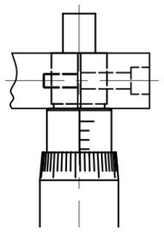
- MHGS type (Standard type), is micrometer used widely and frequently
- Gauging plane: SKS3(Hardness: above HRC60)
- Scale part finish: Hard chrome-plating
- Attached screw type, recommended thickness: 6mm

Purpose

Micromter, applied to moving equipment in high accuracy, optical adjustment instrument, precise fine tuning stages, various machine tools, gauging instruments, tiny tranmission of precise positioning, fixed amount movement.

Installation way

Head of micrometer, classifield as shape for lock screw and set screw.

Fixed form	Lock screw		Set screw	
Installation diagram				
Shaft dia.	Ø6.0	Ø9.525 Ø9.5	Ø6.0	Ø9.525 Ø9.5
Mounting hole tolerance	G7(+0.004~+0.016)	G7(+0.005~+0.020)	G7(+0.004~+0.016)	G7(+0.005~+0.020)
Notice	Right angle opposite to mounting hole A must be noticed. If right angle below 0.16/6.5, would affect nothing to fixing.		Pleasse notice burrs caused by inner wall of mounting holes.	
Axial static load	8.63~9.8kN(880~1000kgf)		0.69~0.98kN(70~100kgf)	
Remark	Simply and firmly locked		Locked and welded process	

★Load data is exlusive of maintaining overall accuracy

Micrometer selection

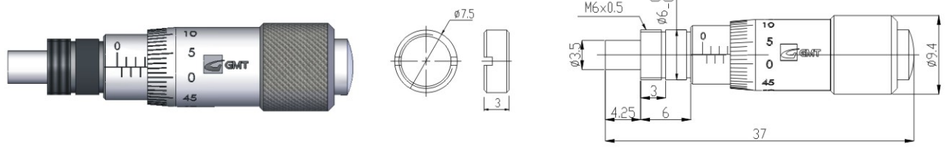
Points to selection are gauging range, shape of gauging plane, axis part, readable axis, and select micrometers as purposes.

Gauging plane selection

Shaft dimensions are designed by the size fit for assembly of micrometer and body set. Shaft diameter is used by allowable tolerance h6. As gauging instrument, generally used in plane type.

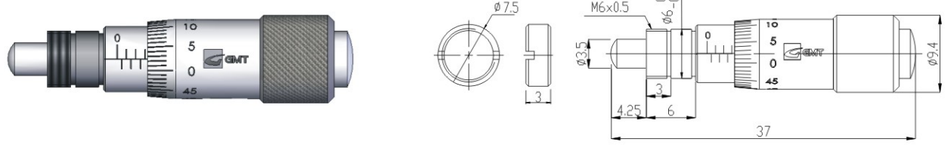
As transfering device, sphere type could decrease errors caused by slanting of mounting portion of micrometer to minimum.

