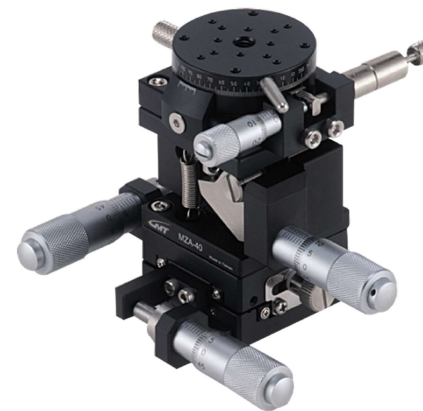


4






Positioning
Stages



Manual Positioners

Specification Comparison of the Mini-Stages




Specification Comparison of the Mini-Stages

MX(Y)□-AC (AS) [Aluminum Alloy] - MICROMETER DESIGN			
Product Trait	Crossed roller guiding		
Pages	P.0047 ~ P.0051	P.0053 ~ P.0059	P.0061 ~ P.0065
Image			
Table Size [mm]	□ 20, □ 25, □ 30	□ 40, □ 50, □ 60, □ 70	□ 80, □ 100, □ 120
Travel Stroke [mm]	±3.2	±6.5	±12.5
Loading [kgf]	1 ~ 1.2	2 ~ 6, 1.8 ~ 6	10 ~ 20, 9.5 ~ 18.4
Weight [kg]	0.03 ~ 0.045, 0.06 ~ 0.09	0.14 ~ 0.44, 0.3 ~ 0.88	0.5 ~ 1.6, 1 ~ 3.2



P.0047
~
P.0065

MX(Y)L□-AC (AS) [Thin Aluminum Alloy] - Micrometer Design		
Product Trait	Crossed roller guiding	
Pages	P.0075 ~ P.0079	P.0081 ~ P.0083
Image		
Table Size [mm]	□ 30, □ 40, □ 60	□ 90, □ 125
Travel Stroke [mm]	±3.2 [□ 30], ±6.5 [□ 40, □ 60]	±7.5, ±12.5
Loading [kgf]	1 ~ 5, 1 ~ 5	8, 15
Weight [kg]	0.04 ~ 0.3, 0.08 ~ 0.5	0.45 ~ 1.1, 0.85 ~ 2

P.0075
~
P.0083


MLZ□-ASZ [Aluminum Alloy] - Micrometer Design			
Product Trait	Crossed roller guiding		
Pages	P.0085		
Image			
Table Size [mm]	□ 30, □ 40, □ 60, □ 90		
Travel Stroke [mm]	±3.2 [□ 30]	±6.5 [□ 40, □ 60]	±7.5 [□ 90]
Loading [kgf]	1.5	1.5, 2	3
Weight [kg]	0.1	0.21, 0.52	0.91


P.0085

MZL □-ACR (As), SCR, (SS) [Aluminum Alloy], [Stainless Steel] - Micrometer Design		
Product Trait	Crossed roller guiding / Linear ball guiding	
Pages	P.0067 ~ P.0069	P.0135 ~ P.0137
Image		
Table Size [mm]	□ 25, □ 40, □ 60, □ 80	
Travel Stroke [mm]	±3.2 [□ 25], ±6.5 [□ 40, □ 60], ±12.5 [□ 80]	
Loading [kgf]	0.5, 1, 2, 5, 1 [□ 25], 5 [□ 40, □ 60, □ 80]	
Weight [kg]	0.06, 0.2, 0.45, 0.8, [0.23, 0.09], 0.32, 0.58, 1.2	

P.0067
~
P.0069
+
P.0135
~
P.0137

P.0087 ~ P.0089 · P.0139 ~ P.0141	MYW □ - AS (AC), SS (SC) Series [Super Thin Aluminum Alloy], [Super Thin Stainless Steel] - Micrometer Design	
	Product Trait	Crossed roller guiding, Linear ball guiding
	Pages	P.0087 ~ P.0089 P.0139 ~ P.0141
	Image	
	Table Size [mm]	□ 40, □ 60, □ 80, □ 100
	Travel Stroke [mm]	±6.5 [□ 40, □ 60], ±12.5 [□ 80, □ 100]
	Loading [kgf]	1 [□ 40], 3 [□ 60], 4 [□ 80, □ 100], 9, 19, 20, 25
	Weight [kg]	0.2, 0.4, 0.7, 1.1, 0.34, 0.64, 1.32, 2


P.0091 ~ P.0107	MX(Y)□-AC(AS) [Aluminum Alloy] - Feeding Screw Design		
	Product Trait	Crossed roller guiding	
	Pages	P.0091 ~ P.0093 P.0095 ~ P.0101 P.0103 ~ P.0107	
	Image		
	Table Size [mm]	□ 25, □ 30 □ 40, □ 50, □ 60, □ 70 □ 80, □ 100, □ 120	
	Travel Stroke [mm]	±3.2 ±6.5 ±12.5	
	Loading [kgf]	1 2 ~ 6, 1.8 ~ 6 10 ~ 20, 9.5 ~ 18.4	
	Weight [kg]	0.04 ~ 0.045, 0.08 ~ 0.09 0.14 ~ 0.44, 0.3 ~ 0.88 0.5 ~ 1.6, 1 ~ 3.2	


P.0109	MX764 - AC - SHR [Aluminum Alloy] - Micrometer Design	
	Product Trait	Crossed roller guiding
	Pages	P.0109 [X axis]
	Image	
	Table Size [mm]	76×64
	Travel Stroke [mm]	Coarse : ±6.5 Medium : ±0.325 Fine : ±0.0325
	Loading [kgf]	1.5
	Weight [kg]	0.6




P.0114 ~ P.0116	MPS Series [Prober Stage Series, XYZ-Axis]		
	Product Trait	Crossed roller guiding	Linear ball guiding
	Pages	P.0114 P.0115 P.0116	
	Image		
	Table Size [mm]	□ 20 20*35 □ 40	
	Travel Stroke [mm]	±3 ±5 ±6.5	
	Loading [kgf]	1 1.5 4.5	
	Weight [kg]	0.11 0.21 0.99	



P.0110 ~ P.0111	MBZ [Aluminum Alloy] - Low Profile	
	Product Trait	Crossed roller guiding
	Pages	P.0110 P.0111
	Image	
	Table Size [mm]	□ 20 □ 30
	Travel Stroke [mm]	±3 ±3.25
	Loading [kgf]	1 1.5
	Weight [kg]	0.08 0.18