MHGS-FN-6.5



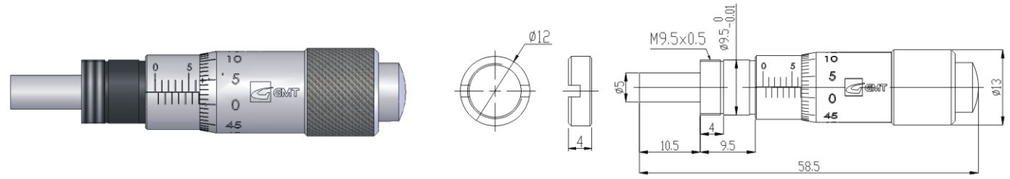
MHGS-FP-6.5

MHGS-SN-6.5



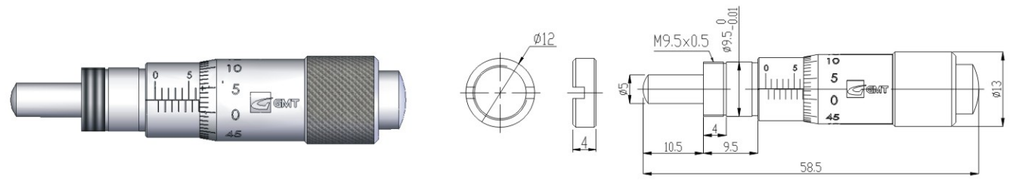
MHGS-SP-6.5

MHGS-FN-13



MHGS-FP-13

MHGS-SN-13



MHGS-SP-13

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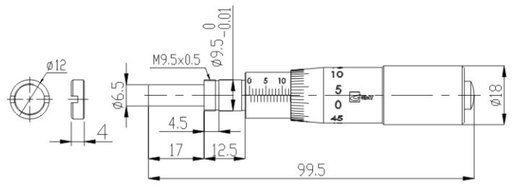

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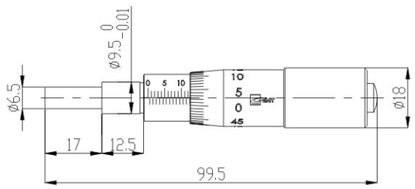

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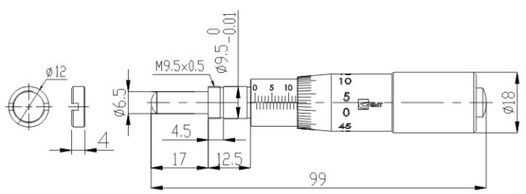
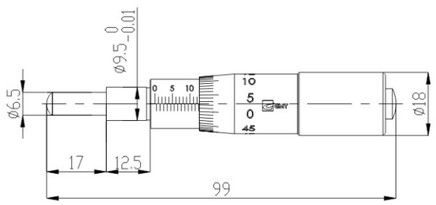


MHGS-SP-25



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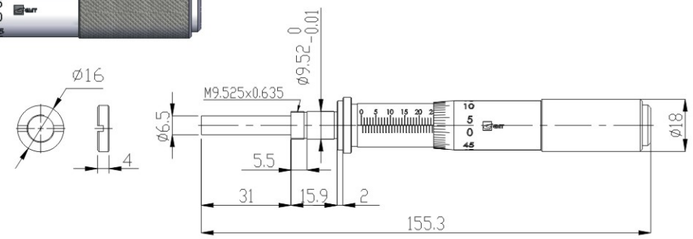

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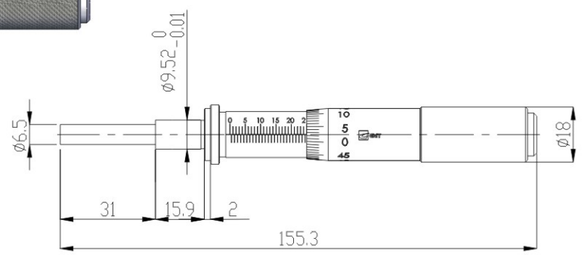

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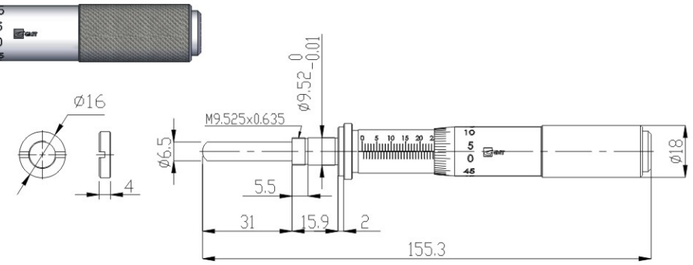

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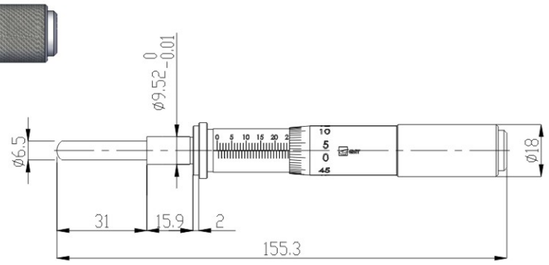

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