P.0117	MXTH80 - FCS [Carbon Steel] - Feeding Screw Type	
	Product Trait	Crossed roller guiding
	Pages	P.0117
	Image	
	Table Size [mm]	□ 80
	Travel Stroke [mm]	±20
	Loading [kgf]	40.5
	Weight [kg]	1.9

P.0119 ~ P.0133	MX(Y)-SC (SS) [Stainless Steel] - Micrometer Design		
	Product Trait	Linear ball guiding	
	Pages	P.0119 ~ P.0121 P.0123 ~ P.0129 P.0131 ~ P.0133	
	Image		
	Table Size [mm]	□ 25, □ 30 □ 40, □ 50, □ 60, □ 70 □ 80, □ 100	
	Travel Stroke [mm]	±3.2 ±6.5 ±12.5	
	Loading [kgf]	4 ~ 6, 3.9 ~ 5.9 10 ~ 23, 9.7 ~ 22.4 27 ~ 35, 26.1 ~ 33.6	
	Weight [kg]	0.07 ~ 0.08, 0.14 ~ 1.9 0.23 ~ 0.58, 0.46 ~ 1.16 0.9 ~ 1.33, 1.8 ~ 2.66	


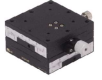

P.0112 ~ P.0113	MYCP □ - A [Aluminum Alloy, XY-Axis] - Micrometer Design	
	Product trait	Crossed roller guiding
	Pages	P.0112 P.0113
	Image	
	Table Size [mm]	□ 40 □ 60
	Travel Stroke [mm]	±6.5
	Loading [kgf]	1.8 4.5
	Weight [kg]	0.28 0.5




P.0145 ~ P.0159	MX(Y)-SC(SS) [Stainless Steel] - Feeding Screw Type			
	Product Trait	Linear ball guiding		
	Pages	P.0145 ~ P.0147	P.0149 ~ P.0155	P.0157 ~ P.0159
	Image			
	Table Size [mm]	□ 25, □ 30	□ 40, □ 50, □ 60, □ 70	□ 80, □ 100
	Travel Stroke [mm]	±3.2	±6.5	±12.5
	Loading [kgf]	4 ~ 6, 3.9 ~ 5.9	10 ~ 23, 9.7 ~ 22.4	27 ~ 35, 26.1 ~ 33.6
	Weight [kg]	0.07 ~ 0.95, 0.14 ~ 1.9	0.23 ~ 0.58, 0.46 ~ 1.16	0.9 ~ 1.33, 1.8 ~ 2.66



P.0071 ~ P.0144	MXZ □, MXYZ □ - A, (S) [Aluminum Alloy], [Stainless Steel] - Micrometer Design	
	Product Trait	Crossed roller guiding. Linear ball guiding
	Pages	P.0071 ~ P.0072 P.0143 ~ P.0144
	Image	 
	Table Size [mm]	□ 25, □ 30, □ 40, □ 50, □ 60, □ 70, □ 80, □ 100, 《□ 120 Aluminum alloy》
	Loading [kgf]	□ 25 ~ □ 50 = 1, □ 60, □ 70 = 2 □ 80 ~ □ 120 = 5 □ 25 = 1, □ 30 ~ □ 100 = 5
	Stroke and weight [kg] please refer to the product page	





P.0073 ~ P.0074	MXYZA, MXYZWA, MXYR, MXYZAR, MXYWR, MXYZWAR [Aluminum Alloy] - Micrometer Design	
	Product Trait	Multi-axis stage
	Pages	P.0073 P.0074
	Image	 
	Table Size [mm]	Please refer to the product page
	Loading [kgf]	Please refer to the product page
	Stroke and weight [kg] please refer to the product page	

P.0161	MX □ L - SS [Stainless Steel] - Feeding Screw Type	
	Product Trait	Linear ball guiding
	Pages	P.0161
	Image	
	Table Size [mm]	60×120
	Travel Stroke [mm]	±12.5
	Weight [kg]	16 0.76

P.0200 ~ P.0202	MC1A - □, MC2A - □, MC4A - □ Series [Body Material : Brass Alloy]		
	Product Trait	Dovetail feeding screw type	
	Pages	P.0200	P.0201 P.0202
	Image		 
	Table Size [mm]	□ 25, □ 40, □ 60	
	Travel Stroke [mm]	±3, ±7, ±9	
	Loading [kgf]	3, 3, 4	2.9, 2.8, 3.4 1, 1, 2
	Weight [kg]	0.07, 0.19, 0.47	0.15, 0.38, 1.2 0.09, 0.26, 0.75

P.0203 ~ P.0213	MC1A - A □, MC1A - □ L, MC1A - □ KMR Series [Aluminum Alloy ; Lead : 4.2mm]		
	Product Trait	Dovetail groove feeding screw thin type	Dovetail groove feeding screw type
	Pages	P.0203	P.0206 P.0213
	Image		 
	Table Size [mm]	□ 40, □ 60	40×60, 40×90 40×80
	Travel Stroke [mm]	±11, ±21	±21, ±35 ±30
	Loading [kgf]	2, 3	3, 3 4
	Weight [kg]	0.10, 0.19	0.14, 0.19 0.31

P.0204 ~ P.0210	MC4A - A □, MC4A - □ S Series [Aluminum Alloy ; Lead : 4.2 mm]	
	Product Trait	Dovetail groove feeding screw type
	Pages	P.0204 [Z-axis thin type] P.0210 [Z-axis]
	Image	 
	Table Size [mm]	□ 60 40×90
	Travel Stroke [mm]	±21 ±35
	Loading [kgf]	2.1 2
	Weight [kg]	0.42 0.46

P.0205 ~ P.0212	MC1 (2) A - □ CL, MC1 (4) - □ Series [Aluminum Alloy ; Lead : 0.5 mm]			
	Product Trait	Dovetail groove feeding screw type		
	Pages	P.0205 [X-axis, XY-axis]		P.0212 [X-axis, Z-axis]
	Image			 
	Table Size [mm]	□ 60		□ 40
	Travel Stroke [mm]	±9		±7
	Loading [kgf]	4	3.4	3 2.1
	Weight [kg]	0.47	0.98	0.2 0.28

MC1A - □L, MC1A - □C, MC1A - □S, MC2A - □S [Aluminum Alloy : Lead : 4.2 mm]							
Product Trait	Dovetail groove feeding screw type						
Pages	P.0206 [X-axis, T=18]		P.0207 [X-axis, T=26]		P.0208 [X-axis, T=26]		
Image							
Table Size [mm]	40×60	40×90	40×60	40×60	40×90	40×60	40×90
Travel Stroke [mm]	±21	±35	±21	±21	±35	±21	±35
Loading [kgf]	3		4, 2		4, 2		
Weight [kg]	0.14	0.19	0.19	0.19	0.29	0.43	0.62

MC1A - 425 Series [Aluminum Alloy : Lead : 4.2 mm]	
Product Trait	Dovetail groove feeding screw type
Pages	P.0211
Image	
Table Size [mm]	25×40
Travel Stroke [mm]	±12
Loading [kgf]	3, 1.5
Weight [kg]	0.09

MC1B - □, MC2B - □, MC4B - □ Series [Aluminum Alloy]			
Product Trait	Dovetail groove Rack and Pinion Type		
Pages	P.0215	P.0216	P.0217
Image			
Table Size [mm]	24.8×42, 40×60, 40×90, 40×140		
Travel Stroke [mm]	±12, ±21, ±35, ±60		
Loading [kgf]	3, 4, 4, 4	2.5, 3.5, 3.5, 3.5	1.5, 2, 2, 2
Weight [kg]	0.17, 0.29, 0.40, 0.56	0.29, 0.51, 0.73, 1.08	0.17, 0.33, 0.45, 0.68

MC1C - □, MC3C - □ Series [Aluminum Alloy]		
Product Trait	Dovetail groove Rack and Pinion Type	
Pages	P.0219 ~ P.0220	P.0223
Image		
Table Size [mm]	50, 70, 100, 150, 200, 250	50, 70, 100, 150, 200, 250, 300
Travel Stroke [mm]	±15, ±25, ±40, ±65, ±90, ±115	±15, 25, ±40, ±65, ±90, ±115, ±140
Loading [kgf]	3	1.5
Weight [kg]	0.12, 0.12, 0.14, 0.17, 0.21, 0.36	0.12, 0.135, 0.16, 0.215, 0.3, 0.36, 0.41

MC1C - □ - 2, MC3C - □ - 2, MC3C - □ - 3 [Aluminum Alloy]							
Product Trait	Dovetail groove Rack and Pinion Type [Double blocks / Triple blocks]						
Pages	P.0221		P.0222	P.0224			P.0225
Image							
Table Size [mm]	25×150	25×200	25×300	150(high)	200(high)	300(high)	300(high)
Travel Stroke [mm]	±20	±37	±70	±20	±37	±70	±43
Loading [kgf]	3			3	1.5		1.5
Weight [kg]	0.24	0.28	0.35	0.27	0.3	0.48	0.55

MC1D - □, MC2D - □, MC4D - □ Series [Aluminum Alloy]			
Product Trait	Dovetail groove Rack and Pinion Type		
Pages	P.0226	P.0227	P.0228
Image			
Table Size [mm]	□ 25 [Brass alloy], □ 40, □ 60		
Travel Stroke [mm]	±5, ±10, ±20		
Loading [kgf]	3, 3, 4	2.9, 2.8, 3.0	0.7, 1.5, 2
Weight [kg]	0.09, 0.21, 0.64	0.18, 0.37, 1.19	0.11, 0.23, 0.6

MC1D - 40L, MC2DA - 48NH, MC1BL - 60 [Aluminum Alloy]			
Product Trait	Dovetail groove Rack and Pinion Type		
Pages	P.0229	P.0230	P.0233
Image			
Table Size [mm]	□ 40	Upper : 40×80 Lower : 40×80	40×60
Travel Stroke [mm]	±10	±35	±30
Loading [kgf]	2	3	3
Weight [kg]	0.25	0.6	0.3









MC3B - □, MC5B - □ [Aluminum Alloy], [Brass Alloy]		
Product Trait	Dovetail groove Rack and Pinion Type	
Pages	P.0231	P.0232
Image		
Table Size [mm]	□ 25 [Brass alloy], □ 40 [Brass alloy], □ 60	□ 25 [Brass alloy], □ 40 [Brass alloy], □ 60
Travel Stroke [mm]	±2.5, ±5, ±10	X = ±5, ±7, ±10, Z = +10, +10, +25
Loading [kgf]	0.7, 1, 1.5	1
Weight [kg]	0.08, 0.12, 0.47	0.17, 0.51, 0.62





Manual Positioners




Specification Comparison of the Mini-Stages


Manual Positioners




Specification Comparison of the Mini-Stages



MCS, MCD, MCV [None : Single Knob, W : Dual Knobs] [None : Z↑, L : Z↑Only] [Aluminum Alloy]									
P.0235 P.0242	Product Trait	Dovetail Rack and Pinion Type [Body weight = single knob type]							
	Pages	P.0235 ~ P.0236		P.0237 ~ P.0238		P.0239 ~ P.0240		P.0241 ~ P.0242	
	Image								
	Table Size [mm]	[44 = 40×40, 46 = 40×60] =◎, [49 = 40×90, 41 = 40×140] =☆							
	Travel Stroke [mm]	[±10, ±15] =◎, [±30, ±50] =☆, Z-axis with upper stroke direction only [+] = △							
	Loading [kgf]	4		3.5		2		2	
Weight [kg]	0.24, 0.31	0.4, 0.55	0.41, 0.54	0.72, 1.07	0.26, 0.36	0.47, 0.67	0.23, 0.33	0.45, 0.63	


MCM, MCT - □ [None : Single Knob, W : Dual Knobs] [None : Z↑, L : Z↑Only] [Aluminum Alloy]										
P.0243 ~ P.0250	Product Trait	Dovetail Rack and Pinion Type [Body weight = single knob type]								
	Pages	P.0243 ~ P.0244		P.0245 ~ P.0246		P.0247 ~ P.0248		P.0249 ~ P.0250		
	Image	◎ / X + Z ☆ / X + Z		◎△ / X + Z ☆△ / X + Z		◎ / XY + Z ☆ / XY + Z		◎△ / XY + Z ☆△ / XY + Z		
										
	Table Size [mm]	[44 = 40×40, 46 = 40×60] = ◎, [49 = 40×90, 41 = 40×140] = ☆								
Travel Stroke [mm]	[±10, ±15] = ◎, [±30, ±50] = ☆, Z-axis with upper stroke direction only [+] = △									
Loading [kgf]	2									
Weight [kg]	0.5, 0.67	0.87, 1.23	0.47, 0.64	0.85, 1.18	0.67, 0.9	1.2, 1.74	0.64, 0.87	1.17, 1.7		



MC□D - 2550, MC□E - □ [Brass Alloy]												
Product Trait	Dovetail groove Rack and Pinion Type / Hexagon wrench type											
Pages	P.0251			P.0253			P.0255					
Image	 1 = X-axis 4 = Z-axis 6 = XY + Z-axis 2 = XY-axis 5 = X + Y-axis						 {} = Z-axis [] = dual axis					
Table Size [mm]	25×50			□25, □40, □60								
Travel Stroke [mm]	±10			±3, ±5, ±7								
Loading [kgf]	X, XY = 8 ; Z, X + Z, XY + Z = 1			3 [2.9] 《1》, 3 [2.8] 《1》, 4 [3.4] 《2》								
Weight [kg]	0.22, 0.44, 0.3, 0.52, 0.75			0.07 [0.15] 《0.08》, 0.19 [0.38] 《0.27》, 0.6 [1.2] 《0.65》								

MC6E - 25 Series [Brass Alloy]												
Product Trait	Dovetail groove Rack and Pinion Type											
Pages	P.0257 [XYZ-axis]											
Image												
Table Size [mm]	25×25											
Travel Stroke [mm]	±3											
Loading [kgf]	1.9											
Weight [kg]	0.22											

MC1G - 525C (F), MC1G - 535C (F), MC7G - 4050C (F) [Aluminum Alloy]												
Product Trait	Dovetail groove feeding screw type [PITCH = C : 0.5, F : 0.25]											
Pages	P.0258			P.0259			P.0260					
Image												
Table Size [mm]	□ 50			□ 50			40×50					
Travel Stroke [mm]	±11			±16			Upper(Fine) : ±17.5 Lower(Coarse) : ±30					
Loading [kgf]	5			5			4					
Weight [kg]	0.27			0.29			0.5					

MC1G - 35LG, MC6G - 35LG [Aluminum Alloy]												
Product Trait	Dovetail groove Rack and Pinion Type (Adjustable for CCD)											
Pages	P.0261			P.0262								
Image												
Table Size [mm]	24.5×35			—								
Travel Stroke [mm]	±10			20 [X-axis]			30 [Y-axis]			60 [Z-axis]		
Loading [kgf]	3			2								
Weight [kg]	0.25			0.81								

MC1F - 40 [Aluminum Alloy]												
Product Trait	Dovetail groove Positioning Stage											
Pages	P.0263											
Image												
Table Size [mm]	□ 40											
Travel Stroke [mm]	±10											
Loading [kgf]	3											
Weight [kg]	0.17											


MNG□E - □CL, MNE□E - □ [Aluminum Alloy]												
Product Trait	Simplified guiding (mini type) - Feeding screw / Threading screw											
Pages	P.0163 ~ P.0165						P.0167 ~ P.0169					
Image												
Table Size [mm]	□ 20, □ 25, □ 40, □ 60						□ 20, □ 25, □ 40, □ 60					
Travel Stroke [mm]	[□ 20, □ 25] = ±5, [□ 40, □ 60] = ±7.5						[□ 20, □ 25] = ±7, ±9, ±13					
Loading [kgf]	[□ 20, □ 25] = 0.2, [□ 40, □ 60] = 1.5						[□ 20, □ 25] = 1.9, [□ 40, □ 60] = 3.7					
Weight [kg]	0.038 《as left》, 0.055 《as left》, 0.104 《0.202》, 0.193 《0.358》						0.1, 0.13, 0.27, 0.48					


Manual Positioners


Specification Comparison of the Mini-Stages




Manual Positioners


Specification Comparison of the Mini-Stages


P.0171 ~ P.0173	MNE1E - □, MN□A - □ [Aluminum Alloy]	
	Product Trait	Simplified guiding (mini type) - Selectable screw / Single spring
Image	Pages	P.0171 P.0173
	Image	 [] = Shared value [] = dual axis
Table Size [mm]	40×40, 40×25, [60×60, 60×40]	
Travel Stroke [mm]	10 [15], 25 [30], 40 [50], 60 [70]	
Loading [kgf]	4 [8], 3.5 [7], 4 [8], 3.5 [7]	
Weight [kg]	Based on the screw type selected	


P.0175 ~ P.0178	MZA - □, MZA□ - 5060 [Aluminum Alloy]	
	Product Trait	Crossed roller guiding
Image	Pages	P.0175 P.0177 ~ P.0178
	Image	 types specifications
Table Size [mm]	□ 25, □ 40, □ 40H, □ 60L, □ 60, □ 80	
Travel Stroke [mm]	±2, ±3, ±3, ±3, ±5, ±5	
Loading [kgf]	1, 1, 2, 2, 4, 3	
Weight [kg]	0.06, 0.2, 0.2, 0.3, 0.6, 1	


P.0179	MZF - □ [Aluminum Alloy]	
	Product Trait	Rapidly Z-axis lifting stage
Image	Pages	P.0179
	Image	
Table Size [mm]	80×120, 120×180	
Travel Stroke [mm]	40, 70	
Loading [kgf]	7, 10	
Weight [kg]	1.25, 3.5	


MR □ - AR (Standard) , MRL □ - AR (Thin Type) , MRE □ - A [Aluminum Alloy]					
P.0181 ~ P.0183 ~ P.0186 ~ P.0187	Product Trait	Rotary stage - [Precise - Standard type, Thin type] , [Economy type]			
	Pages	P.0181		P.0183	P.0186~ P.0187
	Image				
	Table Size [mm]	Ø38, Ø60, Ø85, Ø110		Ø30, Ø40, Ø60, Ø90, Ø125	Ø40, Ø60, Ø85, Ø100
	Travel Stroke [°]	Cursory360° [Fine : inferto the page]		Cursory360° [Fine±5°]	Cursory360°
	Loading [kgf]	1, 3, 4, 5		1, 1.5, 3, 3, 3	5, 7, 8, 9
	Weight [kg]	0.09, 0.28, 0.48, 0.75		0.1, 0.1, 0.2, 0.5, 0.9	0.14, 0.2, 0.4, 0.66


P.0185	MR50 - AR - 48 [Aluminum Alloy], MR85 - S [Stainless Steel]	
	Product Trait	Rotary stage - Precise type, Heavy loading type
Image	Pages	P.0185
	Image	
Table Size [mm]	<div> <div>Ø50</div> <div>Ø85</div> </div>	
Travel Stroke [°]	<div> <div>±5.5°</div> <div>Cursory360° [Fine±5.5°]</div> </div>	
Loading [kgf]	<div> <div>1.8</div> <div>6</div> </div>	
Weight [kg]	<div> <div>0.26</div> <div>1</div> </div>	


P.0188 ~ P.0189	MMT - □, MMS - □ [Carbon Steel]	
	Product Trait	Magnetic base - Thin type, Standard type
Image	Pages	P.0188 P.0189
	Image	
Table Size [mm]	<div> <div>12×38×51, 12×52×63, 12×66×80</div> <div>20×□45, 20×□65, 20×□90, 20×□125</div> </div>	
Travel Stroke [mm]	<div> <div>0.015, 0.02, 0.02</div> <div>0.015, 0.02, 0.02, 0.02</div> </div>	
Magnetic [kgf]	<div> <div>1, 3.3, 3.8</div> <div>17, 20, 25, 70</div> </div>	
Weight [kg]	<div> <div>0.3, 0.6, 1.2</div> <div>0.3, 0.6, 1.2, 2.8</div> </div>	


P.0191 ~ P.0193	MTB - □, MTS - □ [Aluminum Alloy]	
	Product Trait	Tilt stage - Feeding screw type, Thumbscrew type
Image	Pages	P.0191 P.0193
	Image	
Table Size [mm]	<div> <div>□ 40, □ 60, □ 80</div> <div>□ 30, □ 60, □ 90, □ 125</div> </div>	
Travel Stroke [mm]	±2°	
Loading [kgf]	<div> <div>2, 4, 5</div> <div>2, 4, 5, 5</div> </div>	
Weight [kg]	<div> <div>0.03, 0.15, 0.4</div> <div>0.03, 0.15, 0.4, 1</div> </div>	


P.0265 ~ P.0269	MXG □ - □CS, MYG □ - □CS [Brass Alloy]	
	Product Trait	Dovetail - α-axis, αβ-axis Goniometer stage [Transmission : Worm+ Worm gear]
Image	Pages	P.0265 ~ P.0267 (□ 40), P.0269 (□ 50), P.0265 ~ P.0267 (□ 60)
	Image	
Table Size [mm]	□ 40, □ 50, □ 60	
Travel Stroke [°]	<div> <div>±8° ~ ±25°</div> <div>Upper axis : ±10° ~ ±25°; Lower axis ±8° ~ ±20°</div> </div>	
Loading [kgf]	<div> <div>3 ~ 6</div> <div>2.8 ~ 5.4</div> </div>	
Weight [kg]	<div> <div>0.18 ~ 0.55</div> <div>0.42 ~ 1.1</div> </div>	

MXG9 - 118CS [Brass Alloy]	
Product Trait	Dovetail - Goniometer stage [Transmission : Worm + Worm gear]
Pages	P.0271 [α axis]
Image	
Table Size [mm]	□ 90
Travel Stroke [°]	±12°
Loading [kgf]	7.5
Weight [kg]	0.33


MXG □ - □ CE, MYG □ - □ CE [Brass Alloy]	
Product Trait	Dovetail - α -axis, $\alpha\beta$ -axis Goniometer stage [Transmission : Threading screw]
Pages	P.0273 (□ 30), P.0275 (□ 40), P.0277 (□ 60)
Image	
Table Size [mm]	□ 30, □ 40, □ 60
Travel Stroke [°]	±5° ~ ±8° Upper axis : ±6° ~ ±8° ; Lower axis : ±5° ~ ±6°
Loading [kgf]	1.5, 3, 5
Weight [kg]	0.1, 0.3, 0.7 0.2, 0.6, 1.4


MXG4 - □ VM, MXG5 - □ VM, MXG6 - □ VM Series [Aluminum Alloy]	
Product Trait	Dovetail - Crossed roller Goniometer stage [Transmission : Micrometer type]
Pages	P.0279 [α -axis] P.0281 [α -axis]
Image	
Table Size [mm]	□ 40 □ 50 □ 60
Travel Stroke [°]	±7°/40 ±4°/60 ±4°/80 ±3°/50 ±4°/50 ±3°/75 ±3°/100
Loading [kgf]	3 4.5
Weight [kg]	0.15 0.2 0.33


MCV100 - AS [Aluminum Alloy]	
Product Trait	Clamping fixture (Vice)
Pages	P.0283
Image	
Table Size [mm]	100×94
Travel Stroke [mm]	0 ~ 49
Loading [kgf]	20
Weight [kg]	0.55



MC1B - 60F	
Product Trait	Dovetail Rack and Pinion Type
Pages	P.0218
Image	
Table Size [mm]	40×60
Travel Stroke [°]	±12°
Loading [kgf]	20
Weight [kg]	1.6

Manual Fiber Positioning


M3E - 2000S - L(R), M5E - 2000B - L(R), M6E - 2200B - L(R)	
Product Trait	XYZ, XYZ θ x θ y, XYZ θ x θ y θ z - Axis
Pages	P.0285 P.0289 P.0293
Image	
Cursory Tuning Travel Stroke	X ±6.5 mm
	Y ±6.5 mm
	Z ±6.5 mm
	θ x ±3°
	θ y ±3°
	θ z ±4°
Fine Tuning Travel Stroke	X ±0.3 mm
	Y ±0.3 mm
	Z ±0.3 mm
	θ x ±3°
	θ y ±3°
	θ z ±4°
Cursory Tuning Resolution	X ±10 μ m
	Y ±10 μ m
	Z ±10 μ m
	θ x \approx 29.3°/div.
	θ y \approx 27.8°/div.
	θ z \approx 33°/div.
Fine Tuning Resolution	X ±0.5 μ m
	Y ±0.5 μ m
	Z ±0.5 μ m
	θ x \approx 29.3°/div.
	θ y \approx 27.8°/div.
	θ z \approx 33°/div.

M5F - 460A561 - L(R)		
P.0297	Product Trait	XYZ, $\theta x \theta y$ - Axis
	Pages	P.0297
Image		
Travel Stroke	X	0.5 inch(12.7 mm)
	Y	0.5 inch(12.7 mm)
	Z	0.5 inch(12.7 mm)
	θx	$\pm 5^\circ$
	θy	$\pm 5^\circ$
Material	X	Aluminum alloy
	Y	Aluminum alloy
	Z	Aluminum alloy
	θx	Stainless Steel
	θy	Stainless Steel
Allowable Loading		67 N


MTS - 561 - L(R)		
P.0301	Product Trait	$\theta x, \theta y$ - Axis Tilt Stage
	Pages	P.0301
Image		
Travel Stroke	θx	$\pm 5^\circ$
	θy	$\pm 5^\circ$
Sensitivity		Each circular motion equals 5arc-seconds
Material		Stainless Steel
Allowable Loading		22 N

MXY - 460AL(R), MXYZ - 460AL(R)		
P.0305 ~ P.0309	Product Trait	XY-Axis crossed roller guiding type, XYZ-Axis crossed roller guiding type
	Pages	P.0305 P.0309
Image		 
Travel Stroke	X	0.5 inch(12.7 mm)
	Y	0.5 inch(12.7 mm)
	Z	0.5 inch(12.7 mm)
Resolution		10 μ m
Material		Aluminum alloy
Allowable Loading		67 N


Optical Adjuster

MOV - S□		
Product Trait	Vertical mounting	
	P.0313	
Image		
Optics Diameter		1" 2"
Tilt Range	X	$\pm 2.5^\circ$
	Y	$\pm 2.5^\circ$
Sensitivity		2 arcsec
Material		Stainless Steel
Allowable Loading		0.25 Kg 0.6 Kg


Micrometer

MHGS - □□ - □		
Product Trait	Fronttip -Flate, Round & Installation-Lock screw, Set screw	
	P.0317 ~ P.0325	
Image		
Measurement range		0~6.5 mm 0~13 mm 0~15 mm 0~25 mm 0~50 mm
Accuracy		0.005 mm
Minimum resolution		0.01 mm
Micrometer tolerance		$\pm 2 \mu$ m
Vernier		Positive scale

Feeding Screw Stages

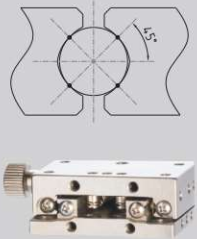
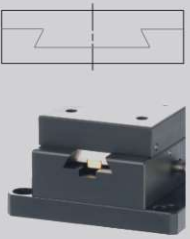
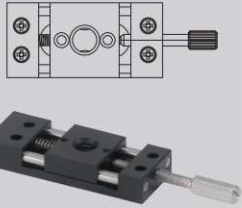
PS□□ - □		
Product Trait	Precision Screw	
	P.0329 ~ P.0331	
Image		
Travel stroke range		0~7mm 0~13 mm 0~25 mm
Accuracy		0.03 mm
Minimum reading		0.01 mm, Vernier
Knob type		Pattern, Hexagon socket

Miniature Actuators

GACT - □□ - □			
P.0333 ~ P.0335	Product Trait	Miniature actuators	
	Pages	P.0333 ~ P.0335	
	Image		
	Measuring Range [mm]	0~6.5 mm	0~13 mm 0~25 mm
	Transmission	Precision thread M6x0.5P	
	Body Weight [kg]	0.129 Kg	
	Pilot Shape	F : Flat measuring surface / S : Spherical measuring surface	
	Installation	N : Locknuts / P : set screws	
	Scale Shape	N scale	
	Material / Color	Actuator : aluminum ally / black anodized	
	Dpi(Pulse) Full / Half [mm]	0.0025	
		0.00125	
	Veneered Positioning Accuracy [mm]	0.01	
	Repeat Positioning Accuracy [mm]	0.003	
	Allowable Load [N]	29.4 N	
	Maximum Speed [mm/sec]	2	
Motor	Motor Model / Shaft Numbers	2-phase stepping / 20□ dual extension shafts	
	Manufacturers	Orientalmotor / GMT	
	Model No.	CVK213BK / 2MS-N20D33A	
Connector	Actuator cable connector	15Pin Public-side connector D-SUB	

Positioning Stages

Characteristic of Different Guiding Type

Slide Way	Structure	Characteristic
Crossed roller		The slide rail consists of two hardened V-grooves with fine ground surface and crossed roller bearings.
Linear ball		Slide way and body is in one unit, and Gothic arc-groove ground precisely to meet requirement of high parallelism 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.
Dovetail type		Dovetail plane-pinion and rack (Main material: Brass or aluminum alloy) GMT supplies proper models suitable to be equipped to various modules such as small, coarse or fine turn, larger size for installation etc. Driven-adjustment mode is rack and pinion. Apply to higher working frequency, requirement of faster movement and larger stroke. Screw-driven plane (main material: 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.
XY Simplified stage		Round sticks on two sides are applied to support middle transmission construction: Feeding screw type To move stage table by push-and-press from screws, and to restrain gap produced by using springs tensile force. It's the type suitable for light loading and accuracy feeding application. Threading type The stage table is moved by thread which has been crossed through to the table. The stage table will be feed-movement in Z-axis application. The stage is suitable for heavier loading compared to feeding screw with spring transmission type.

Positioning Stages

Characteristic of Different Guiding Type

Application	Moving Accuracy	Load Capacity	Rigidity
This is suitable for 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 movement...etc.	Excellent	Excellent	Excellent
Applied to precise positioning device in high accuracy and mid-capacity, product and design integrated system, optical experiment, precise transportation and fine tuning mechanism application.	Excellent	Good	Good
It is applied to optical instruments and equipments, sampler, detecting device, semi-conductor manufacturing equipment, test machine, microscope, transiting machine, machining center, medical instrument, printer and others.	Fair	Good	Excellent
The product is applied to fixture, camera, sensor, nozzle, and guiding groove of the conveyor, those equipments don't require high accuracy adjustment.	Fair	Fair	Fair

Outline

- Mini-Stage is applied for high precision or mid and heavy loading of various production machinery, testing device, precise positioning and quantitative movement.
- There're many types of mini-stages with single axis (X-axis); dual axes (XY-axis); Z-axis; θ -axis, α -axis... can be collocated as needed.

Characteristics

- Can be customized according to the requirements of precise fine tuning; positioning; quantitative movement and able to proceed mass feed of fine tuning.
- Coordinated customer's precise machinery of instrument and fixed in suitable position.
- Feeding mode diversification such as coarse moving handle/ micrometer head; feed screw, rack and pinion with scale and able to manage movement rate.
- The sets of mini stages, XY-axis, XYZ-axis, XZ-axis, and multi-axis modules are able to effectively reduce assembling process because of adjusting their vertical angle before shipping.

Standard Selection

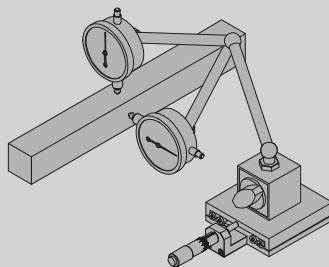
- GMT presents clearly with each kind of mini stages in accordance with different types of moving axis, minimum reading and loading capacity.
- Please coordinate with adjusting methods and refer below information to select the most suitable stages.
- Please refer to the feeding method provided to select the most suitable stages.

The Main Feeding Mode of Mini Stages

Main feeding mode	Characteristics	A circle movement of handle rotation	Applied for guiding device
Rack and Pinion 	<ul style="list-style-type: none"> ● Suitable for high speed mass feed. ● Not suitable for precise positioning. 	17~20 mm	<ul style="list-style-type: none"> ● Dovetail
Feeding Screw 	<ul style="list-style-type: none"> ● Use precise threadscrew pitch to proceed simple precise moving. 	0.25~1 mm	<ul style="list-style-type: none"> ● Dovetail ● Crossed roller ● Linear ball bearing
Micrometer Head 	<ul style="list-style-type: none"> ● Precise reading Unit: 0.01mm is suitable For precise tuning. 	0.5 mm	<ul style="list-style-type: none"> ● Dovetail ● Crossed roller ● Linear ball bearing
Rough Slightly Moving Micrometer Head 	<ul style="list-style-type: none"> ● Divided into rough moving (general feeding) and slight moving (micro feeding) use. ● It's a special feeding device and a bit costly. ● Differential motion Structure for slightly transmission. 	Coarse tuning : 0.5 mm Fine tuning : 0.025 mm	<ul style="list-style-type: none"> ● Linear ball bearing ● Crossed roller

Straightness (refer to JIS B 6191-1993)

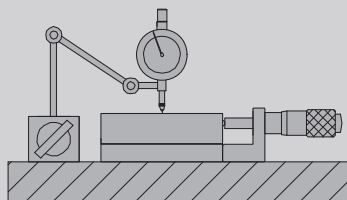
In linear motion units, geometric straight line decides positions in order from datum point to same direction, differences between length variation in those positions and datum is as measured value. To connect datum and final testing post, the max. difference of geometric line is called "Straightness".



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

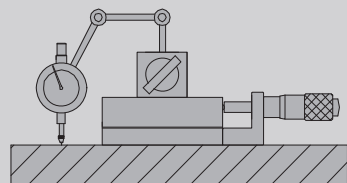
Linear motion parts would occur slanting in Transmitting, and slanting proportion would cause deflection in linear transmission. Position is decided by same direction from datum point in order, and maximum angular gap measured from horizontal direction of each position corresponding to the datum is called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

Same situation to have the maximum angular gap from vertical direction of each position corresponding to datum called pitching.



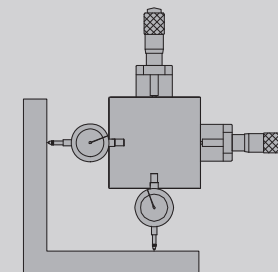
Parallelism (refer to JIS B6191-1993)

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 B7440-1987)

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 tested position is called XY vertical value.



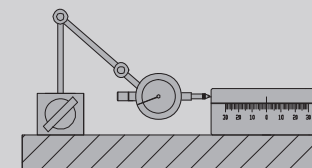
Concentricity (refer to JIS B 6191-1993, B6194-1997)

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.

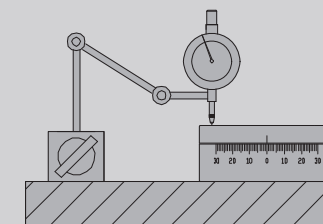
Opposite to geometric circle, measured difference is called concentricity. Fix rotating stage on the plate, and put micrometer around stage. Have it to rotate one circle (360°) to proceed measuring.

Concentricity is half of top value shown in micrometer.



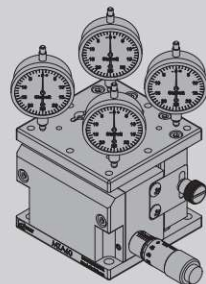
Plane travel Amplitude (refer to JIS B6191-1993)

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.



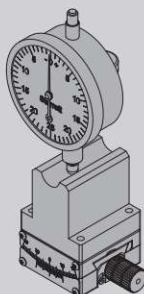
Inspection of Level Z axis (GMT specification)

The stage surface will be slanted caused by transmission components while the stage moves vertically. In order to check if the stage surface is remained in a level, GMT offers one inspection method which is to place 4 inspection meters on the ends of two diagonal lines according to the stage platform, then, check sum of plus and minus figures measured from 4 meters during movement, regard as the level variation of the stage vertical movement.



Precision of Rotation Center Height (GMT specification)

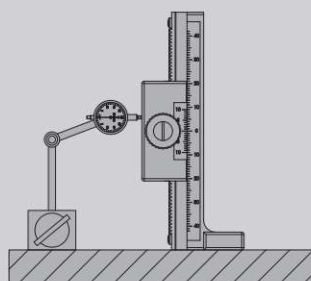
To use a specified inspection tool (meter) (The tool (meter) has been calibrated its circle center matched to the rotation circle center of goniometer stage) to check the tool (meter) indicator changes during repeated movement to examine the circle center accuracy.



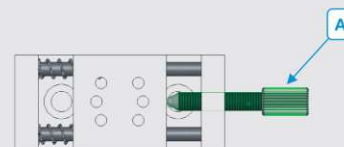
Vertical Z axis (GMT specification)

To check measured figures from the meter applied to the area between limited strokes during vertical movement.

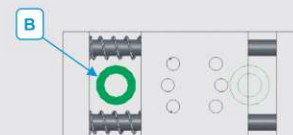
The sum of plus and minus figures measured from the meter means the variation between the movement vertically with base surface.



XY Simplified Stage (Feeding Screws)



- Remove feeding screws (A)

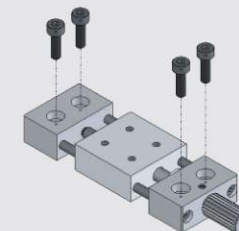


- To have B side fixed with a bolt.



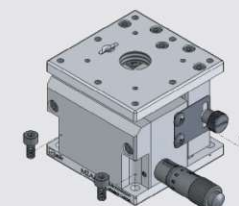
- To have stage table slid to B side.
- To have C side bolt fixed.
- To lock up the feeding screws.

XY Simplified Stage (Threading Type)



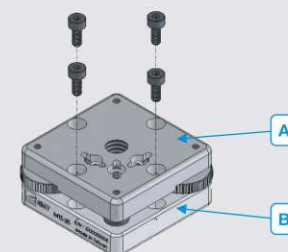
- The stage has been integrated counter bores on left and right sides for mounting.

Leavel Z Axis Stage



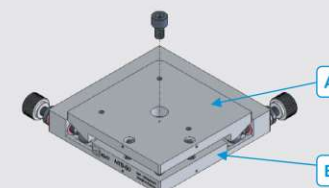
- There are 4 holes reserved for bolts Screw-in on 4 corners of the stage upper surface. It can be screwed-in by the hex-wrench without conflict.

Tilt Stage (Thumbscrew Type)



- The mounting holes on the upper plates (A) have been drilled through and counter bores on the lower plate, (B) such design offers an easier assembly to have bolts assembled from upper plate directly.

Tilt Stage (Feeding Screw Type)

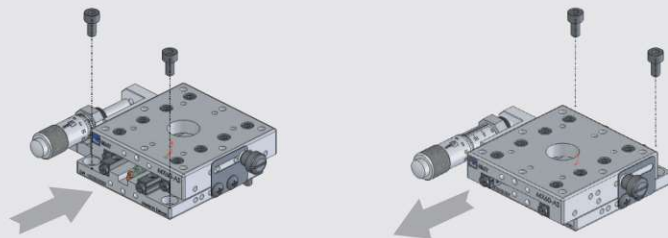


- The mounting holes on the upper plates (A) have been drilled through and counter bores on the low plate, (B) such design offers an easier assembly to have bolts assembled from upper plate directly.

Positioning Stages

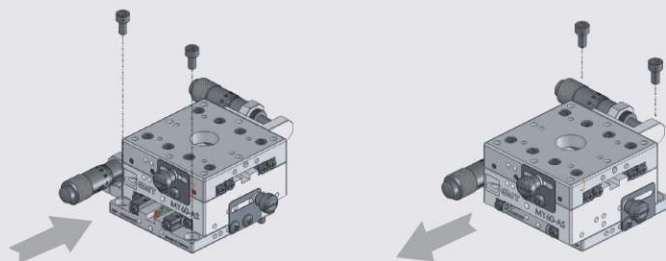
Assembly Scheme

Single Axis



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

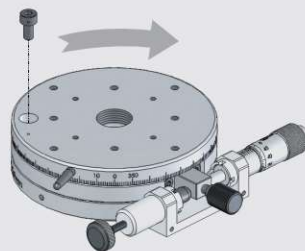
Dual Axis



Screw security same as single axis.

θ Axis

- ◆ Move upper plate by rotating, and take the screw through it.
- ◆ Proceed taking screws through base plate with matched bores respectively.
- ◆ Lock the stage on the work piece with tight confirmation.

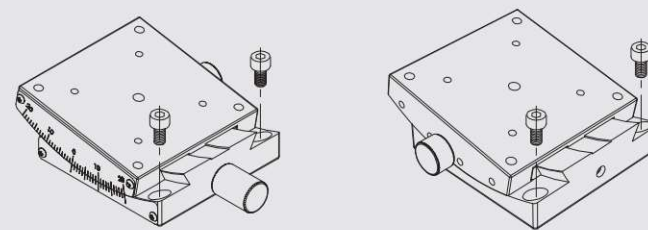


Positioning Stages

Assembly Scheme

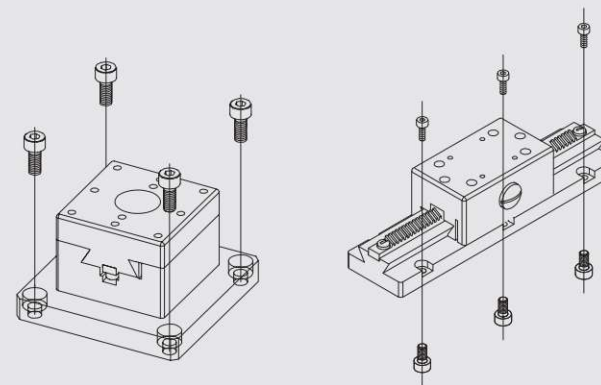
Goniometer Stage

Rotate knob clockwise to move plate to the other side.
(Please operate after loosening safety knob), to adjust locked screw into half-secured status.
Next, rotate knob counterclockwise to move plate to the other side, and secure the screw on base plate and work piece with tight confirmation.



Other Stages

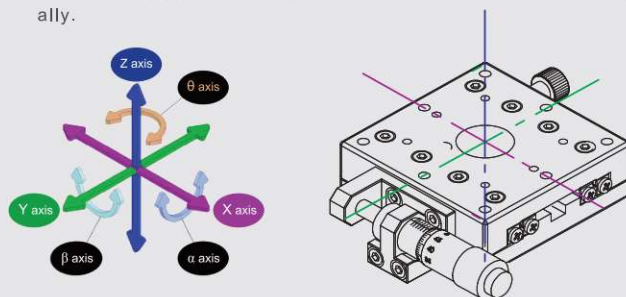
Consider easy installation fit for other devices, threaded holes pattern is made to meet requirement of securing from upper or lower direction, and this provides more options for installation.



Axes Definition

Regarding definitions of moving and rotating axis, GMT defines as the diagram 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.

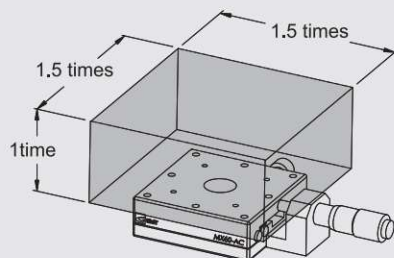


Temperature of Environment

Operating stages in regular range of temperatures as listed. Please contact GMT if products in wider temperature ranges 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

1. 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.
2. Photo images are for reference only. For application design, please download 2D drawing.

Notice

Please read operation principles before your use, this would have GMT product series performed for the best motion accuracy and usage life.

Operation Principles

1. GMT product series are all composed of parts in high accuracy, please avoid extreme environment such as 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. Do not overload out of rated capacity.
3. Besides allowable capacity limit, please avoid taking barycenter of loaded object out of 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 operating conditions, and use appropriate lubricant.
5. All kinds of rolling mechanisms set in the product are adjusted and leveled by engineers before shipment, please do not try any adjustment if not have been trained or authorized.
6. Use right lock unit, tools and torque wrench 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. www.gmtlinear.com
8. GMT also provide custom-made service for special purpose application or other unique spec.